BULLETIN

AMERICAN COLLEGE OF SURGEONS

July 2008
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The future and challenges of surgical education

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Clinical Congress

2008 San Francisco, CA, October 12-16

2009 Chicago, IL, October 11-15

2010 Washington, DC, October 3-7

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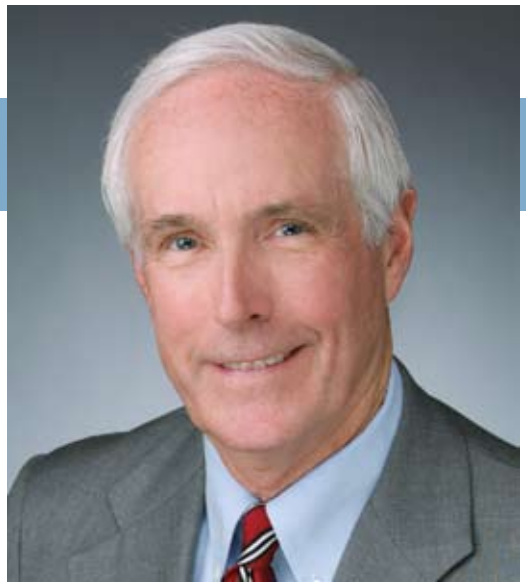
The American College of Surgeons is dedicated to improving the care of the surgical patient and to safeguarding standards of care in an optimal and ethical practice environment.

From my perspective



As most of you know, the American College of Surgeons has been engaged in strategic planning for the past several years. In an effort to ensure that our activities keep pace with the changing health care environment, the College's leaders regularly set new or revised priorities for the organization. I would like to take this opportunity to describe the agenda for 2008 and to provide a mid-year progress report.

• *Serve as a strong advocate for surgery by surgeons who are reimbursed fairly and appropriately for their services and are relieved of major liability issues. Increase the College's visibility among all stakeholders who are shaping the future of health care in the U.S.*

With these goals in mind, work on a new ACS office building in Washington, DC, began on May 9 (see story, page 86). The building's location near Capitol Hill will ensure that our lobbying and regulatory staff is in close, visible proximity to the nation's policymakers.

In addition, College leaders have testified before congressional committees about the effects of Medicare physician payment reductions on surgeons' ability to maintain viable practices and patient access to care. The ACS also has developed a proposal to eliminate the flawed sustainable growth rate methodology from the formula used to calculate physician reimbursement and replace it with six separate spending targets based on category of service. Several members of Congress have expressed interest in this plan.

With regard to medical liability, the College continues to advocate for alternative dispute resolution mechanisms and other legislation that encourages surgeons to participate in patient safety initiatives aimed at improving outcomes.

Furthermore, the organization's overall visibility has been steadily improving. For instance, reporters for nationally recognized publications, such as the *Wall Street Journal* and the *New York Times*, seek the College's input on a more regular basis. And, to extend awareness of the benefits of ACS membership, we are developing a DVD and speaker's kit for surgical audiences.

• *Continue to develop educational products to be delivered electronically as well as regionally to all surgeons to meet their Maintenance of Certification (MOC) requirements and for purposes of local privileging and credentialing.*

> **"I would like to take this opportunity to describe the agenda for 2008 and to provide a mid-year progress report."**

In an effort to offer more regional programs, the ACS hosted sessions at this year's annual meetings of the Southeastern and Southwestern Surgical Congresses. The College-sponsored panels focused on ACS activities and MOC for practicing surgeons.

Moreover, the ACS Program for the Accreditation of Education Institutes continues to verify the capacity of institutions throughout the U.S. to provide state-of-the-art educational opportunities to all members of the surgical team.

In addition, the College has developed a course based on findings in a review of closed claims that indicate that communication—a core competency that surgeons are expected to develop under the MOC mandates—is a determining factor in patients' decisions to sue. The first course, Minimizing Liability and Enhancing Surgical Outcomes through Effective Communication, took place in April of this year.

• *Reach out to all surgical specialty societies*

to assist all surgeons in remaining competent and competitive in a new health care environment.

Exemplifying the College's strengthened relationship with the surgical specialty societies, the ACS and several of these groups combined forces March 9–11 to present a Joint Surgical Advocacy Conference in Washington, DC. This program was very well attended, and many participants indicated that the College and the specialty societies should make the meeting an annual event. In addition, the College has helped to establish a number of coalitions, including the Surgical Quality Alliance (SQA), to address issues of concern to all surgical specialties. Some of their activities are described in the following text.

- *Develop risk-adjusted programs to assess quality of care, effectiveness, efficiency, and patient satisfaction. Examples include the National Surgical Quality Improvement Program (ACS NSQIP) and Consumer Assessment of Healthcare Providers and Systems (CAHPS).*

Among other improvements, ACS NSQIP is being modified to better respond to the needs of private-sector hospitals. Specific enhancements include decreasing the amount of data collected per case, changing the sampling frame to collect more clinically meaningful cases, providing surgeon-specific outcomes, and offering more instruction to hospitals on how to improve their outcomes.

In addition, the College, on behalf of SQA, has contracted with the American Institutes for Research and Westat to develop a Surgical CAHPS survey. Twelve specialty societies and one specialty board are supporting the project financially, assisting in questionnaire design, and recruiting practices to participate in field testing. The Surgical CAHPS questionnaire is scheduled for completion this fall and should be valuable in assessing the degree to which individual surgeons provide patient-centered care.

- *Collect data on surgical performance and efficiency for surgeons to meet MOC requirements and other reporting obligations.*

The College continues to encourage its members to use the ACS Case Log System to track their outcomes and for use in reporting on the practice-based component of MOC.

- *Set standards of care for surgical patients using the evidence that is available today. Continue to set accreditation standards and review programs for purposes of validation. This activity may be done in conjunction with other groups, such as The Joint Commission, American Medical Association Physician Consortium for Quality Improvement, National Quality Forum, the AQA, and the SQA.*

The College continues its tradition of setting standards for surgical care and has expanded its accreditation activities over the last few years. We remain active in the "alphabet soup" of agencies and organizations vetting the quality measures and standards of care. Moreover, we established SQA primarily to ensure that policymakers understand the unique nature of surgical services when setting outcomes measures for pay for performance, pay for compliance, and so on.

In addition, last month the College launched the ACS Nora Institute for Surgical Patient Safety. This institute is designed to educate patients and surgeons about the practice and principles of surgical patient safety. The institute also will conduct clinical research to discover new means of improving patient safety throughout the surgical experience and will promulgate data on related issues.

- *Educate surgeons and their staff in the use of electronic medical records (EMRs).*

The College is surveying its members this summer to ascertain their concerns about electronic recordkeeping. We anticipate that this study will provide insights into whether practices are using EMRs and, if so, what their level of sophistication is. The survey also will gauge the interoperability between office and hospital sites. The results should prove valuable in helping us to develop new educational programs for surgeons seeking to adopt EMRs.

- *Develop cooperative and collaborative relationships with all stakeholders in health care in an attempt to build a less fragmented and safer system. These stakeholders include surgical and nonsurgical organizations, regulatory agencies, the insurance industry, purchasers, payors, providers, and patients.*

As mentioned previously, the College works

with a full range of agencies and organizations focused on quality improvement and has developed a reputation for coalition building. We also have reached out to business and consumer groups, such as the Leapfrog consortium and AARP. Earlier this year, the College expressed support for the Consumer Purchaser Disclosure Project's efforts to develop a patient charter for physician performance measurement, which promotes fairness and transparency in outcomes measurement and reporting programs. This group is composed of leading employer, consumer, and labor organizations working to ensure that all Americans have access to information on health care performance.

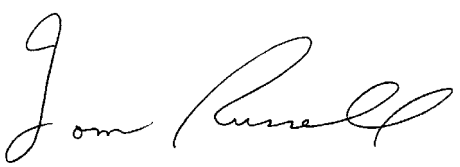
- *Collect data through the ACS Health Policy and Research Institute to develop proactive policies to respond to workforce and other issues.*

This institute became operational in January of this year and is headquartered at the Cecil G. Sheps Center for Health Policy Research at the University of North Carolina until the new Washington Office is completed. Under the direction of George F. Sheldon, MD, FACS, the institute has already completed one article and two abstracts dealing with issues related to the surgical workforce.

- *Foster the maturation of the ACS Foundation to a point of writing significant grants and seeking external support to gain the resources necessary to support the multifaceted programs of the College.*

We continue to reach out to pharmaceutical and device companies to support the organization's multiple scholarship programs. As a recent example, the College now offers a Wound Care Management Award to encourage research that will lead to new clinical applications in advanced wound-healing therapies. This award for general surgeons has been made possible through the generosity of KCI USA. Furthermore, the National Institutes of Health continues to provide grants for our clinical trials programs.

As you can see, the College's leadership has set some very important goals for the organization in 2008 and beyond, and the ACS staff and volunteers are working hard to meet these objectives. Of course, this month's column has largely centered on our agenda and activities for just the first half of this year. Strategic planning is a nonlinear, evolutionary process. I invite all of you to share your priority issues and ideas regarding how the College can best meet the needs of today's surgeons and surgical patients.



Thomas R. Russell, MD, FACS

If you have comments or suggestions about this or other issues, please send them to Dr. Russell at fmp@facs.org.

Dateline|Washington

prepared by the Division of Advocacy and Health Policy

Dr. Mabry testifies on payment policies

During a House Committee on Small Business hearing on May 8, Charles D. Mabry, MD, FACS, ACS Regent and Chair of the College's Health Policy Steering Committee, spoke about how Medicare reimbursement policies affect small surgical practices. A general surgeon in private practice and a small business owner from Pine Bluff, AR, Dr. Mabry noted that Medicare payment reductions are contributing to, among other things, the declining surgical workforce in rural and small hospitals. This shortage, in turn, inhibits patient access to surgical care.

Dr. Mabry asked Congress to preserve Medicare beneficiary access to care by stopping the 10.6 percent cut in reimbursement, which, at press time, was slated to take effect July 1. He also suggested that Congress replace a scheduled 5.4 percent cut in 2009 with an increase and enact long-term reforms consistent with the College's proposal to supplant the current reimbursement structure with a system based on type of service. For a copy of Dr. Mabry's testimony, go to *http://www.facs.org/ahp/testimony/mabry0508.html*.

Dr. Meredith testifies on trauma

J. Wayne Meredith, MD, FACS, ACS Medical Director of Trauma Programs, testified at a May 5 House Committee on Oversight and Government Reform hearing on the possible effects of the Administration's proposed Medicaid regulations on the lack of hospital emergency surge capacity. Dr. Meredith asked Congress to prevent several of these proposed rules from taking effect later this year. Speaking as chairman of surgery at Wake Forest University Baptist Medical Center, Winston-Salem, NC, Dr. Meredith pointed to the scarcity of resources for trauma care and the negative effect the regulations could have on his hospital's ability to continue to provide trauma care services. To read Dr. Meredith's testimony, go to *http://www.facs.org/ahp/testimony/meredith0508.html*.

Conditions for nonpayment list may expand

In April, the Centers for Medicare & Medicaid Services (CMS) posted a notice of proposed rulemaking that would expand the list of avoidable complications that are reasonably preventable through proper care and that will no longer be paid at a higher rate if acquired during a hospital stay. In addition, CMS is adding 43 new quality measures on which hospitals will need to report to receive full annual payment.

The nine new complications proposed for nonpayment to hospitals in 2009 are as follows: surgical site infections following certain elective procedures, Legionnaires' diseases, extreme blood sugar derangement, iatrogenic pneumothorax, delirium, ventilator-associated pneumonia, deep vein thrombosis/pulmonary embolism, staphylococcus aureus septicemia, and clostridium difficile-associated disease.

Although the rule affects hospital payments only, the medical community agrees that this initiative could have significant implications for physician documentation. Hence, at press time, the College was preparing comments for submission to CMS. For more information about the proposed rule, go to *http://www.cms.hhs.gov/apps/media/press.release.asp?Counter=3041*.

2008 PQRI alternative reporting options

by Caitlin Burley, Quality and Regulatory Assistant, Division of Advocacy and Health Policy

The Centers for Medicare & Medicaid Services (CMS) has extended the Physician Quality Reporting Initiative (PQRI) through the end of 2008. The voluntary pay-for-reporting program underwent a six-month trial from July 1 to December 31, 2007. The PQRI was established in the 2006 Tax Relief and Health Care Act, which mandated the development of a reporting system for professionals with a payment incentive for individuals who meet the participation criteria. In late December 2007, Congress passed the Medicare, Medicaid, and SCHIP [State Children's Health Insurance Program] Extension Act (MMSEA), which authorized CMS to extend the incentive-based program into 2008 and establish alternate reporting options. As the 2008 PQRI program began January 1, CMS was collecting and analyzing the reporting data from 2007. In late January, CMS released preliminary reports regarding 2007 participation from July 1 through November. Out of more than 631,000 professionals eligible to participate, only a little more than 99,000 professionals attempted participation.

This article addresses changes that have been made in the 2008 PQRI. It also gives surgeons information to help them determine whether to participate in the program.

What has CMS done to encourage more participation in the 2008 PQRI?

Because the preliminary results of 2007 participation indicated that less than 16 percent of eligible professionals were reporting in PQRI, the MMSEA allowed CMS to create alternative reporting options in order to increase participation. The alternatives, released April 15, allow for new reporting periods, as well as new reporting methods. CMS anticipates that the new criteria will make it easier for eligible professionals to participate in the PQRI by giving them several avenues to succeed and, ultimately, to receive the bonus payment.

The two new reporting periods for 2008 PQRI participation are January 1 to December 31 and July 1 to December 31. These full- and half-year periods have their own specific reporting options, which include claims-based reporting and the new method of registry-based reporting. The new options also include reporting with measures groups. There are currently four established measures groups: diabetes mellitus, end-stage renal disease, chronic kidney disease, and preventive care.

What are the options for reporting in the full year?

Individuals who participate in the 2008 PQRI from January to December have the following options:

- Using claims-based reporting, an eligible professional must report on three PQRI measures (one or two if less than three apply) for at least 80 percent of applicable claims
- Using registry-based reporting, an eligible professional must report on at least three PQRI measures for at least 80 percent of applicable cases
- Using registry-based reporting, an eligible professional must choose one measures group and report on 30 consecutive, applicable patients
- Using registry-based reporting, an eligible professional must choose one measures group to report on at least 80 percent of applicable patients

What are the options for reporting in the half-year?

The options for participating in 2008 PQRI from July to December are as follows:

- Using claims-based reporting, an eligible professional must choose one measures group to report on 15 consecutive, applicable patients
- Using claims-based reporting, an eligible

professional must choose one measures group to report on at least 80 percent of applicable claims

- Using registry-based reporting, an eligible professional must report on at least three PQRI measures for 80 percent of applicable patients
- Using registry-based reporting, an eligible professional must choose one measures group to report on 15 consecutive, applicable patients
- Using registry-based reporting, an eligible professional must choose one measures group to report on at least 80 percent of patients

What are the measures groups, and how are they used for reporting?

Reporting with the measures groups is available for claims and registry-based reporting. Each measures group has four to nine PQRI measures, and health care professionals who choose to use one of the groups must report on all measures within that group. When using the measures groups, the patients must be applicable to the measures group used—that is, the defined measures are relevant to these patients' cases. When submitting measures groups through claims-based reporting, the G code is necessary to signify the first of the 15 consecutive patients and must be submitted to qualify. G codes are only needed when using claims-based reporting.

What are the specifications for registry-based reporting?

On April 15, CMS announced that 12 clinical registries would take part in pilot-testing registry-based reporting. Participating registries were expected to demonstrate that they could successfully submit PQRI data to CMS; were in existence on January 1 of this year; and fulfill CMS-specified technical requirements. These requirements were posted on the CMS Web site in April. Registries that met the requirements could nominate themselves for registry testing; CMS will post the names of the qualifying registries on its Web site by August 31. Eligible professionals also were expected to be able to prove an established relationship with the registry through which they are reporting to CMS and confirm the validity of their data.

Which organizations or firms house the 12 clinical registries CMS named as pilot test participants?

- The Society of Thoracic Surgeons
- Cedaron
- University of Wisconsin Medical Foundation
- ICLOPS
- The National Cardiovascular Data Registry
- Cielo MedSolutions
- American Osteopathic Association
- Rush Health Associates
- Wellcentive
- Wisconsin Collaborative for Healthcare Quality
- General Electric
- Phytel

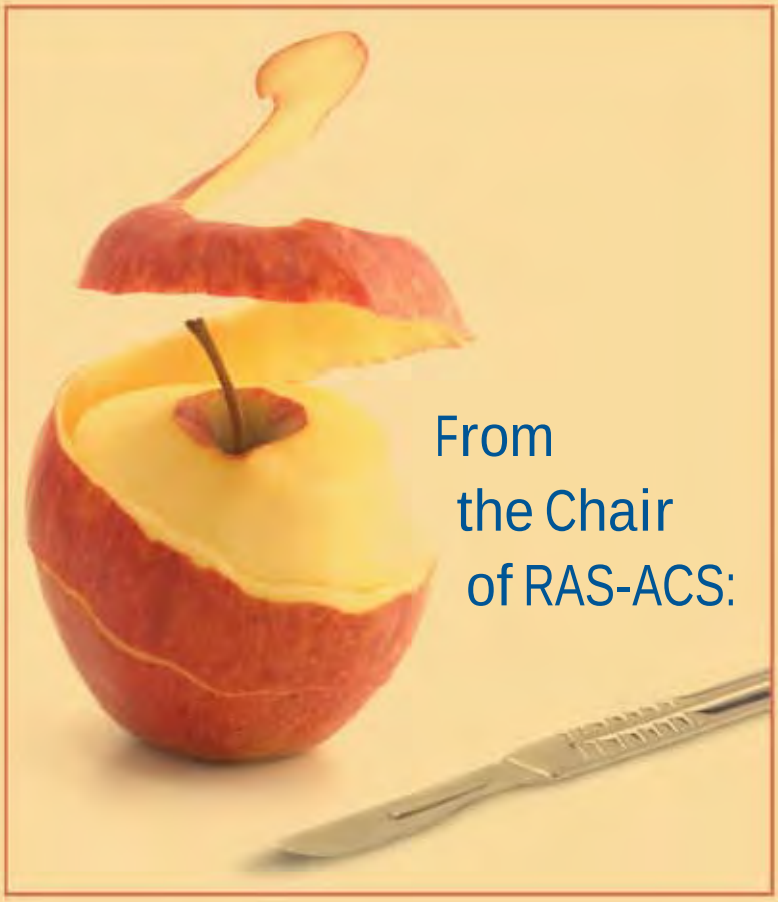
Is there a payment incentive for successful participation in PQRI?

The MMSEA extended PQRI incentive payments for successful participation. It also removed the cap associated with the bonus payments for the 2008 and 2009 PQRI. The incentive is 1.5 percent for all Medicare Part B services in the reporting period.

Is it too late to enroll in PQRI for 2008?

With the release of the alternative reporting options for PQRI 2008, it is not too late to enroll. The half-year reporting period provides eligible professionals with opportunities to receive a bonus payment.

For more information, visit the CMS PQRI Web site at *http://www.cms.hhs.gov/pqri/* or contact Caitlin Burley at cburley@facs.org. Ω



From the Chair of RAS-ACS: *Training in essential nonclinical skills*

by **Ted A. James, MD**

This issue of the *Bulletin* continues the tradition of focusing on residents and young surgeons. The theme this year is "The future and challenges of surgical education." This is a timely and important topic, and published herein are several excellent articles written by members of the Resident and Associate Society of the American College of Surgeons (RAS-ACS) that address the salient issues.

As we move into the future, one of the many challenges of surgical education will be the need to obtain training in areas not traditionally covered in medical school or residency. These areas consist of leadership development and associated nonclinical skills. Other interested parties have begun to take control and exert their opinions on health care policy and regulation. External mandates already have irrevocably changed surgical training in the U.S. How do we stand prepared to address new potential mandates such as a 40- or 60-hour workweek, increasingly stringent credentialing for new surgical procedures, or economic deferment during training? Being a competent clinician with good technical skills, although important, will not be sufficient to tackle many of these political issues confronting the future of surgical training and practice.

As surgeons caring for patients, our insight and experience must be incorporated into the decision-making process, and we need to retain a degree of control in the manner in which surgeons are trained and the environment in which we ultimately practice. Therefore, surgical residents today face the challenge of not only becoming proficient clinically but also developing fundamental skills of leadership, advocacy, and policymaking in order to become effective surgical leaders for tomorrow. The question then becomes: How do residents and young surgeons develop these important skills? One practical avenue is through the College and the RAS, which offer many leadership opportunities and resources for training.

Surgeons have a legacy of quality improvement in patient care and leading revolutionary changes in the health care system. Ernest Codman, MD, a Boston surgeon born in 1869, is recognized as the founder of the field of outcomes management. Dr. Codman dedicated himself to a lifelong pursuit of quality assessment and improvement. He monitored all his patients for years after treatment and recorded their long-term outcomes. He recorded diagnostic and treatment errors and linked these errors to outcome in order to make

improvements. Ultimately, Dr. Codman became frustrated with the lack of similar outcomes evaluation at Massachusetts General Hospital, where he operated. He resigned to start his own private hospital, which he called the End Result Hospital.* He also advocated public reporting of outcomes data so that patients could make informed decisions regarding their choice of hospital and physician. An innovator and visionary of his time, Dr. Codman helped found the American College of Surgeons and its Hospital Standardization Program, which ultimately became the Joint Commission on Accreditation of Healthcare Organizations (now called The Joint Commission).

Today the ACS offers an outcomes research course, which is designed to provide residents and junior surgeons with a foundation in the essentials of evidence-based health services research. In addition to the outcomes research course, the College offers a two-year fellowship in outcomes research and health policy for residents interested in studying patient safety, quality, and policymaking related to health care. The program includes the opportunity to earn an advanced degree in health care quality and patient safety. Residents participating in this fellowship program have already made significant contributions to outcomes research and have produced data affecting practice guidelines and quality performance measures.

The College also sponsors a scholarship in health policy and management through Brandeis University and offers the Resident As Teachers and Leaders course, co-developed by RAS and the College's Division of Education. RAS continues to award an annual scholarship specifically designed to facilitate and encourage residents and young surgeons to attend ACS-sponsored programs in leadership, communication, and research.

The experience and training obtained from these activities will pave the path for future leadership opportunities and allow surgeons to assume more significant roles in establishing health care policy, designing patient safety and clinical guidelines, and determining performance metrics to be used for incentive-based reimbursement, physician reporting, and credentialing. Physicians, armed with evidenced-based data and leadership skills, will be extremely well suited to determine these factors, rather than leaving these decisions solely to the government or third-party private organizations.

In my own experience as a member—and now Chair—of RAS, I have witnessed the numerous opportunities this society provides for grooming future surgical leaders. I know I have learned a great deal about working with teams, organizational politics, communication, and professionalism. This experience will assist me in my career as I take on future positions of authority and serve in advocacy roles. I also look forward to the continued achievements and accomplishments of the many talented members of RAS, as they no doubt assume even greater leadership roles in the future.

Surgeons are natural leaders and have a proud heritage of improving quality in patient care. Nothing short of excellence in clinical skills and leadership will be required to carry this legacy into the future. So as you read the following series of articles on the future and challenges of surgical education, I encourage residents and young surgeons to take advantage of the resources of the College and RAS and sharpen their essential nonclinical skills in order to effectively address these challenges as surgical leaders. In this way, we will have the opportunity to influence the future of surgery for the better. Ω

Dr. James *is assistant professor of surgery and clerkship director at University of Vermont, Burlington, and Chair of the RAS-ACS.*

*Neuhauser D. Ernest Amory Codman, MD. *Qual Saf Health Care.* 2002;11:104-105.

The economics of health care:

Is it threatening surgical education?

by **Brian J. Santin, MD;**
and **C. Suzanne Cutter, MD**

Health care and the components funding it, like all economies, must allocate resources in an attempt to meet the demands of the participating entities. Although much emphasis is placed on this most basic principle of microeconomics, first coined by James Denham-Steuart in 1767,[1] it must be appreciated that the effects of the resultant equilibrium are significant to the people who operate within the economy (no pun intended). This article provides a focused look at how these factors affect those involved in surgical education.

As medical education across the board has taken on a multimodality approach, so has surgical residency training with an increasing popularity of simulation laboratories, Web-based learning resources, and educational conference attendance. As these and other adjuncts are incorporated into residency programs, the costs associated with surgical education escalate as well.

The allocation of payment in the U.S. health care system is determined predominantly by a balance between three basic entities, including government reimbursement, employers, and individuals. At the fulcrum of government funding for resident education are the Centers for Medicare and Medicaid Services (CMS). For more than a decade, federal funding via CMS for resident training has been steadily decreasing while attending surgeons have witnessed a parallel decrease in remunerations. Simultaneously the recruitment and retention rates in general surgery have diminished.

Today's surgical residents face a variety of concomitant factors that play a significant role in influencing a career in surgery, including research incentives and lifestyle and generational changes. These components need to be addressed—and there needs to be a concurrent, thorough appreciation for changes in CMS funding—if any attempt at arriving at a balance in surgical education is to be achieved.

Medicare history

Before the mid-1990s, Medicare reimbursement for medical residency programs was fairly stagnant. On March 12, 1997, Bruce C. Vladeck, PhD, former Administrator of the Health Care Financing Administration of the U.S. Department of Health and Human Services and Director of Medicare and Medicaid, provided testimony to the Senate Committee on Finance that some have considered landmark in medical education financing history.[2] In his statement, Dr. Vladeck recommended that Medicare should begin decreasing the amount of money it provided to support each medical resident in the country, regardless of field or specialty. Without concrete evidence to defend his proposal, the Medicare Payment Advisory Commission subsequently agreed with Dr. Vladeck's suggestions, and thus ensued the beginning of a now 11-year continual drop in the gross amount and percentage of money CMS reimburses hospitals nationwide for resident education.

Before Dr. Vladeck's testimony, there was a limit (resident cap) placed on the number of residents each program was paid for through federal funds as a component of the Balanced Budget Act of 1997. The intention behind this cap was to prevent hospitals from creating new residency programs or adding residents, as it was a concern that the Medicare program was providing a financial incentive to hospitals to train too many residents. The residency cap was also intended to prevent a surplus of physicians and to control the total dollars spent on residency education nationwide. The 1997 cap, which has not changed to date, does not prevent the creation of new programs but rather forces institutions to redistribute the current number of positions if expansion is of interest.

As an example, if Hospital A has 10 medical residents and 10 surgery residents and would like to add two new medicine resident positions, it would only be paid for the original 20 residents. Essentially this system has limited specialists in training while it allows hospitals to retain the ability to grow their primary care positions, but not vice versa. In response to the stagnant number of residency spots, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 afforded an opportunity for programs to increase their resident caps (up to 25 positions). Preference was given to rural hospitals so very few nonrural programs were granted an increase in positions.

Reimbursement

The breakdown of CMS reimbursements to resident education is divided between two categories: graduate medical education (GME) and indirect medical education (IME). GME covers the direct costs of resident training including resident salaries, fringe benefits, and attending physician compensation for providing resident education. It was estimated in 2003 that GME payment in the U.S. totaled $2.59 billion. Although this may appear to be a large figure, GME payments have only increased 2 percent per year since 1986. Is this rate of growth keeping pace with the increasing costs of surgical education? It is below the average rate of base inflation, 3.04 percent, in this country.[3] Consider the increasing costs of simulation or dry labs, digital and electronic media such as the Surgical Education and Self-Assessment Program, wet or animal labs, and national conference attendance. The amount of increase in reimbursement seems to be much less than adequate even to the uneducated observer. As mentioned previously, the GME component of CMS reimbursement is also intended to cover the cost of attending physician compensation for their role in educating residents. The meager increase of 2 percent per year may seem insulting to those staff already facing decreasing CMS reimbursements for operative cases.

The end result is that attending surgeons' time has become increasingly valuable as they are simultaneously witnessing a fall in remuneration from educating residents. Some individuals argue that the financial incentive should not be the driving factor behind educating young surgeons, but rather education should be viewed as a moral responsibility of those who choose a career in the field of surgery.

To cover the indirect costs associated with training residents, CMS developed the IME payment. This payment to medical education programs is intended to cover the additional costs historically attributed to resident involvement in medical care, including additional laboratory tests, longer patient stays, sicker patient populations, and greater technological needs. The IME was also designed to offset the lack of private insurance's contribution to GME. Compared with the GME component, the IME comprises a much larger portion of the CMS budget, an approximate $5.3 billion in 2003. Hospitals receive an add-on payment calculated based on the ratio of interns and residents to hospital beds multiplied by a factor (that is, the IME factor). In 1996, the factor percentage was 7.7 percent and has steadily decreased to a current ratio of 5.5 percent in 2007. When President Bush recently proposed his budget for 2009, he had planned to further decrease the factor to 2.2 percent over the next three years; however, it was dead on arrival to the Democrat-controlled Congress.[4]

To put this concept in a clinical perspective and raise the issue of inherent escalating costs of surgery, if a patient undergoes a sigmoidectomy for diverticular disease, the amount CMS reimburses a hospital is $2,000. The IME is a proportional amount added onto this base figure. Using the previously stated IMEs, the hospital would have received $3,780 in 1996 and only $2,700 in 2007. This steady decline for more than a decade was the direct result of Dr. Vladeck's landmark testimony and recommendations in 1997. Was the payment in 1997 too high or were residents just not as efficient back then? Likely neither was the case. On the contrary, how are the increasing costs for surgical equipment, EEA staplers, and so forth to be covered? Or will they not be covered?

As CMS determines the amount residency programs get paid per resident using the IME and GME calculations, the question often becomes: Who actually pays for these salaries? Each residency program's reimbursement depends on how many CMS patients each respective hospital treats.

Consider the case of a surgical residency program in Columbus, OH, in 2007. IME was roughly equal to $106,000 per resident in medical education and GME was $73,000 per resident. In an average year, the hospital system serves approximately 50 percent Medicare patients. Thus, the CMS pays approximately $38,000 (50% of $73,000) per resident plus half of the IME appropriated funds ($54,000). The obvious question then is, "Where does the remaining reimbursement for surgical education come from?"

Returning to the components of the payor sources (government, employers, and individuals), each hospital system must negotiate for

this deficit in contracts with health maintenance organizations (HMOs), pass the burden on to the patient, or ultimately accept the financial burden out of their own pocket.

