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V98 No 6 BULLETIN American College of Surgeons
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Looking forward

by David B. Hoyt, MD, FACS

This past March, the American College of Surgeons (ACS) Executive Staff participated in a one-day retreat to reflect on our recent accomplishments and to develop strategies that can be implemented over the next 18 months to take the organization to the next level. The retreat was the culmination of a two-month process during which our Performance Improvement (PI) team, led by Will Chapleau, RN, EMT-P, met with each of the division directors to review last year’s objectives and accomplishments and plans for the coming year.

The strategic planning retreat began with a “post-mortem” on the ACS’ two-year engagement with GE Healthcare and the launch of our PI program and the PI Division, which are described in the January 2013 “Looking forward” column (Bull Am Coll Surg. 98[1]:7-8). During the retreat, the PI team reported that the GE initiative had identified 190 projects and priorities for the ACS. At the time of the retreat, 148 projects had begun, and a dozen had been completed and were moving into the control phase.

In addition, each division director reported on their team’s progress and matched the division’s plans with the College’s global objectives and core values to form a strategic model for moving the organization forward. Following is a brief summary of each component of the strategic plan and an example or two of how the College will be working over the coming months to bring these objectives to fruition.

Quality
The College continues its efforts to improve the care of the surgical patient by giving surgeons and their institutions and offices the tools and standards needed to consistently achieve better outcomes. In the coming months the College’s divisions will strive to produce a quality resource guide, foster participation in the Surgeon-Specific Registry, develop more standardized databases, unify the ACS verification and quality programs, and expand the reach of our quality programs, including the ACS National Surgical Quality Improvement Program. In addition, plans are in the works to upgrade the National Cancer Data Base informatics platform and increase its external use.

Advocacy
The College is striving to actively engage its members in coordinated efforts to advocate on surgeons’ behalf with public and private health insurers, state governments, regulatory bodies, and the federal government. Two major goals in this arena are to develop a model for physician payment reform and to strengthen relationships and improve collaboration with specialty societies.

With regard to payment reform, the ACS has developed a framework for the Value-Based Update (VBU) to replace the sustainable growth rate formula used to calculate Medicare reimbursement (see page 72). Over the coming months, the ACS intends to complete an analysis of the VBU and explore its feasibility. Other advocacy initiatives include studying and providing resources on bundled payment and providing new incentives to encourage participation in the American College of Surgeons Professional Association’s political action committee (ACSPA-SurgeonsPAC). Furthermore, the Committee on Trauma and the Commission on Cancer plan to bolster their members’ engagement in grassroots advocacy activities.

Member services
Efforts to increase the number of surgeons who are members of the ACS continue. The College is working to achieve this objective by promoting the value of ACS Fellowship and ensuring a quality membership experience.

Specific activities under way to make ACS membership more meaningful and appealing to practicing surgeons include redesigning the Board of Governors, which represents the Fellowship at large, and the Advisory Councils, which represent the specialties, to make these bodies more proactive and responsive to our members’ concerns. The College is also making strides toward improving data collection to inform recruitment and retention, developing an overarching strategy for international efforts, developing strategic plans for the chapters, and implementing a young surgeon marketing campaign.

We also are improving our communications vehicles to make them more user-friendly and of great-
The retreat was the culmination of a two-month process during which our Performance Improvement team, led by Will Chapleau, RN, EMT-P, met with each of the division directors to review last year’s objectives and accomplishments and plans for the coming year.

Education
Franklin H. Martin, MD, FACS, established the ACS to ensure that surgeons were properly trained in the delivery of patient care. The ACS continues to fulfill his vision by promoting excellence in surgery through innovative education, training, verification, validation, and accreditation programs.

Education projects under way include expansion and further enhancement of existing programs, revision of education and training materials, and expansion of skills courses. Strategic initiatives and programs for the coming year include offering courses, curricula, and resources in a variety of formats for the greatest impact and access; expanding standard-setting programs for educational institutes; significantly expanding accreditation activities; and enhancing the patient education program. Two highlights are programs designed to assist with the transition to residency and the transition to surgical practice.

Organizational strength
The ACS continues its internal efforts to ensure that the staff is engaged, productive, and performing at the highest levels and that the organization’s volunteer base is equipped with the infrastructure and tools they need to keep the College moving forward.

Over the coming year, the College intends to train 60 more staff members in performance improvement strategies and implement a new staff policy guide. We will complete our efforts to ensure that employees’ compensation is commensurate with their peers at other major associations and will begin benchmarking ACS benefits as well. We anticipate that these efforts will be useful in recruiting new talent. In addition, a year-long leadership training program begins in August, which will include five two-day working sessions and individual coaching for leaders.

A robust information technology analysis is under way. Once it is complete, the ACS will build the infrastructure and implement the software needed to support the College’s efforts for the next decade. Additionally, a post-mortem of the 2013 Clinical Congress will take place to determine potential for improvement.

Financial strength
The College’s leadership is committed to ensuring the long-term sustainability of the College while allocating the resources needed for current investment. To these ends, the ACS intends to improve internal financial management and reporting, foster fiscal responsibility with the College, and improve the effectiveness and efficiency of transactional services to internal and external customers.

Ongoing process
The ACS staff is to be commended for their efforts to date to improve the College’s ability to serve those of you who have dedicated yourselves to the serving the surgical patient. We anticipate that the strategic model we have developed will lead to the creation of programs and initiatives across the College that will be focused, cohesive, and centered on our core values.

If you have comments or suggestions about this or other issues, please send them to Dr. Hoyt at lookingforward@facs.org.
Initial management of mass-casualty incidents due to firearms: Improving survival

by Lenworth M. Jacobs, MD, MPH, FACS; Karyl J. Burns, RN, PhD; Norman McSwain, MD, FACS; and Wayne Carver, MD
Since 1996, more than 60 mass-casualty shootings have occurred in the U.S., and 18 have transpired in other countries. As these statistics demonstrate, gun violence is a public health problem. As such, analysis and policymaking are required to reduce the suffering and burdens that are a direct result of these events. This article discusses several aspects of mass-casualty firearm events that require careful examination, such as medical scene management and tactical emergency medical support.

**Initial response**

Whereas much attention has focused on the weapons used and the mental health of the shooter, other issues, including the provision of timely care to the victims, have been somewhat overlooked. One aspect of mass-casualty firearm events that has been examined inadequately is the initial response and immediate management of the scene. A key feature of medical scene management is the immediate assessment, resuscitation, and transportation of the survivors to a trauma center. Enhanced methods of scene management and patient care are needed to improve survivability. The Haddon Matrix, a conceptual model of injury prevention, can guide the analyses and evaluations required to develop and implement policies and procedures to maximize survivability.

The Haddon Matrix, which William Haddon, Jr., MD, developed in the mid-1960s, applies epidemiological principles to injury prevention. Initially, it was a two-dimensional model of phases (pre-event, event, post-event) and factors related to injury, namely the interacting components that contribute to an injury, including the host, the agent or vehicle, the physical environment, and the social environment.

Carol W. Runyan, PhD, proposed a third dimension in 1998 to direct decision making. This third dimension accounts for psychosocial and economic aspects of injury that decision makers may use to select and implement the most appropriate strategies for injury prevention. The application of the Haddon Matrix presented in this article considers factors of the event phase of mass-casualty firearm situations and highlights the need for a decision-making process to implement strategies for increased survival.

Event-phase factors related to the agent of injury include the weapon, the shooter, the ability of law enforcement to neutralize the shooter, and the survivability of the victims. One area that needs more extensive consideration during the event phase is the ability of emergency medical services (EMS) personnel to expeditiously assess and attend to survivors. Knowledge of the weapon and ammunition used and the type of injuries sustained may enhance their assessment.
The first priority needs to be assessment and care of the victims. As noted in the Prehospital Trauma Life Support program—patients are the most important people at the scene of an emergency.

Knowledge of the type of weapon and ammunition used in the shooting will help EMS to anticipate the nature and extent of injuries and to begin formulating a response. As with much of trauma, injury due to firearms is related to kinetic energy, or the force that is produced and strikes the victim. In addition, three characteristics of the frontal surface area of a bullet determine capacity to cause damage or cavitation: the profile, tumble, and fragmentation. The profile refers to the bullet’s ability to increase its size on impact, tumble pertains to the bullet’s ability to change its angle once inside the body, and fragmentation describes its capacity to break into pieces. All three factors increase the lethality of the bullet. Victims shot with a single, low-energy bullet that does not change size on impact, does not tumble to increase its impact, and does not break into fragments are more likely to survive.

Determining the anatomy of the injuries is another assessment that needs to occur rapidly. Direct injuries to the heart or central nervous system are rarely survivable. An analysis of the Sandy Hook Elementary School shootings in Newtown, CT, in December 2012, by two of this article’s authors—Dr. Carver, Connecticut’s Chief Medical Examiner, and Dr. Jacobs, the Chair of the State of Connecticut Committee on Trauma, who was deputized to participate in the review—revealed injuries in 26 victims that were immediately lethal. However, two women at the event sustained injury to an extremity and survived. Survival from an extremity injury is not unusual. Injuries to the extremities or torso may be survivable if treated in time (minutes are critical at this stage), but may lead to hemorrhagic death if treatment is delayed.

**Focus on the victims**

Typically in mass-casualty shootings, law enforcement’s initial focus is on the perpetrator. EMS is unable to attend to victims until the shooter has been neutralized or law enforcement has declared the site of the event to be safe. This situation may cause significant delay in treating survivable victims. Delay can lead to an increased killed-to-injury ratio in contrast with a lesser killed-to-injury ratio when expeditious assessment and care occur. Again, time is critical.

Greater attention to the needs of the victims is important. The scene is a medical emergency. Law enforcement personnel must focus simultaneously on the shooter and the patients. A safe environment for EMS to quickly assess patients and begin their treatment, resuscitation, and transportation for definitive care is critical. Documenting the event and gathering evidence can occur while patients are being treated. The first priority needs to be assessment and care of the victims. As noted in the Prehospital Trauma Life Support (PHTLS) program—patients are the most important people at the scene of an emergency.

**TEMS teams**

Unfortunately, mass-casualty shooting may create scenes that remain unsafe for extended periods of time, increasing the likelihood that victims who are not immediately killed will die from a lack of medical care. In such cases, tactical emergency medical support (TEMS) should be called to the scene. TEMS teams are specially trained and equipped to function within the perimeter of a danger zone. They support the special operations of law enforcement by carrying out such responsibilities as injury control, care under fire, special extraction, and tactical rescue. TEMS is designed to provide a system of care that supports the missions of law enforcement while maximizing victims’ clinical outcomes and minimizing risk to caregivers. This kind of medical support incorporates the principles of military medicine, which include the tactical combat casualty care (TCCC) guidelines. These guidelines provide battlefield medics and corpsmen with strategies for managing trauma in a tactical environment. They are the standard of care for military tactical medicine. The American College of Surgeons (ACS) Committee on Trauma and the National Association of Emergency Medical Technicians have endorsed these guidelines through the PHTLS program.

Although military and law enforcement operations are unique, the TCCC guidelines may be used to standardize TEMS protocols. These principles are appli-
Unfortunately, the time has come when intentional civilian mass-casualty incidents require a military-like response. This approach will enhance rapid assessment, treatment, and triage of patients.

cable to events that generate mass casualties where a team of responders is tasked to secure the scene and simultaneously access and treat multiple victims. The National Tactical Officers Association has endorsed TEMS and the TCCC guidelines. All communities should have rapid access to TEMS, including tactical EMS personnel who are trained for the exigencies of mass-casualty shootings. To achieve the earliest possible care, personnel in schools and other public places should be trained not only in evasive and protective maneuvers but also in first aid for penetrating injuries to themselves and others.

Unfortunately, the time has come when intentional civilian mass-casualty incidents require a military-like response. This approach will enhance rapid assessment, treatment, and triage of patients. Mass-casualty shootings should be viewed as medical scenes where treating patients is a top priority. Although the concepts proposed here would not have saved the 26 Newtown victims, survivability of future mass-casualty shootings will be enhanced if EMS and law enforcement personnel adopt policies and procedures for rapid patient assessment, treatment, and transportation to definitive care.

ACS plays leadership role

The ACS has taken a leadership role in achieving the goal of an integrated response system to rapidly care for patients in these horrific events. Recently, the ACS brought together professionals to form the Joint Committee to Create a National Policy to Enhance Survivability From Mass Casualty Shooting Events. The committee had representation from the ACS Board of Regents, the ACS Committee on Trauma, the PHTLS Program, the Federal Bureau of Investigation, the Major Cities Chiefs Association, the EMS section of the International Association of Fire Chiefs, and the Committee on Tactical Combat Casualty Care. The joint committee met in Hartford, CT, on April 2 and produced a document titled “Improving Survival from Active Shooter Events: The Hartford Consensus,” which is published in its entirety on the following pages. The organizations and agencies involved in the development of this document anticipate that it will be useful in promoting local, state, and national policies that will improve survival from mass-casualty shootings.

REFERENCES


Introduction
The recent mass casualty shooting events in America have had a profound effect on all segments of society. The medical, law enforcement, fire/rescue, and emergency medical services (EMS) communities have each felt the need to respond. It is important that these efforts occur in a coordinated manner to generate policies that will enhance survival of the victims of these events. Such policies must provide a synchronized multi-agency approach that is immediately available within the communities affected by such tragedies.

The American College of Surgeons (ACS) brought together senior leaders from all of the aforementioned disciplines to produce a document that will stimulate discussion and ultimately lead to strategies to improve survival for the victims. A day-long conference on April 2 in Hartford, CT, obtained input from medical, law enforcement, fire/rescue, EMS first responder, and military experts. The conference relied upon data and evidence from existing military and recent civilian experiences and was sensitive to the multiple agencies that play a role in responding to mass casualty shootings. The meeting, known as the Hartford Consensus Conference, produced this concept paper titled Improving Survival from Active Shooter Events. The purpose of this document is to promote local, state, and national policies to improve
The purpose of this document is to promote local, state, and national policies to improve survival in these uncommon but horrific events.

Statement of the problem
Active shooter/mass casualty events are a reality in modern American life. As our experience with these events has accumulated, it has become clear that longstanding practices of law enforcement, fire/rescue, and EMS responses are not optimally aligned to maximize victim survival. Using existing tactics and evolving trauma concepts, the means of improving survival already exist, but have been underutilized. Now is the time to apply these lessons to active shooter events. While efforts to isolate or stop the active shooter remain paramount, early hemorrhage control is critical to improving survival.

Early hemorrhage control to improve survival
The response to shooting events has historically involved a segmented, sequential public safety operation first focused on law enforcement goals (stop the shooting), followed by the remainder of the incident, which is typically focused on response and recovery. As we go forward, initial actions to control hemorrhage should be part of the law enforcement response, and knowledge of hemorrhage control needs to be a core law enforcement skill. Maximizing survival requires an updated and integrated system that can achieve multiple objectives simultaneously.

Life-threatening injuries in active shooter incidents such as those in Fort Hood, Tucson, and Aurora are similar to those encountered in combat settings. Military experience has shown that the number one cause of preventable death in victims of penetrating trauma is hemorrhage. Tactical Combat Casualty Care (TCCC) programs, when implemented with strong leadership support, have produced dramatic reductions in preventable death. Recognizing that active shooter incidents can occur in any community, the Hartford Consensus encourages the use of existing emergency medical techniques and equipment, validated by over a decade of well-documented clinical evidence.

The Hartford Consensus recommends that an integrated active shooter response should include the critical actions contained in the acronym THREAT:

• Threat suppression
• Hemorrhage control
• Rapid Extrication to safety
• Assessment by medical providers
• Transport to definitive care

While some may view the addition of hemorrhage control skills as yet another training requirement in times of constrained financial resources, the concepts are simple, proven, and relatively inexpensive; many law enforcement agencies have already adopted them as best practices. Life-threatening bleeding from extremity wounds is best controlled initially through use of tourniquets, while internal bleeding resulting from penetrating wounds to the chest and trunk is best addressed through expeditious transport to a hospital setting. Optimal response to the active shooter includes identifying and teaching skill sets appropriate to each level of responder without
regard to law enforcement or fire/rescue/EMS affiliation. THREAT incorporates the proven concepts of self-care and buddy-care.

**Integrated response**

Care of the victims is a shared responsibility between law enforcement, fire/rescue, and EMS. Optimal outcomes depend on communication between public safety responders. The response to an active shooter event is a continuum that requires coordination between law enforcement and the medical/evacuation providers. Such coordination includes:

- Shared definitions of terms used in mass shooting events
- Jointly developed local protocols for responding to active shooter events
- Inclusion of active shooter events in tabletop and field exercises to improve familiarity with jointly developed protocols

**Conclusion**

The Hartford Consensus seeks to improve survival from active shooter events. The use of THREAT and a more integrated response by law enforcement, fire/rescue, and EMS offers communities a mechanism to minimize loss of life in these incidents. ♦
Surgeons bring RRT to patients in Guyana

by Arneh Babakhani, PhD; Stephen R. Guy, MD, FACS; Edward M. Falta, MD, FACS; Eric A. Elster, MD, FACS; Tarun R. Jindal; and Rahul M. Jindal, MD, PhD, FACS
The needs and expectations of developing countries have grown in an increasingly globalized world, particularly the demand for specialized health services in addition to primary care. Exactly how to pay for such health care—via private insurers, government subsidies, or a mixture of both—is a subject of great debate.1

One form of acute/chronic care for which the need is significant is renal replacement therapy (RRT). In fact, this type of care is nonexistent in developing countries, and the unfortunate reality is that a diagnosis of end-stage renal disease (ESRD) is tantamount to a death sentence.2 This situation was most certainly the case in Guyana, South America, when we began our efforts there in 2008 to deliver RRT. This article describes the 14 medical missions the authors made to Guyana, with an emphasis on the logistics and outcomes of the team’s public-private partnership. This model is now being extended to the CARICOM (Caribbean community), a grouping of 15 countries in the Caribbean basin.3

Contrasts in kidney failure treatment
The incidence of kidney failure in developed countries has been well-documented. In the U.S., 13 percent of the population reportedly were afflicted with chronic kidney disease (CKD) between 1999 and 2004.4 It is estimated that some 10 percent of the adult population in the U.S. and Europe is affected by kidney disease, with nearly 1 million requiring some form of RRT.5 Typically, these patients are treated with some form of dialysis after the establishment of either vascular or peritoneal access. However, kidney transplantation is the most cost-effective form of RRT, leading to improved

HIGHLIGHTS

• A network of U.S. kidney transplant surgeons, other health care professionals, philanthropists, Guyanese health care professionals, and the Government of Guyana worked together to develop a program to deliver free renal replacement therapy to Guyanese patients.

• Their work included providing appropriate dialysis treatment, surgical care, patient education, advocacy, and a strong public health component.

• A number of publications in peer-reviewed journals have also resulted from the work of this team.

Overleaf, inset: Dr. Falta (left) and Dr. Jindal perform the first kidney transplant in Guyana, South America, on July 12, 2008.

This page, inset: Dr. Jindal’s book detailing the first kidney transplant in Guyana.
quality of life with clear survival advantage over dialysis to the point that physicians encourage preemptive transplantations in lieu of initiating dialysis.6

Patients in developing countries face more dire circumstances. Due to socioeconomic and logistical factors, these patients rarely have access to any form of RRT. In India, for instance, even conservative calculations point to 100,000 new cases of ESRD per year requiring RRT. Because most dialysis centers are located in inaccessible metropolitan settings, many rural Indian patients are not treated and succumb.7 In many other Asian countries as well, the incidence of ESRD is rising rapidly due to the rise of other risk factors, such as diabetes and hypertension.8 By the end of 2002, more than 300,000 patients in Asia were reportedly on dialysis.9

In Guyana, which has a population of nearly 750,000, as many as 8,000 to 10,000 new hypertension and diabetes cases are reported annually. When this team began its intervention there in 2008, 200 Guyanese patients required dialysis.10,11 However, it is important to note that all of these numbers pertaining to developing countries are most likely underestimated due to the absence of national registries that collect such information.

Costs of RRT
In the U.S., the overall cost of managing a patient with CKD and hemodialysis (HD) specifically has been estimated to be from $22,000 to $88,000 per patient per year.12 The cost of a kidney transplant in the U.S. can exceed $250,000.13

The cost of HD in developing countries, such as Brazil, China, India, and Indonesia, ranges from $5,000 to $7,500 per patient per year.14 The leaders of this mission, Rahul M. Jindal, MD, PhD, FACS (senior author of this article) and George Subraj (a philanthropist of Guyanese origin who funded the trips), made two preliminary fact-finding visits to Guyana in early 2008 and found only three dialysis chairs in the entire country. The cost of HD per session in Guyana was approximately
$200 per dialysis session. Assuming a thrice-weekly regimen, the yearly cost for HD per patient in Guyana would be $31,200. In a nation where the gross income per capita was $2,900 in 2010, with little state support and no viable insurance system, patients have few options and often die from kidney disease.15

**Networks**

Our efforts in Guyana began with the establishment of a key network composed of the following: (1) philanthropic Guyanese-Americans; (2) U.S. transplant physicians; (3) the Guyanese government; and (4) Guyanese physicians. The Guyanese-American community was instrumental in helping the team understand the socioeconomic conditions of their native country. Mr. Subraj provided most of the funding (transport and local stay for the five-member team). The transplant team, led by Dr. Jindal, consisted of transplant surgeons, a nephrologist, an operating room nurse, a dialysis nurse, and an anesthesiologist.

The Guyanese government played a significant role in facilitating this nascent RRT program in their country. They provided the use of Balwant Singh Hospital (Georgetown, Guyana), dialysis fluid, and anti-rejection medications at no charge to the patient. The local staff identified patients, performed the necessary workup, scrubbed for operations, and provided postoperative and follow-up care. It was through this network that the team was able to provide quality, lifesaving health care to Guyanese patients with CKD and ESRD.