Does this help create balance among the three basic entities paying for health care overall? Or does it place undue burden on individual hospitals with a resulting strain on the quality of surgical education? While Medicare reimbursements for IME and GME have steadily declined over the past decade, there has been an increased amount of pressure on hospitals to secure outside funding for surgical training programs. Although IME has decreased proportionally more than GME, the total decrease in CMS reimbursement has been quite substantial on training programs. Nationwide the patient population continues to grow significantly. Hospital systems have attempted to meet these needs and benefit from maximizing their economies of scale by increasing the number of residency slots in their programs. Unfortunately, these slots do not receive federal funding from CMS as a result of the cap placed in 1997. So again, resident salaries and all of the associated expenses that accompany these positions must be financed by the hospital.

How long will hospital systems be able to afford this? Can most systems even pay for medical education programs now? It appears as though hospitals cannot meet this expense. On the contrary, and as a result of the increasing patient population of aging baby boomers, hospitals cannot afford not to continue in the current conditions. There have been claims that further restrictions/decreases in IME funding could cause some hospitals to close their residency programs. This outcome would worsen the national trend of physician shortages by further reducing the number of residency positions available.

Physician shortage

During the 1970s, there was an increasing concern by the government regarding the number of physicians being trained in the U.S. This issue largely stemmed from the number of new medical schools being founded in the late 1960s and early 1970s as well as an overall proportional increase in residency positions. As a direct result of these concerns, Congress formed the Graduate Medical Education National Advisory Committee (GMENAC). This body concluded, after conducting a series of surveys and data analysis, that there would be a projected surplus of 145,000 physicians by 2000. These findings were further supported by the Study of Surgical Services in the United States (SOSSUS) in 1974. The ensuing events following the release of these reports, including Dr. Vladeck's testimony in 1997 and the Balanced Budget Act of 1997, defended the government's actions to begin limiting the number of physicians trained in this county.

The results of these historic reports are now considered to be incorrect by most authorities, given that the SOSSUS projected the U.S. population in 2000 to be 250 million whereas it was actually 300 million.[5] Recent studies show the results to be the exact opposite of the SOSSUS and GMENAC predictions. In fact, a physician shortage of approximately 200,000 by 2020 is projected.[6]

A factor contributing to this expected shortage is the relative age of physicians today. Currently one-third of physicians are age 55 years or older and, as George Sheldon, MD, FACS—a scholar well versed on surgical education history and trends in the U.S.—recently stated, "The environment in which medicine is practiced today is believed to be less satisfactory than in the past, and that many surgeons anticipate retiring early."[6] The result is the creation of an enlarging gap in the need for and loss of experienced surgeon perspectives, which are not easily replaced. Ultimately a deficiency is created in teaching staff availability and knowledge. From a more global perspective, the impact of a surgeon shortage is negative on the demand portion of the economy equilibrium equation.

Dynamic changes in surgical education

The educational requirements of surgical residents continue to evolve as technology and multimodality teaching programs gain widespread approval. Parallel to the public's request for minimally invasive surgery is an increase in simulation laboratories to train tomorrow's surgeons how to perform such operations. Gary Dunnington, MD, FACS, chair of the department of surgery at Southern Illinois University, Carbondale, supports the use of simulation labo-

ratories and claims, "With advancing technologies, the cost of the operating room has made the methodical, high-quality teaching with a patient present increasingly more difficult and expensive.... Airlines have been doing this kind of training for years. Pilots often spend hundreds of hours in front of a flight simulator before ever making their first flight and now our residents will have a similar experience, using a high-tech model of a human torso, abdomen, or hand."[7]

Multimodality educational programs are attempting to incorporate a more comprehensive approach to surgical education. Additional learning aids and supplements to surgical education, including e-learning or McGraw-Hill's Access Surgery™ (*http://www.accesssurgery.com/index.aspx*), are growing in popularity. A strain on resident education has been inherently born as 80-hour workweeks are enforced and supplemental learning objectives in the surgical curriculum are created, carving precious operative time out of each week. Although conferences both local and national are addressed from a financial standpoint as a component of GME compensation for surgery residents, where are residency programs to acquire funding to support the new requirements for simulation laboratory construction and maintenance? Coupled with this is the scarcity of attending surgeon time to devote to these additional training exercises.

Advocates of the increase in resources, simulation laboratories, and so forth cite the importance in the changing academic environment, which allows more self-directed learning with less emphasis on attending surgeon participation. Residencies with simulation laboratories have found it advantageous to employ laboratory coordinators and laboratory specialists to maximize the effectiveness and efficiency of the laboratory and its capabilities; however, the funding for these positions can be rather substantial. A few programs have looked toward outside financial assistance from surgical device companies to lessen the burden of the simulation or dry labs. This may pose a possible ethical dilemma with outside source funding intimately intertwined in surgical education.

As attending surgeons are scrutinized more than ever to be efficient with outcomes measurements and operative times, the effects of decreased resident participation in operative cases have become an increasing concern. Senior-level resident autonomy in surgical cases at times seems to be more of an afterthought. Does the increase in attending surgeon participation hinder education and limit the ability to teach first-hand technical skills that can only be mastered in the operative theater? Or are these gross consequences of our health care economy such that we must adapt to and appreciate the more efficient practice management strategies of our teachers?

In a similar manner, the 80-hour workweek era has provided the necessary means to force an evaluation of the service versus education dichotomy in surgery training. The resident's role is less focused on service tasks such as patient transfers and completing blood draws, now partly compensated for by the increasing usage of physician extenders. As a result of the emphasis being placed on efficient time management, resident learning is now more honed to surgical skill endeavors. Will this trend continue as the resurgence of further restrictions on work hours comes to the horizon of training issues?

Morbidity and mortality conferences, essential components of surgical training, have similarly been modified with the advent of the matrix program. It's unknown if this trend in further efficiency in surgical education will correlate to a better cost to benefit ratio from a resident's perspective—that is, a better bang for the buck spent completing five years of training.

Generational changes in expectations

As mentioned previously, the increasing attrition rates among general surgeons are not unique to those ready to retire but are also evident in younger generations. General surgeons once reveled in their ability to surgically manage anything from an infant with pyloric stenosis to the most complex of Whipple procedures. Currently, however, there is a growing perceived need by graduating residents to complete a fellowship in an attempt to begin carving their niche in today's world of surgical specialization. An article published in the *Journal of the American College of Surgeons* in 2005 found that more than 70 percent of recent residency graduates have pursued

fellowship specialty training, an increase from just more than 55 percent in 1992.[8] Is general surgery training becoming a mere stepping-stone to surgical specialization?

It is speculated that the decline in remuneration in general surgery is one of the main stimuli for residents opting for surgical subspecialties. The accompanying lifestyle options that specialization fields offer are an equally attractive preference. This issue has been widely debated and there appears to be no change of these trends in sight. Additional statistics of concern are high attrition rates of medical students selecting a career in general surgery. In 2007, 1,057 categorical positions were offered in general surgery to graduating medical school seniors via the National Residency Matching Program (NRMP). In that same year, there were 1,043 U.S. graduating students who chose to rank general surgery; this is in stark contrast to the statistics of 1994, when 1,874 students vied for a spot in the 1,133 positions offered, which equates to a more than 44 percent decline in the number of applicants. In 1994, 87.3 percent of general surgery positions were filled through the NRMP by U.S. graduating seniors, compared with just 78.1 percent in 2007.[9]

The Association of American Medical Colleges is promoting an increase in medical school admissions in an attempt to offset the physician shortage that has been defined. While approximately half of the existing medical colleges currently have plans to increase enrollment, a few new programs are being created; within the past few years, new programs have been developed at Florida State University; Virginia Tech; and the Touro College of Osteopathic Medicine in Harlem, NY. The overall increase in medical school students might result in the anticipated direct correlation to an increased interest in general surgery; conversely, additional marketing and advertising campaigns may need to be explored.

Is the only way to reverse the growing epidemic of decreased general surgery applications to offer better pay or are we missing something else? The surgical community has struggled for a proactive voice to be heard in Washington, DC, for quite some time. Consider the protracted battle and years spent to achieve tort reform. It is possible that the concerns of the next generation of surgeons revolve around an impending sense of insecurity in the field of surgery. Within the last year, the 20/220 policy was abolished when President Bush signed into law the College Cost Reduction Act, though it was temporarily reinstated until October 2008 after aggressive lobbying efforts by the American Medical Student Association and American Medical Association. This policy enabled all residents who met economic hardship requirements to defer loan repayments without accruing interest during the first three years of training. It's possible that the temporary loss of the 20/220 policy jolted potential future surgical residents to choose careers that require only three years at a resident's salary before making substantially more money to pay off loans. The increase in attrition rates in recent years is an ever-growing dilemma for the surgical workforce, yet the answer seems to lie within another microeconomy in and of itself, a tightrope walk of balancing the incentives and demands for tomorrow's surgeon.

Similar to the lower remuneration rates seen in general surgery are decreased financial incentives for surgical residents and attendings alike to conduct validated research. The low margin associated with these time-consuming ventures puts additional strain on today's surgical education. University-employed surgeons continue to produce research studies, yet private practice surgeons place little value on these activities. This concept may not be new, but a search for one of the fundamental reasons it occurs leads back to the simple economic model: research is not a component of the supply and demand curve. Surgical residents are faced with the highest average amount of loans than ever before, and participating in research endeavors after graduation correlates to a longer wait to substantial remuneration and loan payoff. Therefore, it is no surprise that research efforts across the board are dismal at best when compared to the hypothetical potential of contribution by a vast majority of practicing surgeons.

Conclusion

Surgical education has always been a dynamic aspect of medicine, constantly adopting new techniques, developing innovative surgical de-

vices, and teaching preoperative and postoperative management strategies. These components have all been founded on the general principle of providing the best surgical training. More than ever, the issues related to delivering surgical education have become increasingly connected with the national health care curriculum. With the national spotlight on health care and the economy that encompasses it, we must recognize the workhorses who drive it forward today and those who will be taking the reins tomorrow. We must help find a new balanced equilibrium where supply will meet demand in the health care economy with a focused interest on surgical education.

Are the issues discussed here hindering surgical education, or are they necessary to force resident education to become more innovative, efficient, and focused?

The topics and questions posed in this article will be the focus of the Resident Symposium at the American College of Surgeons Clinical Congress in San Francisco in October. Ω

References

1. Denham-Steuart J. *Inquiry into the Principles of Political Economy*. Published in *The Strand*. 1767. Rod Hay's Archive for the History of Economic Thought, McMaster University, Canada. Available at: http://www.marxists.org/reference/subject/economics/steuart/index.htm. Accessed April 15, 2008.
2. Department of Health and Human Services. Testimony on Graduate Medical Education by Bruce C. Vladeck, PhD. Available at: http://www.hhs.gov/asl/testify/t970312a.html. Accessed March 6, 2008.
3. The Misery Index. Available at: http://www.miseryindex.us/iRbyyear.asp?StartYear=1986&EndYear=2007. Accessed April 15, 2008.
4. Schneider ME. Bush proposes cuts to Medicare, Medicaid in FY 2009. *Surgery News*. March 5, 2008.
5. Sheldon G. Invited critique. *Arch Surg*. 2008;143(4):351.
6. Sheldon G. We must press hard to expand training programs. *Surgery News*. February 8, 2008.
7. Southern Illinois University General Surgical Residency Program. Available at: http://www.siumed.edu/surgery/surgical_skills/index.html. Accessed April 21, 2008.
8. National Residency Match Program. Available at: http://www.nrmp.org/data/index.html. Accessed April 22, 2008.
9. Stitzenberg K, Sheldon G. Progressive specialization within general surgery: Adding to the complexity of workforce planning. *J Am Coll Surg*. 2005;201(6):925-932.

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Mentoring the modern surgeon

by **Mecker G. Möller, MD; John Karamichalis, MD; Nikunj Chokshi, MD; Haytham Kaafarani, MD, MPH; *and* Heena P. Santry, MD**

A mentor helps you to perceive your own weaknesses and confront them with courage. The bond between mentor and protégé enables us to stay true to our chosen path until the very end.

—Daisaku Ikeda,
Buddhist leader and writer

The relationship between a mentor and a mentee is one of the most well-established means of professional development. The original Halstedian system of surgical training relied on this principle. Surgeons trained under the Halstedian system learned directly under the professional and technical guidance of their mentors. In William S. Halsted's own words, this system was intended to "produce not only surgeons, but surgeons of the highest type, men who will stimulate the first youths of our country to study surgery and to devote their energies and their lives to raising the standard of surgical science."[1] Producing surgeons of the highest type requires more than teaching and instruction; it requires strong mentorship.

The literature is replete with definitions of mentors. For example, a mentor serves as a "role model, counselor, and advocate for an understudy."[2] An effective mentor possesses "patience, enthusiasm, knowledge, and a sense of humor" and can "wake up" his or her mentee to important lessons.[3] A successful mentor practices the three Cs: competence, confidence, and commitment.[4] An effective mentor must "ultimately liberate the trainee to complete the maturation process."[5] The mentor-mentee relationship is not about intelligence, political affiliations, race, ethnicity, or even surgical interests. As Murray F. Brennan, MD, FACS, has pointed out, "A genuine mentor is truly politically color blind."[6]

While the practice of surgery has changed immensely since Halsted's time, mentorship remains crucial in shaping the next generation of surgeons. This article will discuss the dynamics of mentorship in a post-Halstedian world of surgical training.

What makes a good mentor?

A mentor's perspective

Richard Karl, MD, FACS, chairman of surgery at University of South Florida, Tampa, who has been a fundamental mentor in the formation of many generations of surgeons, particularly surgical oncologists, was asked to reflect on his own mentors.

For Dr. Karl, the most memorable characteristics of his mentors included being generous in their sharing of knowledge while encouraging development and success. They were good communicators, confidants, and they demonstrated love for surgery and did it well. They lived a life both full and rich. "One can only hope that one day, the mentee will become an even better surgeon than his mentors," Dr. Karl said.

Demands on 21st century mentors

The modern surgical resident faces a training environment that is adapting to curriculum guidelines, duty-hour regulations, and, in some instances, reformulation.[7] All of these changes have obligated the mentor-mentee relationship to evolve. Today's trainees require a more complex approach to mentoring to meet their diverse needs. (See boxed item, this page.)

Besides clinical and surgical skills, surgical trainees must acquire a broad range of technical, interpersonal, administrative, and research skills. Today's mentors must disseminate their knowledge of and passion for surgery in an environment that bears little resemblance to the one in which they have trained and developed as mentors.

Professional and societal expectations of surgeons are changing, and the changes inevitably make the process of successful mentorship more difficult. Increased diversity in the workplace and among the patient population challenges traditional, male-dominated or western-oriented value systems in the daily approach to delivering surgical care and teaching surgery to medical students. Ever more burdensome billing and privacy guidelines require young surgeons to develop a financial and documentation savvy not otherwise honed during their medical training. Higher and higher debt burdens faced by new graduates sometimes force them to forgo their professional passions in order to move on with their lives. Thus, the evolving and wide-ranging needs of today's surgical trainees require a constant adaptation in the act of mentorship.

One might expect that at least the technical aspects of mentorship have not changed since Halsted's time. However, the acquisition of technical skills can no longer follow the tenet of "see one, do one, teach one." Today, professional and public tolerance for a learning curve when acquiring technical skills is much less than in previous decades. This diminished patience, coupled with the rapid pace of surgical innovation, presents a major obstacle for mentors who wish to impart sound surgical skills to their mentees. Mentors may not have the freedom to allow their mentees to learn from their technical errors, or they may even lack a new skill set and be unable to teach certain techniques because of a technological generation gap.

Expectations from 21st century mentees

Data suggest that mentorship plays a determining role in a surgical resident's career trajectory. A recent survey of 74 graduating surgery

residents found that 73 percent selected the subspecialty of their mentor.[8] Whether residency graduates seek out mentors in their preferred field or are influenced by mentors in choosing a certain specialty was not assessed in this survey. However, it was apparent that mentors are individuals who inspire residents to approach each patient or each task with a will to succeed. The best mentors instill confidence but also help residents analyze their own abilities and assess their strengths and weaknesses. Residents want to emulate their mentors because they have shown them their character as well as their skills and expertise. Anecdotal evidence indicates that the relationship between mentor and mentee will often continue well past the end of residency.

For residents, mentorship at its most basic level means a relationship with at least one person whose path they would like to follow. For many, the path is forged on the basis of surgical interests; however, the mentor-mentee relationship generally extends well beyond such matters. Mentors not only reflect a passion for a particular surgical field but also reflect an attitude toward work, an approach to work-life balance, a commitment to basic or clinical research, a style of administration, or a devotion to public health. Thus, residents select mentors based on these latter attributes as well. It seems that instillation of strong values and compassion for one's work is the common thread among all of these different areas of mentorship.

In recent years, a mentor's lifestyle has played a larger role in the mentor-mentee relationship. Finding the right balance between work and home life is difficult, and interactions with individuals who seemingly have done this well is important to today's residents. The same residents who tended to follow in their mentors' clinical footsteps also cited lifestyle concerns as an important factor in specialty selection.[8]

Mentoring IMGs in surgery

Of the myriad challenges facing surgical mentors today, one of the biggest challenges is successfully mentoring trainees from different cultural and/or educational backgrounds. International medical graduates (IMGs) who wish to become successful surgeons face unique linguistic and cultural barriers and sometimes even face overt discrimination in their surgical training.[9] IMGs' mentors need to be especially conscientious when helping their mentees to overcome these obstacles. Fostering a tolerant environment is the cornerstone for successful mentorship of the IMG. Indeed, insightful and inspiring mentors have proven essential to the success of IMGs in surgery.

IMGs aspiring for surgical training come to the U.S. from all over the world, many from countries where English is not the primary language.[10] They face two kinds of linguistic difficulties. The first challenge relates to spoken English and the ability to communicate with patients and express emotional empathy. IMGs may become frustrated when they fail to adequately understand or express their level of sympathy with distressed patients.[11] The stress of practicing medicine, training, and expressing oneself in a non-native language cannot be underestimated. The second linguistic challenge relates to medical jargon used by professionals and laypersons alike. The mental challenges of deciphering acronyms and paraphrasing can prove overwhelming to a trainee who must also juggle the usual rigors of surgical training. A newly arrived IMG may misinterpret an attending who asks him or her to give the patient "some bug juice" and then to schedule for a "chole" in the morning.[12] A mentor is essential for helping an IMG face the linguistic challenge without feeling inadequate. The mentor must specifically assess and address issues in cross-professional and doctor-patient communication that might otherwise come naturally to a U.S. graduate. He or she can direct the IMG to appropriate English courses, can explain the subtle differences in body language, can elucidate the meaning of medical jargon without being judgmental, and can help promote a frank and open approach to patients when language is an issue.

IMGs entering the American health care system also face unique cultural challenges, as most countries have vastly different access to resources and attitudes toward health care compared with the U.S. In many countries, a paternalistic style of medicine is not only practiced but also expected by patients, and the physician's authority is seldom in question, as often occurs in the U.S. IMGs

may find it difficult to take on the comparatively open dialogue that occurs between physicians and patients in the U.S. Other cultural challenges are rooted in broad sociocultural differences across countries not specifically related to the practice of medicine. For example, caring for people of the opposite gender or homosexuals may prove to be difficult regardless of the medical issues involved. Addressing colleagues by their first names might be equally difficult to some, as minor as it may seem to those from a western cultural background. A mentor can alleviate some of the burden of an IMG's cultural transition by providing an informal how-to course in American culture and role-modeling the U.S. style of medicine that patients have come to expect. The IMG faces a self-discovery and value test while trying to blend into the

Mentoring a new generation of surgeons

ACS Executive Director Thomas R. Russell, MD, FACS, made mentoring the focus of the inaugural Herand Abcarian lecture delivered at the Clinical Congress in New Orleans, LA, last year. As he noted in his presentation, "Mentors are… interested in their trainees not only professionally, but as human beings as well. They promote their trainees' efforts to balance professional and personal needs and obligations. They are, on multiple levels, a resident's or a student's support system and biggest fan."

Dr. Russell noted that an unintended consequence of the 80-hour workweek resulted in diminished opportunities for mentor-mentee interaction. Furthermore, beyond work-hour restrictions, he highlighted the many ways in which the practice of surgery nowadays is far different than what it was during the time when most mentors trained. These changes, he argued, call for a different type of mentor—today, teaching by example in the operating room, on rounds, and in the clinic is only a small facet of good mentorship.

Today, the surgical workforce is more accurately reflecting the gender and ethnic diversity of the population. Advances in surgical technology have increased the breadth of a surgeon's armamentarium to include not only open procedures but laparoscopic, endoscopic, and catheter-based procedures as well. Simultaneously, advances in the field of medicine demand that the surgeon be aware of the various noninvasive means of treating what previously were surgical diseases (such as gene therapy, molecular targeting therapy, and advanced chemotherapeutic agents). Meanwhile, growing awareness that physiologic and psychological healing are intertwined suggests that surgical care might perhaps benefit from a multidisciplinary team approach stretching beyond surgical subspecialties. Increased public and payor demand for accountability and a growing focus on quality of care mean that surgeons must police their own outcomes. Data collection is as important for the typical surgeon as it is for the seasoned academic researcher. The financial and regulatory challenges to the delivery of care affect not only surgeons but all medical practitioners. Surgeons need to rise above disciplinary snobbery and unite with all providers to improve the circumstances in which comprehensive health care is both delivered and received.

As Dr. Russell said, "A good mentor will foster an environment in which honest mistakes are seen as opportunities to learn and in which people can freely receive support and information from others." Although teaching technical skills and clinical judgment remains the cornerstone of mentorship, in light of this evolution of surgery, a multifaceted approach to mentorship is warranted. Modern-day mentors must also model effective communication, interpersonal skills, time-management strategies, and successful prioritization of multiple competing professional and personal interests. Dr. Russell acknowledged both limited face-to-face time between mentors and mentees and the reality that not all mentors will themselves have mastered all of the facets of mentorship. Dr. Russell then proposed innovative new approaches to mentorship, including multiple senior mentors with individual strengths and experiences in specific areas as well as peer mentorship in which mentees benefit from networking amongst each other while simultaneously experiencing mentorship from a more seasoned surgeon.

American cultural and medical landscape. A thoughtful mentor can provide the moral support to make it a successful journey.

Linguistic and cultural challenges aside, IMGs face a bigger hurdle in dealing with the perception that they are not as deserving of a career in surgery. There is widespread belief that the reputation of a surgical residency program is negatively affected by the presence of IMGs among housestaff. Despite studies demonstrating unequivocal contribution of IMGs to the progress of medicine and surgery in the U.S., IMGs are generally thought of as less competent than U.S. medical graduates.[10,13,14] Moore and colleagues reported in 2002 that 70 percent of surgical program directors believed that IMGs are discriminated against, and that 20 percent reported being pressured to rank a less-qualified U.S. graduate higher than a more-qualified IMG.[9] Practically speaking, visa limitations do adversely affect the ability of many IMGs to pursue dedicated research years during their residencies and thus may put them at a serious disadvantage when applying for fellowships. A concerned mentor can be an advocate for an IMG's career pursuits and can provide the moral support needed to work through challenging emotional times when one is discriminated against or believes there has been discrimination.

Mentoring IMGs requires the dedication and compassion of mentoring all trainees. Mentors of IMGs should not consider the unique challenges of their mentees to be a weakness but an opportunity to grow mutually in an increasingly diverse world of medicine. With appropriate opportunities and guidance, IMGs can achieve the greatest in surgery that Halsted aimed for. In particular, program directors should acknowledge these barriers faced by IMGs early in their residency and assign them advisors to help them overcome these burdens and guide them through the initial steps in their career. This approach will facilitate the transition and will allow them to perform to their actual potential and capabilities.

Recently, a new resource has become available to improve the mentorship of IMGs. In 2006, the Educational Commission for Foreign Medical Graduates (ECFMG) launched a new acculturation program to assist IMGs with the transition to working and living in the U.S. As part of this program, ECFMG is developing a spectrum of resources designed to help IMGs as they learn about the U.S. medical system in which they will be learning and training. These resources will also cover practical issues, both professional and social, for IMGs and any family members who may accompany them to the U.S. Institutional mentors working with IMGs will now be able to enlist the help of additional mentors through the ECFMG Acculturation Program IMG Advisors Network. The network is a free service that allows qualified IMGs who will be coming to the U.S. to connect with advisors who can answer questions about working and living in the country.

Teaching mentorship

Mentorship can be formal or informal. Formal mentoring usually begins with the assignment of an advisor within the surgical department. Whether the advisor and advisee in turn develop a mentor-mentee relationship, however, is not guaranteed. It seems that there is a higher likelihood that the advisor relationship will grow into a mentorship if advisors are self-selected.[5] Informal mentoring is what residents receive daily from interactions with more senior surgeons, be they upper-level residents or attendings. This informal facet of mentoring may become particularly important for residents learning in a specialty-dominated department. For example, a resident may receive important advice and technical teaching from both the traumatologist and the breast surgeon. Day-to-day investment in teaching a resident may result in mentorship when the teacher and the student share common goals as surgeons even across specialties. Formal and informal mentorships are expected to happen throughout a surgeon's training but the many steps of training rarely include how to successfully mentor others. However, mentorship is not an inherent trait. Mentorship by and large has been a casually acquired trait with varying levels of success, but it is clear that the face of medicine and surgical training in the 21st century require deliberate cultivation of mentors.

Professional mentorship requires mentors to teach the triad of self-recognition, formation of relationships with others, and professional

responsibilities. The stages of productive mentoring may be counter to the learned adaptive behaviors and instinctive personality traits of some accomplished surgeon-educators. Fostering effective mentoring relationships in surgery requires a concerted effort to develop appropriate behaviors that are conducive to the mentoring process. The personal and professional growth of surgical trainees and the success of the field of surgery are dependent on the successful creation of an environment conducive to mentoring.

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Furthermore, the success of mentorship is two-sided, with responsibilities for both the mentor and the mentee. The benefits of this relationship must be bidirectional and both individuals must take responsibility to ensure mutual benefit. This relationship requires time, patience, dedication, and, to some degree, selflessness. It remains our responsibility to understand the changing times and effect changes for successful mentoring in the specialty of surgery in a modern era. As in Halsted's times, mentorship will ultimately be the best tool for mastering the complex professional skills and maturing through various learning curves required to be a successful surgeon.

Key to the success of mentorship is understanding that mentoring is a lifelong process. Even the most seasoned mentor may benefit from being someone else's mentee. Moreover, each individual has the potential to become a mentor. Surgical residents should rely on their mentors to achieve the highest standard in terms of clinical, technical, and research acumen but should also strive to become mentors themselves to ensure that many generations of surgeons to follow will continue to live up to Halsted's vision of surgeons of the highest caliber.

The American College of Surgeons has long recognized the role mentors play in the development of a new generation of surgeons and the importance of learning how to mentor well. In 2006, Edward M. Copeland III, MD, FACS, then-President of the College, presented "The Role of a Mentor in Creating a Surgical Way of Life" in his Presidential Address at the Clinical Congress in Chicago, IL. In 2007, at the Clinical Congress in New Orleans, LA, the College's Executive Director, Thomas Russell, MD, FACS, discussed "Mentoring a New Generation of Surgeons" in the inaugural Herand Abcarian lecture (see text box on page 22).

Each year, the College hosts a Residents As Teachers and Leaders course that helps foster

skills in mentorship. In addition, this year the College and its Resident and Associate Society are sponsoring a competition for residents and fellows to write about the positive impact a mentor has played during their training and career achievement.* Ω

References

1. Kerr B, O'Leary JP. The training of the surgeon: Dr. Halsted's greatest legacy. *Am Surg.* 1999;65(11):1101-1102.
2. Pellegrini VD Jr. Mentoring during residency education: A unique challenge for the surgeon? *Clin Orthop Relat Res.* 2006;449:143-148.
3. Schrubbe KF. Mentorship: A critical component for professional growth and academic success. *J Dent Educ.* 2004;68(3):5.
4. Morton-Cooper A, Palmer A. Mentoring in practice. In: Morton-Cooper A, Palmer A, eds. *Mentoring, Preceptorship and Clinical Supervision*. Oxford: Blackwell Science; 2000:59-62.
5. Ford HR. Mentoring, diversity, and academic surgery. *J Surg Res.* 2004;118(1):1-8.
6. Brennan MF. Lessons learned. *Ann Surg Oncol.* 2006;13(10):1322-1328.
7. Bass BL. Fundamental changes in general surgery residency training. *Am Surg.* 2007;73(2):109-113.
8. McCord JH, McDonald R, Leverson G, et al. Motivation to pursue surgical subspecialty training: Is there a gender difference? *J Am Coll Surg.* 2007;205(5):698-703.
9. Moore RA, Rhodenbaugh EJ. The unkindest cut of all: Are international medical school graduates subjected to discrimination by general surgery residency programs. *Curr Surg.* 2002;59(2):228-236.
10. Aranha GV. The international medical graduate in U.S. academic general surgery. *Arch Surg.* 1998;133(2):130-133.
11. Fiscella K, Roman-Diaz M, Lue BH, Botelho R, Frankel R. "Being a foreigner, I may be punished if I make a small mistake": Assessing transcultural experiences in caring for patients. *Fam Pract.* 1997;14(2):112-116.
12. Fiscella K, Frankel R. Overcoming cultural barriers: International medical graduates in the United States. *JAMA.* 2000;283(13):1751.
13. Akl EA, Maroun N, Major S, et al. Graduates of Lebanese medical schools in the United States: An observational study of international migration of physicians. *BMC Health Serv Res.* 2007;7:49.
14. Akl EA, Mustafa R, Bdair F, Schunemann HJ. The United States physician workforce and international medical graduates: Trends and characteristics. *J Gen Intern Med.* 2007;22(2):264-268.

*Surgeons-in-training are invited to submit a 500-word essay describing what role their mentor has played in their personal and professional development. The top essays, as judged by the RAS-ACS Communications Committee, will be published in the *Bulletin of the American College of Surgeons* as part of an ongoing series of articles generated by members of RAS. At the 2009 Clinical Congress in Chicago, IL, an award including a $500 honorarium will be presented to the writer of the essay that best expresses the meaningfulness of the mentor-mentee relationship in surgical training. Submissions should be sent to hppatel@post.harvard.edu no later than July 31, 2008.

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The virtual surgeon:

Using medical simulation to train the modern surgical resident

by **David T. Cooke, MD; Ramin Jamshidi, MD; Julian Guitron, MD;** *and* **John Karamichalis, MD**

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edited by **Dr. Cooke**

Surgical training has reached a point where the old adage, "See one, do one, teach one," has become antiquated. The surgical resident of today faces a field with numerous complex technologies that reset the bar for core competencies. There is a challenge to meet those core competencies in the 80-hour work-week era, especially as work hours may become even more restricted in the future. Most importantly, patient safety and the quality of medical care provided must be protected as we develop strategies to better educate our residents.

Simulation-based education is the use of technology—such as computer programs with three-dimensional reconstruction of surgical anatomy, high-fidelity tissue-based surgical models, and endovascular and laparoscopic simulation systems—to train the surgeon in a classroom environment. Other professions have used simulation-based education for decades. Many of us learned to drive in high school using video simulation. The aerospace industry has had long success with flight simulation. Surgery, it seems, is ideally suited for the simulation-based education medium. Numerous publications have shown benefits of surgical simulation, including training surgical residents in flexible bronchoscopy and catheter-based vascular surgery.[1-2]

The growing literature supporting medical simulation led the American Council for Graduate Medical Education to comment on the need for residency programs to include simulation and skills laboratories in their curriculum in its most recent Program Requirements for Residency Education in Surgery.[3] Anticipating this need, the American College of Surgeons Division of Education developed the ACS Program for the Accreditation of Education Institutes.[4] This body

determines two levels of accreditation for medical education institutes with simulation centers. Level I-accredited centers, the highest level of accreditation, must provide simulation-based education programs to surgeons as well as at least three other specialty groups and adhere to facility design requirements. Currently there are 18 level I-accredited centers. One level I-accredited center, the University of Michigan, provides 24-hour access to its simulation facilities for surgical residents. In addition, interns in general surgery, plastic surgery, and urology must complete a laparoscopic simulation skills program and reach performance targets using box trainers (developed at the University of Texas, Southwestern) and virtual reality trainers before being allowed to scrub for a laparoscopic case (Pamela B. Andreatta, EdD, MFA, director, University of Michigan Clinical Simulation Center, personal communication, April 28, 2008).

An advantage of the ACS Program for the Accreditation of Education Institutes is the ability to advocate standards and implementation guidelines for the simulation technology available. Medical simulation technology should provide the appropriate biofeedback and subject responsiveness, which would allow the resident to work and learn with some independence. However, there should be an appropriate level of attending instruction within the simulation curriculum, as many surgical nuances and, more importantly, surgical judgment might not be found in a computer model.

The American College of Surgeons has also collaborated with the Eastern Virginia Medical School to establish the Medical Modeling and Simulation Database (*www.medicalmodsim.com*). This Web portal is dedicated to medical simulation and modeling and provides information on related products, companies, and relevant publications.

In the following articles, the authors discuss the role of surgical simulation in the training of two fields of surgery that may most benefit from the technology. Dr. Jamshidi reviews the role of medical simulation in training surgical residents in laparoscopic surgery, and Drs. Guitron, Karamichalis, and Cooke describe how cardiothoracic surgical training is using simulation-based education, including a novel high-fidelity tissue-based cardiac surgical simulator.[5]

Simulation in laparoscopic training

by Ramin Jamshidi, MD

Simulation provides a means of developing technical competency without experimenting on patients. Furthermore, simulation facilitates training without the use of inhospital hours, which are an increasingly valuable commodity since implementation of duty-hour restrictions. Myriad options exist for both the manner of implementation and the actual equipment to be used, but a few central principles will be discussed here.[6-7]

Simulator technology

The unique components of laparoscopy that differentiate it from open surgery are lack of depth perception (a consequence of monocular vision); inability to look directly at work being performed; decreased degrees of freedom in motion (resulting from use of narrow-shaft instruments with fixed ports); and loss of tactile feedback. All the complexities of laparoscopic operations derive from these fundamental limitations combined with differences in exposure. Conveniently, simulation of these characteristics for initial practice and skill development does not require human or even live animal subjects.

In order to mimic these characteristics, training equipment has been developed across a wide spectrum from plastic boxes to extremely costly, computer-powered, force-feedback systems. Some educators advocate for higher complexity and more lifelike simulation, arguing that this will translate best from simulator to patient. Others contend that as long as the underlying dexterity and practice is developed, skills will translate to the patient-care environment without need for "hi-fi" simulation.[8] In fact, some investigators have demonstrated that not only do low-complexity simulators develop skills that translate to patient care, but even video games not intended to simulate operative skills actually develop abilities that are applicable to patient care.[9] The approach at the University of California–San Francisco (UCSF) incorporates both aspects. On one end of the spectrum, one of the authors (RJ) has developed a videoscopic practice system powered by a personal computer, which any resident can build for home use with less than $100. On the other end, we also use complex LAP Mentor™

units (Simbionix, Cleveland, OH), particularly for mock performance of bariatric and anti-reflux operations. Though these machines are extremely costly, they appear to attract residents by virtue of their novelty.

Context-specific training

As with all knowledge, retention is greatest when lessons are learned in a contextually relevant situation and applied soon thereafter. Nationwide, focus on skills training for general surgery house staff has concentrated on interns since they presumably require the greatest amount of training. As skills-training programs have matured, the intern-level curricula have come to include complex anastomotic techniques or laparoscopic skills. Interns generally enjoy these activities, but they do not have the subsequent opportunities to apply these skills in the operating room and hence the lessons are not reinforced. Thus, advanced laparoscopic techniques such as suturing are more useful when reserved for mid-level residents. An attending surgeon can guide an intern through a complex pancreatic resection or vascular reconstruction, but the novice's skills, comprehension, and experience are likely insufficient priming for them to derive lasting benefit from the experience. Just as in patient care, training by simulation should be level appropriate.

Program integration

Finding time to incorporate skills training in a busy surgical residency can be a tremendous challenge. It may require reorganization of service staffing or operating room block time, but most importantly it requires a shift in philosophy about surgical education. Residents require independent access to the program's training laboratory in order to allow practice during the late hours when they are free of patient care duties. However, purely voluntary participation is inadequate; ideally, residency programs will incorporate formal curricula. At UCSF, we have a set protected time for skills laboratory participation—a weekly session—which follows grand rounds and a basic science lecture. A culture shift was required within the program to allow interns to be absent from clinical duty for the first several hours of the day, but this arrangement has gradually gained acceptance.

Another challenge in incorporating a thorough skills program is that of involving higher-level residents. Senior and chief residents reach a level of skill in which simulation becomes inadequate. However, junior and mid-level residents can benefit from more advanced inanimate practice such as laparoscopic suturing or use of a complex simulator to perform anti-reflux or bariatric operations. Such activities also hold potential benefit for residents returning from research fellowships, in order to refresh their technical skills. Although house staff have adapted to the absence of their teams' front-line soldiers (interns), protected training sessions for junior and mid-level residents will create deeper personnel shortages on clinical teams, and this will require further adjustments in the scheduling of operations and coverage of patient care.

Conclusion

The modern era of graduate medical education has evolved from traditional approaches to an emphasis on patient safety and supervision of trainees. Training of technical operative skills before teaching patient care is a major tenet of modern training paradigms, but accommodation of such educational programs requires surmounting logistical and philosophical obstacles. The most educationally valuable, cost-effective, and time-efficient implementation of inanimate skills practice will consider relevant technology, context-specific implementation, and the involvement of trainees beyond the most junior level.

Simulation in cardiothoracic training

by Julian Guitron, MD; David T. Cooke, MD; and John Karamichalis, MD

As patient safety, changes in resident training, and introduction of techniques requiring new skill sets become increasingly more important, the notion that "the operating room is not the place to learn new techniques" is now more valid than ever. Simulation training in cardiothoracic surgery as a technology is gaining ground and offers invaluable assistance in training. It can also offer operative teaching assessment predicting future performance, training of stepwise operative sequences, and identification of appropriate

Figure 1. Close-up of the operative field, where an off-pump coronary bypass is being simulated at the Cardiothoracic Technology Symposium 2008. The coronaries bleed as the surgeon opens them, later controlled with an intracoronary shunt. (Photo courtesy of Walter Merrill, MD, FACS.)

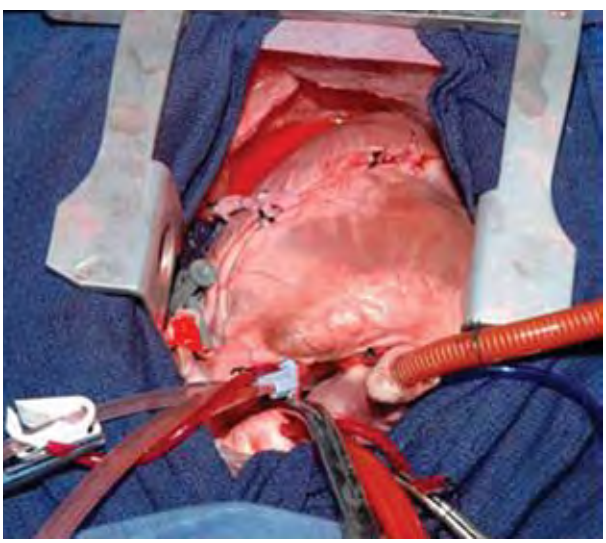

Figure 2. Coronary grafts placed during an on-pump procedure at the Cardiothoracic Technology Symposium 2008. (Photo courtesy of Walter Merrill, MD, FACS.)

tools and instruments in a low-stress environment. Some of the simulation tasks that can be accomplished include, but are not limited to, sternotomy and redo-sternotomy, internal mammary artery takedown, aortic and venous cannulation, coronary anastomosis, valve replacements and complex repairs, and video-assisted thoracic surgery (VATS) lobectomy and other complex VATS procedures.

Currently there are several companies developing a wide range of models specific for cardiothoracic surgery, such as Immersion Medical (Gaithersburg, MD), which produces multiple simulators, including CathLabVR™, which develops vascular access skills—including percutaneous coronary and carotid interventions and percutaneous pulmonary and aortic valve surgery (thoracic and abdominal aortic interventions are in development)—and the Endoscopy AccuTouch® System, which provides virtual bronchoscopy and esophagoscopy. These devices use a tactile feedback technology that combines realistic visual and audio responses to mimic an actual procedure.

At this point in the surgical simulation evolution, the mere fact that simulator devices are available is no longer sufficient; there need to be carefully considered programs or curricula that bring out the most of every model. To that end, there are symposia that advocate the use of surgical simulators in cardiothoracic surgery and centers dedicated to simulated training. The Visioning Simulation Conference, for example, is considered a landmark event in the cardiothoracic surgery arena.[10] This meeting was held April 19–20, 2007, in Cambridge, MA, and addressed essential aspects of the specialty in relation to simulation such as resident and staff education; skill acquisition for new technology; and certification and recertification, which in the foreseeable future will likely incorporate simulator skill-set testing.

At the University of Cincinnati, the Center for Surgical Innovation (CSI) was established to develop, assess, and disseminate new technologies in biomedical and surgical care, bridging the expertise of the University of Cincinnati Colleges of Medicine and Engineering and several industrial partners, focusing on advancing robotic, simulation, and modeling capabilities, among other features.

The Cardiothoracic Technology Symposium for residents has been held at the CSI for the past three years and organized by the Thoracic Surgery Residents Association, with the support and collaboration of the Thoracic Surgery Directors Association and *CTSnet.org*. On April 18–20, Richard Feins, MD, FACS, and other collaborators from the University of North Carolina presented their cardiac surgery simulator. It was originally reported by Paul Ramphal, DM, and colleagues and has been developed further at the University of North Carolina through sponsorship by the American Board of Thoracic Surgery.[5] It is centered on a specially prepared pig heart, which is placed in a modeled mediastinum. It is then draped in the same fashion used for cardiac surgery patients. On the other side of the "curtain" stands the "anesthesiologist" who controls the computer that coordinates vital signs monitors (just as they are displayed in the operating room) as well as a modified cardiopulmonary bypass machine, which makes the heart actually beat. The trainee then cannulates for bypass or positions the heart for an off-pump procedure (see Figures 1 and 2 on page 29). All hemodynamics are traced and modified according to the clinical scenario desired, creating an endless array of circumstances such as ventricular fibrillation, hypotension, and so forth, which the trainee has to recognize and solve.

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The realism achieved with this simulator has surpassed even the most optimistic expectations (coronaries that bleed, irregular heart beats, hemodynamic instability, and so on) and has resulted in suspension of disbelief as described by Dr. Feins, where the simulator users actually get fully involved and react in a similar fashion as they would in the operating room. The skills that can be acquired with this model include cardiac cannulation, on-pump and off-pump coronary bypass, aortic valve replacement, and mitral valve repair/replacement. The cost, while still undetermined, will most likely be affordable to most residency programs. Setting up the simulator to be ready for use takes approximately one hour.

When asked how the residents perceived this simulator, Dr. Feins stated, "The feedback was universally very positive. On average, the residents thought that about 25 percent of their training should be simulator based. We were very pleased with the way the simulator performed and we are convinced that a heavily simulator-based education in cardiothoracic surgery will be a more enjoyable and more beneficial way to go" (personal communication, April 20, 2008). One of the attendees of the symposium, Daniel Tang, MD, a cardiothoracic resident at the University of Michigan, confirmed that sentiment, stating, "The resident symposium was excellent. In particular, the cardiac surgery simulator, the live animal, cadaver, and pig heart wet labs provided the op-

portunity to try a wide variety of techniques that I otherwise would not have had much exposure to. The enthusiasm and involvement of the faculty and the generous support of industry contributed greatly to its success" (personal communication, April 27, 2008).

James I. Fann, MD, FACS, is doing related work at Stanford University using a similar heart model. In particular, he is attempting to quantify how effective simulators are in educating cardiothoracic residents at that institution. He is using synthetic models produced by The Chamberlain Group (Great Barrington, MA).[11]

Conclusion

In summary, simulators and animal laboratories in conjunction with expert guidance now make for a robust training curriculum. It is clear that simulation training should become a mandatory part of cardiothoracic surgery curriculum, with regular sessions required for practice, verification of proficiency, and accreditation of skills. This new approach will mean the development of dedicated simulation centers and mandatory attendance, while the costs involved are being worked out as part of this new training path. Surgical simulation has the potential to effectively allow cardiothoracic residents to develop their basic skills so that the real-life operating room experience becomes all about perfecting them. Ω

References

1. Blum MG, Powers TW, Sundaresan S. Bronchoscopy simulator effectively prepares junior residents to competently perform basic clinical bronchoscopy. *Ann Thorac Surg*. 2004;78(1):287-291.
2. Dawson DL, Meyer J, Lee ES, et al. Training with simulation improves residents' endovascular procedure skills. *J Vasc Surg*. 2007;45(1):149-154.
3. Accreditation Council for Graduate Medical Education Program Requirements for Graduate Medical Education in Surgery. Available at: http://www.acgme.org/acWebsite/downloads/RRC_progReq/440_general_surgery_01012008.pdf. Accessed April 29, 2008.
4. Sachdeva AK, Pellegrini CA, Johnson KA. Support for simulation-based surgical education through American College of Surgeons-accredited Education Institutes. *World J Surg*. 2008;32:196-207.
5. Ramphal PS, Coore DN, Craven MP, et al. A high fidelity tissue-based cardiac surgical simulator. *Eur J Cardiothorac Surg*. 2005;27(5):910-916.
6. Kapadia MR, DaRosa DA, MacRae HM, et al. Current assessment and future directions of surgical skills laboratories. *J Surg Educ*. 2007;64:260-265.
7. Haluck RS, Satava RM, Fried G, et al. Establishing a simulation center for surgical skills: What to do and how to do it. *Surg Endosc*. 2007;21:1223-1232.
8. McCluney AL, Vassiliou MC, Kaneva PA, et al. FLS simulator performance predicts intraoperative laparoscopic skill. *Surg Endosc*. 2007;21:1991-1995.
9. Rosser JC, Lynch PJ, Cuddihy L, et al. The impact of video games on training surgeons in the 21st century. *Arch Surg*. 2007;142:181-186.
10. Carpenter AJ, Yang SC, Uhlig PN, et al. Envisioning simulation in the future of thoracic surgical education. *J Thorac Cardiovasc Surg*. 2008;135(3):477-484.
11. Simulation in Cardiac Surgery. Thoracic Surgery Directors Association. Available at: http://www.tsda.org/documents/PDF/Fann-Simulation_TSDA.pdf. Accessed April 29, 2008.

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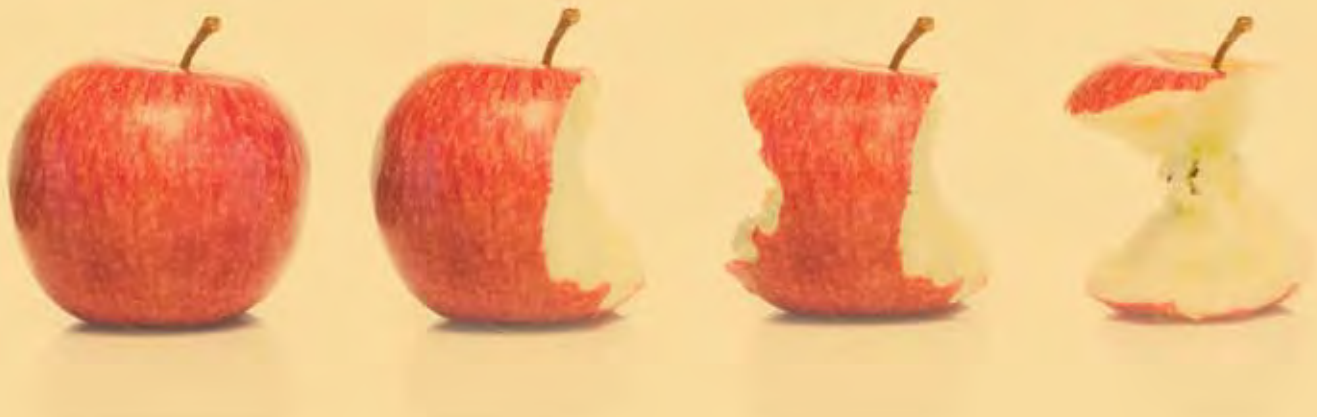
General surgery training and the demise of the general surgeon



Consider the following hypothetical family: The Williams family, from a U.S. town of 25,000 people, has been fortunate to have health insurance and thus access to good health care. They have always felt that they have two "family docs," as they like to put it.

First is Dr. Smith, who is board certified in family medicine. He looks after Grandma's arthritis and Grandpa's hypertension and diabetes. He helps Mr. Williams with his chronic low back pain and Mrs. Williams with her routine gynecologic needs. He cares for Joey and Janey when they have a sore throat or an ear infection. Finally, Dr. Smith ensures the entire family's health maintenance through routine screening and annual physicals.

However, the Williams family has another "family doc." Dr. Jones removed Grandma's gallbladder when she had biliary colic and did a right hemicolectomy when Grandpa had colon cancer. He fixed Mr. Williams' inguinal hernia and biopsied Mrs. Williams' breast for a suspicious lump. Dr. Jones also performed Joey's emergency appendectomy and removed a lipoma from Janey's thigh. The entire family considers Dr. Jones—a board-certified general surgeon—their other "family doc." They can't imagine life without him; he is essential for their good health and well being.

In the U.S. today, families like the Williamses are increasingly unlikely to find surgeons like Dr. Jones. Their primary care providers, like Dr. Smith, are often unable to refer their patients locally for common surgical interventions such as hernia repairs, soft tissue biopsies, and cholecystectomies. The imminent demise of the general surgeon has been a growing concern for the medical community and the general public, both who fear an end to a once robust medical

by **Heena P. Santry MD; Nikunj Chokshi, MD; Nicole Datrice, MD; Julian Guitron, MD;** *and* **Mecker G. Möller, MD**

discipline and its consequences for patients with general surgical problems.

In November 2007, Josef Fischer, MD, FACS, sounded an alarm among physicians nationwide with his commentary, "The impending disappearance of the general surgeon," published in the *Journal of the American Medical Association*.[1] Dr. Fischer described the general surgeons who care for approximately 54 million Americans in rural and small urban areas as "essential to the provision of adequate health care." He noted that the reasons for the "disappearance" are multiple, including fewer graduating surgical residents pursuing general surgery as well as less favorable working conditions and less lucrative reimbursement for practicing general surgeons. Indeed, as can be gleaned from Dr. Fischer's extensive bibliography, the medical literature is replete with research on the workforce challenges facing general surgery.

The general public has also been made aware of this impending public health crisis in which patients with common surgical problems will not have access to general surgeons to treat them. In February 2008, *USA Today* published an article entitled, "Shortage of surgeons pinches U.S. hospitals." The article highlighted a coastal Virginia hospital where only two general surgeons are available, down from seven in the past, because surgeons there are moving or retiring. The hospital, which was started to treat the "simple ills such as appendicitis" of its local people, may no longer be able to carry out its mission because of a shortage of surgeons.[2]

Clearly the general surgery community is at a crossroads. Changes must be made if the field is going to continue to live up to its promise of providing basic surgical care to those in need. Although legislative issues regarding reimbursement and malpractice premiums are a burden that must be addressed with aggressive lobbying and public information, in this issue of the *Bulletin* dedicated to the training of surgeons, we will explore the degree to which general surgery training programs are failing to meet societal needs for general surgeons, why they are no longer providing their graduates with the clinical competence and technical skills to function as broad-based general surgeons, and how they are effectively shunting their graduates into subspecialties.

Supply and demand for general surgery

Approximately 1,000 general surgery residents complete their training each year. Surveys indicate that only 30 percent to 40 percent of these graduates will practice general surgery.[3,4] Almost 33 percent of the 17,243 practicing general surgeons in the U.S. (according to a 2005 estimate) are contemplating leaving practice within five years.[5,6] Meanwhile, the demand for general surgeons in the U.S. continues to increase, with the number of general surgery positions rising during the second half of the academic year, when most chief residents should already have a job.[4] Furthermore, the population of general surgeons has been stagnant, relative to overall population growth.[6] The predicted growth of the U.S. population, in combination with an aging baby boomer generation that will hit the peak age for many common surgical illnesses by 2020,[7] will exacerbate current workforce issues. Since many practicing surgeons in the U.S. are nearing retirement age or opting for early retirement because of unfavorable working conditions, it seems the discrepancy will only worsen without a compensatory increase in graduating residents pursuing general surgery.

Nowhere is the discrepancy of more concern than in rural communities where an estimated 55 million Americans (17% to 25% of our population) live.[8] The number of general surgeons per population of 100,000 is 4.67 in small or isolated rural areas, compared with 6.53 in urban areas and 7.71 in large rural areas.[6] Studies have confirmed geographic differences in caseloads between rural surgeons who perform a greater variety of procedures and urban surgeons who often have a much narrower scope of practice. The bulk of this difference can be attributed to the greater volume of endoscopic procedures performed by rural surgeons compared with their urban counterparts. However, rural surgeons also perform routine orthopaedic, otolaryngologic, gynecologic, and urologic procedures that are rarely performed by urban surgeons because of the availability of specialists in those areas.[9]

A recent survey of rural surgeons found that many believe that their general surgery training did not provide enough exposure to subspecialties outside of general surgery, such as orthopaedics and gynecology.[5] Because the majority of gen-

eral surgery trainees "learn surgery" at urban or large suburban hospitals, lack of exposure to the professional and personal benefits and challenges of rural surgical practice is a major factor in the unmet need for general surgeons in rural communities.

Although a variety of internal factors may or may not inspire graduating chief residents to pursue general surgery careers, regionalization is an external force that is making it more difficult for those few who do want to be general surgeons to perform a wide range of surgical procedures. Regionalization has delegated certain procedures that were traditionally performed by the local general surgeon to general surgery subspecialists at tertiary hospitals.[10] Analyses of volume outcome relationships have suggested that certain major procedures are best delivered at high-volume centers where subspecialists will generally perform them.[11-15] Proponents of regionalization argue that specialized centers and high-volume providers have better outcomes. Payors have followed suit and often, even if patients might choose to have a procedure performed by their local general surgeon, reimbursement will not follow. As a result, today's general surgeons have a narrower scope of practice compared with previous generations. Yet, local emergency rooms are still largely staffed by these same general surgeons, which forces us to question whether emergency cases will be met with the same level of expertise as in previous eras. In addition, if there are no general surgeons available in isolated areas, the impact of longer transport times before surgical treatment remains to be determined.

Challenges to adequate training

Many residents have heard stories of the "old days" when a typical surgeon's operating room (OR) schedule included a colectomy, a carotid endarterectomy, an open lung biopsy, and a mastectomy—all in a single day. Many attribute this impressive array of cases to the 120-plus-hour week invested in general surgical training in years past. However, as surgical knowledge and practice have advanced, it has been increasingly difficult to arm the graduating resident with every acquirable skill in a five-year training period, irrespective of the number of hours spent in the hospital. With the advancement of technology within what was traditionally the general surgery arena, the training of a general surgery resident no longer encompasses only what is accomplished with a scalpel. As a result, surgical training has increasingly obligated the "new" general surgeon to find a niche of expertise. The training of general surgeons has been further challenged by duty-hour regulations and billing/coding regulations that have at once deprived the surgical trainee of important surgical opportunities and the freedom to mature as an independently operating surgeon.

The true impact of the American Council of Graduate Medical Education's (ACGME) 80-hour workweek restriction is hard to quantify. When surveyed, 56 percent of 41 residents reported that they have to abstain from operating post-call because of the 30-hour rule (which states that residents may not work more than 30 consecutive hours, with the final hours allocated only for patient sign-out and/or educational activities).[16] Conversely, other surveys have found that the total operative experience of graduating general surgery residents based on their ACGME operative case logs has not been affected despite the changes in work hours; this outcome has been attributed to strategies such as the implementation of physician assistant coverage, home call, and night float coverage.[16,17] Moreover, the inaccuracy of work-hour logs may cloud the real effect of the restrictions. In a survey of 125 residents, 85 percent reported at least one violation of the restrictions, with greater than 30 percent exceeding it by six or more hours. Of those reporting violations, 48 percent admitted underreporting them to their program director.[18]

Although the 80-hour limitations may or may not adversely affect the acquisition of operative experience and clinical skills, it is clear that resident autonomy has been a casualty of modern surgical training. In years past, chief residents ran the surgical services; they scheduled cases and assigned staff in the OR. They were in essence junior partners to their more senior attendings with whom they developed a strong relationship that consisted of mentorship and trust. Chief residents had a great deal of autonomy and many were able to take their junior residents through cases, with minimal direct supervision from attending staff. As a result, chief residents emerged from

their training prepared for independent practice. Today, however, a surgical procedure will not be reimbursed unless the attending surgeon is scrubbed in for the "critical portions" of the procedure, and in some cases the operative note has to be dictated by the attending surgeon in order to be reimbursed.[19]

Lack of autonomy, possibly worsened by the limitations of the 80-hour workweek, means that many clinical situations are not encountered until after finishing training and entering practice. It is not difficult to understand, then, that even individuals who were entertaining the idea of a broad general surgery practice frequently change their minds and decide to obtain additional training in order to develop a more manageable clinical niche. Currently, defining oneself as a surgeon based on a specific disease process (such as surgical oncology), body system (such as endocrine surgery), or anatomic area (such as breast surgery) is easier than defining oneself as a general surgeon adept in a variety of disease processes, body systems, and anatomic areas. Arguably, the depth and breadth of skills and clinical experience necessary for the latter are lacking in modern-day general surgery training.

Allure of subspecialization

The majority of general surgical trainees in the U.S. obtain their training at academic institutions providing tertiary care. Along with the onslaught of new knowledge and technologies during residency come interactions with surgeons who have mastered them by subspecializing in disciplines such as surgical endocrinology, surgical oncology, hepatopancreaticobiliary surgery, colorectal surgery, vascular surgery, and thoracic surgery. It is not uncommon for academic surgery departments to have divisions for each of these subspecialties. In addition, subspecialty-trained surgeons who have individually narrowed their scope of practice often staff the general surgery division itself. It is within these subspecialty divisions, rotating among them monthly, that the modern-day surgical resident trains to become a general surgeon.

This begets the question, where are the broadly trained general surgeons who will mentor residents? Most commonly, the major interaction with such surgeons occurs at community hospitals. For university-affiliated training programs, these hospitals provide residents with an opportunity to work with nonspecialized surgeons. However, these experiences are often shorter in duration and not consistent enough to garner a mentor-mentee relationship. Role models do have an impact on career choices, and a majority of residents choose the same specialty path as their self-selected mentor.[20] Without exposure to an adequate number of general surgeons during training, finding a mentor in this field may be impossible.

The subspecialization of surgeons, with the recruitment of these individuals to training programs as teachers and mentors, is leading to what may become a neverending cycle with a continual decrease in general surgeons. Current data suggest that 70 percent of general surgery graduates pursue subspecialty training.[21] Since 1984, there has been a 25 percent decrease in graduates of general surgery programs who have chosen to practice as general surgeons.[22]

The addition of primary certification in certain subspecialties will only further decrease the pool of residents available to the general surgeon career path. Plastic surgery was one of the early adaptors of abbreviated training programs, but others have now joined them. The American Board of Surgery has passed regulations that would allow residents to "double count" their first year of fellowship training toward their final year of general surgery residency. These individuals would then be board eligible in general surgery and vascular or pediatric surgery. The current stipulation in place is that all of the training must be at the same institution.[23] It seems likely that general surgery training programs will continue to lose trainees to subspecialty tracks because of the appeal of truncated training and other perceived benefits of subspecialty careers.

A driving force behind the allure of subspecialization for general surgery graduates is the health care market itself. Increased competitiveness in the workforce and increased payment for subspecialists are both factors that could sway a trainee. In addition, surgical subspecialists often do not take part in emergency or trauma call, which further highlights the lifestyle benefits these surgeons receive. In fact, emergency department call itself, which in the past was the purview of the general surgeon, is now being developed into yet

another subspecialty, alternatively called emergency surgery or acute care surgery. This further highlights the segmentation of what we currently know as "general surgery."

These same free-market factors could also ultimately help general surgery, in that current health care projections forecast a deficit of surgeons.[22] This outcome would mean that areas that rely on broad-based surgical care, such as rural locations as previously discussed, might need to pay a premium to recruit staff. This could lead to an increase in interest among graduates looking to optimize their salary.

In sum

To those individuals who are not resigned to view general surgeons as a dying breed: What, then, is our solution? The dwindling breadth of cases and the decreasing autonomy for chief residents has left many graduates feeling inadequately prepared for general practice.