**Results of the first program**

We introduced peritoneal dialysis (PD) to the country carefully selecting appropriate patients and performing 17 catheter placements in the first phase over the course of one year. This was accompanied by teaching and follow up via Skype clinics. Table 1, this page, displays the demographics, cause of kidney failure, complications, and outcomes.16 The mean age of the 17 patients was 43.6, with the youngest being eight years old and the eldest 76 years old. Five patients died, including the eight-year-old and a 15-year-old, both approximately two weeks after PD catheter placement.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Gender</th>
<th>Cause of kidney failure</th>
<th>Complication</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>EG</td>
<td>34</td>
<td>F</td>
<td>Hypertension</td>
<td>None</td>
<td>Patient doing well with PD</td>
</tr>
<tr>
<td>JA</td>
<td>08</td>
<td>F</td>
<td>Acute kidney failure</td>
<td>None</td>
<td>Died of multi-organ failure</td>
</tr>
<tr>
<td>DD</td>
<td>48</td>
<td>F</td>
<td>Diabetes, hypertension</td>
<td>Exit site abscess</td>
<td>Incision and drainage of abscess</td>
</tr>
<tr>
<td>GW</td>
<td>48</td>
<td>M</td>
<td>Hypertension, polycystic kidneys</td>
<td>None</td>
<td>Living kidney transplant from daughter</td>
</tr>
<tr>
<td>DW</td>
<td>25</td>
<td>F</td>
<td>Hypertension</td>
<td>Single episode peritonitis</td>
<td>Living kidney transplant from sister</td>
</tr>
<tr>
<td>AG</td>
<td>49</td>
<td>F</td>
<td>Diabetes, hypertension</td>
<td>PD blocked</td>
<td>Required temporary HD, otherwise doing well with PD</td>
</tr>
<tr>
<td>AS</td>
<td>51</td>
<td>M</td>
<td>Diabetes, hypertension</td>
<td>None</td>
<td>Patient doing well with PD</td>
</tr>
<tr>
<td>DB</td>
<td>48</td>
<td>F</td>
<td>Hypertension</td>
<td>None</td>
<td>Died of myocardial infarction</td>
</tr>
<tr>
<td>FR</td>
<td>65</td>
<td>M</td>
<td>Diabetes</td>
<td>Blocked, tube replaced</td>
<td>Patient doing well with PD</td>
</tr>
<tr>
<td>KL</td>
<td>44</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Died at home, unknown reason</td>
</tr>
<tr>
<td>TS</td>
<td>15</td>
<td>M</td>
<td>Acute kidney failure</td>
<td>None</td>
<td>Died of liver failure</td>
</tr>
<tr>
<td>KK</td>
<td>43</td>
<td>F</td>
<td>Hypertension</td>
<td>Single episode peritonitis</td>
<td>Died at home, unknown reason</td>
</tr>
<tr>
<td>GE</td>
<td>34</td>
<td>F</td>
<td>Diabetes</td>
<td>Inadequate clearance</td>
<td>Switched to HD</td>
</tr>
<tr>
<td>RA</td>
<td>76</td>
<td>M</td>
<td>Polycystic kidneys</td>
<td>Inadequate clearance</td>
<td>Switched to HD</td>
</tr>
<tr>
<td>ST</td>
<td>68</td>
<td>M</td>
<td>Obstructive uropathy</td>
<td>None</td>
<td>Patient doing well with PD</td>
</tr>
<tr>
<td>PM</td>
<td>48</td>
<td>F</td>
<td>Diabetes</td>
<td>Single episode peritonitis</td>
<td>Living kidney transplant from sister-in-law</td>
</tr>
<tr>
<td>KS</td>
<td>38</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Living kidney transplant from brother</td>
</tr>
</tbody>
</table>

PD=peritoneal dialysis, HD=hemodialysis

**TABLE 1.**

**PERITONEAL DIALYSIS PATIENTS IN GUYANA**
due to acute kidney and multi-organ failure. The other deaths were attributed to co-morbidities or unknown causes. Other complications included two conversions to HD that became necessary due to inadequate clearance, one instance of PD catheter malfunction that was successfully corrected, and one instance of PD catheter exit site infection that failed initial treatment with antibiotics but was surgically corrected. Aside from these negative outcomes, most patients did well with their self-administered PD regimen. Of note, in four cases, the PD regimen served as a successful bridge to kidney transplantation. These patients likely would have died before obtaining the transplant if not for this bridge. We continue to perform PD during our visits and to follow these patients in conjunction with our colleagues in Guyana.

**First vascular access program**

We introduced the concept of vascular access for dialysis to Guyana. Table 2, this page, shows the demographics, causes of kidney failure, and outcomes for this population. Of note, a significant number of patients failed to attend their follow-up appointments or died of unknown causes. Patients were given the option of PD or HD. Those who were unsuited for PD due to logistics, lack of training, or medical issues (such as previous abdominal surgery) were placed on HD via vascular access. The HD option follows as a corollary that patients who underwent vascular access procedures were sicker with a more advanced disease. The high cost of HD may have deterred patients from being compliant, thus leading to inadequate dialysis and early death. Despite relatively poor outcomes, we hope that with the reduction of costs associated with HD and with more teaching, results will improve in the next few years.

**Tissue typing and cross-matching**

Tissue typing and cross-matching were done gratis at the Immunology Department of Walter Reed National Military Medical Center (WRNMMC), Bethesda, MD, to ensure standard quality as required by various regulatory bodies in the U.S. See Table 3, page 22, for the results of the tissue typing and cross-matching. In total, 13 transplants were performed following this laboratory work. It is also interesting to note the instances in which patients did not receive a transplant or the more viable of two potential donors was selected. Patient KH, for instance, did not receive a kidney because of the presence of unacceptable antigens, whereas KS did not receive one from either of two donors because of a positive cross-match. In two cases (DW and HG), tissue typing allowed us to select the better match.

**TABLE 2. VASCULAR ACCESS PATIENTS IN GUYANA**

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Gender</th>
<th>Cause of kidney failure</th>
<th>Complication</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>LL</td>
<td>69</td>
<td>M</td>
<td>Hypertension</td>
<td>Superficialization</td>
<td>Currently on HD</td>
</tr>
<tr>
<td>BZ</td>
<td>36</td>
<td>F</td>
<td>DM and PCKD</td>
<td>None</td>
<td>Unknown (lost to follow-up)</td>
</tr>
<tr>
<td>AM</td>
<td>60</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
<tr>
<td>BF</td>
<td>56</td>
<td>F</td>
<td>DM</td>
<td>None</td>
<td>Unknown (lost to follow-up)</td>
</tr>
<tr>
<td>SS</td>
<td>56</td>
<td>M</td>
<td>Unknown</td>
<td>None</td>
<td>Currently on HD</td>
</tr>
<tr>
<td>EB</td>
<td>45</td>
<td>F</td>
<td>Hypertension</td>
<td>Thrombosis, new native AVF</td>
<td>Currently on HD</td>
</tr>
<tr>
<td>KH</td>
<td>45</td>
<td>F</td>
<td>Hypertension</td>
<td>None</td>
<td>Currently on HD</td>
</tr>
<tr>
<td>JS</td>
<td>45</td>
<td>F</td>
<td>PCKD</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
<tr>
<td>UJ</td>
<td>60</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
<tr>
<td>PF</td>
<td>34</td>
<td>F</td>
<td>DM and hypertension</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
<tr>
<td>DP</td>
<td>46</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Unknown (lost to follow-up)</td>
</tr>
<tr>
<td>SB</td>
<td>43</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Currently on HD</td>
</tr>
<tr>
<td>RK</td>
<td>52</td>
<td>M</td>
<td>Unknown</td>
<td>None</td>
<td>Unknown (lost to follow-up)</td>
</tr>
<tr>
<td>ON</td>
<td>53</td>
<td>M</td>
<td>Hypertension</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
<tr>
<td>WG</td>
<td>19</td>
<td>F</td>
<td>Unknown</td>
<td>None</td>
<td>Died of unknown cause</td>
</tr>
</tbody>
</table>

HD=hemodialysis, DM=diabetes mellitus, PCKD=polycystic kidney disease, AVF=arteriovenous fistula
Results of the first kidney transplant program

The list of 13 patients who received transplanted kidneys between 2008 and 2012 are presented in Table 4, page 23. Of these recipients, three died from kidney failure or other co-morbidities. The unfortunate case of kidney failure was a result of poor compliance with the necessary anti-rejection medication, a problem all too common in the transplant population. This case demonstrated that when offered a viable treatment option, some patients, regardless of need, will refuse to comply. The case also highlighted the need for more patient education.17

All transplants were from living donors because Guyana, like most other developing countries, has no deceased donor program. The donors were related except in one case of an unrelated altruistic donor. We are working to establish a deceased donor program similar to the one started by the United Network for Organ Sharing.18

Ethical dilemmas

Our efforts in Guyana were not without ethical dilemmas. In one case, patient JG (in Table 3) was not transplanted despite having a living donor and a negative cross-match. Our predicament with him centered on the fact that he needed a transplant but had bacterial...
### TABLE 4. TRANSPLANT PATIENTS

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Date of transplant</th>
<th>Donor (initials, relation, age, gender, and post-op complications)</th>
<th>Cause of kidney failure</th>
<th>Current serum creatinine (mg/dL)</th>
<th>Current medications</th>
<th>Recipient outcome and complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM, 18-year-old male</td>
<td>07/12/2008</td>
<td>LM, mother, 43-year-old female, wound infection that resolved, otherwise well</td>
<td>HTN</td>
<td>1.0 at last visit 1 year before death, 7.0 death</td>
<td>None</td>
<td>Died of kidney failure 3 years post-op due to non-compliance with anti-rejection meds</td>
</tr>
<tr>
<td>GW, 43-year-old male</td>
<td>01/31/2009</td>
<td>MG, daughter, 24-year-old female, otherwise well</td>
<td>DM and PCKD</td>
<td>2.1</td>
<td>CC / PG</td>
<td>Developed 6-cm brain lesion cleared with reduction of immune-suppressants, otherwise well</td>
</tr>
<tr>
<td>MS, 59-year-old male</td>
<td>05/23/2009</td>
<td>CC, wife, 31-year-old female, otherwise well</td>
<td>HTN</td>
<td>1.9</td>
<td>CC / PG / PD</td>
<td>Wound infection that resolved with treatment, otherwise well</td>
</tr>
<tr>
<td>JS, 58-year-old male</td>
<td>05/24/2009</td>
<td>BS, son, 34-year-old male, pain near surgical incision, otherwise well</td>
<td>DM and prostatic obstruction</td>
<td>1.2</td>
<td>None</td>
<td>Died of myocardial infarction 2 months after surgery</td>
</tr>
<tr>
<td>GR, 36-year-old male</td>
<td>03/18/2011</td>
<td>KR, brother, 32-year-old male, otherwise well</td>
<td>Unknown</td>
<td>1.2</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>AR, 55-year-old male</td>
<td>05/25/2011</td>
<td>VR, wife, 40-year-old female, otherwise well</td>
<td>HTN</td>
<td>1.3</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>RH, 56-year-old male</td>
<td>05/27/2011</td>
<td>RH, daughter, 19-year-old female, otherwise well</td>
<td>HTN</td>
<td>1.2</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>MD, 38-year-old male</td>
<td>08/31/2011</td>
<td>RB, brother, 43-year-old male, otherwise well</td>
<td>PCKD</td>
<td>1.0</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>DW, 23-year-old female</td>
<td>12/13/2011</td>
<td>PW1, sister, 25-year-old female, otherwise well</td>
<td>HTN</td>
<td>1.0</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>PG, 48-year-old male</td>
<td>03/08/2012</td>
<td>OJ, sister-in-law, 45-year-old female, otherwise well</td>
<td>DM and HTN</td>
<td>1.0</td>
<td>CC / PG / PD</td>
<td>Post-transplant DM, otherwise well</td>
</tr>
<tr>
<td>AB, 54-year-old male</td>
<td>03/07/2012</td>
<td>UB, daughter, 19-year-old female, otherwise well</td>
<td>HTN</td>
<td>1.2</td>
<td>None</td>
<td>Died of cerebrovascular event 2 months after surgery</td>
</tr>
<tr>
<td>KS, 31-year-old male</td>
<td>07/14/2012</td>
<td>MS, father, 60-year-old male, otherwise well</td>
<td>HTN</td>
<td>1.4</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
<tr>
<td>HG, 20-year-old male</td>
<td>10/23/2012</td>
<td>JP, altruistic living donor, 27-year-old female, otherwise well</td>
<td>Unknown</td>
<td>1.0</td>
<td>CC / PG / PD</td>
<td>Otherwise well</td>
</tr>
</tbody>
</table>

CC = CellCept, PG = tacrolimus, PD = prednisone, DM = diabetes mellitus, HTN = hypertension, PCKD = polycystic kidney disease
endocarditis and was noncompliant with his antibiotics regimen. The team questioned how well he would comply with anti-rejection medications after transplantation and elected not to proceed. The patient died a few months later from septic endocarditis.

In the case of recipient HG, the dilemma was that she was not a Guyanese native but instead from neighboring Antigua. The ethical question was, should a non-Guyanese citizen receive health care services provided by the Guyanese government? After much discussion and legal counseling, and because Guyana has an open immigration policy with Antigua, we chose to proceed, and she received a kidney. Other ethical issues involving potential medical tourism, commoditization of organs, and donations involving minors also came up. These cases clearly demonstrated to us that the same ethical issues that plague larger Western programs may also affect a small, nascent transplant service in a developing country. 19-21

Skype clinics
In conducting our renal transplant therapy in Guyana over the last four years, the team faced a key challenge with respect to keeping in touch with our patients, the local physicians, and nurses. Although we found e-mail sufficient for staying in contact with the staff, we felt it might not be adequate for communicating with the patients, as most of them did not have personal computers. Instead, we elected to use Skype via the local hospital. 23

For a typical clinical encounter, the patients would go to the Balwant Singh Hospital, where staff would set them up with a computer and help connect them with the transplant surgeon via Skype. Team members would interview each patient and provide information on proper care. During each encounter, the local Guyanese health care professionals would perform a physical exam and conduct any needed laboratory tests. Our patients conveyed to us that they enjoyed these Skype clinics; though not the same as a real physical encounter, they liked having at least some remote contact with the U.S. team in conjunction with the local physicians. More than 450 patients with CKD were examined with direct contact and approximately 100 patients via these Skype clinics.

Immunosuppression
Though induction therapy is often useful in solid organ transplantation, it was not employed here to avoid the associated steep cost. 22 Also to save costs, we used generic medications: maintenance immunosuppression consisted of tacrolimus, mycophenolate, and low-dose prednisone, which was tapered off after six months. Random samples to check tacrolimus levels were conducted at our laboratories in WRNMMC. Usual prophylactic medications, such as trimethoprim-sulfamethoxazole, valganciclovir, and anti-fungals, were prescribed. All patients also received a ureteric stent that a local surgeon removed using flexible cystoscopy two weeks after the operation.

Teaching local staff and sustainability
We had to teach the local staff and their patients how to maintain their dialysis regimens and how to properly monitor their immunosuppressive therapy post-transplantation. The procurement of dialysis fluid and its proper usage was one challenge. For the sake of simplicity, we encouraged the use of one solution (Dianeal 2.5 percent) for dialysis exchanges. Both staff and pa-
tients were instructed in how to properly carry out PD and how to monitor their fluid status. Patients were instructed in the use of a blood pressure cuff and a kilogram scale, and to watch for signs of edema at home. We showed them how to keep a log and emphasized good fluid-restriction practices.

Strict adherence to immunosuppressive therapy after transplant was crucial, and we strived to impress on both local staff and patients the importance of compliance. We noted to them that if the challenge of compliance is met with less than due diligence, the invaluable donated kidney will be rejected. We encouraged patients to keep a log of their medication use, to adhere to a schedule, and to have their medications accessible at all times. We encouraged the involvement of family members to ensure patient compliance. We created a handbook for the staff detailing the work-up and postoperative management with emphasis on compliance. This educational process is crucial to the sustainability of the RRT program in Guyana.

Public-private partnership

We would like to emphasize that our efforts in Guyana came to fruition because of an intricate partnership between the private and public sector. The initial idea and funding for our trip came from Mr. Subraj, who saw a dire need in his home country and sought to help those in despair. The Guyana government provided access to hospitals and key materials, such as dialysis fluids, and generic medications for the patients. The team believes we have demonstrated that such a model of public-private partnership can lead to the establishment of a program that provides a sophisticated surgical procedure at no cost to the patient in a developing country.²⁵-²⁷

Public health program

We initiated a pilot program that trained high school students from remote villages in clinical skills, such as monitoring/recording of blood pressure, blood sugar, peripheral edema, and dietary practices. In this way, these students serve as health advocates in their communities. The initial phase will encompass seven villages of approximately 1,000 people each. The information will be collected and analyzed to inform the government of Guyana about the incidence and prevalence of diabetes, hypertension, kidney failure, and poor sanitation. We anticipate that the government of Guyana eventually will allocate resources for treating and preventing these diseases. We also hope that other communities in Guyana will emulate this model.²⁴ This volunteerism and method of surveillance is the only form of health care that is accessible to some of these villagers.²⁹,³⁰

Ongoing efforts in Guyana

The team recently completed its 15th medical mission to Guyana, April 5 to 10. We carried out two additional living kidney transplants, six vascular and peritoneal access procedures, as well as kidney biopsies for diagnostic purposes. The team examined more than 100 patients in various stages of CKD. We continued our efforts in training high school students in carrying out the unique public health program.
Guyanese patient GR (left), 36, waits to receive a kidney from his 32-year-old brother, KR (right).

**REFERENCES**


**The future**

Our team has created a comprehensive RRT in Guyana where none existed by a network of U.S. transplant health care professionals, U.S. philanthropists, Guyanese health care professionals, and the government of Guyana. This work included medical, surgical, education, advocacy, and a strong public health component. A number of publications in peer-reviewed journals have also resulted from the work of this team.14,16,21

We plan to continue our efforts in Guyana until the local physicians are trained in the art and science of kidney transplantation. We are currently working with the Guyana Ministry of Health to establish a deceased donor kidney program.31 This model will also be tested in select CARICOM countries this year. In fact, during our most recent trip to Guyana, some patients were from CARICOM countries. In all, we hope that our efforts will serve as a template for philanthropic efforts in other developing countries.
Acknowledgements
The authors would like to acknowledge the following contributors who provided RRT to the people of Guyana: Mr. Subraj, philanthropist and president of Zara Realty, Queens, NY, who funded the entire program; the government of Guyana for providing the use of facilities and medications; the staff of Balwant Singh Hospital, where the transplants and related surgeries were performed; the departments of pathology and nephrology at Drexel University, Philadelphia, PA; the department of nephrology at the Walter Reed National Military Medical Center and their supporting staff for tissue-typing and cross-matching analysis; and Arthur Womble, MD, of the Southeastern Pain Management Institute, Gadsden, AL, who provided anesthesia support and pain management.

Disclaimer
The views expressed in this paper are those of the authors and do not reflect the official policy of the U.S. Army, the U.S. Department of Defense, or the U.S. government. No financial conflict of interest exists.

REFERENCES (CONTINUED)

In March of 2013, The Doctors Company conducted a study of medical liability claims filed against general surgeons. These claims closed between 2007 and the third quarter of 2012. Events resulting in patient harm occurred in the preoperative, intraoperative, or postoperative phases of surgical care. Studies conducted by CRICO Strategies, Boston, MA, and outlined in their 2009 Annual Benchmarking Report: Malpractice Risks in Surgery, supported this finding. They concluded “Surgeons and their clinical teams are found responsible for errors across the entire surgical timeline—flawed decisions to operate, technical errors in the OR [operating room] and postoperative mismanagement during recovery. Alarmingly, most of the scenarios are preventable.”*

Although there are many risks of patient harm in the preoperative phase (diagnosis and treatment selection) and during surgery, we found that some of the most dangerous risks exist in the postoperative time. These potential hazards included failure to recognize and treat surgical complications on a timely basis and other problematic care provided during patients’ recovery. The postoperative phase of patient care became the focus of our study.

Not all surgical complications evaluated in this study were due to negligence. All general surgery claims were included in this review, re-

Regardless of whether expert reviewers found negligence in a particular case. We also looked at care provided that was unassociated with surgical complications.

**Study of patient injuries**

To understand the adverse outcomes that patients experienced in the postoperative phase of care, we looked at patient injuries and determined the following:

- 46 percent of patients represented in these claims and lawsuits died
- 29 percent experienced postoperative infections (not including abscess)
- 14 percent had a puncture or laceration
- 12 percent required additional surgery
- 12 percent required hospitalization or prolongation of hospitalization
- 9 percent had an amputation or other mobility dysfunction
- 9 percent experienced tissue necrosis
- 5 percent had an abscess

(Note: patients may have experienced more than one adverse outcome such as infection and death, so percentages add up to more than 100 percent. See Figure 1, this page.)

Risks unrelated to surgical procedures were identified in the postoperative period as well. Patients receiving opioids for pain who were not properly monitored suffered respiratory depression, prompting the need for ventilator support, and sometimes resulting in death. Many of these patients had unrecognized obstructive sleep apnea. Immobile patients experienced deep venous thrombosis (DVT), pulmonary embolism, and death. One patient suffered ischemic stroke from heparin-induced thrombosis, a rare but recognized complication of anticoagulant heparin therapy.

Manifestations of problems related to surgical complications occurred in a variety of locations (see Figure 2, page 30). Some complications developed after patients had been discharged home following postanesthesia care. The responsibility then fell to family members or friends to distinguish the symptoms of complications from the normal recovery experience. Physicians were contacted at their offices 31 percent of the time, and patients went to emergency rooms in 3 percent of these cases.

The remainder of postoperative complications manifested themselves in the hospital setting (66 percent). Patients were in inpatient units (not intensive care units [ICUs]) in 54 percent of these cases, intensive care units in 8 percent, and radiology or special procedure areas in 4 percent of cases.