As discussed, some programs now offer rural surgery electives or rural surgery fellowships as a means to recruit and train surgeons for practice in remote regions. These fellowships impart the lifestyle experience of rural general surgery while also focusing on pathologies and cases that may no longer be a part of traditional, university-based residency training. Proponents of specialized rural surgery tracks have recommended that a special designation be given to programs offering them, which will aid medical students in identifying programs that meet their expectations.[24] Reports from these programs not only suggest that their graduates are more likely to practice in rural settings, but also that job satisfaction among their graduates has increased.[25]

Similar to rural surgery electives, international electives provide another means of broadening clinical experience while also promoting volunteerism for underserved areas abroad. Such rotations expose residents to a wide array of general surgical problems often not encountered in modern western surgical practice. Residents experience first-hand how such problems are diagnosed and treated with limited resources and under austere circumstances. A survey of residents who rotated internationally found that they were exposed to a broader scope of pathology, were challenged to be more resourceful, and were taught to rely more on physical examination skills.[26]

In an age when both advancing medical science and regulations on medical training have reduced real-life opportunities for surgical experience, simulators may play a role in educating broadly skilled general surgeons. The promise of technology in advancing skills in newer minimally invasive surgical techniques is obvious and improvement in operative performance after simulated laparoscopic training has been well documented.[27,28] However, virtual reality methods may prove even more promising by giving residents opportunities to gain "hands-on" experience in open cases that are infrequently performed today thanks to advances in medical management (such as ulcer surgery) and surgical technology (such as open cholecystectomies). Although these newer training techniques will not be able to impart clinical judgment, they will be critical for equipping graduating general surgery residents with the technical skills to handle such uncommonly encountered scenarios should contemporary approaches fail.

Providing residents with off-site opportunities to further their training in broad-based general surgery—whether in rural America, abroad, or via simulators—has been challenging because of ACGME duty-hour restrictions and residency salary structure. Residency programs are struggling to provide coverage of their core hospitals with an 80-hour workweek. Moreover, funding for rotations away from a residency's core hospitals is also an obstacle because resident salaries are tied into Medicare/Medicaid funds that are distributed based on a resident's presence at a particular institution. Despite these constraints on time and financial considerations, leaders in surgical education recognize that training is paramount.

Accordingly, surgical educators have undertaken innovative and rewarding solutions that will likely spread to general surgery residencies throughout the country. Hopefully these improvements in surgical training will bolster the recruitment, and moreover the retention, of medical students interested in broad-based general surgery careers. However, further incentives are needed. The compensation disparity between general surgeons and subspecialists must be narrowed to retain new graduates who have an ever-widening array of subspecialty paths to pursue. Policymakers should

consider loan forgiveness programs for general surgeons willing to practice in areas with greater need, similar to those that have been implemented for primary care physicians. Broad-based general surgery mentors should be made available to all surgical trainees at some point during their training so that they can experience the challenges and rewards of what might otherwise be a dying field.

To avert this pending crisis in U.S. health care caused by a shortage of general surgeons, Cofer has suggested that the Residency Review Committee expand the number of slots in those residency programs that have made the effort to promote and sustain broad-based general surgery training.[4] The Blue Ribbon Committee on Surgical Education—a collaborative effort between the College, the American Surgical Association, and the Resident Review Committee on Surgery—formed in 2002 and has recommended a "modular" surgical training format in which a basic surgery core is followed by specialization in general surgery or the varied subspecialties.[29] This approach may increase the appeal of general surgery by reducing the length of training, through the elimination of subspecialty electives that neither interest nor increase the skill set of aspiring general surgeons.

Modern challenges to surgical training and the public health impact of a shortage of surgeons are key focuses of the College. Causes of, and potential solutions for, this pending crisis will be addressed at the 2008 Clinical Congress, in a session tentatively entitled The Educational Challenge of Surgical Workforce Shortage. Ω

References

1. Fischer JE. The impending disappearance of the general surgeon. *JAMA*. 2007;298(18):2191-2193.
2. Davis R. Shortage of surgeons pinches U.S. hospitals. *USA Today*. February 26, 2008.
3. Stitzenberg KB, Sheldon GF. Progressive specialization within general surgery: Adding to the complexity of workforce planning. *J Am Coll Surg*. 2005;201(6):925-932.
4. Cofer J. Rural hospitals dogged by drop in general surgeons. *Surg News*. 2008;4:7.
5. Heneghan SJ, Bordley JT, Dietz PA, et al. Comparison of urban and rural general surgeons: Motivations for practice location, practice patterns, and education requirements. *J Am Coll Surg*. 2005;201(5):732-736.
6. Thompson MJ, Lynge DC, Larson EH, et al. Characterizing the general surgery workforce in rural America. *Arch Surg*. 2005;140(1):74-79.
7. Incorvaia AN, Ringley CD, Boysen DA. Factors influencing surgical career decisions. *Curr Surg*. 2005;62(4):429-435.

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8. Shively EH, Shively SA. Threats to rural surgery. *Am J Surg*. 2005;190(2):200-205.
9. Ritchie WP Jr, Rhodes RS, Biester TW. Work loads and practice patterns of general surgeons in the United States, 1995-1997: A report from the American Board of Surgery. *Ann Surg*. 1999;230(4):533-542.
10. Luft HS, Bunker JP, Enthoven AC. Should operations be regionalized? The empirical relation between surgical volume and mortality. *N Engl J Med*. 1979;301(25):1364-1369.
11. Begg CB, Cramer LD, Hoskins WJ, Brennan MF. Impact of hospital volume on operative mortality for major cancer surgery. *JAMA*. 1998;280(20):1747-1751.
12. Birkmeyer JD, Finlayson EV, Birkmeyer CM. Volume standards for high-risk surgical procedures: Potential benefits of the Leapfrog initiative. *Surgery*. 2001;130(3):415-422.
13. Birkmeyer JD, Siewers AE, Finlayson EV, et al. Hospital volume and surgical mortality in the United States. *N Engl J Med*. 2002;346(15):1128-1137.
14. Finlayson EV, Goodney PP, Birkmeyer JD. Hospital volume and operative mortality in cancer surgery: A national study. *Arch Surg*. 2003;138(7):721-725.
15. Dudley RA, Johansen KL, Brand R, et al. Selective referral to high-volume hospitals: Estimating potentially avoidable deaths. *JAMA*. 2000;283(9):1159-1166.
16. Izu BS, Johnson RM, Termuhlen PM, Little AG. Effect of the 30-hour work limit on resident experience and education. *J Surg Educ*. 2007;64(6):361-364.
17. Ferguson CM, Kellogg KC, Hutter MM, Warshaw AL. Effect of work-hour reforms on operative case volume of surgical residents. *Curr Surg*. 2005;62(5):535-538.
18. Carpenter RO, Spooner J, Arbogast PG, et al. Work hours restrictions as an ethical dilemma for residents: A descriptive survey of violation types and frequency. *Curr Surg*. 2006;63(6):448-455.
19. Supervising Physicians in Teaching Settings. *Medicare Carriers Manual, Part 3–Claims Process*. Rockville, MD: Centers for Medicare and Medicaid Services; 2002:15-12.
20. Thakur A, Fedorka P, Ko C, et al. Impact of mentor guidance in surgical career selection. *J Pediatr Surg*. 2001;36(12):1802-1804.
21. Bell RH Jr, Banker MB, Rhodes RS, et al. Graduate medical education in surgery in the United States. *Surg Clin North Am*. 2007;87(4):811-823.
22. Powell AC, McAneny D, Hirsch EF. Trends in general surgery workforce data. *Am J Surg*. 2004;188(1):1-8.
23. Sutherland MJ. A young surgeon's perspective on alternate surgical training pathways. *Am Surg*. 2007;73(2):114-119.
24. Burkholder HC, Cofer JB. Rural surgery training: A survey of program directors. *J Am Coll Surg*. 2007;204(3):416-421.
25. Doty B, Heneghan S, Gold M, et al. Is a broadly based surgical residency program more likely to place graduates in rural practice? *World J Surg*. 2006;30(12):2089-2093.
26. Ozgediz D, Roayaie K, Debas H, et al. Surgery in developing countries: Essential training in residency. *Arch Surg*. 2005;140(8):795-800.
27. Korndorffer JR Jr, Dunne JB, Sierra R, et al. Simulator training for laparoscopic suturing using performance goals translates to the operating room. *J Am Coll Surg*. 2005;201(1):23-29.
28. Scott DJ, Bergen PC, Rege RV, et al. Laparoscopic training on bench models: Better and more cost effective than operating room experience? *J Am Coll Surg*. 2000;191(3):272-283.
29. Debas HT, Bass BL, Brennan MF, et al. American Surgical Association Blue Ribbon Committee Report on Surgical Education: 2004. *Ann Surg*. 2005;241(1):1-8.

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Teaching and assessing the ACGME competencies in surgical residency

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The Accreditation Council for Graduate Medical Education (ACGME) Outcome Project is an educational reform that shifts the process of program accreditation from a system that valued a program's potential to train its residents to a system that requires the actual measurement of educational outcomes among residents.[1] The Outcome Project requires residency programs to implement a curriculum covering six core competencies and to provide evidence of resident learning within these competencies via assessment by July 2011.[2] With this date only three years away, many programs are adopting and implementing new curricular materials and assessment to meet the Outcome Project requirements.

The six core competencies—patient care, medical knowledge, practice-based learning and improvement (PBLI), interpersonal and communication skills, professionalism, and systems-based practice (SBP)—were developed by the ACGME in the early 1990s and officially endorsed in 1999. Beginning in 2001, the ACGME constructed a three-phase timeline that culminates with the full integration of the competencies and their assessment in resident education by 2011. The fourth and final phase of the Outcome Project involves the identification of benchmark programs and the nationwide adoption of generalizable materials and methods from these programs.[2]

Since creation of the competencies, numerous publications have addressed their implementation and evaluation in a variety of medical specialties. Although some of this material is applicable to surgical training programs, there are many ways in which our training varies significantly from these other specialties and therefore may require unique solutions to specifically address the competencies. This article will review the current state of the competencies in general surgery residencies and suggest some methods to teach and evaluate them.

Patient care

> Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.[2]

Traditionally, patient care has been taught on the floors and in the operating room using direct attending-resident interactions. This method is largely unregulated and the experience varies depending on the individuals involved. In an effort to standardize teaching of patient care and to comply with ACGME regulations, most programs have included or improved existing clinical teaching sessions, departmental conferences, and institutional core curriculum lectures. In particular, the morbidity and mortality (M&M) conference has been a hallmark of general surgery residency training. This conference, traditionally used to teach and assess patient care and medical knowledge, is now evolving in an effort to address the other four ACGME competencies.[3]

Several programs have used standardized patients to simulate particular disease processes and train residents in the nonoperative skills of patient care.[4] To cut down on the cost of implementation, programs have used senior residents or friends and relatives as standardized patients. A similar instrument is the Objective Structured Clinical Exam (OSCE), where residents complete a series of clinically based stations or tasks, often involving standardized patients and/or procedure stations. OSCEs are considered the gold standard for postgraduate clinical evaluation by some educators and appear to be able to differentiate between the skills of faculty, senior, and junior residents.[5]

Written evaluation of residents' performance is a well-used method to assess patient care. Patient survey questionnaires, completed by patients after a resident encounter, are sometimes used for this purpose. However, multiple survey responses per resident are needed to give reliable results and the patient's evaluation of the resident evaluation is influenced by his or her overall experience during the visit.[6] Another tool commonly used is the 360-degree global evaluation. This instrument captures information from all who come in contact with the resident during the performance of his or her duties (including faculty, peer physicians, medical students, nurses, allied health personnel, patients, families, and others).[7] Even though this is a valuable tool, it is limited by the potential "halo" (a well-liked person can do no wrong) and "millstone" (a less-liked person can do no right) phenomena.

Unlike other medical specialties, acquisition of technical skills is a basic tenet of surgical residency. Mannequins, animal procedure laboratories, computer simulators, virtual reality, and other tools are increasingly being used to teach and assess procedural skills.[8] Reznick and colleagues described the use of standardized bench model simulations to teach and assess technical competence in surgical residency.[9] All of these methods have the advantage of allowing residents to learn under direct observation of someone who can give feedback and assess their skills without concerns about patient safety. However, there is significant cost involved in the acquisition and maintenance of some of these instruments.

The patient care competency—in particular, its technical skills component—is the most commonly taught and demonstrated competency in the operating room.[10] Taking into account that this is the place where surgical residents spend a large amount (if not most) of their training time, it becomes the perfect setting for evaluating resident performance in patient care. Standardized faculty evaluations of particular procedures and supervised case logs are ways to achieve this. For example, Anderson and colleagues developed a standardized form that the faculty completes

at the end of a surgical procedure evaluating the trainee in terms of skills displayed during the case.[11]

Although patient care has been traditionally at the center of residency teaching, as resident education evolves into a more standardized process, such instruments will need to be progressively incorporated into residency programs, undoubtedly leading to the refinement of existing techniques, inception of newer assessment tools, and their integration into the final certification process of surgical graduates.

Medical knowledge

> Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.[2]

In the Halstedian model of surgical training, medical knowledge has been mainly accumulated on the wards, in the emergency room, or in the operating room and reinforced by lectures from attending surgeons, grand rounds, teaching conferences, journal clubs, and textbook reading by residents in their spare time. The changes in residency training resulting from the introduction of the 80-hour workweek have pushed residents to be more efficient and resourceful in terms of time management. In 2004, the American Surgical Association (ASA) Blue Ribbon Committee recommended development of a standardized national curriculum to provide the fundamentals of surgery. This would ensure that all trainees received a common education in basic principles of surgical disease and patient care.

Various methods to increase resident participation in teaching and improve retention of medical knowledge have been evaluated, including use of a core curriculum program based on a principal textbook to address a different topic per week. Attendance in such classes has correlated with improved performance in the American Board of Surgery (ABS) In-Training Examination (ABSITE).[12] It appears that structured faculty interaction and monitored attendance are important for such a curriculum to be successful, as it has been shown that voluntary Web-based curriculum reviews do not improve ABSITE performance.[13]

Standardized evaluation of medical knowledge in surgical residency is not new. For more than 30 years, the ABSITE has been used as a measure of medical knowledge attainment. Performance on this exam has been correlated with success in the ABS Qualifying Examination.[14] However, this method of assessment is limited as it does not measure noncognitive and technical abilities that could be considered part of "medical knowledge" within the context of surgical residencies.[15]

Many residency programs have used mock oral board examinations to evaluate the residents in preparation for the certifying exam in surgery. These examinations can also allow evaluation of other competencies such as interpersonal and communication skills. Mock oral examinations are also used to determine if there are programmatic deficiencies with an individual training program.

PBLI

> Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.[2]

PBLI involves the development of skills to identify areas of possible improvement in clinical practice; to obtain, analyze, and assimilate scientific evidence; to plan and implement changes; and to evaluate the impact of those interventions. Each step involves a different set of skills with unique challenges in terms of training and assessment, making PBLI one of the most difficult competencies to integrate into surgical residency.

There are several ways to identify possible areas of improvement. Primary review of the literature provides an easy approach. However, for PBLI to be truly educational, areas of improvement should be derived from the reflection and analysis of the resident's own practice. Lyman and colleagues at the University of Virginia developed a Web-based system that provided internal medicine residents aggregate reports

of their own clinical ambulatory practice.[16] Residents could obtain statistical information on their practice (such as how many patients were current with recommended breast screening guidelines) and compare these statistics with those of other residents and faculty, then propose and implement quality improvement initiatives based on the information. Another approach that could be more easily integrated into surgical residency is to encourage residents to include on their case log a "learning need" for each patient encounter or operation.[17] This learning need could represent information residents wished they knew before, what they learned from the encounter, or what they would like to research at a later time.

The development of critical appraisal skills for the analysis and assimilation of scientific literature forms the basis of journal clubs. A few modifications—such as emphasizing different critical appraisal skills on each session, discussing in detail the methodology of the studies, and assessing and documenting progress—can improve the utility of this format for PBLI.

Residency programs have used different methods to teach planning and implementation of changes into practice. They include offering didactic courses on quality improvement skills (such as systems thinking, error investigation, and root cause analysis),[16] encouraging participation of residents in hospital-wide quality improvement committees, and having residents design projects to improve their own residency system[18] or clinical practice.[16,19,20]

A reasonable approach to document progress in PBLI is the creation of resident portfolios—which might include case logs, literature searches, research assignments, and quality improvement projects—to provide evidence of learning and achievement.[21,22] Webb and colleagues had residents choose a case they had encountered over the previous month and submit in their portfolios a written report including history, differential diagnoses, management options, lessons learned, and a brief literature review.[23]

Perhaps one of the least intrusive methods to address PBLI is to transform the morbidity and mortality conference into a PBLI tool. Residents involved in the care of patients chosen for discussion can present the hospital course and conduct a brief discussion including areas of improvement and a brief literature review. The resident can then submit a written PBLI log analyzing the factors contributing to the complication, opportunities for system improvement, and what can be done to avoid the complication in the future.[3]

All methods will likely add some burden to residency programs and residents themselves. Program directors will need to use PBLI skills to develop or adapt instruments to teach and assess PBLI within their own residency context.

Interpersonal and communication skills

> Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients' families, and professional associates.[2]

Physicians' communication skills have been linked with important outcomes, including patient satisfaction and liability. Given the nature of surgery, it is essential for surgeons to have expertise in patient education and counseling. Physician communication skills have now become a standard component of the medical school curriculum.[24] However, there has been traditionally little emphasis placed in the attainment of these skills during surgical residency. Assessment has also been difficult, as many evaluation systems are prone to bias and ABSITE scores bear no correlation at all with interpersonal and communication skills.[25]

The traditional method of learning communication skills has been by observation of role models and by trial and error, relying mostly on residents' self-assessment. Recently, recognizing the limitations of the traditional method, some residency programs have offered workshops and role-play scenarios to teach specific communication skills. These sessions have been deemed useful by participants[26] but require additional time allotment in an already constrained resident schedule. The real impact of such innovative methods on the actual improvement of interpersonal and communication skills among residents is still largely unknown.

The global evaluation encompassing all six competencies is perhaps the most popular assessment method currently in use. As part of this evaluation, a Likert scale is used to evaluate different domains. This system is flawed by assessment bias and, because traditionally only faculty members complete these evaluations, a full picture of the residents' performance, especially as it pertains to interpersonal and communication skills, is not really obtained. The multisource 360-degree global evaluation has been suggested and adopted by some programs in response to these limitations. All members of the health care team, including nurses and allied health practitioners, would have the opportunity to evaluate residents' performance with this assessment tool. This instrument works best if a variety of evaluators is used, as some educators believe it does not provide any additional information if there is high correlation between evaluator groups.[27]

To obtain a more objective evaluation, other methods have been described, including standardized questionnaires and OSCEs, which are effective in assessment of resident communication skills[28,29] and use of standardized patients, which has been advocated by the ACGME to provide a fair, reliable, and valid method of assessing competence in interpersonal and communication skills. However, these methods may have financial limitations.

It is clear that there is no best method to teach and assess interpersonal and communication skills to surgical residents. However, a combination of some of the methods described will probably serve a better role than the traditional methods in training residents.

Professionalism

> Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diverse patient population.[2]

Professionalism includes virtues such as honesty, altruism, service, suspension of self-interest, commitment to excellence, communication, and accountability.[30] Traditionally, residents have learned professional values and behavior from exposure to attending physician role models. With the 80-hour workweek regulations, this method is severely curtailed. Furthermore, exposure to professional behavior does not necessarily translate into acquisition of such behavior. Therefore, professionalism training should be formally integrated into the residency curriculum.

Core curriculum lectures improve knowledge and awareness of professional issues but fail to change attitudes, personality, or professional conduct.[31] Home visit programs and ethical case conferences have been used to sensitize residents to professionalism issues at hand and try to impart professionalism skills.[32,33] In some cases, educational, cultural, religious, and business leaders in the community who are experts in their respective fields are enlisted to instruct residents in aspects of professionalism discussing theoretical implications and providing practical examples. For example, college ethicists, local clergy members, and regional organ procurement representatives might discuss topics such as confidentiality, informed consent, end-of-life decisions, recognition of bias and conflict of interests, harassment, and use of human subjects in research.[34]

Modified essay questions or simulated clinical case studies can be used to promote self-reflection and assess some professionalism topics. Using open-ended questions and step-wise case studies, these instruments can assess the knowledge of ethical concepts and arguments, as well as sensitivity to ethical conflict and ability to reason critically and justify a course of action. Their real limitation is the perceived detachment from real patient exposure.[35]

OSCEs have been deemed valid and reliable ways of assessing ethical issues among residents. Stations with standardized patients can focus on professional issues like refusal of care, informed consent, multicultural sensitivity, communicating bad news, and end-of-life scenarios. Evaluation then focuses not only on the right-or-wrong answer but also on the soundness of the reasoning employed.[36]

Patient questionnaires and 360-degree global evaluations by providers (including nurses and allied health care professionals) offer different perspectives on residents' professional conduct.[37]

Large numbers of evaluations are sometimes needed for reliable results, but these methods may provide the most accurate assessment of professional conduct.

Teaching and assessment of professional competence in residency may be a way to ensure common understanding of basic principles, policies, and procedures in residents. However, how these instruments translate into improvements in real-world professionalism is still largely unknown.

SBP

> Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.[2]

SBP is proving to be one of the most challenging competencies to teach and assess in general surgery residencies. SBP competency topics such as health care access, quality of care, patient safety, and disparities in health care do not lend themselves to daily discussions in a typical residency program. In an intraoperative observational study of the core competencies, Greenberg and colleagues found that no teaching events within the SBP competency were observed over the course of nine different operations.[10] Despite these findings, several programs have created innovative and effective methods to teach and assess the SBP competency.

At Southern Illinois University in Carbondale, Dunnington and Williams created a curriculum that specifically addresses the six core competencies.[38] In order to ensure teaching within SBP, second-year residents were expected to serve on a hospital committee that focused on quality improvement and patient safety for one year. The residents were made to keep logbooks of all the issues discussed during their tenure on this committee and how these discussions would affect their practice. In addition, residents completed a quality-related project, such as a root-cause analysis of a systems error that affected the care of one of their patients, which they would present during surgical grand rounds.[38]

Siri and colleagues at the University of Florida chose a multidisciplinary approach to teaching SBP.[39] In their model, teams of residents focused on one of four quality assessment variables of preoperative care: bowel preparation, prophylactic antibiotic use, perioperative beta-blockade, or deep venous thrombosis prophylaxis. Each team performed a literature review and formulated a standardized management approach based on the best available evidence. These findings were then presented at a surgical grand rounds along with presentations from the departments of anesthesia, medicine, and nursing. The purpose of this multidisciplinary format was to include all personnel involved in the preoperative treatment of surgical patients so that the new treatment recommendations would be standardized for all preoperative patients.

Kerfoot and colleagues employed a Web-based program where residents and students across a variety of disciplines completed a series of validated modules on patient safety and the U.S. health care system over a nine-week time period.[40] With this program, the authors were able to demonstrate significant, durable learning in these topics.

While these examples show that teaching within the SBP is certainly possible, they also demonstrate that additional elements had to be incorporated into residency programs to ensure there was teaching within this competency, which is likely to be true in an overwhelming majority of surgical residencies across the country. Although it will require some effort to implement one of these methods or a similar program, the long-term benefits to patient care and resident education outweigh the initial costs of implementation.

Conclusion

In the last few years, we have experienced major changes in resident education in the U.S.—the 80-hour workweek and the ACGME's six competencies probably being the two most radical. Overall, residency programs are now being required to provide adequate, focused, and relatively equivalent training in less time while documenting residents' actual learning. The focus of residency learning is thus being shifted from imbibing of knowledge and skills by merely

being exposed to the problems in the hospital to a more focused and potentially more meaningful educational experience. Whether the changes in the work hours and the implementation of the set of competencies will accomplish these goals is still to be determined.

When the ACGME put forth the six competencies a few years ago, little guidance was given as to how to best implement their teaching and assessment as part of residency training. Residency programs have tried to design and adapt educational and assessment instruments to try to comply with the new mandate.

It is clear that there is no perfect instrument to teach and measure all competencies in all different environments. Over the ensuing years, residency programs will need to choose and adapt those methods that they believe will work best for them, taking into account their own context, resource constraints, and collective evidence. To help residency programs choose and implement some of these instruments, the ACGME and the American Board of Medical Specialties have published a document with a toolbox describing different resident evaluation methods, feasibility, and use. This toolbox can be found at *www.acgme.org/outcome/assess/toolbox.asp*.

Also as part of this initiative, the ACGME has been developing a Web-based portfolio to help with residents' self-reflection and lifelong learning.[41] This portfolio is designed to allow residents to document their learning experiences and reflections and document their experiences in the form of case logs, project documents, presentations, formal and informal evaluations, and so on. This portfolio is currently undergoing alpha testing in a few programs.

Surgical residencies pose an additional challenge since a great component of the core learning of our specialty represents the acquisition of technical skills. Programs will therefore have to develop and adapt tools to assess these technical skills as part of the evaluation of the ACGME competencies.

In 2006, the Surgical Council on Resident Education (SCORE) was created in an effort to reduce the variability in surgical residency programs and to ensure that residents are being appropriately trained in the core aspects of general surgery.[42] This Council is composed of representatives from the ABS, American College of Surgeons, ASA, Association for Surgical Education, Association of Program Directors in Surgery, and the Residency Review Committee for Surgery of the ACGME. The main initiatives being pursued by SCORE are the development of a comprehensive, competency-based curriculum for general surgery residency, a national Web site for general surgery education, and a structured technical skills curriculum. As part of the development of the competency-based curriculum for general surgery, SCORE added to its scheme a seventh competency relevant to surgical training: "technical ability." In April 2008, SCORE released an outline with the topics that would form part of the general surgery curriculum in terms of the patient care competency.[43] It is expected that SCORE will develop specific learning objectives and then a full curriculum including educational content, teaching materials, instructional methods, and assessment for this competency. The curriculum for the other six competencies is to follow.

The drafting of the six—or seven—competencies and the push to document residents' learning experience in these domains merely represent the first steps toward ensuring adequate education across the diverse number of residency programs in the U.S. There is still much work to be done. Programs will now need to decide which instruments are most appropriate for them, implement the necessary changes to use them, and longitudinally assess their effectiveness in residents' training. We believe these times provide a unique opportunity for programs and residents alike to revise and improve surgical education. Ω

References

1. Leach DC. A model for GME: Shifting from process to outcomes. A progress report from the Accreditation Council for Graduate Medical Education. *Med Educ*. 2004;38(1):12-14.
2. Accreditation Council for Graduate Medical Education. Outcome Project. Available at: http://www.acgme.org/Outcome/. Accessed April 7, 2008.
3. Rosenfeld JC. Using the morbidity and mortality conference to teach and assess the ACGME General Competencies. *Curr Surg*. 2005;62(6):664-669.

4. Burdick WP, Escovitz ES. Use of standardized patients in a freshman emergency medicine course. *J Emerg Med*. 1992;10(5):627-629.
5. Sloan DA, Donnelly MB, Schwartz RW, et al. The Objective Structured Clinical Examination. The new gold standard for evaluating postgraduate clinical performance. *Ann Surg*. 1995;222(6):735-742.
6. Matthews DA, Sledge WH, Lieberman PB. Evaluation of intern performance by medical inpatients. *Am J Med*. 1987;83(5):938-944.
7. Wenrich MD, Carline JD, Giles LM, et al. Ratings of the performances of practicing internists by hospital-based registered nurses. *Acad Med*. 1993;68(9):680-687.
8. Derossis AM, Fried GM, Abrahamowicz M, et al. Development of a model for training and evaluation of laparoscopic skills. *Am J Surg*. 1998;175(6):482-487.
9. Reznick R, Regehr G, MacRae H, et al. Testing technical skill via an innovative "bench station" examination. *Am J Surg*. 1997;173(3):226-230.
10. Greenberg JA, Irani JL, Greenberg CC, et al. The ACGME competencies in the operating room. *Surgery*. 2007;142(2):180-184.
11. Anderson CI, Jentz AB, Harkema JM, et al. Assessing the competencies in general surgery residency training. *Am J Surg*. 2005;189(3):288-292.
12. Lee L, Brunicardi FC, Scott BG, et al. Impact of a novel education curriculum on surgical training within an academic training program. *J Surg Res*. 2008;145(2):308-312.
13. Ferguson CM, Warshaw AL. Failure of a Web-based educational tool to improve residents' scores on the American Board of Surgery In-Training Examination. *Arch Surg*. 2006;141(4):414-416.
14. Biester TW. The American Board of Surgery In-Training Examination as a predictor of success on the qualifying examination. *Curr Surg*. 1987;44(3):194-198.
15. Scott DJ, Valentine RJ, Bergen PC, et al. Evaluating surgical competency with the American Board of Surgery In-Training Examination, skill testing, and intraoperative assessment. *Surgery*. 2000;128(4):613-622.
16. Lyman JA, Schorling J, Nadkarni M, et al. Development of a Web-based resident profiling tool to support training in practice-based learning and improvement. *J Gen Intern Med*. 2008;23(4):485-488.
17. Thomas PA, Goldberg H. Tracking reflective practice-based learning by medical students during an ambulatory clerkship. *J Gen Intern Med*. 2007;22(11):1583-1586.
18. Canal DF, Torbeck L, Djuricich AM. Practice-based learning and improvement: A curriculum in continuous quality improvement for surgery residents. *Arch Surg*. 2007;142(5):479-482.
19. Coleman MT, Nasraty S, Ostapchuk M, et al. Introducing practice-based learning and improvement ACGME core competencies into a family medicine residency curriculum. *Jt Comm J Qual Saf*. 2003;29(5):238-247.
20. Staton LJ, Kraemer SM, Patel S, et al. "Correction": Peer chart audits: A tool to meet Accreditation Council on Graduate Medical Education (ACGME) competency in practice-based learning and improvement. *Implement Sci*. 2007;2:24.
21. Hayden SR, Dufel S, Shih R. Definitions and competencies for practice-based learning and improvement. *Acad Emerg Med*. 2002;9(11):1242-1248.
22. Lynch DC, Swing SR, Horowitz SD, et al. Assessing practice-based learning and improvement. *Teach Learn Med*. 2004;16(1):85-92.
23. Webb TP, Aprahamian C, Weigelt JA, et al. The Surgical Learning and Instructional Portfolio (SLIP) as a self-assessment educational tool demonstrating practice-based learning. *Curr Surg*. 2006;63(6):444-447.
24. Liaison Committee on Medical Education, Functions, and Structure of Medical Schools. *Standards for Accreditation of Medical Education Pro-*

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grams Leading to the M.D. Degree. Washington, DC: Association of American Medical Colleges; 1998.
25. Haurani MJ, Rubinfeld I, Rao S, et al. Are the communication and professionalism competencies the new critical values in a resident's global evaluation process? *J Surg Educ*. 2007;64(6):351-356.
26. Klaristenfeld DD, Harrington DT, Miner TJ. Teaching palliative care and end-of-life issues: A core curriculum for surgical residents. *Ann Surg Oncol*. 2007;14(6):1801-1806.
27. Weigelt JA, Brasel KJ, Bragg D, et al. The 360-degree evaluation: Increased work with little return? *Curr Surg*. 2004;61(6):616-626.
28. Yudkowsky R, Alseidi A, Cintron J. Beyond fulfilling the core competencies: An objective structured clinical examination to assess communication and interpersonal skills in a surgical residency. *Curr Surg*. 2004;61(5):499-503.
29. Horwitz IB, Horwitz SK, Brandt ML, et al. Assessment of communication skills of surgical residents using the Social Skills Inventory. *Am J Surg*. 2007;194(3):401-405.
30. Gruen RL, Arya J, Cosgrove EM, et al. Professionalism in surgery. *J Am Coll Surg*. 2003;197(4):605-608.
31. Fox E, Arnold RM, Brody B. Medical ethics education: Past, present, and future. *Acad Med*. 1995;70(9):761-769.
32. Matter CA, Speice JA, McCann R, et al. Hospital to home: Improving internal medicine residents' understanding of the needs of older persons after a hospital stay. *Acad Med*. 2003;78(8):793-797.
33. Markakis KM, Beckman HB, Suchman AL, et al. The path to professionalism: Cultivating humanistic values and attitudes in residency training. *Acad Med*. 2000;75(2):141-150.
34. Rosenfeld JC, Sefcik S. Utilizing community leaders to teach professionalism. *Curr Surg*. 2003;60(2):222-224.
35. Mitchell KR, Myser C, Kerridge IH. Assessing the clinical ethical competence of undergraduate medical students. *J Med Ethics*. 1993;19(4):230-236.
36. Cohen R, Singer PA, Rothman AI, et al. Assessing competency to address ethical issues in medicine. *Acad Med*. 1991;66(1):14-15.
37. Arnold EL, Blank LL, Race KE, et al. Can professionalism be measured? The development of a scale for use in the medical environment. *Acad Med*. 1998;73(10):1119-1121.
38. Dunnington GL, Williams RG. Addressing the new competencies for residents' surgical training. *Acad Med*. 2003;78(1):14-21.
39. Siri J, Reed AI, Flynn TC, et al. A multidisciplinary systems-based practice learning experience and its impact on surgical residency education. *J Surg Educ*. 2007;64(6):328-332.
40. Kerfoot BP, Conlin PR, Travison T, et al. Web-based education in systems-based practice: A randomized trial. *Arch Intern Med*. 2007;167(4):361-366.
41. Accreditation Council for Graduate Medical Education. The ACGME Learning Portfolio. Available at: www.acgme.org/acWebsite/portfolio/learn_cbpac.asp. Accessed May 1, 2008.

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Teaching surgery to medical students:

Perspectives from our mentees

by **Lynn "Tut" Fuller, Giant Lin, Jun Y. Matsui, Sarah A. Sobotka,** *and* **David T. Cooke, MD**

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edited and introduced by **Dr. Cooke**

Surgery is a great field. I know this, and the members of the American College of Surgeons know this, but why don't more medical students know this? During the late 1990s and the turn of the millennium, the number of U.S. medical graduates seeking entry into a general surgery residency dropped, hitting a nadir in 2002.[1-2] These numbers have recovered in recent years; however, the challenge remains in promoting medical student interest in general surgery.

It is clear that surgical education should be modified to maintain the attractiveness of our specialty. In the following article, four authors recommend improvements to the surgical education of medical students. These opinions are from the most important voices of all: the students themselves. Mr. Fuller suggests ways to introduce first and second year students to surgery. Mr. Lin describes the ideal core third-year surgical clerkship and supporting the student entering a surgical subspecialty. Ms. Matsui stresses the importance of teaching surgery-specific ethics and professionalism during the core clerkship. Lastly, Ms. Sobotka gives a list of points on how, during the core clerkship, to engage the student not entering a surgery profession.

Exposure to surgery in the first and second years of medical school

by Lynn "Tut" Fuller

In the past several years, enrollment and interest in many surgical residencies has been decreasing,[3-4] but with an aging patient population, the demand for surgeons continues to rise. This obvious imbalance of supply and demand and its continuing trend toward an ever-deepening supply shortage highlight a disconcerting and pressing issue: Why are fewer medical students interested in becoming surgeons? A lack of exposure to surgery and surgeons in the first and second years of medical school may be a major factor for decreased interest in surgery. In addition to an innate, organic interest in surgery, positive exposure is one of the greatest attractors drawing individuals to enter surgical training programs.[5]

The first two years of medical school are very formative years, and all medical career options are considered. It is during these first two years that most students are open to surgery as a career. Yet, in my case, without having family members or friends as surgeons, my only interactions with surgeons during these years—aside from a surgery interest group provided by the University of Michigan Medical School that will be discussed later—was in a handful of lectures taught by surgeons. Besides those lectures, there were no surgeons acting as professors, small group leaders, or administrators. Instead, we interacted with nonsurgeons whose portrayal of surgery was hardly ever positive and whose descriptions of their own professions were far more engaging.

Looking back on my first two years of medical school, surgeons generally abdicated their roles as educators, mentors, and role models for the matriculating students. Few educated people would choose to work in any profession, much less a field as demanding as surgery, without some reference as to what their life would be like if that was their chosen career. The average surgeon spends approximately 80,000 hours working as an attending, yet after the first two years of medical school, most students have no idea what the average surgeon does in a day or in his or her spare time.[6]

Exposure to the surgical profession in the early formative years of medical school needs to be increased dramatically. I was lucky to have had the opportunity to participate in and help chair the surgery interest group at the University of Michigan Medical School. Once a month, students had dinner at an attending's home; were given presentations by surgeons of various specialties; and received teaching sessions from our host, Mark Orringer, MD, FACS. Students had the opportunity to speak with surgeons during the dinner and throughout the evening on an informal basis. Participants were able to see that surgeons are "normal" people who have homes, spouses, children, grandkids, and pets. Getting a glimpse at life as an attending is instrumental in a student's career choice, as medical school and residency is only a brief part of one's career. Not surprisingly, there is a high entrance rate into surgical residencies among individuals who attend the surgery interest group. Yet, more than dinners or interests groups have to be provided if surgery expects to domestically recruit the individuals it needs.

Almost every field in medicine is projected to have future shortages of physicians. If surgeons wish to mitigate this trend, they cannot be on the sidelines. Surgeons need to fight to recruit talent from a limited pool of medical students. First- and second-year students need exposure to surgery, and the only way this will happen is if more surgeons occupy influential medical school administrative and leadership positions. Surgeons cannot depend on nonsurgeons to advocate for their profession. Only from positions of administrative and educational influence will surgeons be able to curb the negative stigma wrongly associated with their profession. Perhaps surgeons should be given incentives to increase their involvement with the junior classes of the medical school, and this may, in turn, promote more positive, early, and informative interactions with students. The current perception of surgeons being too busy in the operating room to lead a small group, give a lecture, or be actively involved in the medical school is partially responsible for the declining interest in surgery. By changing the culture in which surgery approaches medical education, the profession should expect increased recruitment of medical students into surgery.

Medical school preparation for the future surgical resident: The third-year core rotation

by Giant Lin

I recently completed otolaryngology–head and neck surgery residency interviews, and of the many questions asked of me by interviewers, the one I remember most vividly was: "What do you think it takes to be a good surgeon?" I answered that the requirements were technical skill, inquisitiveness for problem solving, compassion, and mentorship. I was stopped by the interviewer at the mention of strong mentorship. I had hit the "bull's-eye" with this answer, and the interviewer proceeded to educate me about the importance of leading by example.

I have no doubt that strong mentorship in surgery led me to pursue a career in a surgical specialty. I attend the University of Michigan Medical School, a school with a strong emphasis on general surgery education. Our third-year medical school surgery core rotation consists of two months on two separate surgical services. These services include vascular, trauma/burn, transplant, general/endocrine surgery, surgical oncology, and thoracic surgery, and I was assigned to the latter two. On both the thoracic and surgical oncology surgery services, I had the opportunity to assist the attending surgeon and residents and to perform procedures and suturing in a controlled setting. This experience proved invaluable for me as a student of surgery, since I was able to learn valuable surgical skills under close supervision. For example, on the thoracic surgery service, I was taught step-by-step by the attending and her resident how to perform procedures such as bedside tube thoracostomy and removal.

I have always been told that it is better to learn something right the first time than to unlearn a bad habit, and the environment of our school's general surgery experience fosters this approach. I believe that general surgery as a core rotation is important for anyone considering a career in a surgical field because this is the rotation where students learn basic principles ranging from the use of the sterile field and preoperative and postoperative care of patients to problem solving in a surgical consultation. These skills pertain to all surgical specialties as well as other nonsurgical fields such as emergency medicine.

I was fortunate to take part in the thoracic and surgical oncology services. On the general thoracic service, the surgeons and residents actively involved me in their operations, ranging from video-assisted thoracoscopic surgical lung biopsy to transhiatal esophagectomy. It was especially helpful that Dr. Orringer would always wear a camera over his headlight for the education of everyone in the operating room. Before the start of my thoracic surgery rotation, I was given a binder with important and relevant clinical literature, and my expectations for the service were explained clearly. I have a special interest in swallowing function, and Dr. Orringer's technique for outpatient dilation of esophageal strictures fascinated me and prompted me to explore otolaryngology, a field that handles similar problems. In addition, on the surgical oncology service, I appreciated weekly small group sessions with the surgeons to discuss approaches to solid tumor management. I know many students with similar experiences to mine who used an aspect of surgery they enjoyed during the core rotation as a starting point to understand that surgical field better or to explore similar fields.

The current approach to general surgery education from a student's point of view provides appropriate beginner skill sets and high-quality surgical education that is helpful for anyone considering such a career. The breadth of experience, however, does vary depending on the surgical service that one is assigned to. I was fortunate in that my interests in head and neck surgery, specifically swallowing function, overlapped with the services through which I rotated. However, many students may wish to have a longer or wider exposure to different subspecialties in surgery during the core rotation. Expanding the general surgery core rotation to 10 or 12 weeks—with an elective block that includes surgical subspecialties such as urology, otolaryngology, and neurosurgery—could be a useful approach. Expanding the surgical experience of medical students may open new doors for opportunities and mentorship, and I know how influential mentorship can be when it comes to career decisions.

Doing right: Ethics and professionalism in the surgery clerkship

by Jun Matsui

The predicament of doing a clerkship in the field one loves is that the inherent pressures of being a third-year medical student are heightened, the evaluation feels more critical, and the grades matter. For this reason, we students often hesitate to offer our thoughts. Yet, as new initiates to the surgical profession and its established culture, our perspective is close to the patient's own. We are easily impressed by medical miracles that surgeons perform, but we still pause at unprofessional or unethical behavior, and we question why things are done a certain way. Thus, our distinctive ethical viewpoint can remind the medical team of the patient's responses to their care, but it requires encouragement and guidance to maintain. A structured ethics curriculum focused on the medical student experience in the surgery clerkship will support our transition from simply experiencing and observing to learning. Ultimately, we will be learning much more than how to tie a knot or retract the bowel; we will be learning to make and participate in ethical decisions.

A few experiences from my surgery clerkship stand out for me. I remember feeling torn between wanting to participate in patient care and being apprehensive because of how little knowledge and experience I had. I always wanted to suture an incision or put in a line, yet around me there were many people who could perform the procedure more skillfully. The residents encouraged me, taught me, and gave me opportunities to learn and improve. But all along, I felt that my learning was somehow detracting from patient care. For example, one of our patients needed an arterial blood gas, and when offered the chance to learn the procedure, I was thrilled. However, after missing a few times and continuing to try, I wondered if a more experienced hand could have minimized the patient's discomfort and risk.

I remember overhearing slips in professionalism, such as the occasional derogatory comment about a patient's weight or hygiene. These comments and attitudes made up an unspoken curriculum, and the physicians who were observed displaying questionable professionalism were as much role models for behavior at that moment as they were when doing something positive, such as comforting a patient or performing life-saving surgery. To us, the real dilemma was our role as medical students. Do we inform our attending, who is evaluating us and our ability to work with a team, that he or she is being unprofessional when making these comments? Do we say nothing at all and perhaps feel a little worse about ourselves for not speaking up? I often chose the only balance I could find: consulting and discussing with a sympathetic and empathic resident, hoping I'd speak up one day when I was a resident or an attending.

Incorporating a formal ethics and professionalism component in the surgery clerkship will provide a constructive mechanism for medical students to reflect on the ethical issues we encounter and for using these ethical challenges to learn from each other and our preceptors. An ethics curriculum is particularly relevant in surgery, a field that is rich with ethical issues, including informed consent, emergencies, surrogacy, the complexities of pediatric care, and the role of medical students in patient care.

Dedicated time for structured discussions based on medical student narratives would provide the core of this curriculum. Resident and attending participation would strengthen their position as ethical role models and provide an opportunity for medical teams to learn from one another. However, confidentiality, mutual respect, and anonymity are crucial to minimizing medical student distress and conflicts of interest. By selecting moderators with surgical backgrounds and interests in medical ethics—such as surgical and critical care attendings, senior medical students, and surgery residents, all of whom are not currently involved in the evaluation or grading process of the core clerkship—we can avoid the anxiety that speaking candidly could negatively affect our evaluations. The narrative and discussion formats combine individual reflection with the collective processing of ideas. In finding that we are not alone in struggling with these experiences, we will better retain our ideals and deepen our understanding of ethical decision making. As future surgeons, by participating

in an ethics curriculum, we are keeping residents and attendings in touch with patients' viewpoints and developing our own ethical foundations.

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When surgery is off the table: Educating the nonsurgical medical student

by Sarah A. Sobotka

Let's face it: most third-year medical students on their surgical rotation will not enter a surgical field. And truthfully, most of us are not very enthusiastic about waking up at 4:00 am to hold the "learning stick" (an attending's name for the retractor). Yet, the knowledge I gained from the time on my surgical rotation has made a critical impact on my capacity as a future pediatrician to act decisively in emergencies, prioritize complex patients, and communicate effectively. In the spirit of enriching growth and development espoused in pediatrics, following are a few suggestions for enhancing the surgical clerkship.

Medical education during the surgical rotation, like surgical intervention, has several important stages. The first stage is the initial consult and evaluation. Throughout our careers, we will see patients in medical settings and consider consulting surgery. A surgical consult in the emergency room or on the clinical floors is an excellent learning opportunity for all medical students. Which laboratory and imaging tests are helpful? What are the initial steps in a surgical emergency? If possible, students should be given the opportunity to evaluate consults before a surgical resident sees the patient.

The second stage is preoperative counseling. Engage students in the discussions you have with families before and after surgery. We will learn from your ability to discuss outcome probabilities and to deliver good and bad news. At times, you'll provide us with exemplary models of sensitivity within hurried time frames, and occasionally you may offer learning opportunities by showing us less effective modes of communication.

The third stage, the operation, demonstrates the best and worst of teamwork. Within the context of an operation, there are multiple layers of interdisciplinary collaboration. When the primary surgeon uses a video headset, medical students and others in the operating room are easily engaged in the operation; everyone has a front seat at the game. In addition, surgery is unique in its tight cooperation with pathology and radiology to make operative decisions. I fondly remember a conversation I had with a pathologist while he

was analyzing a frozen section. He was eager to teach the diagnostic criteria for cancer staging and offered a unique perspective on the patient's care. Encourage all your medical students, regardless of their affinity for the operating room, to engage with pathologists, radiologists, and anesthesiologists during their surgical rotation.

Time spent rounding on postoperative patients can be an opportunity to teach holistic postoperative care of surgical patients, the fourth stage. What are the time lines and treatment for postoperative complications? When might an additional surgical intervention be warranted?

An additional, potentially loaded issue on any clerkship is evaluations. Some modes of questioning fail to capture critical thinking ability. A favorite attending had an excellent approach of asking complicated questions on surgical decision making in the context of a clinical scenario: "What is the logic behind sentinel node biopsy in this patient and how can the results be used to counsel her? What is this woman's lifetime risk of breast cancer as a 40-year-old compared with a 60-year-old woman?"

Although I've written from the perspective of a nonsurgical medical student, I am not sure it's important to know the future direction of a third-year student. Asking students what field they intend to pursue has a few dangers. Their answers may change, in large part because of their experience on the rotation. When a well-respected chief resident commented on my "natural ability in the operating room," I strongly considered my future as a general surgeon in a way that I never would have if my team had written me off as a future pediatrician. In addition, the students may feel pressured to give you the answer that they think you want to hear and fearful that it may influence the opinion you have of them.

A thoughtful surgical team can educate a third-year medical student about the aforementioned stages of surgical intervention. Perhaps more importantly, an enriching experience on the core surgical clerkship will enable improved cooperation with future generations of internists, pediatricians, emergency room physicians, and so on. The knowledge gained from the core surgical clerkship is crucial for a thorough medical education for all physicians, regardless of whether a career in surgery is on or off the table. Ω

References

1. Bell RH, Banker MB, Rhodes RS, et al. Graduate medical education in surgery in the United States. *Surg Clin N Am*. 2007;87:811-823.
2. NMRP. *Results and Data: 2007 Main Residency Match*. Available at: http//www.NRMP.org/data/resultsanddata2007.pdf. Accessed April 29, 2008.
3. Dvali L, Brenner MJ, Mackinnon SE. The surgical workforce crisis: Rising to the challenge of caring for an aging America. *Plast Reconstr Surg*. 2004;113(3):893-902.
4. Couldwell WT, Gottfried ON, Weiss MH, et al. New study reveals current trends in U.S. neurosurgical workforce. *AANS Bull*. 2003;12(4).
5. Chung KC, Lau FH, Kotsis SV, et al. Factors influencing residents' decisions to pursue a career in hand surgery: A national survey. *J Hand Surg*. 2004;29(4):738-747.
6. Jonasson O, Kwakwa F. Retirement age and the work force in general surgery. *Ann Surg*. 1996;224(4):574-582.

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Three decades of service in public health:

An interview with C. Everett Koop

by **Julie L. Lewis,** Health Policy Contributor, Division of Advocacy and Health Policy

Author's note: *I recently had the opportunity to interview former U.S. Surgeon General C. Everett Koop, MD, FACS, in his home in Hanover, NH. The house contains many photographs of him with presidents and policymakers, reflecting how much Dr. Koop has influenced public health decisions for nearly three decades. Dr. Koop's distinguished career in public service began at age 65 after an equally distinguished career as a pediatric surgeon. Today, at age 91, Dr. Koop continues to affect our nation's health care policies.*

Dr. Koop's accomplishments are varied and impressive. Born in Brooklyn, NY, he attended Dartmouth College, received his medical degree from Cornell Medical College, and completed his postgraduate training at Boston Children's Hospital and the University of Pennsylvania School of Medicine where he received a doctor of science degree. Dr. Koop spent 39 years devoted to surgical care, serving as professor of pediatric surgery and professor of pediatrics at the University of Pennsylvania, as well as surgeon-in-chief at Children's Hospital of Philadelphia. His public service career began in 1981 when he became the Deputy Assistant Secretary for Health, followed quickly by his appointment as the U.S. Surgeon General, a position he held until 1989. Dr. Koop has been the recipient of many awards and honors, including the Public Health Service Distinguished Service Medal and the Presidential Medal of Freedom.

In the interview that follows, Dr. Koop focuses on his thoughts about the future of the nation's health care system and surgical care. He provides his thoughts about reforming our health care system, including defining the current challenges, roadblocks to avoid or overcome, and his thoughts for improving the system.

Most stakeholders agree that our current health care system is facing dramatic challenges. What do you see as the biggest hurdles we need to overcome in improving our nation's health care?

The first thing that comes to mind is the famous adage that the best health care in the world will not help unless you use it. We have the best health care in the world if you can access it, but we do not have the best health care system.

Before I move on, I should take a moment to note my biases, which are twofold. I was a surgeon, and we [surgeons] think differently and approach problems differently. Beyond that, I was a pediatric surgeon, which always slants my thoughts toward the needs of children. I believe that, as a nation, we are very free with our rhetoric about children's health but low on action. There are still children in our country who went to bed hungry last night and are part of a subset who have not seen a doctor in the last year. It is these same children who will likely not be able to gain access to the best health care in the world should they become sick. It is against this background that I do most of my thinking.

We have a saying in this country that "you shouldn't fix what isn't broken." Our health care system is broken. The current system is not really a health care system at all; it is a "sick care" system. We do not invest in keeping people healthy but instead wait until they become ill. Smoking is not the leading cause of death, but it is the leading cause of preventable death. The discrepancy in what we spend on preventing smoking-related disease and on caring for it is enormous. In our country, we have to change the way prevention is viewed to truly reform the health care system.

People need to understand that the choices they make before they turn 65 will greatly impact their life after 65. A focus on preventable disease can greatly enhance quality of life for seniors and reduce the cost of aging. I mention aging because [seniors are] becoming the largest cohort of our population. I would love to see the baby boomers who thought they would be forever bungee jumping and skydiving carry that same enthusiasm into becoming the elderly-well instead of the elderly-sick.

We have a terrible health care burden to bear that has not struck people in their hearts and souls the way it eventually will. We hear all of the health care statistics but do not change our behavior. To continue with the smoking example, we know that globally a billion people will die a smoker's death in the 21st century. It is a staggering number that is not really being internalized. Suppose that the same statisticians announced that a billion people will die from terrorist attacks in this century. We would be willing to completely change our lives to avoid that tragedy. The significance of the health care problems has not sunk into our nation's psyche. We do not have a critical mass of people in trouble so that we are all compelled to take action.

I do believe that eventually there will be a critical mass of people who have such considerable access-to-care problems that the country will want to make significant changes. What I have learned from dealing with the public is that an event will come along and change the trajectory of public opinion on a given topic. That event will undoubtedly come in health care, and we must be flexible and ready to react.

Suppose you had the power to redesign the U.S. health care system. On the basis of what you have learned throughout your career, what characteristics would you include in the new system? What challenges would you address?

Whatever the future plan, it will be far better if it is a public-private partnership. It cannot be designed with the old "medicine rules all" philosophy or the government taking over with socialistic medical management. In addition, I do not think that all change has to be enacted through the legislature. I think a president who is impassioned about health care could have enormous impact on the system through Presidential Order or moral persuasion. That being said, there is no such thing as "Republican health" or "Democrat health"; there is only our nation's health, and that must remain the focus.

Health care should be universal. The person with the poorest financial background should be entitled to the same care a millionaire can receive. We may not be able to change [the circumstances that] made a person poverty-stricken, but by grace we should provide the equal care. Many people say that we should not be taking

care of those people who are not taking care of themselves. As an American, we do not have the right to health care granted by the Constitution or Bill of Rights, but I do believe that we have the moral right to care. I hope that thinking about care as a moral right makes people think about what role they should play in the system.

To get to some detail, the amount of paperwork that providers are asked to complete is daunting. I think there are 142 forms that can be filled out by a provider who has cared for an insured patient. A surgeon in Maine must have three office staff because of all the paperwork, while a surgeon in Canada might have one member of the office staff. The amount of money spent on administrative expenses for health care could be greatly reduced. I believe that this is an area in which the government could get involved and standardize the submission of information.

The overuse of diagnostic testing and therapies is a serious problem in our country. I am sad to say that I have sat in many hospital meetings as an outsider and listened to the medical staff being encouraged to use the laboratory more frequently because the fees are the difference between coming out in the red versus the black. We need a better understanding of what care is appropriate and why.

As an example, for your grandmother who is confined to a wheelchair because of her bad knees, there are options for her care. She could have steroid injections every few weeks to relieve her pain, or we could give her a new pair of titanium knee replacements. We can spend a few thousand dollars on steroid injections or we can spend $100,000 for the surgery. We decide to go forward with the knee replacements, only to find out that she has neither the muscles nor the will to use them. This is to say that we have amazing technologies available to us in this country, but it is not always appropriate to use them. As providers, we stress the options available, but we do not stress the appropriateness of those options.

I would also institute a medical board to oversee health care. It would be composed of physicians, but also other health care stakeholders because they have a broader view of the system. The board would not have the authority to decide what care should be offered but would establish the gold standard for care. As an example, the board would examine reasons why some specialties are overcrowded while others are shrinking and further examine if this is in the best interests of patient care. I would want to see this board protected from political influence. Perhaps it should be modeled after the Federal Reserve Board.

Federal health care spending continues to rise exponentially, with many policymakers looking for opportunities to slow that growth. What are your thoughts about the amount of spending on health care in the U.S.?

My earlier comments can serve as evidence, but my answer is that we are spending more money than the results would justify. There are many places to trim spending without reducing quality. However, we will have to make compromises, and compromises always hurt somebody. That is a hard path for legislators to go down.

As policymakers search for methods to curb spending and growth, many point to the lack of research that clearly defines proper care. Do you think we should be spending additional dollars on research?

I think research pays off, but research is another area in which aspects could be corrected. I do not think that researchers are out to fleece the government, but as with many facets of health care, [the researchers] are entering a system in which money is customarily wasted so there is little guilt. There are plenty of research projects that we all hear about for which it is hard, by any stretch of the imagination, to see how they are improving human welfare. There is money wasted in research, and we could be getting more for our current research dollar.

In a recent presentation, you talked about your concerns regarding changes in the doctor-patient relationship. Could you talk a little about that now?

I think one of the most sacred things in medicine is the relationship between doctor and patient. That relationship has been talked and written about since the days of Hippocrates. I have given hundreds of lectures about the doctor-patient relationship because I think it inspires medicine to continue and evolve over the gen-

erations. It is this relationship that encourages people to act compassionately and in the best interests of society instead of for personal aggrandizement.

Having said that, I am disappointed that the doctor-patient relationship has waned. I am very upset when I have patients come to me and tell me stories that smack of arrogance by the physician. My current position allows me to do quite a bit of traveling, and I have the opportunity to talk to both patients and physicians. When I talk to patients, they say, "You know, Dr. Koop, the whole thing that is wrong with our health system is that medicine has become a business instead of a profession." And then I will be at a medical school talking to the faculty, and they will say, "One of the problems we have is that we don't treat each other the way we used to. I wonder if we couldn't find a way to sharpen our sensitivity to the way we interact?"

It is clear to me that both sides are feeling the same problems. My fear is that as older physicians who remember a closer doctor-patient relationship retire, they will be replaced with physicians who have their eye on the business aspect of care. As much as we talk about the relationship and have regular training programs, it seems to be an area in which we have to continually be educating ourselves just to keep the relationship at a functional level.

Professional liability is a major concern for surgeons in the current health care environment. Do you have any thoughts as to how the current system could be reformed?

I began practicing medicine in a very nonlitigious time, but ended in the middle of the legal environment we live in now. When I ended my clinical practice, I was paying roughly a quarter of a million dollars a year in malpractice insurance. The policy I bought when I started my practice, the same year that I joined the American College of Surgeons, was $15/year. Of course, it had limitations, including no more than $1,000 paid out per incident with a total limit of $5,000.

Part of the solution is patient education, specifically around the fact that many things that happen to patients are uncontrollable and do not represent negligence on the part of their physician. I think as patients learn more about medicine, it makes them better patients in some respects and more dangerous in others as they know a little and assume a lot.

When I talked earlier about the fading doctor-patient relationship, I was really talking about the roots of the problems that lead to malpractice. There is nobody that has better control over malpractice than the physician. The skills that lead to success also lead to arrogance, which leads to malpractice cases.

How do you think professional organizations such as the American College of Surgeons could be most beneficial to health care?

I think the important function of these organizations is the leadership symposia they provide. This allows knowledge to pass down through the generations of surgeons. It is important for new members to understand what sacrifices it took to get the profession to its current position.

Dr. Koop resides in Hanover, NH, and is the senior scholar of the C. Everett Koop Institute at Dartmouth College. The mission of the Institute is to promote the health and well-being of all people. For more information on the C. Everett Koop Institute, visit http://dms.dartmouth.edu/koop/. *For more information on Dr. Koop's papers and presentations, visit* http://profiles.nlm.nih.gov/QQ/. Ω

Clinical Congress redesigned

to address current and future needs of participants

by Barbara L. Bass, MD, FACS;

Ajit K. Sachdeva, MD, FACS, FRCSC,
Director, Division of Education;

Felix Niespodziewanski,
Director, Convention and Meetings;

Julie Aikins Tribe, MSEd,
Senior Manager of Educational Programs, Division of Education;

and Elisabeth Cherry Brown, MS,
Administrative Assistant of Educational Programs, Division of Education

Over many decades, the Clinical Congress of the American College of Surgeons has remained a premier educational program for practicing surgeons, surgical residents, medical students, and members of the surgical team. The scientific program has included named lectures, plenary sessions, paper sessions, postgraduate courses, correlative clinics, the Forum on Fundamental Surgical Problems (Surgical Forum), video-based education sessions, and scientific exhibits/poster sessions. In addition to a strong scientific program, a number of related activities, including the Opening Ceremony, Convocation, Annual Meeting of the Members, satellite symposia, technical exhibits, Social Program, committee meetings, and various evening functions have made the Clinical Congress an extremely attractive annual event for the House of Surgery.

Over the past six years, major enhancements have been made in the scientific program of the Clinical Congress to address the current trends in surgical practice and surgical education; to help surgeons remain competitive in a changing environment; and to offer surgeons opportunities to meet a variety of national, regional, and local mandates. In addition, special programs have been introduced for surgical residents and medical students. Some of the recent enhancements are listed in the box on page 60.

The response to these changes has been extremely positive. Submissions of abstracts for the papers sessions, Surgical Forum sessions, video-based education sessions, and scientific exhibits/poster sessions have remained robust. Anonymous global evaluations from attendees of the Clinical Congress have remained exceedingly positive. Some of the data are presented in the box on page 61.

Although the Clinical Congress has been very successful, the Program Committee undertook a strategic planning process to ensure that the Clinical Congress program would continue to meet the changing needs of various learner groups and to ensure a vital role for the Clinical Congress well into the future. A strategic planning meeting was held at the American College of Surgeons' Chicago headquarters July 25–26, 2007. Dr. Bass, Chair of the Program Committee, presided over this meeting. Invited attendees included the College's Officers, Regents, members of the Program Committee, chairs of standing committees, and staff of the Division of Education and Convention and Meetings. The list of participants is provided in the box on page 62.