Events that resulted in claims often were due to delayed diagnosis of deteriorating patients’ conditions. Patients made this allegation in 35 percent of these claims and lawsuits. These postoperative allegations included mismanagement of care following surgery. Patients also alleged improper management of treatment (28 percent), improper performance of operation or procedure (7 percent), delay in return to surgery (4 percent), and improper medication management (4 percent) (see Figure 3, page 31).

**Factors leading to claims**

Physician experts who reviewed these cases for the insurance company identified many of the same issues. For example, “patient assessments” that these experts...
identified are closely linked to the “delayed diagnosis” allegations. The following are the five factors that physician experts most frequently identified as contributing to patient injury:

1. Patient assessment issues (36 percent)
   - Failure to order diagnostic tests
   - Failure to consider available clinical information
   - Over-reliance on negative findings when patients continue to experience symptoms

2. Patient factors (22 percent)
   - Noncompliance with treatment
   - Noncompliance with follow-up call or appointment

3. Miscommunication among medical professionals (18 percent)
   - Regarding patient’s condition
   - Failure to read medical record

4. Technical performance (14 percent)
   - Complication not due to negligence
   - Poor technique
   - Retained foreign body
   - Misidentification of anatomical structure

5. Communication between patient and/or family and surgeons (11 percent)
   - Risks of medications
   - Poor rapport (unsympathetic response to patient)
   - Issues concerning patient care in the hospital
   - Follow-up instructions

(Note: Reviewers frequently identified more than one factor that contributed to patient injury, so the percentages add up to more than 100 percent.)

The most common issue that physician reviewers identified was inadequate assessments of patients with postoperative complications. The most frequent assessment issue was failure to order diagnostic tests. Scans of vascular grafts, computed tomography (CT) scans for persistent ileus or to rule out pulmonary embolism, and repeat white blood cell counts to diagnose peritonitis or sepsis were identified as unperformed to identify a complication.

The second and third most common assessment deficiencies were failure to consider available clinical information and over-reliance on negative test results when patients continued to experience symptoms. Examples are as follows:

- In several cases, patients complained of back pain and numbness or loss of control of lower extremities. Later, CT scans revealed spinal epidural abscesses. The experts opined that neurological consults should have been done earlier to prevent the neurological deficits.
- Failure to identify the cause of leg pain in a timely manner resulted in delayed diagnosis of DVT, which led to pulmonary embolism; occlusion of aortofemoral bypass grafts resulted in amputation. Cerebrovascular accidents occurred secondary to anticoagulation therapy or diffuse cerebral hypoxia from bilateral thrombi of sinus veins (rare Factor VIII elevation).
- Assessment of a patient with free air in the abdomen following colonoscopy should have prompted surgical intervention. The patient suffered shortness of breath, tachycardia, and hypotension. Surgery to repair two holes in the patient’s bowel did not occur soon enough to prevent peritonitis with multisystem organ failure and death. Delay in ordering diagnostic tests was the alleged failure in this case.

Patient behaviors were a factor in 22 percent of these claims. The most common behavior, non-compliance with treatment regimens, may be due to a variety of reasons that we were unable to extract from the data;
however, it was clear from the fifth most common factor that communication between patients/families and surgeons was sometimes inadequate. Patients were discharged without a clear understanding of the risks associated with their medications or without adequate follow-up instructions.

Communication among physicians was a factor in patient injury in 18 percent of these claims. For example, inadequate communication between hospitalists and surgeons potentially could lead to patient injury and subsequent claims. The following are examples in which inadequate communication led to claims:

• In one case, the general surgeon removed a pelvic mass from a middle-aged woman. The mass was a papillary serous cystic tumor of the ovary. After the mass was removed, the surgeon discharged the patient with no referrals for follow-up. The surgeon should have referred the patient to a gynecologist/oncologist because these tumors require close, long-term follow-up due to the potential for recurrence.

• Multiple cases involved chest X-ray films with incidental findings of lung or mediastinal masses that went untreated. Claims resulted from surgeons’ failure to notify the patients or refer them to other specialists, diminishing their opportunities for positive outcomes.

• In another case, nurses attempted to notify a surgeon of a hematoma following inguinal hernia surgery but were unsuccessful for several hours. The hematoma impinged on the blood supply of one testicle causing ischemia and resulting in an orchectomy. This raised several questions regarding surgeon availability, surgeon back-up, and the internal chain of command.

• A patient with a colon mass had a right hemicolectomy. Prior to discharge, the patient spiked a fever of 101°F. The nurses did not notify the surgeon. A few days later, the patient was admitted to emergency department in cardiac arrest. The autopsy showed gangrene at the site of the anastomosis with perforation and peritonitis.

• A patient’s incarcerated hernia was repaired with no apparent injury to the bowel. The patient’s vital signs deteriorated, and nurses placed calls to the surgeon. The surgeon provided orders but did not assess the patient. The patient arrested and was resuscitated before being returned to the OR. The bowel was found to be necrotic with multiple perforations. The patient expired due to septic shock.

Technical performance was a factor in 14 percent of these general surgery claims and the fourth most common factor contributing to patient injury. In 62 percent of the claims involving technical performance, the resulting complications were not due to surgical negligence; they were known risks of the procedure. However, when health care professionals failed to recognize and address these complications in a timely manner, they become the basis of a medical liability claim.

Recommendations
Surgeons sometimes found themselves involved in a claim when patients experienced known complications. Even when complications were managed appropriately, some patients felt that their care had been substandard. In these situations, it is of paramount importance that surgeons talk with patients about their surgical outcomes and prognoses. Surgeons need to clarify for patients the reasons for their current condition. Surgeons also need to link the preoperative consent discussion with the complication that patients experienced. Although patients may have difficulty remembering the substance of that earlier discussion, informed consent documents, office notes, and hospital chart notes may
The most common issue that physician reviewers identified was inadequate assessments of patients with postoperative complications. The most frequent assessment issue was failure to order diagnostic tests.

help them to recall the conversation. Although patients may still be disappointed with their outcome, this discussion may help them understand and accept it.

Other lessons flow from a review of these cases. Communication and culture are linked and were identified as having an impact on quality of care. Nurses need a safe environment where they are free to talk with surgeons and other specialists when they have concerns about the status of their patients. Their ability to access surgeons must be maintained.

Some hospitals have instituted rapid response teams to support nurses and provide additional assessments. These groups often provide more detailed information to surgeons who then are able to offer an appropriate solution.

Hospitalists are available to assist with patient assessments. They too need open and direct communication with surgeons. Lines of authority for medical management should be discussed and clarified.

Processes for managing incidental findings need to be outlined. Too often the allegation of failure to diagnose malignancies was leveled at surgeons who addressed only the condition that prompted their patient’s operation. Surgeons may not see radiological reports and may be unaware of incidental findings. A process needs to be established for notifying patients of concurrent conditions and arranging follow-up care so these conditions are addressed.

Patients with obstructive sleep apnea need to be monitored when receiving opioids and those at risk for DVT need to be treated prophylactically. System breakdowns were identified for patients who had not been diagnosed with sleep apnea and with known sleep apnea patients. Patients need to be screened for sleep apnea, prior to surgery, and known sleep apnea patients need to be monitored when receiving opioids.

Patients who are identified as being at risk for DVT need to be treated prophylactically. Systems must be in place to notify physicians if nursing assessments flag a patient and protocols need to be adopted to prompt prophylactic treatment unless contraindicated.

Surgeons’ offices must be ready to respond to calls from patients who have been discharged to their homes following surgery. In some cases, calls were mishandled or the message to the surgeon was delayed.

**Conclusion**

Advances in the art and science of surgery have resulted in what was only a dream cure yesterday becoming the reality of today; however, complications in the delivery of surgical care can occur, and it is important to distinguish unavoidable complications from those due to error.

With good communication and informed consent, patients are more likely to accept unavoidable complications. Complications due to error can be reduced to a minimum or eliminated by carefully studying the root cause and then instituting fail-safe measures to prevent occurrence. The postoperative period is a ripe source of complications that lends itself to corrective action. The postoperative period is an area worthy of study to prevent injuries that would otherwise be avoided by patient safety measures and risk management.
ACS scholarship recipients: Where are they now?

by Tony Peregrin
As the American College of Surgeons (ACS) celebrates its Centennial by reflecting on the achievements of the College’s founders and other surgeon leaders, it’s clear that the organization has a long history of providing opportunities for promising young physicians. In 1957, Charles O. Finley, MD, FACS, Administrator of the College’s disability insurance program, agreed to personally fund two research fellowships in the amount of $20,000 each. His generosity made him the first Fellow to contribute a major gift that funded a College scholarship.* Since Dr. Finley’s inaugural gift nearly 60 years ago, hundreds of promising young surgeons have benefitted from the College’s scholarship program, which awards nearly $2 million annually.† The majority of this funding comes from past and current philanthropy, stewarded by the ACS Foundation.

Today, many of those surgeons serve as chairs of distinguished surgical departments, while others are developing innovative methods to provide better quality care to surgical patients.

In this article, several former ACS scholars describe how the ACS scholarship program had a notable effect on their career path and why these programs will continue to play an essential role as the College enters its next century.

**Bridging the gap between science and surgery**

“My advice to young surgical research fellows and faculty is to follow your passion,” said N. Scott Adzick, MD, MMM, FACS, surgeon-in-chief and director of The Center for Fetal Diagnosis and Treatment at The Children’s Hospital of Philadelphia (CHOP), PA. “It is very difficult to do both clinical work and research, but it is vitally important in order to advance the field.” To that end, Dr. Adzick underscored the importance of the ACS scholarship program as a viable way for young surgeons to bridge the gap between the demands of science and surgery.

According to Dr. Adzick—whose pediatric surgical expertise is centered on neonatal general and thoracic surgery with a particular focus on clinical applications of fetal diagnosis and therapy—several ACS awards have been “crucial for my career development and for any impact my career has had on the field of fetal surgery.” These awards include the ACS Resident Research Scholarship, 1983–1985; the Schering Scholarship Award, 1986–1987 (pediatric surgical fellow); the ACS Faculty Research Fellowship, 1989-1991; and the Australian and New Zealand Chapter of the ACS Traveling Fellowship, 1998.

His research proposal for the ACS Scholar Award was titled Correction of Congenital Hydronephrosis In Utero, which according to Dr. Adzick, was the first area in which fetal therapy was successfully applied. (He worked closely with pediatric surgeon Michael R. Harrison, MD, FACS—an internationally known expert and pioneer in fetal surgery—at the University of California, San Francisco.) Specifically, Dr. Adzick sought to establish an effective animal model for fetal urethral obstruction that simulates human congenital hydronephrosis, which permits in utero correction of urethral obstruction and allows for assessment of the pathophysiologic consequences of the obstruction.

As an ACS scholarship recipient, Dr. Adzick recalls meeting with the ACS Scholarship Selection Committee several times to report on his research activities. “In particular, I recall Frank C. Spencer, MD, FACS, who was the Chair of the Scholarship Committee,” said Dr. Adzick. (Dr. Spencer is a former ACS President, 1990–1991). “Dr. Spencer had the endearing habit of shaking the hand of everyone on the committee and all of the scholarship winners after their reports to personally congratulate them and to encourage them in their work.”

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In addition to offering young surgeons the opportunity to conduct both scientific and clinical research, the ACS scholarship program also gives surgical investigators a foundation for applying for other awards, particularly National Institutes of Health (NIH) funding. Dr. Adzick noted the importance of his ACS-supported research as it would relate to his future investigative work as a pediatric surgeon in a report he submitted to the Scholarship Selection Committee in 1985:

“I have had a wonderful time in the laboratory working on the largely new and unexplored area of fetal diagnosis and treatment. This time was also very productive: 17 paper presentations at major medical meetings and over 40 publications. This research experience will serve as a foundation for future investigative work during my pediatric surgical career.”

“The ACS awards helped me obtain NIH funding in 1989, launching 24 productive years of NIH support for our team,” said Dr. Adzick, the C. Everett Koop Professor of Pediatric Surgery at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia.

In the late 1980s and early 1990s when Dr. Adzick was on the faculty at the University of California, San Francisco, he was the recipient of the ACS Faculty Fellowship. At that time, according to Dr. Adzick, clinical use of fetal surgery became more widespread, and thereafter ultrafast fetal magnetic resonance imaging was introduced to enhance prenatal diagnosis. “In the first decade of the 21st century, refinements in patient selection and treatment were introduced, and randomized clinical trials elucidated the safety and efficacy of fetal surgical therapy,” explained Dr. Adzick. “Indications for fetal surgery were extended to non-life-threatening but serious birth defects, such as spina bifida. At CHOP, we practice in the relatively new field of fetal diagnosis and fetal surgery, and we have a unique special delivery unit within the children’s hospital for the care of mothers carrying unborn patients with birth defects.”

Dr. Adzick has mentored many academic pediatric surgeons in training and many research fellows who he said deserve most of the credit for many of the advances in fetal surgery. He advises young surgical research fellows and faculty members to determine what excites them and then to relentlessly pursue that area of study with the support of scholarship funding, if possible.

Scholarships are a career booster

“The George H.A. Clowes, Jr., MD, FACS, Memorial Research Career Development Award of the American College of Surgeons (Clowes Award) provided essential support during a very formative part of my career,” observed Timothy Billiar, MD, FACS, George Vance Foster Professor and chair, department of surgery, University of Pittsburgh, PA. “In 1993, we reported the first cloning of a critical human gene [the human inducible Nitric Oxide Synthase Gene], and that led to the generation of patents, which then generated industry support for clinical pharmacological approaches to this gene pathway. The Clowes Award contributed to our capacity to do that,” explained Dr. Billiar. His research project proposal was titled Regulation of Hepatocyte Nitric Oxide Synthase and was submitted to the ACS Scholarship Committee in the early 1990s.

Today, Dr. Billiar, chief academic officer at University of Pittsburgh Physicians and principle investigator of the Billiar Laboratory, is involved in several research projects within his lab, particularly investigation of the mechanisms leading to immune dysfunction after injury. The Billiar Laboratory also maintains a strong interest in the regulation and function of the inducible nitric oxide synthase. As a result of his work, Dr. Billiar, who holds seven U.S. patents, has gained an international reputation for his contributions to the understanding of the immune mechanisms following injury, pathobiology of liver disease, and the clinical translation of laboratory observations.

“From a financial aspect, winning one of these awards can be an incredible career boost and can make it very difficult to do both clinical work and research, but it is vitally important in order to advance the field.” —Dr. Adzick
I advise my faculty, especially those who want a career as a surgeon investigator, to aggressively pursue these opportunities....

—Dr. Billiar

a young surgeon’s career because of the flexibility they provide,” said Dr. Billiar. “I advise my faculty, especially those who want a career as a surgeon investigator, to aggressively pursue these opportunities, especially regarding NIH funding, which can be very difficult to get.” Dr. Billiar said he used the Clowes Award to leverage additional funding, and by 1997 he had received two NIH R01 grants. “The Clowes Award allowed me to pursue more sustainable sources of funding. Today, I am the chair of the department, maintain a large research facility, and we continue to be supported by NIH grants.

“I actually met Dr. Clowes,” added Dr. Billiar. “He was a well-known surgeon and researcher and meeting him is one of the best memories I have from that time. He attended one of my first presentations and he actually got up and asked me a question. It was a great honor to win this award, which is all the more meaningful because it is a link to such an excellent surgical investigator.”

According to Dr. Billiar, surgeon investigators are not always taken seriously, due to the fact that if a surgeon pursues research, they have to find ways to concentrate on the clinical side of practice as well. “The Clowes Award is a great example of the commitment the College has to this group. It’s a very specialized subset of individuals. There is an overall need for active investigators to address questions that are particularly relevant to surgical patients—and that is what these scholarships do,” observed Dr. Billiar.

Seed money for future funding

“One of the things about being a surgeon-scientist is that you are competing against other individuals who spend 100 percent of their time on research, whereas a surgeon is trying to balance research and operating room time, clinical time, and teaching time,” observed Herbert Chen, MD, FACS, professor of surgery; chairman, division of general surgery; and vice-chairman of research, department of surgery, University of Wisconsin School of Medicine and Public Health, Madison. “Surgeons who get this kind of support, such as the Clowes Award, as young surgical investigators are able to be competitive later in their career.”

Awarded the Clowes Research Award in 2004 for his proposal titled Inhibition of Gastrointestinal Neuroendocrine (NE) Tumor Progression by Signal Transduction Pathways, Dr. Chen acknowledged the importance of the award in his summary report to the ACS scholarships committee. “There is a lack of funding opportunities to study NE tumors and even less opportunities to pursue translational research in this field,” wrote Dr. Chen, leader of the endocrine cancer group at the University of Wisconsin Carbone Cancer Center.

“This award permitted the establishment of my lab from a small, early-career program to a large research team funded through two R01 grants. I am truly grateful to the ACS for supporting my research over the last five years.”

Dr. Chen said the Clowes Award is unique because some comparably sized grants aimed at developing a young surgeon’s specialty only last a couple of years, but the Clowes supports research for five years. “The Clowes Award gave the surgeon more time and money to develop a sustainable program, and it allowed you to take some risks and pursue directions that you normally may not have pursued otherwise.”

The Clowes Award also provided Dr. Chen with a solid research foundation to apply for other grants, including NIH funding. “NIH funding is more competitive than it used to be, for example, and there’s less of it to go around. The amount of money departments devoted to research is diminishing, and so it is important to have grants, which provide the seed money necessary to obtain a major grant,” explained Dr. Chen.

In his letter of recommendation in support of Dr. Chen’s application for the Clowes Award, Layton F. Rikkers, MD, FACS, ACS First Vice-President-Elect, Editor of ACS Surgery News, and professor emeritus, University of Wisconsin-Madison, underscored the ex-
I always tell young surgeons that getting a grant is like hitting a home run. Interestingly, most big home-run hitters are also big strikeout leaders. When writing a grant, you’ll never get that home run if you don’t hit hard and hit big. You will definitely strike out, but swing as many times as you can, and swing hard.

—Dr. Chen

Extraordinary qualities exemplified by Clowes Award scholars, including Dr. Chen.

“The Clowes Award seeks to support the research of a promising new investigator,” wrote Dr. Rikkers. “Dr. Chen is an ideal candidate for this award and by far one of the most promising new investigators our department has had. At this relatively early stage in his career, Herb has already become the complete academic surgeon and serves as a role model for students and residents…and is clearly destined to become a leader in American academic surgery.”

As Dr. Chen mentors young surgeons today, he encourages them to apply for grants from the ACS, the Association of Academic Surgery, and other organizations and institutions that specifically support young investigators. “I always tell young surgeons that getting a grant is like hitting a home run. Interestingly, most big home-run hitters are also big strikeout leaders. When writing a grant, you’ll never get that home run if you don’t hit hard and hit big. You will definitely strike out, but swing as many times as you can, and swing hard,” he said. “As surgeons we are fortunate to have these opportunities to get funding from surgical organizations like the American College of Surgeons. I don’t think enough young surgeons take advantage of that.”

**Freedom to explore new ideas**

“The prestige of receiving the Clowes Award was something special to me—an affirmation that the American College of Surgeons and the world of surgery recognized what you were doing was important,” recalled Yolonda Colson, MD, PhD, FACS, director, Women’s Lung Cancer Program, Dana-Farber/Brigham and Women’s Cancer Center, Boston, MA. “This scholarship allows a young surgeon to follow a scientific idea without fear of how you’re going to keep the lights on while you try something new—and that is what I did in my work.”

**GEORGE H.A. CLOWES, JR., MD, FACSH, MEMORIAL RESEARCH CAREER DEVELOPMENT AWARD**

This award is offered through a generous endowment established by The Clowes Fund, Inc., of Indianapolis, IN. From 2007 to 2011, a co-sponsorship with the American Association for the Surgery of Trauma (AAST) made possible a clinical scientist development award that provided supplemental salaries for up to five years to promising young surgeons pursuing careers in trauma surgery research. Currently, the Clowes Fund Award criteria is being re-evaluated to allow for a broader group of applicants. The new award application is scheduled to be published later this year.

**THE FRANKLIN H. MARTIN, MD, FACSH, FACULTY RESEARCH FELLOWSHIP**

This two-year fellowship is offered to surgeons entering academic careers in surgery or a surgical specialty and carries an award of $40,000 per year. It is funded by the Scholarship Endowment Fund of the College and is named in honor of the College’s founder. The Franklin Martin Fellow is the applicant who receives the highest ranking in the vetting process of research fellowship applications.

**RESIDENT RESEARCH SCHOLARSHIP**

This two-year resident research scholarship is provided to surgeons, currently in their residency, for research projects. Since 1970, more than 150 surgeons have received this funding. These scholarships are supported through the generosity of Fellows, ACS Chapters, corporations, and foundations.

**THE SCHERING SCHOLARSHIP AWARD**

This scholarship award was supported by the Schering-Plough Corporation, now Merck & Co., and provided a one-year monetary award to nearly 40 surgeons, from 1973 to 1988, for surgical research.
Her original Clowes Award proposal was titled The Mechanism of Facilitating Cell Induced Regulatory T Cell Networks, and it was during the time that she began her research that she switched to a surgical oncology focus—something that was a higher risk, but also with a potentially higher pay off. “It is this freedom to explore new ideas that will allow surgeons to expand our horizons and advance our field with new technologies and discoveries rather than repackaging older ideas in new surgical wrappings. Such a change happened to my career during the Clowes Award,” said Dr. Colson. Her research interest moved from a focus on the induction of immunologic tolerance to surgical oncology, specifically to investigating lymphatic trafficking and the use of nanoparticle targeting as a means to prevent the development of locoregional disease.

In addition to providing flexibility for a young surgeon, scholarships such as the Clowes Award are key because they make a commitment to support a surgeon’s academic goals over an extended period of time. “With the Clowes Award you are given more time to gather preliminary experience and the preliminary data you need to apply for other grants,” explained Dr. Colson, an associate professor of surgery, division of thoracic surgery, Brigham. “The changes in our health care system have made it increasingly difficult to develop a career as an academic surgeon, to obtain NIH grants, and to balance the rigors of ‘good’ research with a clinical practice. Through its Fellowship program, the American College of Surgeons provided me with an opportunity to focus on my research and to develop data for an NIH R01 grant.”