A package of premeeting materials was sent to participants in advance of the meeting. This package included data on the attendance history, types of sessions offered, attendance by session type, and number of abstracts submitted and accepted. Information on turnover of faculty for various postgraduate courses was provided. In addition, participants received an outline of the changes in the Clinical Congress program that had been made over the past five years that have resulted in major enhancements. The evaluation data for the overall Clinical Congress program and the various types of sessions were included in the packet as well. In addition, the Division of Education developed and distributed a comprehensive needs assessment survey to various constituencies and members of the College. Detailed analyses of the results of this survey were sent to the participants of the strategic planning meeting to provide background information in preparation for this seminal event.

The meeting commenced the first evening with presentation of the Clinical Congress survey results by Dr. Bass. The next morning, Dr. Sachdeva provided an overview of the past, present, and future directions of the Clinical Congress. During this presentation, future opportunities to enhance the Clinical Congress program were outlined. An interactive discussion regarding the Clinical Congress program followed. Each type of session was then discussed individually. Following this discussion, Mr. Niespodziewanski and Patrice Gabler Blair, MPH, Associate Director of the Division of Education, delivered presentations on the finances of the Clinical Congress, and Mr. Niespodziewanski discussed the venues, exhibitor issues regarding hours, e-posters, and publicity for the Clinical Congress. The final session of the meeting included definition of new directions for the Clinical Congress and discussion of strategies for implementation of specific changes. Dr. Bass led the latter session and synthesized the discussions into a number of major recommendations. Participants were asked to vote on a number of key questions.

Recommendations from this meeting focused on the following Clinical Congress domains:

- Overall focus and structure
- Development of enduring materials from the presentations
- Focus on specific learner groups
- Components of the Clinical Congress
- Relationship with industry
- Publications and publicity
- Venues
- Finances

The voting attendees at the meeting were asked to respond to the following specific questions:

Recent enhancements to the Clinical Congress scientific program

- Special focus on contemporary topics in surgery, the core competencies, patient safety, new procedures and technologies, and nonclinical topics related to the practice of surgery
- Increase in number of general sessions to cover a broad range of topics
- Separation of didactic and skills-oriented postgraduate courses
- Inclusion of a new slate of didactic postgraduate courses in general surgery and a decrease in the number offered
- Pilot-testing of a longitudinal educational model involving follow-up of attendees after didactic postgraduate courses
- Addition of new review courses in general surgery, urology, pediatric surgery, and cardiac and thoracic surgery
- Expansion of breadth and quality of skills-oriented postgraduate courses to address new operations and procedures and a range of competencies
- Acceptance of only high-quality scientific exhibits through a stringent peer review process
- Addition of a moderated scientific exhibit session and recognition of the best exhibits
- Acceptance of only high-quality papers through a stringent peer review process
- Addition of special programs for residents and medical students
- Development of enduring materials, including webcasts, from the Clinical Congress content
- Evolution of motion picture exhibitions to video-based education sessions that include interactive sessions and special programs
- Restructuring of the Surgical Forum sessions to include co-moderators, invited discussants, multidisciplinary sessions, new categories, and theme-based sessions, as well as recognition of best submissions through awards
- Display of the Presidential theme on the Clinical Congress *Program Book* cover
- Implementation of a new system to record *AMA PRA Category 1 Credit*™ and seamlessly transfer these credits to respective "My CME" pages on the ACS Web portal
- Award of special certificates for patient safety, ethics, and trauma sessions to meet various national and local mandates
- Provision of a special certificate to meet end-of-life care licensure requirements
- Implementation of the five-level Program for Verification of Surgical Knowledge and Skills
- Use of needs analyses, including feedback, in designing the program
- Enhancement of the peer review process used to select various sessions for the program
- Involvement of the ACS Committee on Emerging Surgical Technology and Education in review of proposals for skills-oriented postgraduate courses
- Establishment of an online system to streamline submission of proposals for the program
- Development of an easy-to-use, searchable electronic program guide for use with personal digital assistants
- Enhancement of the process for creating the blueprint of the program for each day
- Shortening of the program of the Clinical Congress
- Creation of specialty flyers for the various surgical specialties, patient safety, and education

1. *Should the Clinical Congress implement a multi-track system to address the needs of various surgical specialties and subspecialties?* The attendees unanimously favored implementation of this system.

2. *Should the Clinical Congress offer special certificates for postgraduate courses?* The attendees unanimously supported this approach.

3. *Should the Clinical Congress include a block of time (such as during evenings) for attendees to visit the scientific exhibits/poster sessions without any scheduling conflicts with the Clinical Congress program?* The attendees unanimously supported this approach.

4. *Should the Clinical Congress offer postgraduate courses prior to the start of the Clinical Congress program?* An overwhelming majority of attendees favored this approach.

5. *Should the Clinical Congress schedule include a mid-day break when attendees are able to visit the scientific exhibits/poster sessions and technical exhibits?* An overwhelming majority of attendees favored this approach.

6. *Should there be a registration fee for the Clinical Congress for the College members?* An overwhelming majority of attendees supported a small registration fee or a fee for late and on-site registration.

7. *Should the venues of the Clinical Congress involve rotations between five locations instead of the traditional three?* A majority of attendees favored a five-location rotation.

8. *Should the Clinical Congress pursue certain joint programs with other national societies and academies?* A majority of attendees favored this approach.

9. *Should industry be permitted to continue offering satellite symposia during time periods outside the Clinical Congress program and without conflicts with the content of the program?* The vote was split; however, a majority of attendees supported this approach.

A summary of the strategic planning meeting was presented to the American College of Surgeons' Board of Regents for information in October 2007. The Program Committee then met December 5–6, 2007, to consider recommendations from the July meeting and develop a specific plan of action that would be phased in over two years, resulting in full implementation of recommendations at the 2009 Clinical Congress. Dr. Bass chaired this meeting as well. Participants in the December 2007 meeting are provided in the box on page 64.

Dr. Sachdeva provided an overview of national trends in surgical education and suggested redesign of the Clinical Congress program based on these trends. He emphasized that surgical outcomes should form the basis for individuals to pursue educational opportunities that, in turn, should have a positive impact on practices and surgical outcomes. Points highlighted during Dr. Sachdeva's presentation are as follows:

- Develop the Clinical Congress program based on comprehensive needs assessments that include ongoing horizon-scanning
- Define the overall educational goals and objectives for the Clinical Congress and critically review each component of the program to ensure that it contributes to these goals and objectives
- Ask attendees at the beginning of the Congress to define their specific learning objectives, and at the conclusion of the Congress, ask attendees to state whether they achieved these objectives and how they would apply the newly

Reponse to recent program changes

2005

- Rating of the overall Clinical Congress program as excellent and very good: 91.5% (n=2,363)
- Will you use the newly acquired knowledge and skills in your practice?: Yes: 97.6%, No: 2.4% (n=2,253)

2006

- Rating of the overall Clinical Congress program as excellent and very good: 94.3% (n=3,122)
- Will you use the newly acquired knowledge and skills in your practice?: Yes: 97.5%, No: 2.5% (n=3,069)

2007

- Rating of the overall Clinical Congress program as excellent and very good: 92% (n=2,145)
- Will you use the newly acquired knowledge in your practice?: Yes: 96%, No: 4% (n=2,141)

Participants in the Clinical Congress strategic planning meeting: July 25–26, 2007

Barbara L. Bass, MD, FACS, Chair, Program Committee/Member, Board of Regents
Horacio J. Asbun, MD, FACS, Chair, Video-Based Education Committee
Stanley W. Ashley, MD, FACS, Chair, Committee for the Forum on Fundamental Surgical Problems
Robert R. Bahnson, MD, FACS, Member, Program Committee
Charles M. Balch, MD, FACS, Guest
Timothy R. Billiar, MD, FACS, Member, Program Committee
Patrice Gabler Blair, MPH, Associate Director, Division of Education
L. D. Britt, MD, MPH, FACS, Vice-Chair, Board of Regents
Terry Buchmiller, MD, FACS, Chair, Committee on Young Surgeons
Gregory S. Cherr, MD, Chair, Resident and Associate Society
Elisabeth Cherry, MS, Administrative Assistant, Educational Programs, Division of Education
Thomas H. Cogbill, MD, FACS, Representative, Advisory Council for General Surgery
Karen E. Deveney, MD, FACS, Secretary, Board of Governors
Richard J. Finley, MD, FACS, Member, Board of Regents
Josef E. Fischer, MD, FACS, Chair, Board of Regents
Julie A. Freischlag, MD, FACS, Member, Program Committee/Member, Board of Regents
Ann-Valerie O. Griffin, MA, Senior Manager, Program for Verification of Surgical Knowledge and Skills, Division of Education
Barrett G. Haik, MD, FACS, Member, Board of Regents/Chair-Elect, Committee on Emerging Surgical Technology and Education
Gerald B. Healy, MD, FACS, President-Elect
Ted James, MD, Vice-Chair, Resident and Associate Society
Kathleen A. Johnson, EdM, Senior Manager, Accredited Education Institutes and Skills Courses, Division of Education
Ronald V. Maier, MD, FACS, Member, Program Committee
Jack W. McAninch, MD, FACS, Member, Board of Regents
Fabrizio Michelassi, MD, FACS, Guest
Jacquelyn M. Mitchell, Manager, Exhibit/Convention Services, Convention and Meetings
Deborah A. Nagle, MD, FACS, Member, Program Committee
Felix P. Niespodziewanski, Director, Convention and Meetings
Carlos A. Pellegrini, MD, FACS, Member, Board of Regents
Olivier Petinaux, MS, Senior Manager, Distance Education and E-Learning, Division of Education
Karl C. Podratz, MD, FACS, Member, Board of Regents
Maryanna Ramirez, Administrative Associate, Division of Education
Layton F. Rikkers, MD, FACS, Vice-Chair, Program Committee
Thomas R. Russell, MD, FACS, Executive Director
Ajit K. Sachdeva, MD, FACS, FRCSC, Director, Division of Education
Marshall Z. Schwartz, MD, FACS, Chair, Advisory Council Chairs
William D. Spotnitz, MD, FACS, Member, Program Committee
Linda K. Stewart, Manager, Educational Administration, Division of Education
Julie A. Tribe, MSEd, Senior Manager, Educational Programs, Division of Education
Richard H. Turnage, MD, FACS, Chair, Committee on Allied Health Professionals
Patricia L. Turner, MD, FACS, Liaison, Committee on Young Surgeons
Thomas V. Whalen, MD, MMM, FACS, Member, Board of Regents

acquired knowledge and skills in their practices; assist attendees in defining individual learning objectives

- Provide surgeons the tools needed to translate new knowledge and skills to practice
- Use interactive teaching and learning strategies and case-based approaches to achieve the educational objectives of each session
- Present evidence-based information
- Create an educational template for all postgraduate courses
- Use contemporary principles of skill acquisition in the design of all experiential courses
- Assess knowledge and skills of learners using valid and reliable evaluation methods
- Provide special certificates based on verification of knowledge and skills
- Use the Kirkpatrick Hierarchy to evaluate the impact of the sessions
- View the Clinical Congress program as a continuum of longitudinal education, because sequenced education has been shown to be more effective in changing practices as compared with single interventions
- Develop additional enduring materials from Clinical Congress

Dr. Bass then led the discussion that focused on creating discipline-based and thematic tracks for the Clinical Congress. Dr. Bass proposed a model for tracks that would involve beginning the day with a "town hall meeting," followed by blocks of plenary sessions (one and one-half to three hours), which would be followed by named lectures. The lunch break would be one hour and 45 minutes long to allow attendees to participate in "meet the professor" boxed lunch sessions, visit scientific exhibits/poster sessions and technical exhibits, and participate in activities not eligible for continuing medical education credits, such as personal financial planning sessions. The blocks of plenary sessions would continue in the afternoon. There would be short breaks between the blocks to allow individuals to travel from one location to the next. The tracking system should be a great help to learners in pursuing specific educational opportunities that are relevant to their needs. The tracks would continue to include state-of-the-art lectures, didactic and skills-oriented postgraduate courses, papers sessions, scientific exhibits/poster sessions, and Surgical Forum sessions.

The thematic tracks may include the following:

- Education
- Quality
- Patient safety
- Leadership

The discipline-specific tracks may include the following:

- General surgery
- Gastrointestinal surgery
- Bariatric surgery
- Hepatic-pancreatic-biliary surgery
- New technologies for treating gastrointestinal diseases
- Colorectal surgery
- Neurological surgery
- Obstetrics and gynecology
- Ophthalmology
- Otolaryngology–head and neck surgery
- Plastic and reconstructive surgery
- Surgical oncology
- Breast surgery
- Endocrine surgery
- Melanoma and sarcoma
- Cardiac surgery
- Thoracic surgery
- Transplantation
- Urology
- Vascular surgery

The committee meetings should ideally be held in the mornings before the start of the scientific program or in the afternoon at the end of the program. Opportunities to offer jointly sponsored programs with other surgical specialty and subspecialty societies should be explored. Such sessions would be of interest to attendees from the various surgical specialties.

The following action items were approved at the end of the process.

Action items

Action item 1: Arrange the approved 2008 Clinical Congress program into discipline-based and thematic tracks. Implement synchronized start and end times for various blocks within the tracks, with breaks between sessions and for lunch. For 2009, create an overall template for the program that defines the total numbers and types of sessions that would be offered to achieve the educational goals and objectives. This template

would provide guidance to the various committees and advisory councils that submit proposals for consideration by the Program Committee. This approach should increase the educational relevance of the program, and reduce submission of overlapping sessions that result in additional time and effort to reconcile and address these overlaps. Proactive planning should result in full implementation of the new model for the 2009 Clinical Congress.

Action item 2: Discontinue the designations of general sessions, specialty sessions, and multidisciplinary sessions for various types of plenary sessions. These designations resulted historically from the processes used to develop various types of sessions. Current trends in surgical practice and surgical education do not support such designations and call for greater integration. Furthermore, these designations are confusing to the attendees. List all such sessions as plenary sessions.

Action item 3: Attempt to schedule more didactic and skills-oriented postgraduate courses during the weekend before the start of the Clinical Congress.

Action item 4: Use a single submission process for the scientific papers and scientific exhibits/poster sessions to permit the Program Committee to select the best venue for presentations of each abstract, following due consideration of preferences expressed by the authors.

Action item 5: Expand the review process for the papers and posters to involve members of standing committees and Advisory Councils engaged in the development of the tracks.

Action item 6: Change the times when the exhibit hall is open. The exhibit hall should be open from 9:00 am to 4:30 pm, Monday through Wednesday, and should not be kept open on Thursday morning. The extended hours on Monday through Wednesday would provide

Participants in the planning meeting for Clinical Congress: December 5–6, 2007

Barbara L. Bass, MD, FACS, Chair, Program Committee/Member, Board of Regents
Robert R. Bahnson, MD, FACS, Member, Program Committee
Patrice Gabler Blair, MPH, Associate Director, Division of Education
Elisabeth Cherry, MS, Administrative Assistant, Educational Programs, Division of Education
William G. Cioffi, Jr., MD, FACS, Member, Program Committee
Quan-Yang Duh, MD, FACS, Member, Program Committee
Ann-Valerie O. Griffin, MA, Senior Manager, Program for Verification of Surgical Knowledge and Skills, Division of Education
Kathleen A. Johnson, EdM, Senior Manager, Accredited Education Institutes and Skills Courses, Division of Education
David R. Jones, MD, FACS, Member, Program Committee
Ronald V. Maier, MD, FACS, Consultant
Fabrizio Michelassi, MD, FACS, Member, Program Committee
Jacquelyn M. Mitchell, Manager, Exhibit/Convention Services, Convention and Meetings
Deborah A. Nagle, MD, FACS, Member, Program Committee
Felix P. Niespodziewanski, Director, Convention and Meetings
Olivier Petinaux, MS, Senior Manager, Distance Education and E-Learning, Division of Education
Erin Quinn, Meetings/Exhibitor Coordinator, Convention and Meetings
Amy B. Reed, MD, FACS, Member, Program Committee
Tamara Roberts, CMP, Manager, Meetings Services, Convention and Meetings
Thomas R. Russell, MD, FACS, Executive Director
Ajit K. Sachdeva, MD, FACS, FRCSC, Director, Division of Education
Julie A. Tribe, MSEd, Senior Manager, Educational Program, Division of Education

two additional hours for visiting the scientific exhibits/poster sessions and technical exhibits than were available in the past and would be more appealing to the exhibitors who would not have to incur additional expenses for the Thursday session when attendance is low.

Action item 7: Do not offer free registration to nonmember presenters of scientific papers, scientific exhibits/poster sessions, video-based education sessions, and Surgical Forum sessions. Require these individuals to register like any other non-College member.

Action item 8: To encourage early registration and to cover the additional costs associated with processing registrants on-site, charge a $50 late registration fee to all registrants after September 15 and an on-site registration fee of $125.

Action item 9: Expand the venues of the Clinical Congress to a five-city rotation and include Boston, MA, and San Diego, CA, in the rotation with Chicago, IL; San Francisco, CA; and Washington, DC.

Action item 10: Pursue innovative technologic support systems, such as 360-degree education centers, to increase interactivity and add a contemporary feel to the Clinical Congress. Sessions especially amenable to this type of presentation may include paper presentations, video-based education sessions, presentations of electronic posters, "meet the professor" sessions, and case discussions. Assess the additional expenses associated with such systems and seek sponsorship for the additional costs. If such a session is located on the exhibit floor, arrange the space appropriately to remain in compliance with requirements of the Accreditation Council for Continuing Medical Education.

Action item 11: Establish a robust information technology infrastructure as soon as possible to implement the various action items and support the system of tracks.

Action Item 12: Develop a policy regarding committee meetings of the ACS and other organizations during the scientific program of the Clinical Congress.

The final report from the strategic planning process and the aforementioned recommendation were presented to the Board of Regents in February 2008. *The Regents approved all 12 action items with one modification in item 7 to clarify that invited presenters will not be required to pay a registration fee.*

This report and the action items are being disseminated to various constituencies of the College. Presentations have been made at meetings of the chairs of the Advisory Councils and various standing committees. Information is being disseminated to the Governors through the leadership of the Board of Governors. The program for the 2008 Clinical Congress, approved in October 2007, will include several changes to begin the phase-in of the new Clinical Congress model.

In addition, the process for acceptance of proposals for the 2009 Clinical Congress has already begun. This process includes steps to support more complete implementation of the new Clinical Congress model in 2009. The publicity and other materials for the 2009 Clinical Congress will reflect the new model. The Program Committee looks forward to comments and suggestions from the College's members. Further changes in the model will be made based on feedback from the attendees and the membership of the College at-large. This process is very exciting and should keep the Clinical Congress innovative, vibrant, and relevant for many years ahead.

For further information, contact Dr. Sachdeva at asachdeva@facs.org. Ω

Dr. Bass *is chair, department of surgery, Methodist Hospital Houston, TX, and a member of the Board of Regents.*

PRELIMINARY PROGRAM

AMERICAN COLLEGE OF SURGEONS

Clinical Congress

94TH ANNUAL

OCTOBER 12–16, 2008 SAN FRANCISCO, CA

Leading the Way to Quality, Safety, and Excellence

Dear Colleague,

Premier hands-on learning. Presentation of leading-edge surgical research. Exceptional peer access, and, when requested, mentoring. These are the hallmarks of the American College of Surgeons annual Clinical Congress. For surgeons dedicated to improving the care of the surgical patient and safeguarding standards of care, there is no better learning opportunity. On behalf of the College, I extend our warmest invitation for you to join us in San Francisco October 12–16, 2008, for the 94th Clinical Congress, "Leading the Way to Quality, Safety, and Excellence."

Programs at the Clinical Congress are designed to advance our ongoing quest to achieve the best clinical outcomes for our patients. Regardless of your specialty area, you will find unique programs among our lectures, skills-oriented and didactic postgraduate courses, panel discussions, Surgical Forum sessions, specialty and multidisciplinary sessions, and video-based education sessions. Attendees will be able to obtain special certificates, including those enabling recipients to meet requirements for Maintenance of Certification, Maintenance of Licensure, and hospital reprivileging. In addition to advancing quality and innovation in the surgical field for our patients, the College is making significant strides in improving the practice environment for surgeons.

New this year to the Clinical Congress is our meeting-wide implementation of a new "track" system that includes specific blocks of sessions that will highlight more than 20 different specialty areas in surgery to choose from. This system is a result of a strategic planning process for the Clinical Congress that led to recommendations that were approved by the Board of Regents in February 2008. These recommendations will be phased in over a two-year period. We hope this new system will assist all our Fellows in targeting their areas of focus and interest and will make it easier for them to identify which sessions and courses will fit into their schedules and provide them with optimal learning opportunities. The goal is to keep our Clinical Congress fresh and innovative for another 94 years!

With outstanding educational programming and networking opportunities, the Clinical Congress of the American College of Surgeons is the most important surgical conference of the year. I look forward to seeing you there.

With best wishes,

Josef E. Fischer, MD, FACS
Chair, Board of Regents

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A BRIEF OVERVIEW

WHAT'S NEW IN 2008?

- New registration fee structure for ACS Members
- Martin Memorial Lecture now part of the Opening Ceremony
- Annual Business Meeting of Members time change to Wednesday, 5:00–6:00 pm
- New Exhibit Hall hours– Monday to Wednesday, 9:00 am–4:30 pm; Thursday hours have been eliminated
- ACS Live Learning Center Webcasts
- Morning Town Hall Meetings and Meet the Professor Luncheons

GOAL

The Clinical Congress is designed to provide individuals with a wide range of learning opportunities, activities, and experiences that will match their educational and professional development needs.

OBJECTIVE

By the conclusion of the Clinical Congress, participants should gain and be able to apply the knowledge to improve their current practice, research, and care of surgical patients.

ACCREDITATION

The American College of Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education (CME) for physicians.

CME CREDIT

The American College of Surgeons designates this educational activity for a maximum of 54.75* *AMA PRA Category 1 Credits*™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

* A maximum of 38 *AMA PRA Category 1 Credits*™ for general sessions only, including evening video sessions.

CME CERTIFICATES

On-site claiming of CME certificates will be available at the My CME Connection booth located in the Moscone Convention Center October 13–16, 2008.

Physicians are responsible for claiming CME credit for Congress. Claims for CME credit for this event will be accepted until March 31, 2009.

SCIENTIFIC AND TECHNICAL EXHIBITIONS

The Scientific Exhibition is a forum of more than 350 exhibits presenting completed research, research in progress, and case reviews. Innovative surgical practices and teaching methods will also be presented.

The Scientific Exhibits will be on display Monday, Tuesday, and Wednesday. The Scientific Exhibits will be located in the North Hall of the Moscone Convention Center.

The Technical Exhibition will feature more than 250 companies displaying their products and services. The exhibition will provide an excellent opportunity to explore the surgical marketplace by comparing products firsthand and planning purchases.

The New Technical Exhibit hours are: Monday through Wednesday, 9:00 am–4:30 pm; Thursday hours have been eliminated. The exhibits are located in the South Building of the Moscone Convention Center.

CONVOCATION

Sunday, October 12
6:00–8:00 pm

Convocation Ceremony
Ballroom, Third Floor, Moscone West Building

Conferral of Fellowship and Response on Behalf of New Fellows, Granting of Honorary Fellowships, Installation of Officers, and Presidential Address

All Initiates of ACS will be automatically registered for the Clinical Congress and need only return the registration form in the Program Planner if postgraduate course or Social Program event tickets are desired. Confirmed ACS Initiates will be bestowed with Fellowship in the College during the ceremony regardless of their attendance at the event and may begin using the FACS designation upon the conclusion of the ceremony.

Family members of Initiates are not required to register for the Clinical Congress program to attend the Convocation Ceremony.

ANNUAL BUSINESS MEETING OF MEMBERS

Wednesday, October 15, 2008
5:00–6:00 pm

New Day and Time!

Moscone Convention Center

* Reports from the Chair of the Board of Regents, the Chair of the Board of Governors, and the Executive Director
* Presentation of the Distinguished Service Award, the Resident Award for Exemplary Teaching, and the Joan L. and Julius H. Jacobson II Promising Investigator Award
* Reports of the Nominating Committee of the Fellows and the Nominating Committee of the Board of Governors, and introduction of the President-Elect

ACS LIVE LEARNING CENTER

ACS Clinical Congress Webcast Package for $99

Purchase the webcast package NOW and have immediate access to the 2007 Clinical Congress webcast sessions. PLUS, by December 31, 2008, you will receive access to the 2008 Clinical Congress webcast sessions. These webcasts are accessible to you 24/7 via the online ACS Live Learning Center in streaming media format. The sessions, which contain the audio presentations fully synchronized to their Power Point presentation, and with transcription, will provide you with a true multimedia recreation of the event. A CME examination, evaluation, and certificate provide you with CME credits for every session.

Bonus: Receive the 2007 webcasts as part of this offering—that's more than **100 hours of CME** for $99 (less than 99¢ per CME hour).

A link for immediate access will be provided in the order confirmation e-mail you will receive upon purchase.

For more information, visit *www.acs-resource.org* or e-mail elearning@facs.org.

AMERICAN COLLEGE OF SURGEONS 94TH ANNUAL

Clinical Congress

OCTOBER 12–16, 2008 SAN FRANCISCO, CA

New to this year's Clinical Congress are discipline- and theme-based tracks, which have been designed to focus specifically on the needs of various surgical specialties and learner groups.

CLINICAL CONGRESS 2008 TRACK SCHEDULE

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Cardiothoracic Surgery (CTS)					
	Colon and Rectal Surgery (CRS)				
		Ethics / Volunteerism (ETHICS-VOL)			
	General Surgery (GEN)				
			Geriatric / Palliative Care (GER)		
		Health Policy: Practice Management / Reimbursement / Liability Issues (HP)			
			Informatics (INFO)		
		International (INTL)			
		Neurosurgery (NEU)			
		Obstetrics and Gynecology (OBG)			
				Orthopaedic Surgery (ORT)	
		Otolaryngology-Head & Neck Surgery (OTO-HNS)			
			Pediatric Surgery (PED)		
		Plastic and Maxillofacial Surgery (PLA)			
		Research / Basic Science (SCI)			
	Residents / Medical Students (RES-MED)				
Surgical Education / Core Competencies / Outcomes & Safety (EDU-OUTCOMES-SAFETY)					
		Surgical Oncology (ONC)			
Trauma / Critical Care (TRAUMA-CRIT CARE)					
		Urology (URO)			
	Vascular Surgery (VAS)				

SCIENTIFIC PROGRAM HIGHLIGHTS

The Clinical Congress is designed to provide a range of educational experiences on a variety of topics—from contemporary issues, leading-edge research, and advances in technology to professional competence and clinical applications of new developments in the basic sciences. Some of the special topics being offered during this year's Clinical Congress include the following:

NEW NAMED LECTURES

The Opening Cermony/AUA Lecture is now **The Martin Memorial Lecture sponsored by the American Urological Association.**

Track: URO

The Excelsior Surgical Society Lecture, previously featured during the ACS Spring Meeting, will now be presented at the Clinical Congress.

Track: GEN

PANEL PRESENTATIONS

Diverticulitis: Selecting the Right Treatment at the Right Time

Track: GEN

The Surgeon's Role in Decreasing Operative Complications: An Evidence-Based Approach to Daily Operative Practices

Track: GEN

Familial Breast Cancer: Evidence-Based Practices to Optimize Each Patient's Care

Track: GEN, ONC

Stents in GI Surgical Practice: New Trials for Tough Problems

Track: GEN

Management of the Axilla in Breast Cancer: Another Moving Target

Track: GEN, ONC

NOTES: An Update from the Front Line

Track: GEN

Rectal Cancer: Case-Based Review of Case-Based Practice

Track: GEN, ONC, CRS

Optimizing Outcomes for the Bariatric Surgical Patient

Track: GEN

Evolving Modalities in the Diagnosis and Treatment of Acute Appendicitis: Does Everyone Need an Operation?

Track: GEN

Gastroesophageal Reflux Disease: Picking the Right Tool from a Cluttered Toolbox

Track: GEN

ACOSOG Update: Trials Addressing Controversies in Breast and Colon Surgery

Track: ONC, GEN, CRS

Laparoscopic Applications in Cancer Surgery

Track: ONC, GEN

Recent Advances in Oncology: Surgical, Medical, and Radiation

Track: GEN, ONC

Universal Health Insurance for Our Diverse Population: Is It Just a Dream?

Track: HP

Trauma and Emergency Surgery Cases: Experts on the Hot Seat

Track: TRAUMA-CRIT CARE

Acute Respiratory Distress Syndrome: Strategies for Ventilator and Pharmacologic Support

Track: TRAUMA-CRIT CARE

Innovative Approaches for Closure of the Open Abdomen

Track: GEN

Colonic Obstruction: Diversion, Resection, or Endoluminal Stent

Track: CRS

The Emerging Evidence for Cancer Stem Cells

Track: ONC

Current and Future Stakeholders in Health Care Policy

Track: EDU-OUTCOMES-SAFETY, HP

Maintenance of Certification and Maintenance of Licensure: What All Surgeons Need to Know

Track: EDU-OUTCOMES-SAFETY

The Educational Challenge of the Surgical Workforce Shortage

Track: EDU-OUTCOMES-SAFETY, HP

Surgical Innovators

Track: SCI

Is Acute Care Surgery Good or Bad?: A Debate

Track: GEN, TRAUMA-CRIT CARE

Antimicrobial Therapy for the General Surgeon

Track: GEN

Fast-Track Surgery: A Model to Improve the Efficiency of Your Operating Room

Track: GEN

Update on Laparoscopic Colectomy

Track: CRS, GEN

Rectal Cancer: Optimizing Multimodality Treatment

Track: CRS, ONC

Management of Localized Prostate Cancer

Track: URO, ONC

SKILLS-ORIENTED POSTGRADUATE COURSES

Disaster Management and Emergency Preparedness

Track: TRAUMA-CRIT CARE, HP

Advanced Ultrasound and Stereotactic Breast Imaging Technologies for Diagnosis and Therapy

Track: GEN

Using the ACS Case Log System to Support Practice-Based Learning and Improvement and Maintenance of Certification

Track: GEN, INFO, EDU-OUTCOMES-SAFETY

DIDACTIC POSTGRADUATE COURSES

General Surgery Review Course

Track: GEN

Review Course in Vascular and Endovascular Surgery for Certification and Maintenance of Certification Candidates

Track: VAS

How to Maintain ACGME Accreditation of Your Urology Residency Program

Track: URO

VIDEO-BASED EDUCATION SESSIONS

Endoluminal and Transluminal Endoscopic Surgery

Track: GEN

Robotic-Assisted Genitourinary Surgery: What Is Its Place?