Since receiving the Clowes Award, Dr. Colson has been awarded or filed three patents on polymer-mediated drug delivery and has received a total of 12 grants, including two current R01 grants from the NCI, an Agency for Healthcare Research and Quality grant, and several foundation grants.

Beyond the patents and the grants, more than a dozen students (undergraduate to residency) have trained in Dr. Colson’s lab, and many of those students have changed career paths into surgery, of which she is particularly proud. “There isn’t a better recruitment tool for surgery than a surgeon loving their job, and this was much easier with support from the Clowes Award,” said Dr. Colson.

As a young physician, Dr. Colson completed a six-year MD/PhD program, then residencies in general and cardiothoracic surgery, plus a postdoctoral fellowship. She was one of the first women cardiothoracic surgery residency chiefs at Brigham. “A lot of women worry that ‘I might be the first, therefore it will be a problem,’ but you don’t know that. And you just do it,” said Dr. Colson. “You can’t be afraid of a big opportunity—and that includes applying for scholarship and grant funding to pursue your academic goals. You might be surprised; it often works out much better than you expected.”

The ripple effect
After receiving the Franklin H. Martin, MD, FACS, Faculty Research Fellowship in 1993, Kevin J. Tracey, MD, FACS, a neurosurgeon known for his contributions to inflammation research, wrote the following in his report to the ACS scholarship committee: “The changes in our health care system have made it increasingly difficult to develop a career as an academic surgeon, to obtain NIH grants, and to balance the rigors of ‘good’ research with a clinical practice. Through its Fellowship program, the American College of Surgeons provided me with an opportunity to focus on my research and to develop data for an NIH R01 grant.”

“I was struck by how timely that quote would be if I said it yesterday or even tomorrow. It’s very interesting that while I was thinking that way in 1995, it is perhaps even more relevant today,” said Dr. Tracey, president of the Feinstein Institute for Medical Research and professor and president of the Elmezzi Graduate School of Molecular Medicine, Manhasset, NY. “It takes a very special department to launch careers in academic surgery—not every department has the resources to
The changes in our health care system have made it increasingly difficult to develop a career as an academic surgeon, to obtain NIH grants, and to balance the rigors of “good” research with a clinical practice. Through its Fellowship program, the American College of Surgeons provided me with an opportunity to focus on my research and to develop data for an NIH R01 grant.

—Dr. Tracey

launch surgeons on dual career paths of clinical work and research work. In fact, I would say many depart-
ments that have historically supported these surgeons through various programs and funding are no longer able to do it today,” observed Dr. Tracey. “The Franklin H. Martin Fellowship was incredibly important to launching my career—it was extremely important to me. Were I starting today, as a young surgeon, it would be even more important.”

Dr. Tracey’s original research proposal was titled Mediators of Post-Traumatic Catabolism. The goal of the project was to gain a clearer understanding of the mediation of protein catabolism by macrophage factors produced during injury or infection. His research led him to investigate the direct inflammatory activity of tumor necrosis factor (TNF), which, in turn, led Dr. Tracey to find ways to inhibit TNF with the goal of seeking out how to make a molecule that would block or regulate the amount of cytokines produced during inflammation—CNI-1493.

Along the way of understanding how this agent can work at the molecular level to prevent cytokine release, Dr. Tracey and his team made what he called a shocking discovery. In animal models, they could attenuate TNF production in the brain, but vanishingly small amounts of this material in the brain completely blocked the appearance of TNF in the bloodstream. That insight led his team to begin manipulating the electrical activity of the vagus nerve to control inflammation, and they developed nerve stimulators to suppress the release of inflammation-causing cytokines, even making a small vagus nerve stimulator to treat inflammatory disease.

In September 2011, the first stimulator was implanted in a 45-year-old man with severe rheumatoid arthritis, who was essentially housebound, and according to Dr. Tracey, he has since had a tremendous clinical response. “From the Martin Memorial grant came the molecule, and from the molecule came the stimulator—and from both of those came successful clinical trials,” explained Dr. Tracey, summarizing the ripple effect the award has had on his career.

“I was happy that my career would start on a kind of accelerated trajectory that would not have been possible without this award,” he added. “I remember thinking at the time that all those years training with G. Tom Shires, MD, FACS, a pioneering surgical leader who helped establish one of the nation’s pre-eminent burn centers, would now result in something successful. Everything that I hoped to accomplish from my training with Dr. Shires seemed possible.” (The William Randolph Hearst Burn Center, New York-Presbyterian/Weill Cornell, New York, NY, co-founded by Dr. Shires, is reportedly one of the largest burn centers in the U.S.)

It wasn’t only Dr. Shires who inspired Dr. Tracey as a surgical investigator. One of his first patients after medical school was Janice, an infant who died due to complications of severe burns as a result of an overturned pot of boiling water. Dr. Tracey later wrote a book about the case: Fatal Sequence: The Killer Within—the title referring to septic shock caused by TNF.

“I remember taking care of Janice in the burn unit that Dr. Shires built,” recalled Dr. Tracey. “Unfortunately, we had no real understanding of why she died, and that event drove me to ask many of these research questions. With this award, I could now pursue answers to the mystery of why Janice died.”

For more information on research scholarships, fellowships, and awards, go to: http://www.facs.org/memberservices/research.html.

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The practice of medicine is rapidly changing and causing significant stress for American physicians—particularly for practicing surgeons. Examples of these stressors include: the loss of autonomy associated with hospital-based practice, the restrictions on practice associated with managed care, the ongoing escalation of liability lawsuits, and the maintenance of competency in a rapidly changing specialty.

These stressors can interact with preexisting psychological characteristics typical of surgeons to pose certain occupational hazards. Surgeons are trained to never make mistakes, so when they do occur, the surgeon may be tormented by his or her own sense of perfectionism, resulting in self-incrimination and even self-loathing. An exaggerated sense of responsibility coupled with guilt and self-doubt adds stress to an already difficult situation. Unfortunately, some surgeons are unable to differentiate perfectionism from the aspiration to excel. Numerous authors have demonstrated that perfectionism is a vulnerability factor for depression, anxiety, burnout, and suicide.

Perfectionism is one of the major precursors for burnout because it is often accompanied by an exaggerated sense of responsibility that
Surgeons are trained to never make mistakes, so when they do occur, the surgeon may be tormented by his or her own sense of perfectionism, resulting in self-incrimination, lack of acceptance and forgiveness, and even self-loathing.

leads to self-doubt and guilt, which then lead to rigidity, stubbornness, and the inability to delegate. These behaviors, in turn, may result in a devotion to, and identification with, work to the exclusion of relationships and self-care.

Perfectionism is also one of the predisposing factors for suicide because fear of failure provokes the need for complete control of everything in a physician’s professional and personal lives, which can leave us feeling empty, disconnected, and cynical.

Burnout is characterized by the following:

- Overwhelming physical and emotional exhaustion
- Feelings of cynicism and detachment from the job
- A sense of ineffectiveness and lack of accomplishment
- Over-identification with work to the exclusion of other activities
- Irritability and hyper-vigilance

As a consequence of burnout, individuals suffering from burnout often experience sleep problems, including nightmares; withdraw socially; display poor judgment; may violate professional and personal boundaries; engage in interpersonal conflicts; develop feelings of numbness and detachment; and have difficulty concentrating.

The B/G Committee on Physician Competency and Health has conducted two surveys of the Fellows of the American College of Surgeons, one in 2008 and one in 2010, leading to multiple publications that have demonstrated a very strong association between burnout and diminished quality of life and practice, depression, suicidal ideation, medical errors, and alcohol abuse.

Specific findings from the 2008 and 2010 surveys include the following:

- 40 percent of responding surgeons met diagnostic criteria for burnout
- 30 percent screened positive for depression
- Only 36 percent of surgeons felt that their work schedule left enough time for personal and family life
- Only 51 percent of respondents felt their children should pursue a career in surgery
- Three factors independently associated with burnout were hours worked per week, nights on call per week, and compensation determined entirely by billing
- Surgeons who placed greater emphasis on finding meaning in work and focused on what is important in life, maintained a positive outlook, and embraced a philosophy that stresses work-life balance were less likely to experience burnout

Fortunately, a number of strategies are available to both decrease and reverse burnout:

- Promote a culture of medicine that values work-life balance
- Provide access to online self-assessment tools to identify levels of stress and burnout
- Promote the “just culture” paradigm during training and make clear that shaming and humiliating of colleagues are unacceptable behaviors
- Define a psycho-social-spiritual support system and access it frequently
- Identify power versus powerlessness over people, places, things, and situations (that is to say, if physicians stop trying to control everything, they will find more joy in their lives)
- Identify the differences between self-knowledge and self-awareness (Self-knowledge is what we believe to be true about ourselves; self-awareness is seeing ourselves as others see us. These insights are rarely the same, yet are equally important.)
- Develop educational programs that promote supportive environments. For example, the B/G Committee on Physician Competency and Health presented three programs as panels at the Clinical Congress meetings in 2009, 2010, and 2011—Stress and Burnout Among Surgeons: Understanding and Managing the Syndrome; Surgeon Burnout: Putting Out the Flames; and Light at the End of the Tunnel: Prognosis for Recovery of Surgeons with Potentially Impairing Conditions.
• Most importantly, physicians should give themselves permission to be sick and to accept good medical care

Speaker and author Lee Lipsenthal, MD, offers the following concepts for achieving a balanced life, guidelines which may also function as tools for avoiding burnout:5

• Take care of ourselves so that we can take care of others

• Remember that our state of well-being affects our patient outcomes, our personalities contribute greatly to our well-being, and our perception creates the world we live in

• We have the power to change these things, we must want to

• Developing gratitude and healthy boundaries and releasing a need for control are the best weapons against burnout

The B/G Committee on Physician Competency and Health recommends surgeons consider the following self-assessment statements to determine if a surgeon is vulnerable to burnout:

• I find meaning in my work

• I protect time away from work with my spouse, family, and friends

• I focus on what is most important to me in life

• I try to take a positive outlook on things

• I take vacations

• I participate in recreation/hobbies/exercise

• I talk with family, significant other, or friends about how I am feeling

• I have developed an approach/philosophy to dealing with patients’ suffering and death

• I seek to strike a balance between my personal and professional life

• I look forward to retirement

• I discuss stressful aspects of work with colleagues

• I nurture the religious/spiritual aspects of myself

• I am involved in non-patient care activities (for example, research, education, and administration)

• I engage in contemplative practices or other mindfulness activities, such as meditation or narrative medicine

• I engage in reflective writing or other journaling technique

The more positive the responses, the less likely surgeons are to suffer from burnout, depression, suicidal ideation, decreased professional and personal quality of life, and abuse of alcohol or other drugs.◆

REFERENCES
2. Beevers CG, Miller IW. Perfectionism, cognitive bias, and hopelessness as prospective predictors of suicidal ideation. Suicide Life Threat Behav. 2004;34(2):126-137.
To help commemorate the American College of Surgeons’ (ACS) Centennial, the Bulletin is reprinting articles centered on the issues and developments that have defined the character and integrity of the organization throughout its history. This month, the Bulletin is reprinting “Death in a Ditch,” which was published in the May–June 1967 issue and reissued with revisions in 1970.

“Death in a Ditch,” written by J.D. Farrington, MD, FACS, then a trauma surgeon in Minocqua, WI, remains one of the most widely requested articles published in the magazine. The article presents the concepts Dr. Farrington used to instruct rescue workers and townspeople on the safe extrication, emergency care, and transport of patients involved in vehicular crashes. It outlines the steps first responders should take in assessing patients’ level of injury and providing on-site care for those conditions. It also demonstrates proper extrication techniques and lists the equipment that should be carried in emergency vehicles.

The ACS remains deeply committed to ensuring that trauma patients receive fast, effective care. As part of that pledge, the ACS continues to train emergency services personnel in the proper care of trauma patients through the presentation of its Advanced Trauma Life Support® course. This program ensures that patients throughout the world can avoid death in a ditch or any other accident site. ♦
Death in a Ditch
J. D. FARRINGTON, M.D., F.A.C.S., Minocqua, Wisconsin

With spring the population of Minocqua each year increases from 2,000 to 30,000 as this town on Highway 51 metamorphoses into a resort area. As the population soars so also does the number of automobiles, trucks, buses, motorcycles and motorbikes which tear over the highways and byways of the vast wooded playground which is northern Wisconsin.

"Death in a ditch," observes J. D. Farrington, orthopedic surgeon at Lakeland Memorial Hospital, Woodruff, Wisconsin, is an immediate probability 24 hours a day, the year around, as ice, snow and wind make transportation hazardous.

To cope, Minocqua and environs used a privately-owned hearse as its ambulance. Otherwise, the town had no equipment with which it could rescue the injured. Worse still, individuals who attended the injured were only sporadically trained.

Appalled, Dr. Farrington, who has been in practice in Minocqua since 1966, set about rectifying this hair-whitening situation by enlisting the help of his fellow townsmen and instructing them in rescue techniques. Dr. Farrington is experienced as he and Sam W. Banks, of the Chicago Committee on Trauma, in association with the Chicago Fire Academy five years ago established a course, probably the first of its kind, to train those first to see the injured how to give them initial care.

"What Dr. Farrington is doing in Minocqua should be done in every community in the United States," Dr. Banks says, "regardless of how small or how large. It is the responsibility of the medical profession to give such courses on a local and continuing basis."

The photographs which illustrate Dr. Farrington's article were taken for the Minocqua Rescue Squad by Audrey Perkins.

THE ROAD WOUND AWAY into the beautiful moonlit night as John Burrows started for home. His wife, Ruth, dozed beside him as he drove along the narrow road from the country home where they had dined with friends. There was little traffic on the road and John, remembering the evening's events, was enjoying the drive.

Suddenly a car came speeding around a corner and careened crazily toward the Burrows' vehicle. Aroused from his dreaming, John quickly pressed on the accelerator and turned his car sharply to avoid the oncoming vehicle.

His car hit the soft shoulder of the road, cartoned into a deep ditch and slammed into a telephone pole.

John was thrown against the steering wheel and corner post of the car and blacked out. How long he was out John did not know, but when he awakened, he felt a severe pain in his neck and an unusual tingling in his arms and legs.

His neck hurt when he tried to turn, but nevertheless he did turn to see what had happened to Ruth. She was crumpled against the door, half in and half out of the seat, looking at him and crying. By the light from the moon he could see blood running down her leg, and he shuddered as he saw bone protruding from the wound.

He tried to move over to his wife but a sharp pain in his neck stopped him. As John thought about what he possibly could do, a man appeared at the car window and shouted: "I'm going for help!"

John blacked out again and later awakened to voices.

"Come on, fellow. We'll take you and your wife to the hospital."

He was pulled from the car, placed on a stretcher, and carried to the ambulance. Ruth soon was beside him on a similar rig. The door was slammed closed and the driver and his helper got into the front seat. The ambulance leaped forward with a screech from the tires and a shriek from the siren.

If this seems dramatic, it is meant to be. Unfortunately this story is too often true, for, if John survives, with the impending permanent cord damage, he will be paralyzed the rest of his life.

To protect the victim of an accident from further injury as he is removed from the
RESCUER

Lifesaving Survey of Accident Victim Following Done Simultaneously

FEEL

Pulse:
- Weak
- None

Shock:
- Elevate legs
- Cover
- Eliminate cause

Cardiac Arrest:
- Cardiac compression
- Mouth-to-mouth resuscitation

Coma:
- Handle carefully, as spine injury

Multiple casualties:
- Survey systematically, stopping to treat only those with life-threatening problems

TALK

Determine state of consciousness

Reassure

Inquire for painful areas

Direct hand pressure, then large dressing with bandages
- Use tourniquet only if necessary

Clear airway
- Mouth-to-mouth resuscitation
- Seal chest wound
- Stabilize flail chest

OBSERVE

For bleeding

For breathing

Survey for Additional Injuries Not Endangering Life

BRAIN AND SPINAL CORD

Question patient

As to movement

When arms move, legs do not, spine injured below neck; when neither arms nor legs move, neck injured. Handle with care:
- Support neck and use spine board

As to sensation

Loss is dangerous
- Handle as if cord injury

FRACTURES

Observe for wound and deformity

Question patient and test gently for:
- False motion
- Tenderness
- Increase in pain

Splint fractures always
- Do not replace bone

WOUNDS

Always cover

Abdomen:
- Do not reinsert intestines

Amputation:
- Bring in severed parts

Fig. 1

Survey developed by
Sam W. Banks, M.D., F.A.C.S.
and J. D. Farrington, M.D., F.A.C.S.
wreckage, the physician must act. He must prevent the sloppy and inefficient removal of a victim from a smashed vehicle. He must teach the rescue worker how to remove the victim properly. This is the physician’s responsibility.

For example, change the last part of the accident story to what it should be:

John blacked out and awakened to the touch of a hand on his neck. A calm, reassuring voice said to him:

"Don’t move. We are trained ambulance attendants. We are here to help you and your wife."

They then proceeded to examine Ruth and John, lift John out of the car on a spine board, and immobilize Ruth’s leg before moving her. John and Ruth were placed in the ambulance, an attendant taking his place beside them. The ambulance proceeded slowly to the hospital, obeying the speed limits and traffic signals.

This latter method of rescue and extrication of the accident victim demonstrates that certain principles should be followed, especially if the victim has severe injuries. The most frequently mishandled injuries, made worse by hasty and rough movement from a vehicle or other accident scene, are fractures of the spine and the femur.

The responsibility for improving ambulance and rescue service rests with physicians. For too long apathy and a “leave-it-to-others” attitude have prevailed.

While the Red Cross, International Rescue, and the Bureau of Mines do a creditable job, training of both rescue workers and ambulance attendants must go further. Although large courses in first aid are excellent, they often do not reach the individuals in need of more advanced training.

Only when the entire problem is approached on a community basis, with medical authorities taking the lead, can the ideal be attained.

Because vehicular accidents cause some 25 per cent of the accidental injuries and 50 per cent of the accidental deaths in the United States, this article will deal with extrication of victims of automobile accidents, although the principles outlined apply to all types of accidents.

There is, in general, a set pattern for rescue—actual extrication—of the injured, regardless of the circumstances. Order should be the basic principle in care and extrication, for the haste arising out of disorder causes more harm than good and usually is unnecessary.

Only when the lives of the victim and the rescuer are threatened by the circumstances of the accident is haste acceptable. Fire, leaking gas, spilled gasoline, possible explosion or collapse of a structure, necessitate immediate removal, but these do not occur often.

As a rule, rescue and ambulance services should not be combined. In most instances, rescue tools kept in an ambulance mean less space for transport and care of the injured.

Ideally, there should be a rescue service and an ambulance service.

Rescue units are of three types—light, medium, and heavy, depending on the needs of a given community. Equipment varies from jacks capable of raising a passenger car to those for raising a freight car. A light rescue unit will have the basic equipment listed on page 129, column 1. Each community must ascertain what it might need.

Survey (Fig. 1) of the situation and the victims should be the initial step. Rescuers must gain enough access to the vehicle to examine the injured and to provide lifesaving care before extricating them. Usually there is no problem, but many times the damage to the vehicle and the position of it and the victims will tax the ingenuity of all concerned.

At the accident scene, the doors, unless jammed shut, may be forced back against the body of the vehicle to make the full width of the opening available. Glass in front, side and rear windows also can be removed. The windshield in many cars will pop out as a unit. The front seat may be moved forward or backward, the rear seat removed.

Attendants must identify themselves and reassure the victims and—strangely enough—the onlookers. To prevent interference from the curious the area must be secured. At times help from onlookers must be obtained but it must be directed and must be orderly. Flares and barricades must be set up to prevent further damage, especially when the accident occurs on a busy highway.

Communication must be established immediately with medical facilities to apprise them of the occurrence and the number of victims.
Lifesaving measures must be instituted before the victim is moved. Of these, correction of airway defects, breathing and bleeding problems is the most pressing. Merely positioning the head of the unconscious patient and clearing his mouth of debris are often all that is
needed to allow spontaneous breathing. Accessible bleeding of any magnitude should be cared for, and fractures immobilized temporarily to prevent further damage when the victim is removed. The arm can be fastened to the trunk, the leg to its mate, until definitive care can be given.

Spine boards (Fig. 2) are of great value in extricating all types of injured, particularly the most frequently mishandled injury, fracture of the spine with actual or impending damage to the cord.

The spine board is ideal for the victim with such an injury, but, once again, preparation of this patient so that he can be removed is a step-by-step procedure.

A sitting victim with cervical injury, for example, is secured to the short spine board described in the March • April 1967 BULLETIN and then removed. The collar (Fig. 3) is applied first. This is fashioned easily from two or more universal dressings,* folded lengthwise and held in place by safety pins or soft roller dressings. The short board then is slid behind the patient on an angle and positioned (Fig. 4). As the board is waxed, it slides easily. The victim’s head then is secured (Fig. 5) to the board by using the headband and chin strap. A neck roll may be necessary in some cases to allow fixation in the optimum position.

(Continued)

*All-purpose dressing unfolds to either 10 by 18 inches or 10 by 36 inches, affording adequate coverage for any wound. When two are folded lengthwise, they form an efficient cervical collar. It may also be used as padding for splints.
Next the victim is secured to the board. Two eight-foot long straps are passed through the upper handholds, behind the board, out the lower handholds and around the thigh from outside to inside, and finally under and over the thigh to the chest buckle, staying as high as possible in the groin. The injured and the board are now a unit (Fig. 6).

The victim then is turned in the seat so that he faces the side of the car, and his feet and legs are outside. If his leg is fractured, the legs are tied together with triangular bandages before the victim is turned. Three ties are sufficient—a figure eight about the foot and ankle and ties below and above the knee.

Once the victim is turned, his legs will be accessible, allowing definitive splinting with blanket rolls, padded boards or inflatable splints.