Track: URO

Surgical Management of Common Anorectal Disorders: How Colorectal Surgeons Do It

Track: CRS

Highlights from International Meetings Video Session

Track: INTL

SURGICAL FORUM SESSIONS OF INTEREST

Geriatric Surgery Abstract Presentations

Track: GER

Genetic Determinants Abstract Presentations

Track: SCI

Cancellation of Sessions: The American College of Surgeons reserves the right to cancel any of the scientific sessions listed in this preliminary program. Check the College Web site, *www.facs.org*, for updates.

NAMED LECTURES

Monday
OCTOBER 13, 2008

NL01—8:30–9:30 am
Track: URO

The Opening Ceremony followed by the Martin Memorial Lecture sponsored by the American Urological Association (Title TBD)

Presiding Officer: John L. Cameron, MD, FACS, ACS President, Baltimore, MD

Lecturer: Peter Neupert, MBA, Corporate Vice-President, Health Solutions Group, Microsoft Corporation, Redmond, WA

Jointly sponsored by the American Urological Association and the Honors Committee

Introduction of Honorary Fellows, recipient of the Distinguished Philanthropist Award, Officers, Regents, Past-Presidents, and special invited guests

Martin Memorial Lecture, established in 1946 to honor Franklin H. Martin, MD, FACS, founder of the College

NL02—9:45–10:45 am
Track: CTS, GEN

John H. Gibbon, Jr., Lecture: The Phenotype of the Cardiothoracic Surgeon

Presiding officer and introducer: Frank W. Sellke, MD, FACS, Boston, MA

Lecturer: Alden H. Harken, MD, FACS, Oakland, CA

Sponsored by the Advisory Council for Cardiothoracic Surgery

NL03—2:30–3:30 pm
Track: NEU

Charles G. Drake History of Surgery Lecture: The Origin and Evolution of Minimally Invasive Neurosurgery

Presiding officer and introducer: Clarence B. Watridge, MD, FACS, Memphis, TN

Lecturer: Alan R. Cohen, MD, FACS, Cleveland, OH

Sponsored by the Advisory Council for Neurological Surgery

Tuesday
OCTOBER 14, 2008

NL04—10:00–11:00 am
Track: GEN

Excelsior Surgical Society Lecture: Plasma and Red Blood Cell Resuscitation for Trauma Patients: Col. Churchill Was Right

Presiding officer and introducer: David V. Feliciano, MD, FACS, Atlanta, GA

Lecturer: John B. Holcomb, MD, FACS, San Antonio, TX

Sponsored by the Advisory Council for General Surgery

NL05—11:30 am–12:15 pm
Track: TRAUMA-CRIT CARE

Scudder Oration on Trauma: Blood and War—Lest We Forget

Presiding officer and introducer: John Fildes, MD, FACS, Las Vegas, NV

Lecturer: David B. Hoyt, MD, FACS, Orange, CA

Sponsored by the Committee on Trauma

NL06—2:45–3:45 pm
Track: GEN

Olga M. Jonasson Lecture: Myths in Surgical Care

Presiding officer and introducer: M. Margaret Kemeny, MD, FACS, Jamaica, NY

Lecturer: Anna M. Ledgerwood, MD, FACS, Detroit, MI

Sponsored by the Women in Surgery Committee

Wednesday
OCTOBER 15, 2008

NL07—9:45–10:45 am
Track: ETHICS-VOL

Ethics and Philosophy Lecture: Surgeons and Ethics! You Bet!

Presiding officer and introducer: John T. Preskitt, MD, FACS, Dallas, TX

Lecturer: Ira J. Kodner, MD, FACS, St. Louis, MO

Sponsored by the Committee on Ethics

NL08—11:30 am–12:30 pm
Track: ONC

Commission on Cancer Oncology Lecture: New Paradigms in the Treatment of Breast Cancer

Presiding officer and introducer: Frederick L. Greene, MD, FACS, Charlotte, NC

Lecturer: Umberto Veronesi, MD, FACS(Hon), Milan, Italy

Sponsored by the Commission on Cancer

NL09—2:30–3:15 pm
Track: SCI

I. S. Ravdin Lecture in Basic Sciences: Modulation of the Hypermetabolic Response to Injury: Nutrition, Drugs, and Exercise

Presiding officer and introducer: William P. Schecter, MD, FACS, San Francisco, CA

Lecturer: David N. Herndon, MD, FACS, Galveston, TX

Sponsored by the Committee on Perioperative Care

NL10—2:30–3:30 pm
Track: CRS

Herand Abcarian Lecture: The 21st Century: The Renaissance Period for American Surgery

Presiding officer and introducer: Clifford L. Simmang, MD, FACS, Coppell, TX

Lecturer: L. D. Britt, MD, MPH, FACS, Norfolk, VA

Sponsored by the Advisory Council for Colon and Rectal Surgery

NL11—3:00–4:00 pm
Track: INTL

Distinguished Lecture of the International Society of Surgery: Defining Competence: Remuneration, Results, Rewards, and Reinvestment

Presiding officer and introducer: Patricia J. Numann, MD, FACS, Syracuse, NY

Lecturer: Kenneth David Boffard, MB, BCh, FACS, Johannesburg, South Africa

Sponsored by the International Society of Surgery

Postgraduate Courses and Fees

Only registered meeting attendees may purchase postgraduate course tickets. Seating capacities are limited, and ticket requests will be filled on a first-come, first-processed basis. Postgraduate course tickets may be purchased on-site in San Francisco, subject to availability. All courses require a ticket for admission. Tickets may only be exchanged before the beginning of a course and may only be exchanged for another course. Course syllabi will be distributed on-site in San Francisco.

Description of Fee Categories

FELLOW

A surgeon who is a Fellow of the College.

NON-FELLOW

A practicing physician who is not currently a member of the College.

RAS

Associate Fellows, Resident Members, and Affiliate Members of the College.

NON-RAS

A physician-in-training or member of the surgical team who is currently in an accredited training program or working in a surgical-related setting, but has no membership affiliation with the College.

ACS Model for Verification of Knowledge and Skills

The Board of Regents of the American College of Surgeons has approved a five-level model for verification and documentation of knowledge and skills for surgeons participating in educational offerings at the College. Administered by the Division of Education, this model provides a framework for designing educational courses based on the principles of contemporary surgical education and permits the provision of appropriate documentation to attendees. The postgraduate didactic and skills courses offered at the Clinical Congress have been assigned verification levels based on the requirements of each level.

LEVEL I:

Verification of Attendance

The documentation would attest that the surgeon has attended and completed an experiential course.

LEVEL II:

Verification of Satisfactory Completion of Course Objectives

The documentation would attest that the surgeon has attended an experiential course and has satisfactorily completed the specified learning objectives of the course.

LEVEL III:

Verification of Knowledge and Skills

The documentation would attest that the surgeon has demonstrated the requisite knowledge and skills to the course faculty. Knowledge and skills assessment would be conducted using valid and reliable measurement tools.

LEVEL IV:

Verification of Preceptorial Experience

The documentation would attest that the surgeon has completed the requisite coursework and has satisfactorily performed the procedure under preceptorial guidance to demonstrate transfer of the new skill to surgical practice.

LEVEL V:

Verification of Satisfactory Patient Outcomes

The documentation would attest that the surgeon has successfully completed the full spectrum of the training program, including participation in an American College of Surgeons-sponsored program to monitor his or her own practice outcomes involving the newly learned procedure.

SC01: Disaster Management and Emergency Preparedness

7.5 credits, Verification Level I

Track: TRAUMA-CRIT CARE

Saturday, October 11, 2008
8:00 am–5:00 pm

Chair: Lawrence Lottenberg, MD, FACS, Gainesville, FL

Sponsored by the Committee on Trauma

FEE	
Fellow	$375
Non-Fellow	$430
RAS	$115
Non-RAS	$150

SC02: Fundamentals of Breast Imaging for the General Surgeon

4 credits, Verification Level I

Track: GEN

Sunday, October 12, 2008
7:30–11:45 am

Chair: Edward J. Donahue, MD, FACS, Phoenix, AZ

Sponsored by the Committee on Emerging Surgical Technology and Education

FEE	
Fellow	$265
Non-Fellow	$325
RAS	$80
Non-RAS	$125

SC03: Ultrasound Course for Residents

5 credits, Verification Level II

Track: RES-MED

Sunday, October 12, 2008
7:30 am–12:45 pm

Chair: Andrew W. Kirkpatrick, MD, FACS, Calgary, AB

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	N/A
Non-Fellow	N/A
RAS	$175
Non-RAS	$210

SC04: Ultrasound Instructors Course

4 credits, Verification Level III

Track: EDU-OUTCOMES-SAFETY

Sunday, October 12, 2008
8:00 am–12:15 pm

Chair: Reid B. Adams, MD, FACS, Charlottesville, VA

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$250
Non-Fellow	$290
RAS	N/A
Non-RAS	N/A

SC05: Ultrasound in the Surgical ICU

8 credits, Verification Level II

Track: TRAUMA-CRIT CARE

Sunday, October 12, 2008
8:00 am–5:30 pm

Chair: Heidi L. Frankel, MD, FACS, Dallas, TX

Prerequisite: Registrants must have completed a course in basic ultrasound to register for this course. Three options are available to meet the prerequisite:

1. Completion of the previously offered ACS postgraduate course titled "Ultrasound for Surgeons."
2. Completion of the CD-ROM course, "Ultrasound for Surgeons: The Basic Course." The CD-ROM is available for purchase online at *www.facs.org* in the ACS Publications and Services Catalog or by contacting ACS Customer Service at 312/202-5474.
3. Completion of a comparable course elsewhere. Please include the following documents with your registration form: CME Certificate, Certificate of Completion, registration confirmation/verification. If you do not have one of these documents, please contact the organization that sponsored your course to obtain one. Your registration will not be processed until the National Ultrasound Faculty has approved your accompanying documentation.

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$895
Non-Fellow	$1030
RAS	$270
Non-RAS	$360

SC06: Vascular Ultrasound: New Applications and Laboratory Management

7 credits, Verification Level II

Track: VAS

Sunday, October 12, 2008
8:30 am–5:00 pm

Chair: David C. Han, MD, FACS, Hershey, PA

Prerequisite: Registrants must have completed a course in basic ultrasound to register for this course. Three options are available to meet the prerequisite:

1. Completion of the previously offered ACS postgraduate course titled "Ultrasound for Surgeons."
2. Completion of the CD-ROM course, "Ultrasound for Surgeons: The Basic Course." The CD-ROM is available for purchase online at *www.facs.org* in the ACS Publications and Services Catalog or by contacting ACS Customer Service at 312/202-5474.
3. Completion of a comparable course elsewhere. Please include the following documents with your registration form: CME Certificate, Certificate of Completion, registration confirmation/verification. If you do not have one of these documents, please contact the organization that sponsored your course to obtain one. Your registration will not be processed until the National Ultrasound Faculty has approved your accompanying documentation.

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$815
Non-Fellow	$935
RAS	$245
Non-RAS	$325

SC07: Laparoscopic Colorectal Surgery

Part I, Lectures: 6 credits, Verification Level I

Part II, Hands-On: 6 credits, Verification Level II

Track: CRS

Sunday, October 12, 2008
9:00 am–4:30 pm (Lectures)

Monday, October 13, 2008
10:00 am–5:30 pm (Hands-On)

Chair: David E. Rivadeneira, MD, FACS, Cold Spring Harbor, NY

Prerequisite for Part II: Registration for Part I and application for Part II approved by course chair. E-mail skillscourses@facs.org for more information and an application for Part II.

Sponsored by the Committee on Emerging Surgical Technology and Education and the Advisory Council for Colon and Rectal Surgery

Part I, Lectures

FEE	
Fellow	$475
Non-Fellow	$545
RAS	$145
Non-RAS	$190

Part II, Hands-On

FEE	
Fellow	$950
Non-Fellow	$1095
RAS	$285
Non-RAS	$380

SC08: Mammography for the General Surgeon

5 credits, Verification Level I

Track: GEN

Sunday, October 12, 2008
12:15–5:30 pm

Chair: Darius S. Francescatti, MD, FACS, Chicago, IL

Sponsored by the Committee on Emerging Surgical Technology and Education

FEE	
Fellow	$375
Non-Fellow	$430
RAS	$115
Non-RAS	$150

SC09: Thyroid and Parathyroid Ultrasound

7 credits, Verification Level II

Track: OTO-HNS

Monday, October 13, 2008
9:45 am–5:15 pm

Chair: Robert A. Sofferman, MD, FACS, Burlington, VT

Prerequisite: Registrants must have completed a course in basic ultrasound to register for this course. Three options are available to meet the prerequisite:

1. Completion of the previously offered ACS postgraduate course titled "Ultrasound for Surgeons."
2. Completion of the CD-ROM course, "Ultrasound for Surgeons: The Basic Course." The CD-ROM is available for purchase online at *www.facs.org* in the ACS Publications and Services Catalog or by contacting ACS Customer Service at 312/202-5474.
3. Completion of a comparable course elsewhere. Please include the following documents with your registration form: CME Certificate, Certificate of Completion, registration confirmation/verification. If you do not have one of these

documents, please contact the organization that sponsored your course to obtain one. Your registration will not be processed until the National Ultrasound Faculty has approved your accompanying documentation.

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$835
Non-Fellow	$960
RAS	$250
Non-RAS	$335

SC10: Fundamentals of Laparoscopic Surgery (FLS)

No FLS Examination: 6 credits, Verification Level I

With FLS Examination: 6 credits, Verification Level III

Track: GEN

Monday, October 13, 2008
10:00 am–5:30 pm

Co-Chairs: E. Matthew Ritter, MD, FACS, Gaithersburg, MD

Daniel J. Scott, MD, FACS, Dallas, TX

Sponsored by the Committee on Emerging Surgical Technology and Education

No FLS Examination:

FEE	
Fellow	$450
Non-Fellow	$520
RAS	$135
Non-RAS	$180

With FLS Examination:

FEE	
Fellow	$650
Non-Fellow	$745
RAS	$195
Non-RAS	$260

SC11: Accelerated Partial Breast Irradiation

5 credits, Verification Level II

Track: GEN

Tuesday, October 14, 2008
7:30 am–1:00 pm

Chair: Peter D. Beitsch, MD, FACS, Dallas, TX

Sponsored by the Committee on Emerging Surgical Technology and Education

FEE	
Fellow	$290
Non-Fellow	$335
RAS	$85
Non-RAS	$115

SC12: Using the ACS Case Log System to Support Practice-Based Learning and Improvement and Maintenance of Certification

4 credits, Verification Level I

Track: GEN, INFO, EDU-OUTCOMES-SAFETY

Tuesday, October 14, 2008
8:00 am–12:15 pm

Co-Chairs: Richard J. Finley, MD, FACS, Vancouver, BC

M. Michael Shabot, MD, FACS, Houston, TX

Sponsored by the Committee on Informatics, Task Force on Practice-Based Learning and Improvement

FEE	
Fellow	$250
Non-Fellow	$290
RAS	$75
Non-RAS	$100

SC13: Breast Ultrasound

7.5 credits, Verification Level II

Track: GEN

Tuesday, October 14, 2008
9:00 am–5:45 pm

Co-Chairs: Kristin R. Corgan, MD, FACS, Marietta, GA

Shawna C. Willey, MD, FACS, Washington, DC

Prerequisite: Registrants must have completed a course in basic ultrasound to register for this course. Three options are available to meet the prerequisite:

1. Completion of the previously offered ACS postgraduate course titled "Ultrasound for Surgeons."
2. Completion of the CD-ROM course, "Ultrasound for Surgeons: The Basic Course." The CD-ROM is available for purchase online at *www.facs.org* in the ACS Publications and Services Catalog or by contacting ACS Customer Service at 312/202-5474.
3. Completion of a comparable course elsewhere. Please include the following documents with your registration form: CME Certificate, Certificate of Completion, registration confirmation/verification. If you do not have one of these documents, please contact the organization that sponsored your course to obtain one. Your registration will not be processed until the National Ultrasound Faculty has approved your accompanying documentation.

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$875
Non-Fellow	$1100
RAS	$265
Non-RAS	$350

SC14: Using Advanced Multimedia in PowerPoint Presentations

4 credits, Verification Level I

Track: INFO

Tuesday, October 14, 2008
1:00–5:15 pm

Co-Chairs: Patricia L. Turner, MD, FACS, Baltimore, MD

Brian A. Janz, MD, Houston, TX

Sponsored by the Committee on Informatics

FEE	
Fellow	$415
Non-Fellow	$475
RAS	$125
Non-RAS	$165

SC15: Advanced Ultrasound and Stereotactic Breast Imaging Technologies for Diagnosis and Therapy

8 credits, Verification Level II

Track: GEN

Wednesday, October 15, 2008
8:00 am–5:30 pm

Co-Chairs: Eric B. Whitacre, MD, FACS, Tucson, AZ

Victor J. Zannis, MD, FACS, Phoenix, AZ

Prerequisite: Approval by course chair; application required. E-mail skillscourses@facs.org for more information.

Sponsored by the Committee on Emerging Surgical Technology and Education and the National Ultrasound Faculty

FEE	
Fellow	$775
Non-Fellow	$890
RAS	$235
Non-RAS	$310

SC16: The Minimally Invasive Approach to Breast Biopsy: Basic Stereotactic Technique and Application

8 credits, Verification Level II

Track: GEN

Wednesday, October 15, 2008
8:00 am–5:30 pm

Chair: Arthur G. Lerner, MD, FACS, White Plains, NY

Sponsored by the Committee on Emerging Surgical Technology and Education

FEE	
Fellow	$850
Non-Fellow	$975
RAS	$255
Non-RAS	$340

POSTGRADUATE DIDACTIC COURSES

PG17: Surgical Education: Principles and Practice

6 credits, Verification Level I

Track: EDU-OUTCOMES-SAFETY

Saturday, October 11, 2008
9:00 am–4:30 pm

Co-Chairs: Mary E. Maniscalco-Theberge, MD, FACS, Reston, VA

Anne T. Mancino, MD, FACS, Little Rock, AR

Sponsored by the Committee on Continuous Professional Development

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG18: Cardiac Surgery for Candidates of Certification and Recertification

6 credits, Verification Level I

Track: CTS

Saturday, October 11, 2008
9:30 am–5:00 pm

Chair: Max B. Mitchell, MD, FACS, Denver, CO

Sponsored by the Advisory Council for Cardiothoracic Surgery

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG19: Thoracic Surgery for Candidates of Certification and Recertification

6 credits, Verification Level I

Track: CTS

Sunday, October 12, 2008
9:30 am–5:00 pm

Chair: Michael J. Weyant, MD, FACS, Aurora, CO

Sponsored by the Advisory Council for Cardiothoracic Surgery

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG20: Oncoplastic Surgery of the Breast

6 credits, Verification Level I

Track: PLA, ONC

Monday, October 13, 2008
10:00 am–5:30 pm

Chair: Elisabeth K. Beahm, MD, FACS, Houston, TX

Sponsored by the Advisory Council for Plastic and Maxillofacial Surgery

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG21: General Surgery Review Course

12 credits, Verification Level II

Track: GEN

Part I: Monday, October 13, 2008
10:00 am–5:30 pm

Part II: Tuesday, October 14, 2008
10:00 am–5:30 pm

Chair: John A. Weigelt, MD, FACS, Milwaukee, WI

Vice-Chairs: Eugene F. Foley, MD, FACS, Madison, WI

Robert C. McIntyre, MD, FACS, Denver, CO

FEE	
Fellow	$625
Non-Fellow	$720
RAS	$190
Non-RAS	$250

PG22: Benign Colon Disease

5.75 credits, Verification Level I

Track: CRS

Tuesday, October 14, 2008
8:15 am–3:15 pm

Chair: Janice F. Rafferty, MD, FACS, Cincinnati, OH

Sponsored by the Advisory Council for Colon and Rectal Surgery

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG23: Introduction to CPT, ICD-9-CM, and Evaluation and Management Coding (Basic)

7 credits, Verification Level I

Track: HP

Tuesday, October 14, 2008
8:15 am–4:45 pm

Chair: Albert Bothe, Jr., MD, FACS, Danville, PA

Sponsored by the General Surgery Coding and Reimbursement Committee

FEE	
Fellow	$375
Non-Fellow	$430
RAS	$115
Non-RAS	$150

PG24: Minimally Invasive Surgery: The Next Steps

6 credits, Verification Level I

Track: GEN

Tuesday, October 14, 2008
10:00 am–5:30 pm

Chair: Michael A. Schweitzer, MD, FACS, Baltimore, MD

Sponsored by the Committee on Emerging Surgical Technology and Education

FEE	
Fellow	$350
Non-Fellow	$400
RAS	$105
Non-RAS	$140

PG25: How to Maintain ACGME Accreditation of Your Urology Residency Program

6 credits, Verification Level I

Track: URO

Wednesday, October 15, 2008
8:15 am–3:45 pm

Chair: Robert R. Bahnson, MD, FACS, Columbus, OH

Sponsored by the Advisory Council for Urology

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG26: Review Course in Vascular and Endovascular Surgery for Certification and Maintenance of Certification Candidates

6 credits, Verification Level II

Track: VAS

Wednesday, October 15, 2008
8:15 am–3:45 pm

Chair: K. Craig Kent, MD, FACS, New York, NY

Sponsored by the Advisory Council for Vascular Surgery

FEE	
Fellow	$325
Non-Fellow	$375
RAS	$100
Non-RAS	$130

PG27: 2008 Surgical and Office-Based Coding and Reimbursement (Advanced)

7 credits, Verification Level I

Track: HP

Wednesday, October 15, 2008
8:15 am–4:45 pm

Chair: Linda M. Barney, MD, FACS, Dayton, OH

Sponsored by the General Surgery Coding and Reimbursement Committee

FEE	
Fellow	$395
Non-Fellow	$455
RAS	$120
Non-RAS	$160

PG28: Implementing and Evaluating a Teaching Program in Surgical Ethics and Professionalism at Your Institution

4 credits, Verification Level I

Track: EDU-OUTCOMES-SAFETY, ETHICS-VOL

Wednesday, October 15, 2008
11:30 am–3:45 pm

Co-Chairs: Peter Angelos, MD, PhD, FACS, Chicago, IL

Mark Siegler, MD, FACP, Chicago, IL

Sponsored by the Committee on Ethics

FEE	
Fellow	$250
Non-Fellow	$290
RAS	$75
Non-RAS	$100

SESSIONS OF SPECIAL INTEREST

Convocation

Sunday, October 12
6:00–8:00 pm

Convocation Ceremony

Ballroom, Third Floor, Moscone West Building

Conferral of Fellowship and Response on Behalf of New Fellows, Granting of Honorary Fellowships, Installation of Officers, and Presidential Address

All Initiates of ACS will automatically be registered for the Clinical Congress and need only return the registration form if postgraduate course or social program event tickets are desired. Confirmed ACS Initiates will be bestowed with Fellowship in the College during the ceremony regardless of their attendance at the event and may begin using the FACS designation upon the conclusion of the ceremony. Family members of Initiates are not required to register for the Clinical Congress program to attend the Convocation Ceremony.

Annual Business Meeting of Members

Wednesday, October 15
5:00–6:00 pm

New Day and Time!

Moscone Convention Center

* Reports from the Chair of the Board of Regents, the Chair of the Board of Governors, and the Executive Director
* Presentation of the Distinguished Service Award, the Resident Award for Exemplary Teaching, and the Joan L. and Julius H. Jacobson II Promising Investigator Award
* Reports of the Nominating Committee of the Fellows, and the Nominating Committee of the Board of Governors, and introduction of the President-Elect

2008 Excellence in Research Award Distribution/ Dedication

Wednesday, October 15
11:30 am–1:00 pm

Surgical Innovators

The Committee for the Forum on Fundamental Surgical Problems will distribute 11 awards for excellence in research in the following categories: Critical Care, Geriatric Surgery, Orthopaedic Surgery, Pediatric Surgery, Plastic/ Maxillofacial Surgery, Progenitor Cells, Surgical Education, Targeted Therapies, Transplantation, Urology, and Vascular Surgery.

In addition, the 59th volume of the Owen H. Wangsteen Surgical Forum will be dedicated to Patricia K. Donahoe, MD, FACS, Boston, MA. Introduction will be made by Marshall Z. Schwartz, MD, FACS, with remarks from Dr. Donahoe following. The session will then proceed with the scientific presentations as scheduled.

Resident and Associate Society Symposium

2008 RAS Symposium

Sunday, October 12
1:00–4:00 pm

The Economics of Health Care: A Threat to Surgical Education or an Opportunity for Innovation?

Department of surgery chairs are no longer just MDs. They have MBAs, PhDs, and JDs. Each has varied interests. Also, the current health care environment is squeezing the profit out of the surgical practice. This reduction in profit prevents many practices from being solvent and makes it difficult for surgeons to cover the costs of their practice (such as staffing, insurance, supplies, etc.). These economic pressures can be distracting to busy surgeons or even force them out of academia and teaching environments. The Resident and Associate Society (RAS) poses the question, "The Economics of Medicine: Is it Threatening Surgical Education?"

A combination of these and other pressures forces departments to be run like a business and private practitioners to become more selective about the patient profiles they treat. The essence of the question posed by the 2008 RAS-ACS Symposium is: Are these challenges insurmountable or do they force the field of surgery to become more creative, efficient, and effective with educational efforts? During this symposium, we will explore this topic from several perspectives.

Attendance is open to all RAS members, as well as medical students and Fellows. An open microphone discussion will promote audience participation during the symposium.

Essential Skills for Surgical Practice: A Primer for Residents

Monday, October 13
9:45 am–4:00 pm

Surgery residents from all postgraduate year levels are invited by the Division of Education to participate in a special program designed to assist with planning for post-training careers and making the transition from training to practice. This special program is specifically designed to assist surgery residents with essential nonclinical issues they face during residency training and the transition period to their post-training career. The program will feature sessions on personal financial planning and debt management, job-seeking strategies and negotiation skills, and reduction of liability risks. Join residents from other programs and interact with experts who can share techniques for managing the residency experience more effectively and being better prepared for life after residency.

Cardiothoracic Surgery in the Future: Technology Overview for Residents and Medical Students

Wednesday, October 15
11:30 am–3:45 pm

Course Directors: Daniel L. Miller, MD, FACS, Atlanta, GA

John D. Puskas, MD, FACS, Atlanta, GA

This course will introduce surgery residents and medical students to minimally invasive procedures that are available to cardiothoracic surgeons today and discuss what new technologies will be available in the future. The course will include didactic lectures about current technology, video sessions (during lunch that will be provided) of minimally invasive cardiac and thoracic procedures, and hands-on sessions that will allow the participants to perform and experience new cardiothoracic procedures. The lectures and hands-on session will be taught by cardiothoracic surgeons who are leaders in their respective fields of minimally invasive cardiac and thoracic surgery.

Sponsored by the American College of Surgeons, The Society of Thoracic Surgeons, and the American Association for Thoracic Surgery

Special Program for Medical Students

The Division of Education invites medical students from all four years of medical school to attend the Clinical Congress and to participate in a program designed specifically for medical students who may be interested in pursuing surgery as a career. Sessions with leading surgeon faculty members and residents will cover topics such as deciding if surgery is the best career choice, taking the appropriate steps in each year of medical school to be competitive for surgical residency programs, identifying the qualities that program directors want in applicants, asking for letters of recommendation, interviewing successfully, choosing residency programs, preparing to optimize the resident experiences, and beginning to consider various surgical specialties and settings in which to practice. Be sure to take advantage of this unique opportunity to interact with other students interested in surgery, residents, program directors, faculty, and surgeons practicing in academe and the community. Early registration is encouraged, as space is limited.

Town Hall Meetings

Tuesday–Thursday
7:00–7:45 am

Visit the Clinical Congress Web site for topics and locations.

Fifth Annual Rural Surgeons Meeting and Oweida Scholarship Presentation

Tuesday, October 14, 2008
4:00–5:30 pm

To accomplish its mission, "To improve the patient's access to quality surgical care in the rural setting by identifying and addressing the needs of surgeons in this unique environment," the Rural Surgery Subcommittee of the Advisory Council for General Surgery needs your input.

The presentation of the 2008 Nizar N. Oweida, MD, FACS, Scholarship to Timothy A. Breon, MD, FACS, of Oskaloosa, IA, will open the session. Thereafter, a panel of well-recognized surgical leaders eager to hear from rural general surgeons will be introduced. Many of the issues and challenges traditionally faced by the rural surgeon and their patients are becoming progressively more relevant to all general surgeons. While we face similar challenges, we prioritize and address them differently, oftentimes with remarkably different outcomes.

Specific updates from the ACS Committee on Trauma on the Rural Trauma Development Course and on ACS efforts to develop a NSQIP process for rural hospitals will be provided. The leadership of our College wants to learn how rural general surgeons have prioritized and dealt with the major impediments they face in delivery of quality surgical care. Come prepared to share your experiences.

Sponsored by the ACGS Rural Surgery Subcommittee

FINANCIAL SESSIONS

Empowering Children on Financial Issues

Sunday, October 12
12:00 noon – 2:00 pm / $10

Susan Beacham, CEO, Money Savvy Generation

Money Savvy Generation develops innovative products that help parents and educators teach basic personal finance skills to school-aged children. The mission of the company is to empower children and young adults to take control over their financial lives and financial futures in a world of increasing financial complexity. Susan Beacham is the founder of Money Savvy Generation and creator of the Money Savvy Pig® piggy bank – the centerpiece of the Money Savvy Kids™ Basic Personal Finance Curriculum. This pioneering system uses age-appropriate instructional materials to teach kids about the value of money.

Sponsored by ACS Surgeons Diversified Investment Fund

Note: Lunch will be provided.

Investing in Health Care: Risks and Opportunites

Monday, October 13
7:00–8:15 am / $10

Ben Andrew, Principal, William Blair & Company, L.L.C.

Ben Andrew is a medical technology analyst with coverage including cardiovascular, orthopaedics, sleep disorders, blood products, and other sectors. Previously, Ben Andrew was an equity research analyst at Vector Securities International, worked in product development at Baxter International, and was a synthetic organic chemist at Abbott Laboratories. William Blair & Company, L.L.C., is a Chicago-based investment firm offering investment banking, asset management, equity research, institutional and private brokerage, and private capital to individual, institutional, and issuing clients.

Sponsored by ACS Surgeons Diversified Investment Fund

Note: Breakfast will be provided.