If the victim is small so that two average men can lift him, he then is lifted (Fig. 7) out of the car. Each attendant uses the upper handhold on the board and passes his forearm under the buttocks of the victim and grasps the other attendant’s hand. They place the victim, his thighs still flexed in the straps, on a litter or stretcher. The straps then are released and used to secure the victim, still on the short board, to the litter or stretcher.

The victim is taken to the hospital on the board, which should be removed only by a physician.

(The hospital gives duplicate items of equipment to the ambulance attendants so that they have neither to wait nor return to pick up the ones in use.)

If the victim is too large to be lifted out, then he may be removed (Figs. 8 and 9) as a unit on the long board. First, he is secured to the short board, turned, placed flat on the seat, and under him and the short board is pushed the long board. The victim then can be lifted out on the long board, and he should remain on it, secured by straps. Straps are passed easily through the handholds or strap holes as the board has one-inch half rounds on its underside (Fig. 10).

Removal of many victims even though they may have no evidence of spine injury is easier with the long board, instead of pulling, tugging and lifting them out. This patient may be turned and slid onto the board, or the board may be pushed under him.
**Fig. 8.** This 270-pound man is too large to be lifted. After being secured to short board, he is removed as unit on the long board.

*Fig. 9.** After victim is turned and placed flat on seat, long board is pushed beneath him and the short board.

*Fig. 10.* Victim’s legs are released from the two long straps, which are now used to secure him to long board.

*Fig. 11.* To remove victim thrown to floor between seats long board can be pushed in from either side.

*Fig. 12.* Six-foot sling of one-inch rope is helpful in extricating a victim trapped under a vehicle. Figures continue on following page.
One of the most difficult to remove is the victim who has been thrown on the floor between the front and rear seats (Fig. 11). Here again the long board is valuable. Being beveled and waxed, the board can be pushed under the injured by attendants at both sides of vehicle (Figs. 9 and 10).

For the occasional hard-to-handle victim, a recently developed rope sling (Fig. 12) is valuable. This is a six-foot loop of one-inch rope to which two 1 ½-inch rings are affixed before the rope is spliced. The rings are fastened together by a malleable chain link.

The first step toward removal of such a victim is to obtain more space by lifting out the back seat (Fig. 13). The victim is then examined and given whatever care is necessary at this point.

The sling is placed across the victim’s chest (Fig. 14) and under his arms, the ring slide pushed firmly under his back. This slide keeps the rope from spreading when tension is applied. The long board then is positioned under the victim’s shoulders and head, and, guided from foot end, he is pulled onto the board as the attendants pull steadily on the rope (Fig. 15).

Being large in diameter, the rope does not cut into the chest; and with the ring holding the loop together under the patient’s back, local pressure in either axilla is surprisingly little. Pressure is uniform and the possibility of harm is less than if the rescuers were to pull on a fractured shoulder girdle or arm.

An ejected victim suspected of having spinal injuries traditionally is lifted by blanket lift, by three-, four- or six-man lift (Fig. 16), and placed on litter, face up or face down. It is common practice that after such a patient is hospitalized he is turned on his side if necessary for examination.

Using the long board, the same method of turning is valuable at the accident scene, and the victim will not sag. By grasping the victim’s clothing (Fig. 17), attendants can turn

![Fig. 13. Back seat is lifted out to make more working space, permit whatever care is immediately necessary to victim, enable attendants to push long board under him, and remove him through either door.](image)

![Fig. 14. Encircled in sling, this victim is carefully pulled onto long board previously pushed under head and shoulders.](image)
Equipment for Rescue Vehicle

The light rescue vehicle used in Minocqua, Wisconsin, is a four-wheel-drive panel truck with power take-off winch, heavy-duty springs and tires. To extricate the victim of an accident and provide emergency care, the truck carries this equipment:

Siren
Rotating lamp with red light, on top of truck
Two spot lights
Portable gas-powered generator with two 300-watt lights with 100-foot extension cords
Stand-up flash lights
Chain saw, gas powered
Rescue saw, gas powered, with blades for metal and concrete
Bolt cutter
Ten-ton, push-pull jack with spreader unit
Crowbars
Sledge hammer
Two ten-foot wooden pike poles
One hundred feet of 3/8-inch rope
Twenty-five feet of heavy-duty chain
Six four-by-four- by six-inch blocks
Ten-pound BC fire extinguisher
Asbestos blanket
Fourteen-foot aluminum extension ladder
E oxygen tank with regulator, hose and mask
Four wool blankets
One traction splint with ankle hitch
Padded-board splints for leg and arm
Inflatable splints
Triangular and soft roller bandages
Universal dressings
Airways for infant, child and adult
Two pillows
Bag-mask resuscitation unit
Six-foot (circle) one-inch rope sling with ring slide
Short and long spine boards with eight- and nine-foot straps
Hard helmets and coveralls

him part way, place the long board alongside of him, and turn him back on the board. The straps are passed across the victim, fastened, and he is (Fig. 18) ready for transport.

Usually the ejected victim is out in the open, but on occasion he is found under the vehicle (Fig. 19). With the rope sling and long board, he can be extricated with relative ease (Fig. 20). Just as emergency care—resuscitation, splinting and bandaging—must be practiced to attain perfection so must rescue techniques be practiced. The actual scene of the accident is no place for practice.

Extraction can be practiced on pseudo victims in cars salvaged from wrecks and placed in any position necessary. Such exercises should be part of any training program and should be done on a continuing basis.

Use of the long and short spine boards definitely lessens the potential damage to the victim, especially one with an injured spine, and makes difficult tasks relatively easy.
Rescue From Death in a Ditch—continued

Fig. 16. Three attendants demonstrate lift of ejected victim suspected of having injuries of spine.

Fig. 17. Grasping ejected victim’s clothing, rescuers turn him part way, position board, turn him back on it.

Fig. 18. After straps carried in every rescue vehicle assure patient’s security, he is ready for journey to hospital.

Fig. 19. To extricate victim from under auto rescuers use rope sling, rather than pull on clothing or extremities.

Fig. 20. Minocquans demonstrate second step in “snaking” injured out of tight spot. Traction should be at board level.
**The inpatient list**

This column describes the Centers for Medicare & Medicaid Services’ (CMS) inpatient list and CMS’ policies for payment of services that are either included or not included on this listing. Although the inpatient list directly affects Medicare reimbursement to hospitals and other patient care centers, surgeons should be aware of the inpatient list, because the inclusion of services on the list could affect interactions with their hospitals.

**What is the inpatient list?**
The Social Security Act allows CMS to define services that are appropriate for payment under the Outpatient Prospective Payment System (OPPS). Under this authority, CMS also identifies services that should be performed in the inpatient setting. These services are itemized on the inpatient list, also known as the inpatient-only list.

The inpatient list is a litany of services for which Medicare will only reimburse hospitals if the services are provided in the inpatient setting. Services are included on this list based on the nature of the procedure, the underlying physical condition of the patient, or the need for at least 24 hours of postoperative recovery time or monitoring before the patient can be discharged safely.

Medicare will not pay the facility for inpatient list services if they are provided outside of the inpatient setting, such as in a hospital outpatient department, an ambulatory surgical center (ASC), or a physician’s office. However, the inpatient list does not affect physician reimbursement. If the medical record documents the medical necessity of a service, taking into consideration any Medicare coverage policy requirements, then the physician will typically receive the Medicare Part B reimbursement for an inpatient list service, regardless of the setting.

The services on the inpatient list are predominately surgical services and are expressed in terms of Current Procedural Terminology (CPT) codes.* CMS maintains and updates the list annually as part of the OPPS rulemaking process.

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*If a service is not on the inpatient list, will Medicare still reimburse a physician and a hospital for providing that service in the inpatient setting?*

Generally, yes. Procedures that are not on the inpatient list may be performed in either the inpatient or outpatient setting. As long as the medical record shows that the service was medically necessary, the physician and the hospital will be reimbursed. In other words, inclusion on the inpatient list is not a prerequisite for physician or hospital reimbursement if a physician determines the service should be provided in the inpatient setting.

It is important to note, however, that other factors could potentially prevent a hospital from receiving full reimbursement for services provided in the inpatient setting that are not on the inpatient list. For example, a Medicare recovery audit contractor might determine that an inpatient admission was not medically necessary. To protect the hospital’s reimbursement in an audit, surgeons should clearly document both the medical necessity of the procedure as well as the medical necessity of the inpatient admission.

Although CMS’ rules state that the decision to admit a patient is a medical one based on many factors and that hospitals must obtain concurrence from the practitioner responsible for the care of the patient before changing the patient’s status from inpatient to observation, both facilities and physicians often misunderstand these rules.† As such, the ACS is actively working to encourage CMS to clearly define the rules regarding patient status and is...
To protect the hospital’s reimbursement in an audit, surgeons should clearly document both the medical necessity of the procedure as well as the medical necessity of the inpatient admission.

What criteria does CMS use when determining whether to remove a procedure from the inpatient list?

CMS uses the following criteria when reviewing procedures to determine whether they are frequently and safely performed on an outpatient basis and should be removed from the inpatient list:

- Most outpatient departments are equipped to provide the services to the Medicare population
- The simplest procedure described by the CPT code may be performed in most outpatient departments
- The procedure is related to codes that CMS has already removed from the inpatient list
- The procedure is being performed in numerous hospitals on an outpatient basis
- The procedure can be performed appropriately and safely in an ASC and is on the list of approved ASC procedures, or CMS has proposed that it be added to the ASC list

Where can I find the inpatient list?
The list is included as Addendum E to the hospital OPPS rule and is posted at www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalOutpatientPPS/index.html under the “Hospital Outpatient Regulations and Notices” tab.

On the same CMS website, under the “Addendum A and Addendum B Updates” tab, Addendum B lists the payment status indicator (SI) for all CPT codes. The payment SIs are updated quarterly and indicate whether a service is payable under the Inpatient PPS, the Hospital Outpatient PPS, or another payment system. If a code has the SI of “C,” that code is on the inpatient list and the facility will receive payment only if performed in the inpatient setting. However, if a code has the SI of “T,” the code is payable under the Hospital Outpatient PPS, but may also be paid under the Inpatient PPS.
Effectively using E/M codes for trauma care

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

Trauma typically involves every organ system and requires both the medical and surgical expertise of the attending surgeon. As trauma care has evolved, intensive, nonoperative care has been used more frequently to manage many trauma patients. Consequently, coding for the care of trauma patients is now a more complicated process because it involves knowing not only the major surgical procedure codes, but also how to use evaluation and management (E/M) codes effectively. E/M coding remains an area of difficulty for some surgeons due to the numerous rules and guidelines. Furthermore, Medicare’s decision to not reimburse consultation codes has made coding for E/M services in trauma care even more complicated for those surgeons using the consult codes.

This column provides coding guidance and clinical scenarios on the appropriate use of E/M codes during the care of injured or critically ill patients, including the use of critical care codes, the coordination/counseling guide as a coding alternative to the tradition documentation guidelines (“bullets”), and modifiers for coding during the global surgical period.

ATLS and E/M documentation

Most surgeons are familiar with and have completed an Advanced Trauma Life Support® (ATLS®) course. The initial assessment and management tool includes a brief primary survey combined with the opportunity to take a patient’s history that includes allergies, medications, past illnesses, pregnancy, last meal, and events/environment related to the injury (AMPLE), followed by a head-to-toe secondary physical exam. Typically, the emergency medical technicians and nurses also capture the past and social history of the patient during their assessment, and this information may be incorporated into the surgeon’s initial assessment and management document. If the surgeon performs and fully documents this initial evaluation and secondary survey the service will typically qualify for one of the highest levels of E/M encounters.*

To capture one of the highest level E/M codes, the level of care that must be documented requires a comprehensive history and physical exam and a level of decision making that is of moderate or high complexity. The 1995 guidelines require a general multisystem examination or a
complete examination of a single organ system in order to constitute a comprehensive exam. The 1997 multisystem examination requires two bullets from each of the nine organ systems to constitute a comprehensive history and physician exam (see Table 1, this page).

The sickest trauma patients may be unable to provide history, social, family, and other required E/M information. In these instances, to qualify for the highest level E/M (99223 or 99255), the surgeon must document that the information was unobtainable and document high-complexity medical decision making.

However, if the surgeon does not document the patient’s history, physical examination, or decision making, the level of E/M cannot be justified. Good documentation is important.

Typically the trauma admission forms will cover the multisystem exam, because it is generally recommended that trauma patients receive a comprehensive evaluation. The creation of a standardized evaluation form
TABLE 2. RISK MODIFIED FOR TRAUMA PATIENTS

<table>
<thead>
<tr>
<th>LEVEL OF RISK</th>
<th>PRESENTING PROBLEM(S)</th>
<th>DIAGNOSTIC PROCEDURE(S) ORDERED</th>
<th>MANAGEMENT OPTIONS SELECTED</th>
</tr>
</thead>
</table>
| Moderate      | • Acute illness with systemic symptoms, for example, pyelonephritis, pneumonitis, colitis  
• Acute complicated injury, for example, head injury with brief loss of consciousness | • Physiologic tests under stress, for example, cardiac stress test, fetal contraction stress test  
• Diagnostic endoscopies with no identified risk factors  
• Deep needle or incisional biopsy  
• Cardiovascular imaging studies with contrast and no identified risk factors, for example, arteriogram, cardiac catheterization  
• Obtain fluid from body cavity, for example, lumbar puncture, thoracentesis, culdocentesis | • Minor surgery with identified risk factors  
• Elective major surgery (open, percutaneous, or endoscopic) with no identified risk factors  
• Prescription drug management  
• Therapeutic nuclear medicine  
• Intravenous fluids with additives  
• Closed treatment of fracture or dislocation without manipulation |
| High          | • Acute or chronic illnesses or injuries that pose a threat to life or bodily function, for example, multiple trauma, acute myocardial infarction, pulmonary embolus, severe respiratory distress, progressive severe rheumatoid arthritis, psychiatric illness with potential threat to self or others, peritonitis, acute renal failure  
• An abrupt change in neurologic status, for example, seizure, transient ischemic attack, weakness, sensory loss | • Cardiovascular imaging studies with contrast with identified risk factors  
• Cardiac electrophysiological tests  
• Diagnostic endoscopies with identified risk factors  
• Discography | • Elective major surgery (open, percutaneous, or endoscopic) with identified risk factors  
• Emergency major surgery (open, percutaneous, or endoscopic)  
• Parenteral controlled substances  
• Drug therapy requiring intensive monitoring for toxicity  
• Decision not to resuscitate or to de-escalate care because of poor prognosis |

for the history and physical, whether as an admission or consultation, is recommended.

Complexity of decision making helps to determine the level of CPT code billed

When the surgeon fully documents the standard initial ATLS trauma evaluation, the level and complexity of medical decision making may become the critical element in determining the final level of coding. The levels of E/M services recognize four increasingly complex levels of medical decision making (straightforward, low complexity, moderate complexity, and high complexity). Medical decision making refers to the complexity of establishing a diagnosis and/or selecting a management option based on three components: (1) the number of diagnoses or treatment options; (2) the amount and/or complexity of data to be reviewed; and (3) the level of risks of complications and/or morbidity or mortality.

Typically, trauma care requires extensive treatment options and data review. As such, the complexity of a medical decision may boil down to the level of risk. The 1995 guidelines for the upper two levels of risk are provided in Table 2 on this page. The surgeon would also need to document high complexity for either the number of diagnoses or treatment options or the amount or complexity of data reviewed to capture the highest level charge.

Coding the initial encounter

Care of trauma patients generally involves one of three management options: evaluation in the emergency department (ED) followed by admission to the hospital to the general surgery trauma team or to another specialty’s service; observation as an outpatient in the hospital or in the ED area; or discharge from the ED with either follow up in the office or transfer to another hospital.

In most trauma cases, the surgeon will typically determine that the patient requires admission to the inpatient hospital or observation through the general surgery or trauma service.
Because Medicare has stopped reimbursing for consult codes, and some commercial payors have followed suit, it is critically important that surgeons report the disposition of the patient.

When admitting Medicare patients to the hospital, surgeons should bill an initial hospital care code (99221–99223) and not an ED visit code. Medicare also requires that the admitting physician append modifier AI to the initial hospital visit code (9922X-AI). If the patient is admitted to the hospital as an inpatient and the surgeon sees the patient on the hospital unit on the same day of admission, this additional work should be summed into the one initial inpatient admission service code (99221–99223). However, if the patient also receives critical care services on the day of admission, these services are separately reportable. Subsequent hospital care visits per day are coded using Current Procedural Terminology (CPT) codes 99231–99233; day of discharge is coded using CPT code 99238. For trauma services in which multiple physicians may play different roles (one covers admits, one covers the intensive care unit [ICU]), it will be important to coordinate coding practices.

For payors that follow CPT rules, if a patient is admitted after an ED consultation and is not seen on the unit on the date of admission, only report the outpatient consultation codes (99241–99245). If the surgeon sees the patient on the hospital unit on the date of admission, report all E/M services related to the admission with the initial inpatient admission service code (99221–99223); documentation is key in this situation. If after admission the E/M documentation does not meet the criteria for an initial inpatient admission, the visit should be coded as subsequent hospital care (99231–99232). Do not report both an outpatient consultation and inpatient admission (or observation care) for services on the same day related to the same inpatient stay.

If the patient is admitted to the general surgery service for observation, codes 99218–99220 are reported for the first day of observation. For subsequent observation services, performed on a date other than the initial day of observation care, CPT codes 99224–99226 should be reported. CPT code 99217 is reported when a patient is discharged from observation on a date other than that of initial or subsequent observation care, if a face-to-face encounter occurred on that date. Code 99217 should not be reported in conjunction with a hospital stay.

For patients who receive hospital outpatient observation services and are discharged on the same date of service or who are admitted to the hospital as an inpatient and discharged the same day, the surgeon should report CPT codes 99234–99236. For Medicare patients, the patient must be admitted for at least eight hours but less than 24 hours to report CPT codes 99234–99236. Table 3 on this page describes the 2013 total facility and nonfacility relative value units (RVUs) for total initial observation, hospital, same-day observation and discharge, and outpatient consultations.

In some cases, a patient presents to the ED, and general surgery is consulted, but the patient is not admitted to the hospital. If the patient is a Medicare beneficiary, the surgeon should bill the appropriate level of ED code (99281–99285). Non-Medicare patients are considered

### Table 3. 2013 Total Initial Observation, Hospital, Same-Day Observation and Discharge, and Outpatient Consultation Facility and Nonfacility RVUs

<table>
<thead>
<tr>
<th>CPT</th>
<th>Initial observation care</th>
<th>CPT</th>
<th>Initial hospital care</th>
<th>CPT</th>
<th>Observe/discharge same date</th>
<th>CPT</th>
<th>Outpatient consultation</th>
<th>CPT</th>
<th>ED visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>99218</td>
<td>2.84</td>
<td>99221</td>
<td>2.92</td>
<td>99234</td>
<td>3.86</td>
<td>99241</td>
<td>1.37</td>
<td>99281</td>
<td>0.60</td>
</tr>
<tr>
<td>99219</td>
<td>3.87</td>
<td>99222</td>
<td>3.96</td>
<td>99235</td>
<td>4.83</td>
<td>99242</td>
<td>2.58</td>
<td>99282</td>
<td>1.18</td>
</tr>
<tr>
<td>99220</td>
<td>5.31</td>
<td>99223</td>
<td>5.82</td>
<td>99236</td>
<td>6.24</td>
<td>99243</td>
<td>3.52</td>
<td>99283</td>
<td>1.76</td>
</tr>
<tr>
<td>99244</td>
<td>5.20</td>
<td>99245</td>
<td>6.36</td>
<td>99284</td>
<td>3.37</td>
<td>99285</td>
<td>4.93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

†All specific references to CPT (Current Procedural Terminology) codes and descriptions are © 2012 American Medical Association. All rights reserved. CPT and CodeManager are registered trademarks of the American Medical Association.
outpatients until admitted to the hospital, and therefore, the outpatient consultation codes may be reported (99241–99245) if the payor recognizes those consult codes. If the surgeon does not see the patient in a face-to-face visit but advises the ED physician by telephone, the surgeon may not bill for this service. Table 4, this page, describes the 2013 total initial hospital and outpatient consultation for facility and nonfacility RVUs.

### Critical care codes

Critical care codes are E/M codes that may be billed independently or in addition to the typical E/M codes often used for trauma patients. However, distinguishing between critical care services and other E/M services can be confusing. The critical care surgeons provide to severely injured patients typically fits the criteria of critical care. However, it is important to note that just because a patient is critically ill or in a critical care unit does not automatically determine whether a service can be billed as critical care. Critical care services require direct personal management by the surgeon. Additionally, the determination of critical care is based not only upon the severity of the illness but on time. Table 5 on page 61 illustrates how to correctly report critical care services.

CPT defines critical care as:

- The direct delivery by a physician(s) or other qualified health care professional of medical care for a critically ill or critically injured patient. A critical illness or injury acutely impairs one or more vital organ systems such that there is a high probability of imminent or life-threatening deterioration in the patient’s condition. Critical care involves high complexity decision making to assess, manipulate, and support vital system function(s) to treat single or multiple vital organ system failure and/or to prevent further life threatening deterioration of the patient’s condition. Examples of vital organ system failure include, but are not limited to: central nervous system failure, circulatory failure, shock, renal, hepatic, metabolic, and/or respiratory failure. Although critical care typically requires interpretation of multiple physiologic parameters and/or application of advanced technology(s), critical care may be provided in life-threatening situations when these elements are not present. Critical care may be provided on multiple days, even if no changes are made in the treatment rendered to the patient, provided that the patient’s condition continues to require the level of attention described above.*

Critical care codes 99291 and 99292 are used to report the total time a physician spends providing critical care services on a single date of service, even if the time spent is not continuous. Although the time does not need to be continuous, it must be measured in increments from greater than 30 minutes up to 74 minutes for CPT code 99291, and each 30-minute increment thereafter using CPT code 99292. If a patient is in an intensive care area, but either the time spent is less than 30 minutes or the level of care does not meet the above criteria, the surgeon should use the appropriate level of E/M code for the encounter, such as 99233. For example, if a surgeon delivered critical care in one 60-minute increment, followed by three 20-minute increments throughout the day (120 minutes total time), this care would be coded as 99291 × 1, and 99292 × 2. The physician’s progress note must document the care delivered.

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on the unit and the time spent with the patient or family. In some instances, a surgeon may need to accompany a critically ill patient during transport between facilities. Critical care codes (99291 and 99292) are used if the patient is 24 months of age or older. For pediatric patients, codes 99466 and 99467 are used to report “the physical attendance and direct face-to-face care by a physician during the interfacility transport of a critically ill or critically injured pediatric patient 24 months of age or younger. Codes 99485 and 99486 are used to report the control physician’s non-face-to-face supervision of interfacility transport of a critically ill or critically injured pediatric patient 24 months of age or younger.”* As noted previously, critical care and other E/M activities may be provided and coded for on the same patient on the same day. Thus, if a patient was seen earlier in the day and then deteriorated clinically and required subsequent critical care, both the E/M service and critical care may be reported. For any given period of time spent providing critical care services, the physician must devote his or her full attention to the patient and, therefore, cannot provide services to any other patient during the same period. This critical care time may include coordinating care with other physicians, obtaining a history from others when the patient cannot give a comprehensive history, or discussing a specific treatment issue with family members when the patient is unable to participate.

**Counseling, coordination of care**

It is a misconception that an E/M encounter must meet each of the documentation guidelines or “bullets” for the associated service. Even if the documentation guidelines for the history, physical exam, or decision making are unmet, the work and time spent may be reported and are reimbursable as “counseling and coordination of care.” CPT defines these activities as follows:

When counseling and/or coordination of care dominates (more than 50 percent) the encounter with the patient and/or family (face-to-face time in the office or other outpatient setting or floor/unit time in the hospital or nursing facility), then time shall be considered the key or controlling factor to qualify for a particular level of E/M services. This includes time spent with parties who have assumed responsibility for the care of the patient or decision making whether or not they are family members (for example, foster parents, person acting in loco parentis, legal guardian). The extent of counseling and/or coordination of care must be documented in the medical record.*

When counseling or coordination of care occupies more than half of a given E/M visit, the surgeon may use that total time to determine the level of E/M code. In many cases, the work involved in coordinating multiple procedures between other specialists, talking with family members, and planning rehabilitation treatment falls on the trauma surgeon. As an example, if a hospitalized patient requires 35 minutes of time for that day’s care, which includes at least 18 minutes of counseling and coordination of care, then the surgeon may

<table>
<thead>
<tr>
<th>TOTAL DURATION OF CRITICAL CARE CODES</th>
<th>CODE TO REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 minutes</td>
<td>99232 or 99233 or other appropriate E/M code</td>
</tr>
<tr>
<td>30–74 minutes</td>
<td>99291 x 1</td>
</tr>
<tr>
<td>75–104 minutes</td>
<td>99291 x 1 and 99292 x 1</td>
</tr>
<tr>
<td>105–134 minutes</td>
<td>99291 x 1 and 99292 x 2</td>
</tr>
<tr>
<td>135–164 minutes</td>
<td>99291 x 1 and 99292 x 3</td>
</tr>
<tr>
<td>165–194 minutes</td>
<td>99291 x 1 and 99292 x 4</td>
</tr>
<tr>
<td>194 minutes or longer</td>
<td>99291–99292 as appropriate (per the above illustrations)</td>
</tr>
</tbody>
</table>

report those services with code 99233. This code is separately reportable if the patient is not in the global period for a procedure performed by the surgeon. The surgeon must document the total time, must indicate that greater than 50 percent of time was spent counseling/coordinating care, and must summarize the counseling/coordination of care work. Use the add-on prolonged service CPT codes (99356 and 99357), in addition to the standard E/M code, when the face-to-face time exceeds the time allotted for E/M services at any level, by more than 30 minutes. (See Table 6 on this page.)

Table 6: Using Time and Prolonged Services

<table>
<thead>
<tr>
<th>CODE</th>
<th>TYPICAL TIME FOR CODE</th>
<th>THRESHOLD TIME TO BILL 99356</th>
<th>THRESHOLD TIME TO BILL 99356 AND 99357</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial hospital services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99221</td>
<td>30</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td>99222</td>
<td>50</td>
<td>80</td>
<td>125</td>
</tr>
<tr>
<td>99223</td>
<td>70</td>
<td>100</td>
<td>145</td>
</tr>
<tr>
<td>Subsequent hospital visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99231</td>
<td>15</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>99232</td>
<td>25</td>
<td>55</td>
<td>100</td>
</tr>
<tr>
<td>99233</td>
<td>35</td>
<td>65</td>
<td>110</td>
</tr>
<tr>
<td>Inpatient consults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99251</td>
<td>20</td>
<td>50</td>
<td>95</td>
</tr>
<tr>
<td>99252</td>
<td>40</td>
<td>70</td>
<td>115</td>
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<td>85</td>
<td>130</td>
</tr>
<tr>
<td>99254</td>
<td>80</td>
<td>110</td>
<td>155</td>
</tr>
<tr>
<td>99255</td>
<td>110</td>
<td>140</td>
<td>185</td>
</tr>
</tbody>
</table>

test results, and so on, but the severity of illness and intensity of care delivered do not rise to the critical care level. Remember, the longer the visit/work time, the longer the percentage of time counseling and coordinating care. Wait time increases work time and, thus, will add to the amount of counseling/care coordination that must be met. For example, if the time for an initial hospital service takes greater than 125 minutes, report code 99222 for the hospital visit, then code 99356 for the first 30–60 minutes of additional care and code 99357 for each additional unit of 30 minutes.

It is important to note that time has no relevance in the ED when reporting 99281–99285 codes alone.

E/M services not related to the global period
Typically surgical procedures have global periods of 0, 10, or 90 days. E/M work typically performed in the global surgical period is inherent in the payment for a 10- or 90-day global surgical procedure. However, there are some exceptions to that rule, which allow separate payment if the appropriate modifier and diagnosis code(s) are used to report the service(s).

Modifier 24 (unrelated evaluation and management service by the same physician or other qualified health care professional during the postoperative period) is appended to an E/M service during the global period to indicate that the diagnosis or cause for the E/M service is unrelated or not typically seen in relation to the operation. An example would be if a patient has a splenectomy for a ruptured spleen (CPT 38100, splenectomy; ICD-9 865.04, massive parenchymal disruption of spleen), and over the next several days the surgeon manages the patient on a ventilator due to his concurrent flail chest (CPT
To capture one of the highest level E/M codes, the level of care that must be documented requires a comprehensive history and physical exam and a level of decision making that is of moderate or high complexity.

99291-24, critical care, first 30 minutes; ICD-9 807.4, flail chest.

Modifier 25 (significant, separately identifiable E/M service by the same physician on the same day of the procedure or other service) is appended to an E/M service to indicate that on the same day as a procedure, the physician performs an E/M service that is a significant, separate, identifiable service from the procedure. Modifier 25 is only used when the procedure performed on the same day is a minor procedure and has a 0- or 10-day global period. For example, a surgeon provides critical care for a patient following multiple traumas with head injury and pelvic fracture and places a central line to provide pressors and total parenteral nutrition. These activities would be coded using CPT 36556, insertion of nontunneled central venous catheter; ICD 9 958.4, traumatic shock; ICD 9 263.0, malnutrition of moderate degree; and CPT 99291-25, critical care, first 30 minutes; ICD 9 851.0, cerebral cortex contusion with prolonged loss of consciousness, ICD 9 808.43, multiple closed pelvic fractures.

Modifier 57 (decision for surgery) is added to an E/M code if the surgeon sees the patient and then, based upon the evaluation of the patient, decides to proceed with surgery either the same or the following day.

Clinical scenarios

Case 1: A 65-year-old male involved in a motor vehicle accident (MVA) is brought to the ED with a fractured pelvis and small bleed from the spleen. The general surgeon consults.

The patient presents hypotensive but responds to an initial fluid challenge and has acceptable vital signs. Due to poor IV access, the surgeon inserts a central venous catheter using ultrasound guidance. The surgeon then evaluates the patient with a standard ATLS initial, secondary survey, and a contrast CT scan of abdomen and pelvis, along with the standard blood, urine, and electrocardiogram tests. The patient has pain upon palpation of his pelvis. Suspicious of a pelvic fracture, the surgeon performs a focused abdominal scan for trauma (FAST) with image documentation. The FAST exam shows a small amount of blood around the spleen but no other free fluid in the abdomen. The CT scan shows a small tear of the spleen with a small amount of blood and a contained retroperitoneal hematoma caused by a pelvic fracture, but no arterial blush is seen. The surgeon then communicates with the patient’s family, the orthopaedic surgeon on call, and the patient’s primary care physician and enters orders for admission to the intensive care unit. The surgeon sees the patient later that afternoon and evening; the patient is stable and requires no vasopressors or operations. However, the patient does require a blood transfusion and adjustment of his pain medications. The patient remains stable and is subsequently moved to a regular floor and is discharged to a rehabilitation facility after a seven-day hospital stay.

The surgeon was in direct attendance with the patient in the ED for 120 minutes—critical care, including care coordination and communication with family. Reportable procedures include:

Day 1

• 99291-25, Critical care, evaluation and management of the critically ill or critically injured patient; first 30–74 minutes

• + 99292-25, Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes (List separately in addition to code for primary service)

• + 99292-25, Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes (List separately in addition to code for primary service)

• 99223-25-AI, Initial hospital care
• 36556, Insertion of nontunneled centrally inserted central venous catheter; age 5 years or older

• + 76937-26, Ultrasound guidance for vascular access requiring ultrasound evaluation of potential access sites, documentation of selected vessel patency, concurrent real-time ultrasound visualization of vascular needle entry, with permanent recording and reporting (List separately in addition to code for primary procedure)

• 76705-26, Ultrasound, abdominal, real time with image documentation; limited (eg, single organ, quadrant, follow-up)

• 76775-26, Ultrasound, retroperitoneal (eg, renal, aorta, nodes), real time with image documentation; limited

• 76604-26, Ultrasound, chest (includes mediastinum), real time with image documentation

Days 2 to 6
• 99232, Subsequent hospital care

Day 7
• 99238, Hospital discharge day management; 30 minutes or less

Codes 99291 and 99292 are used to report the total duration of time spent providing critical care services. CPT code 99223 is used to report the hospital admission and includes evaluation and admission to hospital, including later rounding on patient in ICU (noncritical care) on day of admission, accounting for the face-to-face time of the subsequent care delivered later that day and complexity of the medical decision making. The critical care and hospital admission are separately reportable. Although the surgeon was called in to consult, the consult codes are not reported because the surgeon decided to admit the patient to his service. The AI modifier is necessary to alert the Centers for Medicare & Medicaid Services (CMS) that the surgeon is the admitting physician. The 25 modifier (significant, separately identifiable E/M service by the same physician on the same day of the procedure or other service) is necessary on the E/M services because a nontunneled centrally inserted central venous catheter, a minor procedure with a 0-day global period, was performed; however, the E/M services are separately reportable. The ultrasound procedures require the 26 modifier (professional component) because the surgeon may only bill for the physician component of the service. In addition, any add-on codes must follow the primary code on the claim form.

Case 2: A 45-year-old male is brought to the ED in shock with a gunshot wound to the chest.

The trauma surgeon meets the ambulance in the ED and performs the ATLS, primary and secondary surveys, initial resuscitation, and complex medical decision making, including imaging studies, coordination with specialty services for an operation with multiple teams, and communication with family. The patient is unable to provide a comprehensive history. The surgeon documents that the history is unobtainable and high-complexity medical decision making. The surgeon places bilateral chest tubes for hemopneumothoraces and performs a FAST exam, which shows free fluid in the abdomen. The surgeon directs the management of ventilation and blood product administration. The surgeon spends 60 minutes performing critical care in the ED and then takes the patient to the operating room, where he or she performs a laparotomy to pack and control a liver injury. At the same session, a thoracic surgeon performs a thoracotomy with wedge resection of a bleeding lung and a pericardial window. The patient then goes to the intensive care unit, where the surgeon spends another 60
It is a misconception that an E/M encounter must meet each of the documentation guidelines or “bullets” for the associated service. Even if the documentation guidelines for the history, physical exam, or decision making are unmet, the work and time spent may be reported and are reimbursable as “counseling and coordination of care.”

minutes supervising critical care. Reportable procedures include:

Day 1

• 47361, Management of liver hemorrhage; exploration of hepatic wound, extensive debridement, with or without packing of liver; ICD-9 864.14 (laceration of liver, major with open wound into cavity)

• 32551-50, Tube thoracostomy, includes water seal (eg, for abscess, hemotorax, empyema), when performed (separate procedure); ICD-9 860.5 (traumatic pneumothorax with open wound into thorax)

• 76705-26, Ultrasound, abdominal, real time with image documentation; limited (eg, single organ, quadrant, follow-up); ICD 9 958.4 (traumatic shock)

• 76775 -26, Ultrasound, retroperitoneal (eg, renal, aorta, nodes), real time with image documentation; limited

• 76604-26, Ultrasound, chest (includes mediastinum), real time with image documentation

• 99291-25, Critical care, evaluation and management of the critically ill or critically injured patient; first 30–74 minutes

• + 99292-25, Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes (List separately in addition to code for primary service); ICD-9 958.4 (traumatic shock)

• 99223-25-57, Initial hospital care

Management of the liver hemorrhage is reported with CPT code 47361. CPT code 32551 is used to report the placement of the chest tubes, and the 50 modifier (bilateral procedure) is required because chest tubes were placed bilaterally. It is important to note that some payors that do not follow Medicare rules may require the reporting of bilateral procedures on two lines (32251 and 32251-50). The ultrasound procedure requires the 26 modifier (professional component) because in the facility the surgeon may only bill for the physician component of the service. Add-on codes must follow the primary code on the claim form.

Critical care codes 99291 and 99292 are used to report the total duration of time that a physician spent providing critical care. CPT code 99223 is used to report the hospital admission and includes evaluation and admission to hospital, including later rounding on patient in ICU (noncritical care) on day of admission, accounting for the face-to-face time of the subsequent care delivered later that day and complexity of the medical decision making. The critical care and hospital admission are separately reportable.

If you have additional coding questions, contact the ACS Coding Hotline at 800-227-7911 between 7:00 am and 4:00 pm Mountain time, excluding holidays, or go to www.facs.org/ahp/pubs/tips/index.html.

Editor's note

Accurate coding is the responsibility of the provider. This summary is only intended as a resource to assist in the billing process.
Proper sterilization of instruments used in surgical procedures is a crucial step toward reducing surgical infections, perioperative morbidity, and operative time and cost. Although health care providers are well aware of how important it is to clean, disinfect, and sterilize medical equipment, devices, and supplies, The Joint Commission has observed several significant missteps in these processes in recent years. More specifically, issues related to the proper use of steam sterilization as well as the unprecedented pace at which new devices and resistant pathogens have emerged and generated concern. In response, The Joint Commission has revised a standard and two elements of performance related to reducing these risks in ambulatory care facilities, critical access hospitals, hospitals, long-term care facilities, and office-based surgery centers.

Surgeons and health care providers seeking to address these issues and improve surgical outcomes use accreditation requirements and guidelines from the Centers for Disease Control and Prevention (CDC) and other professional agencies and organizations to standardize sterilization practices. One health care provider recently reported that use of Lean quality improvement techniques produced significantly better results in sterile surgical instrument processing. Lean is a set of production improvement tools that companies such as Toyota have used to increase customer value by eliminating waste and creating flow throughout the value stream. Details of the project were reported in the March issue of *The Joint Commission Journal on Quality and Patient Safety.*

In a study undertaken at The Joint Commission-accredited Virginia Mason Medical Center in Seattle, WA, quality improvement interventions in the surgical instrument sterilization process were based on adoption of a specific set of Lean production improvement methods called the Virginia Mason Production System (VMPS). The article describes how the center used VMPS to improve surgical sterile instrument processing in its 24 operating rooms (ORs) where approximately 18,000 operative procedures are performed annually.

With the implementation of the Lean-based strategies, health care professionals at Virginia Mason reported that the instrument sterilization error rate decreased 50 percent, from 3.0 per 100 surgical procedures at baseline to 1.5 in the final sustainability period.

The daily defect sheet

The 37-month project at Virginia Mason relied on a quality monitoring approach that was developed to identify and categorize errors in sterile instrument processing through use of a daily defect sheet.

The organization used Lean methods to reduce risks in sterile processing of surgical instruments by creating separate steps of defined work related to assembling and packaging the instruments and by rearranging the physically confined sterile processing workspace to accommodate the new work processes. The center also developed a brief checklist and other processes to mistake-proof sterilization, created an instrument sterilization certification training program for staff, and sought continuous feedback on the sterilization processes.

The daily defect sheet was used to track errors, discover the causes of mistakes, foster accountability, and communicate across departments and disciplines. For example, OR staff’s discovery of multiple errors in functionality of the same instrument type led sterile processing staff to initiate a discussion, which revealed that the OR team was using laparoscopic tissue forceps to pull on a drain in a manner beyond its load tolerance, leading to frequent failures.

With the implementation of the Lean-based strategies, health care professionals at Virginia Mason reported that the instrument sterilization error rate decreased 50 percent, from 3.0 per 100 surgical procedures at baseline to 1.5 in the final sustainability period. Improvements were observed in multiple categories of error types, particularly assembly errors in packaging (from 0.66 to 0.24 errors per hundred cases, p = .004) and foreign objects such as pens and paper clips (0.17 to 0.02 errors per hundred cases, p = .025). Although process reviewers at Virginia Mason were unable to directly measure and attribute specific clinical outcomes to the surgical instrument processing interventions, reviewers anticipate the improved processes will contribute to lower infection rates, fewer surgical errors, and reduced costs.

In addition, the Center’s team expects to uncover direct linkages between OR delays and surgery times with sterile processing errors. The authors of the study concluded that surgical sterile instrument errors may be markedly reduced through the rigorous application of the VMPS Lean quality improvement methodology, with potential improvement in surgical quality and efficiency.


For more information regarding the Virginia Mason study, Applying Lean Methods to Improve Quality and Safety in Surgical Sterile Instrument Processing, contact C. Craig Blackmore, MD, MPH, director of the Center for Health Services Research, Virginia Mason Medical Center, Seattle, WA, at craig.blackmore@vmmc.org. ✶
Workers’ compensation

Compensation for bodily injury began shortly after the advent of written history. The ancient Sumerian Nippur Tablet No. 3191 (dating back to 2050 BC) outlines the king’s law that provides monetary compensation for specific injury to workers’ body parts, including fractures.* There are references in ancient Greek, Roman, Arab, and Chinese law providing for precise payments according to compensation schedules for the loss of a body part.* It was not until the 20th century that the U.S. began examining worker safety and, later, compensation for on-the-job injuries. The novel The Jungle by Upton Sinclair describes the horrendous working conditions in Chicago, IL, slaughterhouses in the early 1900s, which resulted in a public outcry on working conditions. The publication of this novel, in turn, led to the U.S. Food and Drug Act of 1906 and the Meat Inspection Act of 1906. President Howard Taft put into law the first compensation system to cover workers involved in interstate trade in 1908.*

Because labor regulation in the U.S. was set at the state level, it was up to state-level policymakers to pass their own legislation. Wisconsin was the first state to pass a comprehensive workers’ compensation law in 1911. By the end of that decade, 45 states had passed similar legislation. The last state to pass workers’ compensation legislation was Mississippi in 1948.*

As time passed, the American workforce continued to grow. In 2010, according to the Bureau of Labor Statistics Current Population Survey, the U.S. private and public workforce was composed of an estimated 139 million civilian workers.† Every day many of these workers suffered injury, disability, and death from workplace incidents. In 2010, approximately 3.9 million workers in state and local government and private industry experienced a nonfatal injury or illness.† That same year, more than 4,500 U.S. workers died from occupational injuries, another 2.6 million were treated in emergency rooms, and 110,000 of these workers were hospitalized.† This loss of productivity comes with a huge price tag. In 2009, employers spent $74 billion on workers’ compensation insurance alone.†

To examine the occurrence of occupational injuries in the National Trauma Data Bank® (NTDB®) research dataset for 2012, admissions medical records were searched using the field work-related (indication of whether the injury occurred during paid employment) with

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Workers’ compensation legislation offers three critical benefits: (1) the employer gets tort relief for injury occurring in the workplace; (2) the employee gets a relatively quick and predictable no-fault compensation based on a published scheme; and (3) the system carries an inherent incentive toward rehabilitation of the injured worker. Even though these three benefits exist, adherence to on-the-job safety procedures and workplace-injury prevention are far better than any workers’ compensation.

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

Acknowledgement
Statistical support for this article has been provided by Chrystal Caden-Price, data analyst, NTDB.
To whom it may concern,

Dear sir or madam,

Editor’s note: The following comments were received regarding recent articles published in the Bulletin. Letters should be sent with the writer’s name, address, e-mail address, and daytime telephone number via e-mail to dschneidman@facs.org, or via mail to Diane Schneidman, Editor-in-Chief, Bulletin, American College of Surgeons, 633 N. Saint Clair St., Chicago, IL 60611. Letters may be edited for length or clarity. Permission to publish letters is assumed unless the author indicates otherwise.

**Surgery for the developing world**

In his letter “Back to basics” (Bull Am Coll Surg. April 2013;98[4]:69-70), Edward Walworth, MD, FACS succinctly describes his joy at contributing to surgical care in the Ivory Coast and Haiti. He commends the American Board of Surgery for allowing certain trainees to engage in an elective in the developing world and bemoans the trend toward reliance on surgical technology, which may leave some trainees unable to perform open laparotomy with needle and thread.