Estate Planning and Estate Tax Issues for Surgeons and Their Spouses

Monday, October 13
9:00–10:30 am /$25

This seminar will be presented by Richard Campbell, an attorney with Mayer Brown Rowe & Maw, and it will cover all of the basic topics and principles of estate planning. Topics that will be covered include use of trusts in estate planning, disability planning, creditor and asset protection planning, charitable planning ideas, and top 10 estate tax planning ideas. As part of the presentation, you will receive reference material concerning estate planning. Find out all you need to know about your own personal estate planning from one of the top estate planning attorneys in the country.

2008 Initiates Program: From the Wards to Wall Street: What Every Surgeon Should Know About Financial Planning and Asset Management

Monday, October 13
9:45 am–12:30 pm

Moderator: Mark T. Savarise, MD, FACS, Sandpoint, ID

Surgeons' exposure to financial planning topics and instruction is very limited during medical school and nearly nonexistent during training. This session will provide an overview of relevant financial planning topics, such as managing debt, protecting personal and professional assets, managing investments, and selecting a financial advisor. Participants will learn the "language" of financial planning and will be able to avoid common mistakes and pitfalls.

Sponsored by the Committee on Young Surgeons

ACS Surgeons Diversified Investment Fund: 2008 Update

Tuesday, October 14
7:00 – 8:15 am / No Fee

Charles D. Mabry, MD, FACS, Member, Board of Directors, Asset Management, LLC; Savi Pai, President; and Tom Kiley, Vice-President of Surgeons Diversified Investment Fund

An update on the ACS Surgeons Diversified Investment Fund (SDIF) will be presented. Highlights include the most recent quarterly performance, expense ratio, and asset allocation changes made to SDIF, as well as a discussion on the current market outlook and how it has affected SDIF.

Note: Breakfast will be provided.

GENERAL INFORMATION

Registration is open to all physicians and individuals in the health care field. Registration includes a name badge, program, and entrance to exhibits and all sessions other than postgraduate courses, ACS webcasts, and Meet the Professor Luncheons. Registered attendees may purchase postgraduate course tickets based on availability. Advance registration is strongly encouraged.

PLEASE USE ONE OF THE FOLLOWING REGISTRATION OPTIONS:

Internet

Register online at *www.facs.org/clincon2008*.

By mail

Complete and mail the registration form in the Program Planner to:

American College of Surgeons
Attn: Registration Services
PO Box 92340
Chicago, IL 60675-2340

By fax
(CREDIT CARD PAYMENTS ONLY)

Complete the form and fax to:

800/682-0252 or 312/202-5003

Payment of applicable fees must accompany the registration form. Space in postgraduate courses cannot be reserved without payment. All fees are payable in U.S. dollars. Purchase orders are not accepted. If registration is submitted by fax or online, the original form from the Program Planner is not required.

If you would like to send check payment by courier, please send to American College of Surgeons, Attn: Registration Services, 633 N. Saint Clair St., Chicago, IL 60611.

DEADLINE FOR REGISTRATION

The early registration deadline is September 15. Registrations received and postmarked after the deadlines will be billed according to the pricing structure published on the registration form.

VISA INFORMATION

International Fellows, guest physicians, and meeting attendees: Please be aware that the process of obtaining a visa to attend meetings in the U.S. takes much longer than it did in the past. You are strongly urged to apply for a visa as early as possible, preferably at least 60 days before the start of the meeting.

You may request a letter from the College welcoming you to the meeting if you feel this will be helpful by contacting the International Liaison Section via e-mail at postmaster@facs.org or by fax at 312/202-5001.

CANCELLATION

Refunds will be issued if written requests are postmarked no later than September 15. A $50 handling fee will be retained for all refunds. Cancellations and registrations postmarked after the deadline will not be eligible for refunds.

Conference attendee substitution from one individual to another is not permitted.

The American College of Surgeons reserves the right to cancel any regularly scheduled session prior to the start of the meeting and assumes no responsibility for nonrefundable airline tickets or other travel costs. The ACS will make every effort to immediately notify registrants of a cancellation.

TRANSPORTATION

The ACS has arranged special meeting discounts on United Airlines. These special discounts are available by booking with United directly (independently or through a travel agent). Be sure to indicate the name of the meeting to which you will be traveling, and refer to the ACS file number to obtain the special fares.

Area/Zone fares based on geographic location are also available with no Saturday night stay required. Minimum stay (two nights); seven-day advance purchase required. (Zone fares are not available through online ticket purchase; please call United Airlines.)

United Airlines
800/521-4041
8:00 am–10:00 pm ET
ACS File: 501CR
www.united.com

Purchase your ticket online at *www.united.com* and receive a 10% discount off the lowest applicable fares.

CAR RENTAL

Avis is designated as the official car rental company for the 2008 Clinical Congress. Special meeting rates and discounts are available on a wide selection of General Motors and other fine cars. To receive these special rates, be sure to mention your Avis Worldwide Discount (AWD) number when you call.

Avis Reservations
800/331-1600
www.avis.com
AWD number: B169699

College breaks ground for new Washington Office

The American College of Surgeons broke ground on May 9 for a new home for its Washington, DC, Office that will serve as its centerpiece presence on Capitol Hill. The 10-story, class A office building, located at 20 F Street, NW, will be completed in the first quarter of 2010.

The Board of Regents believes that the proximity of the building to Capitol Hill will provide a more visible presence for the College and the surgeons it represents. At the groundbreaking ceremony, Thomas R. Russell, MD, FACS, ACS Executive Director and member of the building committee, said, "It is becoming increasingly important for all of surgery to speak with one voice." Dr. Russell also noted that, "The new Washington Office will be a physical representation of the College as the 'house of surgery' and will present a united front to lawmakers on Capitol Hill on behalf of surgeons and their patients."

Dr. Russell added, "This building represents the American College of Surgeons' commitment to working with policymakers to improve patient care, measure outcomes of that care, and work collaboratively with all other organizations and groups representing the overall health care team to create a better health care system."

Helping to break ground for the College's new Washington, DC, Office at 20 F Street, NW, were (left to right) J. David Richardson, MD, FACS, ACS Regent and member of the building committee; Josef E. Fischer, MD, FACS, Chair, ACS Board of Regents, and member of the building committee; William A. Liggins, representative of Mayor Adrian M. Fenty's Office of the Deputy Mayor for Planning and Economic Development; John L. Cameron, MD, FACS, ACS President-Elect and member of the building committee; and Dr. Russell.

Artist's rendering of the new building.

In addition to housing the College's Division of Advocacy and Health Policy, currently located in Georgetown, the new Washington Office will be home to the ACS Health Policy and Research Institute, currently located in North Carolina. Several surgical specialty societies also have agreed to lease space in the new building.

The new building will allow the College to add more experts in congressional and regulatory affairs to its staff without space restrictions, and the building will include meeting areas large enough to host conferences sponsored by building tenants and other interested groups.

RCSI awards highest honor to Presidents of ACS and RCSEng

The Royal College of Surgeons in Ireland (RCSI) awarded Honorary Fellowship to Gerald B. Healy, MD, FACS, President of the American College of Surgeons, and Prof. Bernard Ribeiro, President of the Royal College of Surgeons of England (RCSEng). The Honorary Fellowships were awarded during the RCSI's annual Charter Day celebrations in February.

Pictured above, left to right: Dr. Healy; Prof. Gerald O'Sullivan, President of RCSI; and Professor Ribeiro.

Dr. Morton honored with Jacobson Innovation Award

Donald L. Morton, MD, FACS, is the recipient of the 2008 Jacobson Innovation Award of the American College of Surgeons. Dr. Morton is a surgical oncologist and clinical scientist at the John Wayne Cancer Institute in Santa Monica, CA. Dr. Morton received this honor at a June 13 dinner ceremony at the John B. Murphy Memorial Auditorium in Chicago, IL.

Established in 1994, the Jacobson Innovation Award honors living surgeons or surgical teams who have been innovative in the development of a new technique in any surgical field. The award is made possible through a donation from Julius H. Jacobson II, MD, FACS, a general vascular surgeon known for his pioneering work in the development of microsurgery. Dr. Jacobson is director emeritus and the Distinguished Service Professor of Surgery at Mount Sinai School of Medicine of the City University of New York.

Dr. Morton's selection by the Honors Committee of the Board of Regents recognizes his contribution to surgery: his pioneering research efforts toward the development and clinical application of sentinel lymph node biopsy, which has transformed the surgical management of solid tumors, particularly breast cancer and melanoma.

Dr. Morton

A medical school graduate of the University of California–San Francisco (UCSF) in 1958, Dr. Morton completed a medical internship (1958–1959) and surgical residency (1959–1960) at UCSF, followed by a clinical associate appointment in the surgery branch of the National Cancer Institute in Bethesda, MD, from 1960 to 1962 and another surgical residency and fellowship at the Cancer Research Institute at the UCSF Medical Center from 1962 to 1966. From 1960 to 1969, he served in the Public Health Service of the U.S. military. He became a Fellow of the College in 1973.

Dr. Morton introduced his lymphatic mapping technique—a surgical procedure that identifies the sentinel lymph nodes in the regional lymphatic basin—in 1990. Histopathologic examination of the sentinel node reveals the tumor status of the entire lymphatic basin, so patients with tumor-negative sentinel nodes would not need to undergo radical lymphadenectomy. This minimally invasive procedure has been applied to neoplasms including breast, colon, and thyroid cancers.

Dr. Morton has been at the Saint John's Medical Center in Santa Monica since 1991. He has also served in multiple academic appointments, including chief of the melanoma program and director of the fellowship program (2006 to present) and medical director and surgeon-in-chief (1991–2006) at the John Wayne Cancer Institute at Saint John's, and emeritus professor at the University of California–Los Angeles School of Medicine since 1991, after serving as professor of surgery and chief of the division of surgical oncology from 1971 to 1991.

Dr. Morton has published close to 700 research papers and more than 100 book chapters. He has received numerous other awards throughout his career, including the 2005 National Cancer Fighter Award and the 2003 Heritage Award of the Society of Surgical Oncology, and is an honorary member of multiple international medical associa-

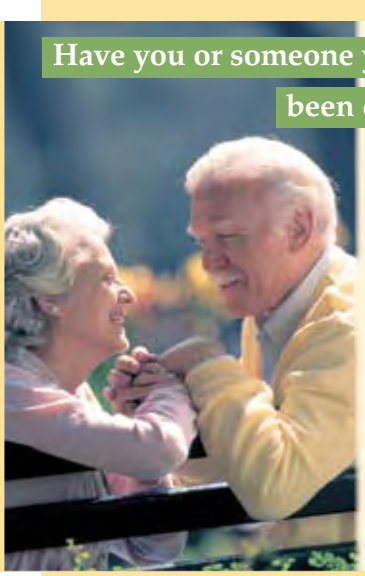
Jacobson Innovation Award recipients

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 stented graphs.
1999, John F. Burke, MD, FACS, Boston, MA: Development and implementation of a number of innovative techniques in burn care, including the codevelopment of an artificial skin (Integra™).
2000, Paul L. Tessier, MD, FACS (Hon), Boulogne, France: Development of a new surgical specialty (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: Microsurgery and replantation.
2005, Stanley J. Dudrick, MD, FACS, Waterbury, CT: Research in nutritional support for surgical patients.
2006, Judah Folkman, MD, FACS, Boston, MA: Founder of the field of angiogenesis research.
2007, William Schuler Pierce, MD, FACS, Hershey, PA: Pioneering work in the conception and development of mechanical circulatory support and the total artificial mechanical heart and contributions to surgical bioengineering and patient care.

tions, such as the Polish Society of Surgical Oncology, the Japanese Cancer Association, and the H. William Scott, Jr., Society.

He has served as president of the International Sentinel Node Society (2003), the World Federation of Surgical Oncology Societies (1995), and the Society of Surgical Oncology (1992).

The Jacobson Innovation Award is administered by the Honors Committee of the American College of Surgeons. Original thought combined with first presentation of work that has led to a milestone in the advancement of surgical care is the main criterion for selecting a Jacobson Innovation Award recipient.


Have you or someone you love
been diagnosed with cancer?
If so, you have many decisions to make.
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- Comprehensive cancer care and services
- A multispecialty, team approach to treatment
- Clinical trials information
- Access to cancer-related information, education, and support

And, most importantly, **Quality Care Close to Home**

Commission on Cancer

Find a Commission on Cancer-Approved Cancer Program Near You. Visit The American College of Surgeons Web Site:
www.facs.org/cancerprograms/aa

2008 COT Resident Trauma Papers Competition winners announced

The Committee on Trauma (COT) announced the winners of this year's Resident Trauma Papers Competition at its annual meeting in Washington, DC. There were 15 regional winners, who each received a prize of $500. An additional $500 was received by the two second-place winners, and an extra $1,000 was awarded to the two first-place winners. The competition is funded by the Eastern and Western States COTs, Region 7 (Iowa, Kansas, Missouri, and Nebraska), Wyeth Pharmaceuticals, and the American College of Surgeons.

The competition is open to surgical residents and trauma fellows. Papers are first submitted for state or provincial competitions. Those winners are then judged at a regional level. Papers should describe original research in the area of trauma care and/or prevention in one of two categories: basic laboratory research or clinical investigation.

Winning papers from 15 regions were presented at the Scientific Session of the COT meeting, which was moderated by M. Margaret Knudson, MD, FACS, Vice-Chair of the COT and Chair of the COT Regional Committees. The four final winners were announced at the Trauma Banquet on March 14.

The 2008 final winners are as follows:

Left to right: John J. Fildes, MD, FACS, Chair of the COT; Dr. Golob; Maj. Seery; Dr. Shalhub; Dr. Sailhamer; and Dr. Knudson.

First Place, Basic Laboratory Research: Maj. Jason M. Seery, MD, Fort Gordon, GA: The Effect of Metal Fragments on Nerve Healing in Extremity Injuries Using a Rat Peroneal Nerve Model.

First Place, Clinical Investigation: Joseph F. Golob, Jr., MD, Cleveland, OH: Modern Medical Informatics for Intensive Care Unit Research, Quality of Care Improvement, and Daily Patient Care: The Validation of SIC-IR.

Second Place, Basic Laboratory Research: Elizabeth A. Sailhamer, MD, Boston, MA: Acetylation: A Novel Method for Modulation of the Immune Response Following Trauma/Hemorrhage and Inflammatory Second Hit in Animals and Humans.

Second Place, Clinical Investigation: Sherene Shalhub, MD, MPH, Seattle, WA: Variant IL-1 Receptor-Associated-Kinase-1 Haplotype Is Associated with Worse Clinical Outcomes in Trauma Patients and Affects Human In Vitro Response to Endotoxin.

Profiles in Leadership

Paul F. Nora, MD, FACS

Fellow of the American College of Surgeons since 1961. Professor of clinical surgery, Northwestern University. Consultant, ACS Committee on Patient Safety and Quality Improvement. Co-editor, *Surgical Patient Safety: Essential Information for Surgeons in Today's Environment.* Founder of the College's Nora Institute for Surgical Patient Safety.

"Government involvement in the care of surgical patients is becoming increasingly active and the College must be an important player in legislative and regulatory efforts to transform the nation's health care system. The Nora Institute for Surgical Patient Safety will be a valuable addition to the College's efforts to engage in research and analysis that will be useful in ensuring that advances in surgical patient safety are key components of health system reform.

"The College has always represented the highest standards of surgical care worldwide. Historically, it has been one of the pioneer organizations in educating its members in the practice of safe surgical care. For nearly a century, the College has provided guidance to both surgeons and hospitals in advocating safe surgical care for patients."

We invite you to consider joining Dr. Paul F. Nora in the Fellows Leadership Society of the American College of Surgeons.

Dr. Nora supports the College financially through active membership in the Fellows Leadership Society.

For information about joining the Fellows Leadership Society, contact the Foundation via telephone at 312/202-5376, via e-mail at fholzrichter@facs.org, or by visiting the ACS Web site at *www.facs.org.*

ACEP releases report on emergency department boarding

The American College of Emergency Physicians (ACEP) recently released *Emergency Department Crowding: High-Impact Solutions*. This report was crafted by an ACEP task force charged with developing low- or no-cost solutions to the practice of "boarding," or holding patients admitted to the emergency department (ED).

Problems

According to the ACEP task force, boarded patients wait, sometimes days, for inpatient beds. As a consequence of ED crowding, sick people often wait too long to receive lifesaving care. The report notes that the Centers for Disease Control and Prevention has determined that more than 10 percent of patients who triage nurses have judged to be in critical condition wait more than an hour to see a physician in the ED. ACEP also notes that ED crowding leads to ambulance diversion, forcing critically ill patients to travel farther for care and thereby delay care in situations where seconds count.

ACEP further contends that ED overcrowding increases medical errors and the probability of patient mortality. As noted in the report, The Joint Commission has concluded that 50 percent of sentinel events causing serious injury or death occur in the ED, and approximately one-third of those negative outcomes are related to crowding.

In addition, the report indicates that boarded ED patients are subject to a chaotic and unpredictable environment where sensitive patients, such as children and the elderly, are likely to be exposed to emotionally traumatic events. Furthermore, the ACEP task force determined that such an environment increases the total length of stay, further weakens access to emergency care, and increases the number of patient walkouts. Boarding of patients also interferes with the ability of physicians to deliver patient-centered, coordinated care and leads to litigation.

Solutions

According to the report, the following strategies may significantly reduce boarding and improve the flow of patients through EDs in a cost-effective way:

- Move emergency patients who have been admitted to the hospital out of the ED and into inpatient areas, such as hallways, conference rooms, and solaria. If each hospital unit would care for a small number of additional patients, the burden of boarding would be spread more evenly across the institution, freeing the ED to function effectively.
- Coordinate the discharge of hospital patients before 12:00 noon to increase the availability of inpatient beds, as timely discharge can improve the flow of patients through the ED.
- Coordinate the scheduling of elective procedures. An uneven influx of elective surgical patients is believed to be a prime contributor to hospitals exceeding their capacity.

Other potential—but more costly—solutions that the ACEP task force arrived at include implementing bedside registration systems, developing fast-track units for patients with nonurgent conditions, adding observation units, involving a physician in the triage process, and canceling elective operations.

To view the report, visit *http://www.acep.org/WorkArea/downloadasset.aspx?id=37960*.

ACS Clinical Scholars in Residence Program comes full circle

by Clifford Y. Ko, MD, FACS

The American College of Surgeons Clinical Scholars in Residence Program is a two-year fellowship in outcomes research and surgical health care policy. It was started in 2006 as an opportunity to offer residents a unique experience in the work of the College's Division of Research and Optimal Patient Care. The primary objective of the fellowship is to address issues in health care quality, health policy, and patient safety, with the goal of helping the Clinical Scholar in Residence prepare for a career in academic surgery through this applied research fellowship at the College.

Karl Bilimoria, MD, MS, was the first ACS Clinical Scholar in Residence. His time has been very productive, as evidenced by more than 25 peer-reviewed publications, 20 national meeting presentations, and important contributions to the surgical quality programs of the College credited to him (including the National Surgical Quality Improvement Program and the Commission on Cancer programs).

During his time as the Clinical Scholar in Residence, Dr. Bilimoria earned a masters of science degree in clinical investigation from Northwestern University in Chicago, IL. Dr. Bilimoria will be returning to his general surgery residency as a fourth-year postgraduate at Northwestern this month. His long-term interest is in surgical oncology with an emphasis on health services research.

Dr. Bilimoria

Dr. Ingraham

Dr. Raval

Dr. Frencher

The American College of Sur-

geons now welcomes two new Clinical Scholars in Residence. Both residents demonstrate great dedication to outcomes research and improvement of the quality of surgical care, and they will undoubtedly make meaningful contributions to the programs of the College.

- Angela Ingraham, MD, is a resident at the University of Cincinnati (OH) and will be relocating to Chicago to join the College in July. Her long-term interest is in trauma and clinical research. As an ACS Clinical Scholar, Dr. Ingraham hopes to further her training and education to enable her to conduct meaningful research that will reduce traumatic injury incidence and improve the care of trauma patients.
- Mehul Raval, MD, is a resident at Northwestern University and will be joining the College in July. His long-term interests are in pediatric surgery and establishing improved practice guidelines in pediatric surgery. As an ACS Clinical Scholar, Dr. Raval aspires to obtain the skills necessary to conduct effective outcomes research that will contribute to advancements in his field.

The College also welcomes the first Robert Wood Johnson Clinical Scholar supported by the College. Stanley Frencher, MD, is a general surgery resident at Yale–New Haven (CT) Hospital. He also will begin his work for the College in July. He will be primarily located at the University of California–Los Angeles Center for Surgical Outcomes and Quality. Dr. Frencher is interested in quality of surgical care, appropriateness of care, and health care disparities.

The College is now accepting applications for the next Clinical Scholar in Residence positions. These two-year positions would begin July 1, 2009. Applications are due by July 15, 2008.

Visit *http://www.facs.org/ropc/clinicalscholars2009.html* for more information regarding the program and application requirements. Contact Karen Richards at krichards@facs.org with additional questions regarding the Clinical Scholars in Residence Program.

Dr. Ko *is Director, Division of Research and Optimal Patient Care.*

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Surgeons Diversified Investment Fund's first quarter 2008 performance report

Q108

Quarterly performance as of March 31, 2008

SURGEONS DIVERSIFIED INVESTMENT FUND

Serving the membership of the American College of Surgeons

FUND FACTS

Symbol	ACSFX
Inception date	9/22/06
NAV	10.42
Total net assets	$45,803,304
Expense ratio	1.96% (Gross)*
	1.08% (Net)**

TARGETED FUND ALLOCATION

- **8%** Large Cap Value Stocks
- **8%** Large Cap Growth Stocks
- **8%** Large Cap Index Stocks
- **3.5%** Small Cap Value Stocks
- **3.5%** Small Cap Growth Stocks
- **6%** REIT Stocks
- **6%** Energy Stocks
- **23%** International Equity
- **4%** Emerging Market
- **3%** Commodities
- **27%** US Fixed Income

FUND HOLDINGS

Holding	% of portfolio
iShares DJ US Real Estate	5.96%
iShares Lehman Agg Bond	27.56%
iShares MSCI EAFE Index	22.85%
iShares Russell 1000 Growth	7.87%
iShares Russell 1000 Value	7.86%
iShares Russell 2000 Growth	3.48%
iShares Russell 2000 Value	3.51%
iShares S&P Global Energy	5.81%
S&P 500 Depositary Receipt	7.86%
Vanguard Emerging Markets	3.99%
iPath Dow Jones AIG Commodity	2.90%
Northern Institutional Government Select	0.35%

INVESTMENT OBJECTIVE

Surgeons Diversified Investment Fund (SDIF) is a no-load, open-end, asset-allocation mutual fund that seeks to provide long-term capital appreciation and income.

SDIF seeks to achieve its investment objective by investing up to 100% of its net assets in Exchange Traded Funds ("ETF(s)") and Exchange Traded Notes ("ETN(s)," and together with ETFs, the "Underlying ETFs"). Under normal market conditions, SDIF intends to allocate approximately 70% of its net assets (measured at market value at the time of purchase) to Underlying ETFs that invest primarily in equity securities and approximately 30% to Underlying ETF(s) that invest primarily in fixed income securities.

AVERAGE ANNUAL TOTAL RETURNS[1] FOR PERIODS ENDED 3/31/08

	Quarter	YTD[2]	1 Year	Since Inception[3]
Surgeons Diversified Investment Fund	-5.44%	-5.44%	-2.09%	4.56%
S&P 500 Index/Lehman Brothers U.S. Aggregate Index	-6.03%	-6.03%	-1.24%	3.81%

[1] Average annual total return figures include changes in principal value, reinvested dividends, and capital gain distributions.

[2] YTD return is not annualized and represents an aggregate total return.

[3] SDIF commenced operation on September 22, 2006.

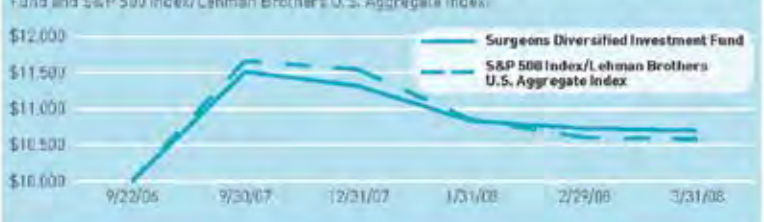
1.96% (Gross Expense Ratio)*

1.08% (Net Expense Ratio)**

Current performance may be lower or higher than the quoted past performance, which cannot guarantee future results. Share price, principal value, and return will vary, and you may have a gain or loss when you sell your shares.

GROWTH OF $10,000

Comparison of the change in value of a $10,000 investment in the Surgeons Diversified Investment Fund and S&P 500 Index/Lehman Brothers U.S. Aggregate Index



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(over)

Surgeons Diversified Investment Fund
First quarter 2008 performance report (continued)

SURGEONS DIVERSIFIED INVESTMENT FUND

Quarterly performance as of March 31, 2008

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Performance numbers have been positively impacted by fee waivers and/or expense reimbursements. Without such fee waivers and/or expense reimbursements, performance numbers would have been lower.

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A look at The Joint Commission

Joint Commission emphasizes standards for flash sterilization

The practice of flash sterilization may be used by health care organizations in specific situations; however, knowing when it is allowed can be confusing.

Issues that often surround flash sterilization include overuse of this method, improper cleaning before sterilization, and whether it is appropriate as the sole method of cleaning instruments. These concerns are particularly common among ambulatory and office-based surgery organizations.

Flash sterilization is a necessity in some situations. For example, when an instrument is dropped, flash sterilization would be appropriate. It would not be an acceptable alternative, however, when trying to save time or to avoid buying extra inventory, according to the Centers for Disease Control and Prevention (CDC) and the Association of periOperative Registered Nurses. The CDC specifically states, "Perform flash sterilization only for patient care items that will be used immediately (e.g., to reprocess an inadvertently dropped instrument). Do not use flash sterilization for reasons of convenience, as an alternative to purchasing additional instrument sets, or to save time."

The Joint Commission's standards require accredited organizations to follow the relevant scientific guidelines for this method of sterilization, such as those offered by the CDC, the Healthcare Infection Control Practices Advisory Committee, and the National Quality Forum.

The specific Joint Commission standard that addresses flash sterilization is IC.4.10, Element of Performance 1, in the chapter "Surveillance, Prevention and Control of Infection (IC)." This standard applies to surgeons working in hospital, ambulatory, and office-based surgery organizations.

The Joint Commission's expectation is that health care organizations plan and implement interventions to address infection control issues that they find important based on prioritized risks and associated surveillance data.

The surgeon plays a major role in ensuring that a proper protocol for infection control is being followed within his or her organization, and that includes following The Joint Commission's standard on flash sterilization. Getting involved and asking questions about how the instruments are being sterilized is important for patient safety.

Prevention of health care-associated infections (HAIs) represents one of the major safety initiatives an organization can undertake, and the effective evaluation and possible redesign of existing infection prevention and control programs should be a priority. Following the guidelines for flash sterilization can help organizations achieve the goal of an effective infection control program, which is to reduce the risk of acquisition and transmission of HAIs.

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NTDB® data points

School's out

by Richard J. Fantus, MD, FACS

It is July and our children are about halfway through summer break, but "school's out for summer" is more than just the title of an Alice Cooper song. Summer is a time when children have an opportunity to kick back and recharge from their stressful academic year. Attention turns to leisure activity or, in some cases for teenagers, a summer job for extra income. Unfortunately, for some students, it is a time to recover from injuries, emotional scars, or to mourn the loss of classmates who have been gunned down as a result of the increasing number of school shootings.

Many readers likely remember going to school and only having to worry about homework, tests, or the next social event. Students today face the real risk of becoming a new statistic—a school shooting victim. At the time this article was written, during the first real warm week of spring, the nice weather brought out the green in the landscape along with more than 50 shootings. Of these shootings, several involved school-aged children and school locations.

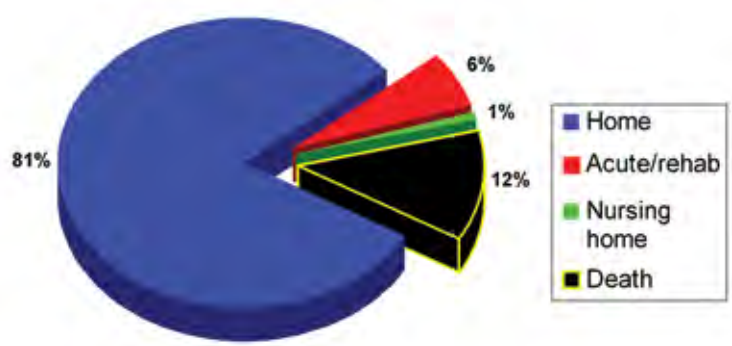
Over the past 10 years, there have been 28 notable school shootings (defined by multiple victims and high-profile media coverage), resulting in 107 fatalities and countless more wounded. When focusing on elementary, middle, and high school shootings alone, this number drops to 21 events with 56 deaths. On average, from 1998 through 2007, these notable events have ranged from one to four per year. However, in 2008, five notable school shooting events, including on college campuses, have already occurred.

There is not a specific E code for school shootings, so in order to examine the occurrence of shootings involving school-aged victims in the National Trauma Data Bank® Dataset 7.0, records were searched for victims aged 11 to 18 years, occurrence on weekdays Monday through Friday and school year months September through May, time of day 8:00 am to 4:00 pm, and codes E 965.0 thru E 965.4 (assault with firearm).

There were 455 records that had discharge status recorded, including 367 discharged to home, 29 to acute care/rehabilitation, and four to nursing homes; 55 died. (These data are displayed in the graph on this page.)

Among patients, 92 percent were male and on average 16.6 years of age; there was an average length of hospital stay of 4.9 days and an average

Hospital discharge status



injury severity score of 11.9. Of those also tested for alcohol, 20 percent were positive, and of those tested for drugs, almost two-thirds were positive.

The trend in school-related gun violence is alarming. Parents who take their children on college campus visits nowadays will likely find that campus tour guides now volunteer their respective schools' plans for dealing with a campus shooting and the security measures that the college or university has put in place if such an event were to occur. School's out for now, but the jury is in on the need to curb these occurrences.

The full NTDB *Annual Report Version 7.0* is available on the ACS Web site as a PDF and a PowerPoint presentation at *http://www.ntdb.org*.

If you are interested in submitting your trauma center's data, contact Melanie L. Neal, Manager, NTDB, at mneal@facs.org.

Acknowledgment

Statistical support for this article has been provided by Sandra M. Goble, MS.

Dr. Fantus *is director, trauma services, and chief, section of surgical critical care, Advocate Illinois Masonic Medical Center, and clinical professor of surgery, University of Illinois College of Medicine, Chicago, IL. He is Chair of the ad hoc Trauma Registry Advisory Committee of the Committee on Trauma.*

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