Although aptly put, the threat that surgeons will no longer be capable of performing such traditional procedures goes beyond a decline in dexterity, and extends to the whole art of clinical diagnosis. Those surgeons who have a few or more grey hairs will undoubtedly recall the masters of old who, with great panache, could diagnose dextrocardia or malingering from the foot of the bed! They were the experts, the “Sherlock Holmes,” who spotted the tell-tale signs that others had missed and put the whole picture together in a shattering display of clinical acumen.

Such clinical mastery is now frowned upon in preference of the apparent surety of the computed tomography or magnetic resonance imaging scan, despite numerous descriptions of their limitations. Alas, the false confidence now given to technological aids has not only engulfed our trainees, but also the public and worse, the lawyers. Furthermore, perfectly appropriate techniques, such as closed treatment of fractures or symphysiotomy for obstructed labor, have been consigned to the dustbin of the past, and those surgeons who use these approaches (often with aplomb and excellent results) are at risk of legal action unless they gain categorical assent from their patients.

All this means that the surgical trainee of today is ill-equipped to deal with the surgical problems of the developing world. Dr. Walworth, in contrast, could rely on his training and experience of the 1970s, and his efforts were met with very acceptable results, despite the absence of nearly all laboratory equipment.

His story demonstrates eloquently that good practice in a resource-poor setting may yield positive results. In the quest for perfection, we in the resource-rich world have forgotten that this reliance on technology comes with a price—not just financial, but social and practical. No wonder the poor benefit only from approximately 3.5 percent of all surgical procedures done worldwide.*

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It is time that surgery was recognized as an adjunct to primary care. It has been shown to be hugely cost-effective—far more so than most medical interventions—and successful surgical care in the developing world setting gives all other medical care credibility.

The International Collaboration for Essential Surgery, www.essentialsurgery.com, has drawn up a definition of 15 procedures that would address approximately 85 percent of the surgical needs of people in the developing world who currently have no access to surgical care whatsoever.

It is our humanitarian duty to train health care personnel, not necessarily physicians, to perform these procedures so that the unmet burden of surgical disease does not haunt the profession for generations to come.

Michael Cotton, MA (Oxon), FACS, FRCS(Eng), FCS(ECSA), FMH (Switzerland)
Lausanne, Switzerland

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**Dr. Jordan inspires**


Although negative aspects of neurosurgical training are discussed in my book, my enthusiasm for the profession has persisted for nearly 40 years. However, I was both surprised and appalled to read that “90 percent of 5,000 physicians who participated in a study by The Doctors Company were unwilling to recommend medicine as a profession.”

In my book, I reflect on the satisfaction of providing lifesaving interventions to patients. Almost weekly during my years of practice I was encouraged by the knowledge that an individual incapacitated due to severe pain/weakness could promptly be returned to productivity and relative enjoyment of life by a “simple” operation.

Since childhood, I have been a recipient of medical/surgical interventions that have allowed me to enjoy excellent health at the age of 76. The negative attitude toward medicine described by Dr. Jordan suggests to me that its origins lie in the energy, time, and cost required in reaching the goal of being a reliable health care professional rather than the lack of satisfaction derived from practice. I would be most interested to hear/read further comments on the topic.

Edward R. Lang, MD, FACS
Gainesville, VA

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The article in the January 2013 issue of the Bulletin by Paul H. Jordan, MD, FACS, is the nicest and most inspiring piece I have read in some time, and he should be complimented by all of us sharing his pride in the practice of general surgery. Thank you for this first article in the Bulletin’s new and very welcome column, From Residency to Retirement.

I first met this unassuming but impressive and friendly man when I was a freshman at the University of Chicago, IL, and he was a medical student. He has been a role model and a warm friend since that time. Dr. Jordan has been a truly major contributor to both the science and the practice of surgery over the course of an unusually long and distinguished career at Baylor College of Medicine, Houston, TX, but he retains the spirit of his youth as demonstrated by this essay. His message is powerful, and I am now copying his presentation for my medical student tutorials at my own university. He has an important message, and he tells it well. Our students need to hear him!

Walter Lawrence, Jr., MD, FACS
Richmond, VA
Replacing the SGR:  
The latest developments in the ACS Value-Based Update proposal

In the August 2012 issue of the Bulletin, David B. Hoyt, MD, FACS, Executive Director of the American College of Surgeons (ACS), announced that the College was engaged in an effort to replace the flawed Medicare sustainable growth rate (SGR) formula, which is used to calculate physician payment, with a Value-Based Update (VBU). In his “Looking forward” column, Dr. Hoyt indicated that the ACS proposal would better reflect the real increasing costs of delivering health care in the U.S. and would begin to factor in the quality of care that physicians deliver based on measures that are meaningful to patients as well as to surgeons.

Since then, the ACS has continued its work to develop this proposal. Although many details still must be pinned down, policymakers in Washington, DC, are showing increasing interest in the concept of the VBU, and the ACS is working diligently to further define the structure of the VBU and provide more information to and obtain feedback from Fellows of the ACS.

ACS as a thought leader in payment reform
In July 2012, ACS leaders testified at two different congressional meetings dedicated to developing an alternative payment methodology to the SGR.

First, Frank G. Opelka, MD, FACS, Associate Medical Director of the ACS Division of Advocacy and Health Policy, represented the College at a July 11 Senate Finance Committee roundtable. The meeting, titled Medicare Physician Payments: Perspectives from Physicians, was an opportunity for members of Congress to hear the physician community’s suggestions on how best to reform the Medicare physician payment system and encourage health care providers to deliver high-quality, high-value health care. Representatives of four other health care organizations—the American Medical Association, American Academy of Family Physicians, American College of Cardiology, and American Society of Clinical Oncology—also participated in the roundtable. This meeting was the third in a series that the Senate Finance Committee has scheduled to examine the current state of the Medicare physician payment system.

Next, Dr. Hoyt spoke on Medicare payment reform during a July 18 House Energy and Commerce Health Subcommittee hearing, Using Innovation to Reform Medicare Physician Payment, which was convened to explore possible options for replacing the SGR. Witnesses and Representatives at the hearing strongly agreed that the SGR should be replaced. Dr. Hoyt shared the College’s experience with quality programs and discussed the framework of the College’s VBU. In addition, at press time, the College was scheduled to testify before the House Ways and Means Subcommittee on Health.

Through these and other activities, the ACS is ensuring that as Congress continues its march toward identifying a replacement for the SGR, the ACS will serve as a valued resource committed to improving the payment system to better reflect the care delivered and factors that are important to surgical patients.

Adding more meat to the bones
As the College looks to further develop the proposal, it is taking the critical step of conducting further research into and analysis of the possible permutations the VBU methodology could take and developing a model of what possible clinical quality measure groupings might look like under this potential plan. More specifically, the ACS has partnered with researchers from Brandeis University, Waltham, MA, and Brigham and Women’s Hospital, Boston, MA.

Through this venture, the ACS anticipates gaining a better understanding of how this methodology may be used to ensure that payment updates are more closely aligned with factors that surgeons can control rather than being anchored to the spending and resource use of all Medicare Part B providers. The ACS also seeks to bring further clarity to the quality and appropriateness of measures that
As the College looks to further develop the proposal, it is taking the critical step of conducting further research into and analysis of the possible permutations the VBU methodology could take and developing a model of what possible clinical quality measure groupings might look like under this potential plan.

would be selected for inclusion in the program, as well as the ability of participants to meet set performance thresholds on the measures both on a national level and a local level.

**Time is of the essence**
Needless to say, a substantial amount of thought and effort goes into designing a physician payment system that serves the best interests of all stakeholders, including patients, all types of physicians, and the government. However, as ACS Fellows can attest, all health care services continue to be delivered under the pressure of a broken Medicare payment system.

Although the more than 27 percent cut that was slated for January 1, 2013, was averted through congressional action—largely due to the advocacy efforts of the ACS and other medical and surgical organizations—other cuts are scheduled to occur in the near future. These potential reductions include the 2 percent cut in physician payments mandated under the federal budget sequester, as well as a 24 percent SGR-triggered Medicare physician payment cut effective January 1, 2014. With the stresses these factors place on surgeons across the nation, the ACS proceeds with a sense of cautious determination to replace the system that has served American medicine so poorly for so long.

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**ACS releases primer on bundled payment**

The American College of Surgeons (ACS) recently released *Surgeons and Bundled Payment Models: A Primer for Understanding Alternative Physician Payment Approaches*, which summarizes the concept of bundled payment and the effect bundled payment policies could have on surgical practices.

Given the increased focus on bundled payment as an approach to payment reform, the ACS General Surgery Coding and Reimbursement Committee formed a workgroup to develop a process for creating clinically coherent bundled payment models and analyzing the potential opportunities and barriers for surgery in bundled payment. The workgroup was composed of surgeon experts in quality and coding and reimbursement and was tasked with: (1) determining the resources and expertise necessary for developing clinically coherent surgical bundles; (2) developing general principles regarding the selection, optimal structure, and function of surgical bundles; (3) providing robust guidelines about which procedures or condition characteristics must be present to construct a usable bundle; and (4) providing insight about which characteristics might make a procedure or condition a poor candidate for a bundled payment model.

In addition to the workgroup findings, the primer provides an overview of existing congressionally mandated and private-sector bundled payment programs at Geisinger Health System in Pennsylvania and BlueCross BlueShield of Massachusetts, as well as describing common issues to consider when developing a bundle. To access this members-only resource, go to efacs.org/advocacy and use your ACS-issued username and password.
On February 25, America and the world lost a great humanitarian, C. Everett Koop, MD, FACS, who died peacefully at age 96 in Hanover, NH. His entire life had been directed toward helping others, most recently founding the Koop Institute at Dartmouth College’s Geisel School of Medicine in Hanover.

Born an only child in Brooklyn, NY, on October 14, 1916, Dr. Koop’s earliest aspirations were to become a physician, indeed a surgeon. A neighbor’s son who was a medical student at Columbia allowed him to be an observer in their operating room galleries. From that experience, Dr. Koop learned rudiments of simple surgical procedures, which he performed on stray animals with his mother, a social worker, administering ether anesthesia.

In 1933 at age 16, he matriculated at Dartmouth College as a premedical student in zoology, choosing to take a fourth undergraduate year, instead of enrolling in Dartmouth’s then two-year medical school. In 1938 he married Elizabeth (Betty) Flanagan, a student at Vassar College whom he had met while at Dartmouth, and in 1941, Dr. Koop was awarded his MD degree from Cornell University Medical School, New York, NY.

Dr. Koop started his surgical residency training at the University of Pennsylvania in Philadelphia under Isidor S. Ravdin, MD, FACS. On December 8, 1941, while hospitalized with an acute duodenal ulcer, in the turmoil of the day after Pearl Harbor, he learned that Dr. Ravdin would soon depart from the university to serve in the Army Medical Corps. Dr. Ravdin told Dr. Koop that he would declare him to be essential to the university for the duration of the war. A tibial nonunion and the duodenal ulcer disqualified Dr. Koop from active duty. He spent the war years in surgical training at the University of Pennsylvania, where he conducted research into plasma substitutes.

At the end of World War II, Dr. Koop was planning for a future in cancer surgery. However, Providence presented an opportunity that he had not considered, namely pediatric surgery. There being no reliable coverage of pediatric surgical problems at the University of Pennsylvania, Dr. Ravdin again turned to Dr. Koop to fill that need. After an introductory stay at Children’s Hospital of Philadelphia (CHOP) he was sent to Children’s Hospital in Boston, MA, for a postgraduate stint with William E. Ladd, MD, FACS, and Robert E. Gross, MD, FACS.

Pioneer pediatric surgeon
In 1947, at age 31, Dr. Koop returned to Philadelphia. He said the other physicians at CHOP needed time to adapt to a surgeon being in charge of pediatric surgical patients. He established a world-renowned training program, and his own 35-year career in pediatric surgery as surgeon-in-chief. By 1951, he had trained 38 pediatric surgical fellows, many of whom relocated to other hospitals that by then had recognized the need for this emerging specialty. Although Dr. Koop trained in many types of surgery during the war years, he recognized the need for full-time surgeons in pediatric general surgery, urology, cardiac surgery, plastic surgery, ophthalmology, otolaryngology, orthopaedics, and neurosurgery and recruited excellent individuals to run each of those units in the department of surgery.

Children’s surgery was a recognized specialty in Europe before it was established in
America. Dr. Koop became the founding editor of the Journal of Pediatric Surgery in 1964. He also served as the surgical editor for the Journal of Clinical Pediatrics, as a member of the editorial board of Zeitschrift für Kinderchirurgie, and as an editorial consultant for the Japanese Journal of Pediatric Surgery and Medicine.

He established America’s first neonatal intensive care unit in collaboration with the anesthesia department of CHOP. In 1968, Stanley Dudrick, MD, FACS, then a surgical resident at the University of Pennsylvania Hospital, demonstrated the feasibility of long-term parenteral alimentation in an infant with massive loss of intestine. That modality has saved thousands of lives since then in patients of all ages.

Dr. Koop was author or coauthor of more than 230 articles and books on surgery, medical ethics, and health policy. He was awarded 41 honorary doctorates and multiple prestigious awards, including the William E. Ladd Medal of the American Academy of Pediatrics and the Denis Browne Medal of the British Association of Pediatric Surgeons to mark outstanding contributions to pediatric surgery. He was awarded the Medal of the Legion of Honor by France in 1980 and honorary memberships in the Royal College of Surgeons of England in 1982, the Royal College of Physicians and Surgeons of Glasgow in 1987, the Royal College of Surgeons of Edinburgh in 2009, and the Royal College of Medicine in 1997. Dr. Koop was a member of the American Surgical Association, the Society of University Surgeons, and served in 1971 as the second president of the American Pediatric Surgical Association.

**U.S. Surgeon General**

As his unique surgical career was coming to a close, Dr. Koop began another full-time career that was destined to save millions of lives worldwide. President Ronald Reagan appointed him to serve as the nation’s 13th Surgeon General and Director of the Office of International Health on November 17, 1981. His confirmation was not immediately forthcoming when proposed by the President, for he spoke passionately about various public health issues, such as the addictive and carcinogenic hazards of tobacco, which inspired vehement denials from the tobacco industry. In 1982, he wrote “The Surgeon General’s Report on Smoking and Health,” which led to marked reduction in the number of places where smoking was allowed and therefore a significant decrease in the number of people exposed to secondhand smoke. As Surgeon General, he was in charge of the 6,000-member U.S. Public Health Service Commissioned Corps, and advised the President and the public on health matters, such as smoking, diet and nutrition, immunization, and disease prevention.
In 1986, the President requested that Dr. Koop prepare a report on Acquired Immune Deficiency Syndrome (AIDS). David Baltimore, MD, chairman of the National Academy of Sciences, lauded Koop as a hero, as the one person in the Reagan Administration who was acting positively and practically in confronting this dreaded new disease—even to the point of advocating use of condoms, a measure seldom discussed in those times.

In 1995, President Clinton awarded Dr. Koop the Presidential Medal of Freedom, America’s highest civilian honor. His lasting legacy as Surgeon General was to use medical evidence, not politics, to give thoroughly honest information on health care.

**Return to his roots**

In 1992, Dr. Koop and Elizabeth returned to Hanover. Betty died in 2007. The Koops had previously lost one of their three sons, David Charles, who perished while mountain climbing. On April 1, 2010, Dr. Koop married a longstanding church friend, Cora Hogue, in the Tenth Presbyterian Church in Philadelphia, PA. My wife and I were pleased to be there for that happy occasion.

The final chapter for “Chick” (a nickname given to him as an undergraduate at Dartmouth) was the founding of the C. Everett Koop Institute at Dartmouth’s Geisel School of Medicine. Dr. Koop created the institute as a way to shape medical school curricula to provide students not only with scientific knowledge, but also to instill Hippocratic principles, such as dedication to the patient, the family, and the community. His leadership led to founding the Dartmouth Center on Addiction, Recovery, and Education, which emphasizes tobacco as a powerful and dangerous scourge across the globe. The C. Everett Koop Institute is a collaborative partnership of educators, scholars, researchers, students, and practicing physicians designed to address critical new health care issues. After serving nearly four decades as a pioneer in pediatric surgery, Dr. Koop shifted his focus seamlessly to improving the health of millions of people of all ages worldwide.

A beautiful memorial service of praise and thanksgiving for the life and spirit of Charles Everett Koop took place at the First Congregational Church of Woodstock, VT, on March 9.

His son, the Reverend Norman A. Koop, led the service with all Koop family members taking an active part in the service. A large contingent of uniformed U.S. Public Health Service personnel were in attendance, along with some of Dr. Koop’s trainees.

Dr. Koop is survived by two sons, Allen and Norman; his daughter, Elizabeth Thompson; his wife Cora; and eight grandchildren.

As his unique surgical career was coming to a close, Dr. Koop began another full-time career that was destined to save millions of lives worldwide. President Ronald Reagan appointed him to serve as the nation’s 13th Surgeon General and Director of the Office of International Health on November 17, 1981.
In memoriam:

Leading trauma surgeon

Eric R. Frykberg, MD, FACS, dies at age 62

Eric R. Frykberg, MD, FACS, an American College of Surgeons (ACS) Governor, died March 25 at the age of 62. For nearly 30 years, Dr. Frykberg was chief of the division of general surgery at Shands Jacksonville Medical Center and professor of surgery at the University of Florida College of Medicine-Jacksonville.

Dr. Frykberg had an intense interest in many aspects of general surgery and was particularly dedicated to trauma care and disaster preparedness. He served on the ACS Committee on Trauma (COT) from 1999 to 2005 and in the aftermath of the September 11, 2001, terrorist attacks chaired the COT’s Ad Hoc Committee on Disaster and Mass Casualty Management. He also served on the COT’s Committee on Injury Prevention and Control (1999–2005). In addition, he was member of the Nominating Committee of the Board of Governors (2011–2012) and the Board of Governors’ Committee on Physician Competency and Health (2011–2012).

His foresight saved many lives and his insights forged systems of care that will save many more. He is missed by all who had the privilege to know and work with him.

Dr. Frykberg is survived by his wife of 39 years, Patti; daughter Erica Glass, DO; son Brett Frykberg, MD; daughter Jessica Vogel; and five grandchildren.

More than 100 hospitals participate in ACS NSQIP CMS Hospital Compare

A total of 102 hospitals now are participating in a collaborative project between the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) and the Centers for Medicare & Medicaid Services (CMS), which allows ACS NSQIP hospitals to voluntarily report surgical performance measures on the CMS Hospital Compare website. On April 18, the results of the second reporting period were posted to the Hospital Compare website. Since the initial reporting period ended in October 2012, 23 additional hospitals have volunteered to publicly report their ACS NSQIP performance measures. View the results for the 102 hospitals at http://www.medicare.gov/hospitalcompare/acs-surgical-measures.aspx.

Participating hospitals may report results for one or any combination of three National Quality Forum (NQF)-endorsed surgical measures: elderly surgical outcomes, colon surgical outcomes, and lower-extremity bypass surgical outcomes.

Registration is open for the next reporting period scheduled for October 2013. View additional information regarding this initiative and registration procedures at http://site.acsnsqip.org.
Are you taking advantage of all the American College of Surgeons has to offer?

ACS members are dedicated to promoting the highest standards of surgical care through education and advocacy for Fellows and their peers. The College serves as an international forum through which surgeons can reinforce the values, ideals, and ethics that characterize the surgical profession.

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- And much more

**THERE IS STRENGTH IN NUMBERS**

Our members represent every surgical specialty, practice setting, and stage of practice. Their views and concerns help shape the College’s agenda for the future.

If you aren’t a member of the American College of Surgeons, apply for Fellowship today. If you are already a member, maintain your status and consider getting involved in the College’s efforts to make a difference.

Together, we can bring about positive change for our patients and partners—and for the surgeons of the future.

Information on becoming a member of the College and an application form are available online at [www.facs.org/memberservices/documents.html](http://www.facs.org/memberservices/documents.html) or contact Cynthia Hicks, Credentials Section, Division of Member Services, at [800-293-9623](tel:800-293-9623) or [chicks@facs.org](mailto:chicks@facs.org).
New book recounts lessons learned through Inspiring Quality forums


Starting with a July 2011 forum in Chicago, IL, the ACS organized 11 regional forums in key states, with panels of key stakeholders, including surgeons, hospital administrators, policymakers, nonsurgeon members of the surgical care team, and health policy analysts. A total of 95 panelists voiced their concerns, experiences, success stories, and challenges in addressing two foci of health care reform—improving quality and reducing costs.

The forums were part of the ACS Inspiring Quality campaign, which is designed to raise awareness of proven models that enhance the quality and value of health care. Since the Institute of Medicine issued its influential report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, 12 years ago, many quality improvement initiatives have attempted to address the problem, but health care quality remains uneven.

“The College has 100 years of experience developing rigorous quality improvement and educational programs,” said David B. Hoyt, MD, FACS, ACS Executive Director. “Surgeons have a responsibility to share what we’ve learned with the larger health care community and Congress and collaborate with them to achieve our shared goal of continuously improving the quality of surgical care.”

Many nonsurgeons agree, including Stuart Altman, PhD, the Sol C. Chaikin Professor of National Health Policy at the Heller School for Social Policy and Management, Brandeis University, Waltham, MA. In a quote from the book taken from his keynote address at the Boston, MA, forum in June 2012, Dr. Altman said, “In the past we didn’t include physicians and surgeons in discussions on how to fix the American health care system because we thought they were part of the problem—a big mistake. We need them as part of the solution because they are American health care.”

In addition, the book provides background on the ACS and its surgical quality and education programs, a summary of each forum with main points expressed by each speaker, and select case studies that point to successful models for improving health care quality. ♦
2013 COT Residents Trauma Papers Competition winners announced

The American College of Surgeons Committee on Trauma (ACS COT) announced the 15 winners of the 36th annual Residents Trauma Papers Competition at its March 21–23 meeting in San Diego, CA. Each winner received a $500 prize, with an additional $500 awarded to the second-place winners in each category, and an extra $1,000 to the two first-place winners.

The competition is open to surgical residents and trauma fellows. Submissions describe original research in the area of trauma care and/or prevention in one of two categories: basic laboratory research or clinical investigation. The Eastern and Western States COTs, Region 7 (Iowa, Kansas, Missouri, and Nebraska) and the ACS are funding the competition.

Submissions begin at the state or provincial level, and winners are then judged at regional competitions. Each region is then eligible to submit two abstracts to a panel of COT judges, who make the final selection for presentation at the Scientific Session of the COT meeting. This year, Raul Coimbra, MD, PhD, FACS, San Diego, CA, Vice-Chair of the COT and Chair of the COT Regional Committees, moderated the session.

The surgical residents and trauma fellows who presented are listed in the sidebar on page 81.

The 2013 final winners are as follows (see photo, this page):

- **First Place, Basic Laboratory Research:** Abubaker A. Ali, MD, Dearborn, MI (Region 5): The Stress Hormone Epinephrine Increases IgA Transport across Respiratory Epithelial Cells
- **First Place, Clinical Investigation:** Eiman Zargaran, MD, Vancouver, BC (Region 11): Development and Evaluation of an Electronic Trauma Health Record to Support Trauma Care and Population-Based Injury Surveillance in Low-Resource Settings
- **Second Place, Basic Laboratory Research (tied):** Kristin L. Long, MD, Lexington, KY, (Region 4): Fresh Red Blood
Cells Mitigate Human T-Cell Suppression Seen with Stored Blood Bank Red Cells

• Second Place, Basic Laboratory Research (tied): Isaiah R. Turnbull, MD, PhD, St. Louis, MO (Region 7): Severe Multisystem Injury Alters Immune Cell Expression of TLR-4 in a Novel Mouse Model of Adult Trauma

• Second Place, Clinical Investigation: David A. Hampton, MD, MEng, Portland, OR (Region 10): Cryopreserved Red Blood Cells Are Superior to Standard Liquid Blood Cells

2013 SURGICAL RESIDENTS AND TRAUMA FELLOWS PRESENTING PAPERS

Joshua J. Shaw, MD, Worcester, MA (Region 1)
Peter J. Smit, MD, MS, Buffalo, NY (Region 2)
Jeffrey W. Shupp, MD, Washington, DC (Region 3)
Kristin L. Long, MD, Lexington, KY (Region 4)
Abubaker A. Ali, MD, Dearborn, MI (Region 5)
Rafael F. Diaz-Flores, MD, MPH, Dallas, TX (Region 6)
Isaiah R. Turnbull, MD, PhD, St. Louis, MO (Region 7)
John R. Stringham, MD, Aurora, CO (Region 8)
Douglas Z. Liou, MD, Los Angeles, CA (Region 9)
David A. Hampton, MD, MEng, Portland, OR (Region 10)
Eiman Zargaran, MD, Vancouver, BC (Region 11)
Alexandra C. R. Stratton, MD, St. John’s, NL (Region 12)
Cpt. Diane F. Hale, MD, U.S. Army, San Antonio, TX (Region 13)
Paola C. Lattanzio Vazquez, Montevideo, Uruguay (Region 14)
Norman Lin, MD, Singapore (Region 16)

Find useful content on the public SRGS website

Although an annual subscription to Selected Readings in General Surgery (SRGS) is required to access the full content of each online edition, there are two public pages on the SRGS website that will help you locate the best of the medical literature:

• The current issue bibliography of articles the editor has recommended for further study, with a link to previous bibliographies, is available free of charge at www.facs.org/srgs/inside/bibliography.html.

• One of the commentaries in the What You Should Know section of SRGS Connect online is selected for public viewing each month. Find it free of charge at www.facs.org/srgs/featuredcomment.html.

From the Archives:
Dr. LaMar McGinnis proposes forming club dedicated to surgical history

In a recent post on the history and philosophy community of the American College of Surgeons (ACS) Web portal, LaMar S. McGinnis, Jr., MD, FACS, proposed the idea of a College club that would meet during Clinical Congress to discuss surgical history. The organization would serve to enhance communication and encourage the exchange of information regarding surgical and ACS history. With support from the ACS Archives staff, the club would review historical materials, participate in online chat rooms, present papers on aspects of the history of surgery, discuss methods of preserving the College’s rich history through the ACS Archives, and collaborate on historical projects of mutual interest.

Several surgeons expressed interest in participating in such a club on the Web portal. To view all of the comments, and participate in the discussion, go to http://efacs.org/forum/viewpost_1779_1.html.

Dr. McGinnis believes that it is appropriate, in the College’s Centennial year, to have an initial gathering to discuss such a club. Archives staff will sponsor a continental breakfast meeting at the 2013 Clinical Congress in Washington, DC, for all those interested. If you are interested in attending, contact ACS Archivist Susan Rishworth at srishworth@facs.org.
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- Mercer University School of Medicine/Medical Center of Central Georgia, Macon
- Ohio State University Wexner Medical Center, Columbus
- University of Louisville School of Medicine, KY
- University of Tennessee College of Medicine, Chattanooga
Members in the news

Christine Hodyl, DO, FACS, director of breast health services at South Nassau Community Hospital, Oceanside, NY, and a strong advocate for breast cancer screening and early detection, was recently honored as a health care hero by the Long Island Business News (see photo, this page). The award recognizes individuals and organizations in Nassau and Suffolk counties for outstanding leadership and commitment to health care issues. Dr. Hodyl also served as South Nassau’s Liaison Physician to the American College of Surgeons (ACS) Commission on Cancer, 2009–2012.

Fabrizio Michelassi, MD, FACS, the Lewis Atterbury Stimson Professor and chairman of the department of surgery at Weill Cornell Medical College, New York, NY, and surgeon-in-chief of NewYork-Presbyterian Hospital/Weill Cornell Medical Center, in December 2012 received the Grand Award of Merit from the American Society of the Italian Legions of Merit, the society’s highest honor (see photo, this page). The award recognizes Dr. Michelassi for his excellence, dedication, and leadership in medicine and the surgical field, as well as his contributions as a clinician, researcher, and teacher. Dr. Michelassi serves on the ACS Executive Committee of the Board of Governors and is chair of the ACS Committee on Clinical Congress Programs of the Advisory Council for General Surgery. He is also a Member and Past-Chair of the ACS International Relations Committee.

A new book on leadership by Donald J. Palmisano, MD, JD, FACS, The Little Red Book of Leadership Lessons, is now available in print and e-reader formats (see photo, this page). Published by Skyhorse Publishing, Inc., the book contains inspirational quotes, illustrations, and photos. Each chapter concludes with a section on “Lessons learned.” Dr. Palmisano is clinical professor of surgery and clinical professor of medical jurisprudence at Tulane University School of Medicine, New Orleans, LA. Dr. Palmisano’s first book, On Leadership, was published in 2008.

Susan E. Pories, MD, FACS, an award-winning breast surgeon at Mount Auburn Hospital, Cambridge, MA, and Beth Israel Deaconess Medical Center, Boston, was elected president of the Association of Women Surgeons at the organization’s 31st annual conference in Chicago, IL (see photo, page 84). Dr. Pories is the co-director of the Hoffman Breast Center at Mount Auburn Hospital and an associate professor of surgery at Harvard Medical School.
School, Cambridge. She serves on the ACS’ Women in Surgery Committee and has participated in committees of the American Society of Breast Disease and the American Society of Breast Surgeons.

Michael F. Rotondo, MD, FACS, chairman of the department of surgery at the Brody School of Medicine at East Carolina University and chief of surgery at Vidant Medical Center, Greenville, NC, on July 1 will assume the role of chief executive officer of the 1,000-physician University of Rochester Medical Faculty Group in Rochester, NY (see photo, this page). In this new assignment, Dr. Rotondo will also serve as senior associate dean of clinical affairs, professor of surgery, and vice-president for administration at Strong Memorial Hospital.

Dr. Rotondo, a former ACS Governor, is currently Chair of the ACS Committee on Trauma and Liaison for the ACS Program Committee.◆

Dr. Lewis Flint receives H. Biemann Othersen, Jr., MD, MUSC alumni award

Lewis M. Flint, MD, FACS, Editor-in-Chief of Selected Readings in General Surgery of the American College of Surgeons (ACS) Division of Education and adjunct professor of surgery at the Feinberg School of Medicine, Northwestern University, Chicago, IL, received the H. Biemann Othersen, Jr., MD, Distinguished Alumnus Award on April 25. This award is the highest alumni honor bestowed by the Medical University of South Carolina (MUSC) department of surgery, Charleston. The Curtis P. Artz MUSC Surgical Society, a member organization that recognizes the achievements of MUSC alumni who have enhanced the surgical profession through education, research, and clinical practice, presented the award to Dr. Flint.

Dr. Flint earned his medical degree and completed his surgical internship at Duke University School of Medicine, Durham, NC, in 1966. He was surgery chief resident at MUSC from 1973 to 1974. Dr. Flint has served as president of several surgical societies, including the Society of University Surgeons, the American Association for the Surgery of Trauma, the Halsted Society, and the Southern Surgical Association. He was recognized by the American Board of Surgery as director and senior examiner and was on the Centers for Disease Control and Prevention Injury Grant Review Committee. He also provides his expertise to the editorial boards of the American Journal of Surgery and the Journal of Trauma and Acute Care Surgery.

For more information on the Curtis P. Artz MUSC Surgical Society, view the brochure at http://academicdepartments.MUSC.edu/surgery/alumni/artzbrochure 6 13 12.pdf.◆
The newly expanded edition will debut at the 2013 Clinical Congress

For more than 42 years, the Surgical Education and Self-Assessment Program (SESAP®) has been a premier resource for practicing surgeons who want to evaluate and maintain clinical competence, as well as expand clinical knowledge and provide the best surgical care.

SESAP® 15 features more content than previous editions, including more than 800 questions and critiques. Earn up to 90 continuing medical education (CME) credits that can be used for self-assessment purposes and, for the first time ever, claim CME credit as each category in general surgery is completed:

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

A variety of print and electronic formats will be available to ensure that the expanded content and new method of claiming CME credit can be used to help fulfill Maintenance of Certification, Part 2 requirements.

To learn more about this exceptional program, developed by the American College of Surgeons Division of Education, visit facs.org/education/sesap.

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Connecticut Chapter presents Doctor’s Day 2013
The Connecticut Chapter co-hosted its annual Doctor’s Day with the Connecticut State Medical Society and several specialty societies on April 4 at the State Capitol in Hartford. All groups that participated in the program are members of a coalition that has worked on common issues during the current state legislative session. Doctor’s Day coincided with the signing of Connecticut’s historic new firearms legislation, which was developed in response to the tragedy at Sandy Hook Elementary School, Newtown, CT, in December 2012.

On the agenda were the delivery of personal, handwritten messages to legislators’ offices and presentations from Connecticut House Majority Leader Joe Aresimowicz (D), Rep. Gail Lavielle (R), and Rep. Prasad Srinivasan, MD (R). Dr. Srinivasan (see photo, this page) is the only elected physician in the Connecticut General Assembly. Doctor’s Day participants also were honored to be joined by Victoria Veltri, JD, LLM, Connecticut’s Healthcare Advocate, who addressed the gathering and conveyed more information about her office’s advocacy efforts.

This year, chapter members have advocated for passage of a definition of surgery bill and the defeat of a bill that would weaken Connecticut’s certificate of merit statute. Chapter President Kathleen LaVorgna, MD, FACS (see photo, this page), and Philip Corvo, MD, FACS, Co-Chair of the Chapter’s Patient Safety Committee, gave a presentation on the Connecticut Surgical Quality Collaborative (CtSQC). In the past 18 months, the CtSQC has grown from four participating hospitals to more than 20, most of which are using the ACS National Surgical Quality Improvement Program as their database.

As in past years, the Connecticut Chapter’s Doctor’s Day was successful due to the hard work of chapter members who took time from their practices to attend the event. Because of the partnerships that were forged with the state medical society and the specialty societies, as well as the support of the ACS Board of Governors, the medical and surgical communities were able to speak with a united voice.

Residents, Governors from the Brooklyn and Long Island Chapter visit Capitol Hill
An ACS grant allowed three residents of the Brooklyn and Long Island (BLI) Chapter to attend the 2013 Leadership and Advocacy Summit in April in Washington, DC.
Attending the Summit were: Robert Autin, MD, New York Methodist Hospital, Brooklyn; Teddi Takeuchi, MD, New York Methodist Hospital; and Praise Matemavi, MD, New York Hospital Medical Center, Queens. ACS Governors participating in the conference included Howard Sussman, MD, FACS, and Charles Coren, MD, FACS. The Leadership and Advocacy Summit proved to be memorable for these participants.

**Alabama Chapter presents Annual Lobby Day with state medical association**
The Alabama Chapter presented its annual Lobby Day in conjunction with the Medical Association of the State of Alabama's (MASA) legislative reception on the evening of February 5 (see photo, this page). The event occurred on the same night that Gov. Robert J. Bentley (R) delivered the State of the State Address in the Alabama Archives and History Building. After the address, members of the House and Senate convened for the reception with physicians from Alabama.

**Peru Chapter hosts IX Congress**
The Peru Chapter presented this year’s IX Congress in conjunction with the XIII International Congress of General Surgeons Peruvian Society (see photo, this page). More than 720 surgeons and
surgical academicians attended the educational and scientific program, which took place at the Lima Sheraton Hotel and Convention Center. This year, 24 professors from the U.S., Spain, Belgium, and Latin America were invited to attend the event.

Carlos A. Garberoglio, MD, FACS, chairman of the department of surgery at Loma Linda (CA) University, represented the College. Dr. Garberoglio lectured on gastric cancer, esophagi-gastric junction cancer, and acute care surgery. He also provided an update on other College activities.

New Mexico Chapter conducts annual meeting
Attending the 2012 New Mexico Chapter’s Annual Meeting and representing the state were Murugan Athigaman, MD, FACS, Chapter Vice-President; Robert Bahnsen, MD, FACS, ACS guest speaker; Charles Guimaraes, MD, FACS, Chapter President; Albert Kwan, MD, FACS, Chapter Treasurer; Stephen Lu, MD, FACS, Trauma Liaison/Past-President, Tim Nelson, MD, FACS, Chapter President-Elect; Ann Marie Wallace, MD, FACS, Past Cancer Liaison; and Anthony Vigil, MD, FACS, ACS Governor (see photo, this page).

Leaders of the New Mexico Chapter, which held a successful annual meeting last September, hope to double attendance for the upcoming 2013 Annual Meeting, September 13–14 at the Albuquerque Marriott Hotel Uptown.

Correction
The article “Centennial reprint: 1952 Supreme Court decision prompts College action on fee splitting,” on page 36 of the May 2013 Bulletin, contains an inaccuracy. The article should have stated, “The court maintained that because no public policy regarding these types of activities existed at the time that the physicians took the payments from the opticians, the court was forced to rule in the defendants’ favor.” The editors regret the error.
The American College of Surgeons (ACS) is offering International Guest Scholarships in 2014 to outstanding young surgeons from countries other than the U.S. or Canada who have demonstrated a strong interest in teaching and research. The $10,000 scholarships will provide the International Guest Scholars with an opportunity to visit clinical, teaching, and research institutions in North America and to attend and participate fully in the educational opportunities and activities of the ACS Clinical Congress in San Francisco, CA, October 26–30, in 2014.

A legacy left to the College by Paul R. Hawley, MD, FACS(Hon), former Director of the College, originally funded the scholarship endowment. More recently, gifts from Fellows and their families and associates have expanded the roster of International Guest Scholarships. The ACS Foundation website features additional information about these benefactors and the awards they support.

The scholarship requirements are as follows:

• Applicants must be medical school graduates.

• Applicants must be at least 35 years of age, but younger than 45, on the filing date of the completed application.

• Applicants must submit their applications from their intended permanent location. The College will accept applications for processing only when the applicants have been in surgical practice, teaching, or research for a minimum of one year at their intended permanent location, following completion of all formal training (including fellowships and scholarships).

• Applicants must have demonstrated a commitment to teaching and/or research in accordance with the standards of their respective home country.

• Applicants whose careers are in the developing stage are deemed more suitable for receipt of this scholarship than those who are serving in senior academic appointments.

• Applicants must submit a fully completed application form provided by the College on its website. The application and accompanying materials must be submitted in English. Submission of a curriculum vitae without a completed application is not acceptable.

• Applicants must provide a list of all of their publication credits and must submit three complete publications (reprints or manuscripts) of their choosing from that list.

• Applicants must submit letters of recommendation from three colleagues. One letter must be from the chair of the department in which the applicant holds academic appointment or a Fellow of the ACS residing in the applicant’s country. The letter from the chair or Fellow must include a specific statement detailing the nature and extent of the teaching and other academic involvement of the applicant.

• The International Guest Scholarships must be used in their designated year. Recipients cannot postpone the scholarship.

• Applicants who receive scholarships are expected to provide a full written report of the experiences provided through the scholarships upon completion of their tours.

• An unsuccessful applicant may reapply only twice, and only by completing and submitting a current application form provided by the College, together with new supporting documentation.

International Guest Scholarships provide successful applicants with the privilege of participating in the College’s annual Clinical Congress in October, with public recognition of their presence. They will receive gratis admission to
International Guest Scholarships provide successful applicants with the privilege of participating in the College’s annual Clinical Congress in October, with public recognition of their presence.

selected postgraduate courses, plus admission to all lectures, demonstrations, and exhibits, which are integral to the Clinical Congress. Assistance will be provided in arranging visits (following the Clinical Congress) to various clinics and universities of the scholars’ choosing.

To qualify for consideration by the selection committee, applicants must fulfill all of the requirements. The application form for the ACS International Guest Scholarship is available online on the College’s website at http://www.facs.org/memberservices/igs.html. Questions should be directed to Kate Early, International Liaison, American College of Surgeons, 633 N. Saint Clair St., Chicago, IL 60611-3211 USA; kearly@facs.org.

The ACS must receive all completed applications, including all the supporting documentation for the 2014 International Guest Scholarships, no later than July 1, 2013. All applicants will be notified of the selection committee’s decision in November 2013. The College urges applicants to submit their completed application package as early as possible in order to provide sufficient time for processing.

SRGS Rural Surgery Single Issue
Nonsubscribers can earn CME credit for this special issue.

This issue of Selected Readings in General Surgery immerses itself in topics of interest to rural surgeons. These include the characteristics of rural practice, challenges in recruitment and retention, and a selective review of common clinical problems encountered in rural practice: trauma care, cutaneous surgery, endoscopy, gynecology, laparoscopic surgery, and urology.

To order: Purchase online at www.facs.org/srgs/subscribe/individuals.html. Scroll to the bottom and select “SRGS Rural Surgery Single Issue with CME.”

If you are an ACS member or have an ACS username, please log in to the e-store using your existing username and password BEFORE you place your order.

An order form is available at www.facs.org/srgs/rural.html
Order by phone at 800-631-0033
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NOTE: 2013 Webcasts will be available for viewing from December 15, 2013; access expires December 31, 2014.
# Calendar of events

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

| JUNE 2013 | Washington and Oregon Chapter  
June 14–17  
Lake Chelan, WA  
Contact: Sue Lentz,  
Sclentz@aol.com,  
http://www.wachapteracs.org/,  
http://www.oregonchapteracs.org/ |
| --- | --- |
| New England Society of Plastic and Reconstructive Surgeons  
June 1–2  
Newport, RI  
Contact: Charlotte Constantian,  
caconstantian@gmail.com |
| Point/Counterpoint-Acute Care Surgery  
June 3–5  
National Harbor, MD  
Contact: Melissa Anderson,  
andersma@evms.edu |
| Illinois Chapter  
June 6–June 8  
Springfield, IL  
Contact: Paul Pacheco, MD, FACS,  
pacheco7@gmail.com,  
http://www.ilchapteracs.org/ |
| Northern California Chapter  
June 8  
San Francisco, CA  
Contact: Christina McDevitt,  
nccacs@att.org,  
http://www.nccacs.org/ |
| Brooklyn-Long Island Chapter  
June 11  
Garden City, NY  
Contact: Teresa Barzyz,  
acsteresa@aol.com,  
http://www.bliacs.org/ |
| Alabama Chapter  
June 13–15  
Point Clear, AL  
Contact: Lisa Beard,  
acollegesurgeons@yahoo.com,  
http://www.acsalabama.org/ |

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<tr>
<th>JUNE 2013</th>
<th>JULY</th>
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| Italy Chapter  
June 25–27  
Villa Quaranta-Badia della  
Castagna, Genoa, Italy  
Contact: Giuseppe Nigri, MD, FACS,  
nigrig@yahoo.com |
| 2013 ACS NSQIP National Conference  
July 13–15  
San Diego, CA  
Contact: Whitney Watson,  
wwatson@facs.org,  
http://www.acsnsqipconference.org |
| South Carolina and North Carolina Chapters  
July 12–14  
Asheville, NC  
Contact: Jennifer Starkey,  
Jennifer@acschapters.org,  
http://www.ncfacs.org/ |
| Tennessee Chapter  
July 26–28  
Nashville, TN  
Contact: Wanda McKnight,  
wanda@tnacs.org,  
http://www.tnacs.org/ |

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<tr>
<th>AUGUST</th>
<th>SEPTEMBER</th>
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<td>No events scheduled at press time.</td>
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| Saudi Arabia Chapter  
September 6  
No other information provided at this time. |
| Kansas Chapter  
September 7–8  
Overland Park, KS  
Contact: Gary Caruthers,  
gcaruthers@kmsonline.org,  
http://www.kansaschapteracs.org/ |
| Kentucky Chapter  
September 10  
Louisville, KY  
Contact: Linda Silvestri,  
lsilv2@email.uky.edu |
| New Mexico Chapter  
September 13–14  
Albuquerque, NM  
Contact: Gloria A. Chavez,  
GChavez@nmms.org |

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<th>FUTURE CLINICAL CONGRESSES</th>
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| 2013  
October 6–10  
Washington, DC |
| 2014  
October 26–30  
San Francisco, CA |