

## EAST PRESIDENTIAL ADDRESS: REFLECTIONS ON AND DIRECTIONS FOR TRAUMA CARE

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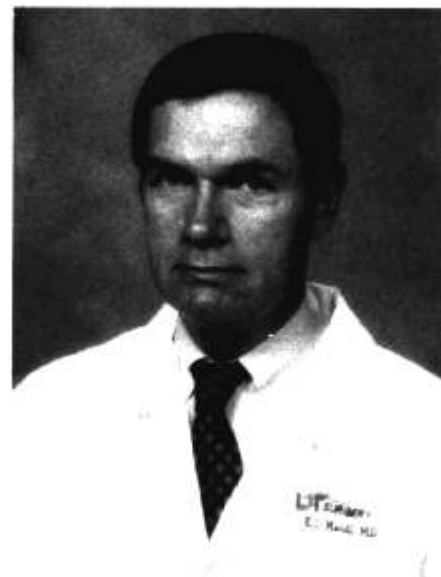
I APPRECIATE the honor of serving as the President of this organization, and the honor of being able to address you today. The Eastern Association for the Surgery of Trauma (EAST) was conceived as a forum for younger surgeons to articulate their thoughts on trauma. It was six years ago almost to the month when I called Lenworth Jacobs, Kimball Maull, and Burton Harris together for the basic mission of founding EAST. I am very proud of the efforts and accomplishments of this organization and the enthusiasm that it continues to generate.

I have been encouraged to take the opportunity of this address to provide a personal view of trauma care. It is fitting, therefore, that this EAST meeting is being held in Bermuda, in the middle of the Atlantic, since perforce I have a transatlantic perspective. I first developed an interest in trauma during my surgical training in England and Scotland, but for a few months less than 20 years have maintained my professional career in trauma and critical care in the United States. While I will heed the advice to give a personal view of trauma care, I will do so with a transatlantic historical perspective and with an eye cast to the future, specifically with a focus on recruitment and retention of surgeons in trauma care. Recruitment and retention have become pressing issues

in our profession and must be addressed for trauma care to advance. I realized, upon (recently) reaching the age of 45 years, that age is a crucial issue for a trauma surgeon. So I will look back to try to identify the pivotal factors that have sustained my interest in trauma and, in keeping with much of the tenor of trauma research, will extrapolate far beyond the content of the data to



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make several recommendations. I hope that these recommendations will enhance our ability to secure and sustain bright young surgeons in the practice of trauma and surgical critical care and foster the type of professional milieu into which they can enter and enjoy an intellectually stimulating and economically successful career well past the age of 45 years.

### ENGLAND

I want to start with the period between the world wars when systematic approaches to fracture care were the hallmarks of trauma systems. Of the eminent trauma surgeons of the time, Bohler in Austria, Scudder in the United States, and Gissane in England, my career was touched most by the latter, who started the system of trauma call at the Birmingham Accident Hospital, where I first developed an interest in trauma. It is Gissane on whom I will dwell and who, more than most, deserves the appellation "Father of Trauma Systems." William Gissane was born in 1898 in Australia, graduated from the Sydney University School of Medicine, and came to England in 1927, obtaining the F.R.C.S. in Edinburgh.<sup>1-3</sup> In the mid-1930s, he became Surgeon-in-Charge of London's St. James's Hospital, after spending time at Bohler's Accident Surgery Unit near Vienna, which was considered during that time a model for injury care. In 1941, as England's industrial heartland was being attacked by Hitler's bombs, Gissane became the Surgeon-in-Chief and Clinical Director of the Birmingham Accident Hospital. At Birmingham, Gissane developed a comprehensive approach to the care of the seriously injured that is, in many respects, the model for trauma care used throughout the world today. His accomplishments were many; his major ones are listed below.

- In the United Kingdom, civilians who suffer from injuries are treated in what is called the "Casualty Department," a part of the hospital dating back to the



William Gissane, FRCS

Middle Ages, where the "casuals," those who could not afford private physicians, were treated. Only the indigent were relegated to treatment in the Casualty Department, the role of which has metamorphosed into what is known in the United States as the Emergency Department. At Birmingham, Gissane routed the critically injured to a separate resuscitation area called the Major Injuries Unit, into which the ambulances delivered the patients.

- Gissane required that a senior surgeon be available to evaluate, resuscitate, and manage patients with severe injuries. Before this time, trauma treatment had been relegated to the most junior house officers. This was the first time that consultant (attending) surgeons were in house at night.

- He organized the team approach to trauma treatment (resuscitation, surgery, postoperative care, rehabilitation). He devised the structure of three trauma teams, each with attending surgeons, registrars, and house officers. Each team took call one night in three, did follow-up surgery on their least stressful day, and followed their patients throughout the course of their in-hospital treatment. This is the system you find today at the Maryland Institute of Emergency Medical Services Systems (MIEMSS), Harborview Medical Center in Seattle, the Washington Hospital Center, and many other large, reputable trauma centers.

- Gissane foresaw the need for cost-effective treatment of all seriously injured patients, regardless of the

cause of injury, and integrated rehabilitation with acute care.

- Gissane required autopsies of all deaths. Simon Sevit, the pathologist, identified the importance of deep venous thrombosis and pulmonary embolism and introduced prophylactic and coagulation therapies.

- Gissane established a burn care center at the Accident Hospital that brought burn and trauma research in the United Kingdom to new heights, and developed a medical research council unit that did groundbreaking work in the use of antibiotics in patients with severe burns.

- He stressed the importance of mechanism of injury to the point of retracing the path of the bone fracture to reduce the fracture.

- He developed perhaps the first cadre of individuals who contributed to the scientific medical literature with respect to road traffic injury.

- Gissane also knew that the Birmingham Accident Hospital's comprehensive approach to trauma treatment would fail without physician leaders. He recruited bright young surgeons who could actively participate in and contribute to all facets of the trauma service at Birmingham. Although Gissane was a tough taskmaster, he supported his trainees without reservation.

Other changes Gissane tried to make were not successful, however. Recognizing that prehospital civilian trauma care was virtually neglected, Gissane adopted the field surgical unit concept, developed by the military in World War II, for civilian use by securing the gift of a bus from the Austin Motor Company. However, requisite coordination among the hospital, police, and ambulance personnel was never achieved. A similar experiment in Germany also failed in the 1950s.

In addition, he tried unsuccessfully, because of lack of funds, to move the Birmingham Accident Hospital next to Queen Elizabeth Hospital, a move that, had it succeeded, would have allowed integration of specialty academic services into trauma care.

The advances at the Birmingham Accident Hospital, however, did not go unnoticed. In 1962, Sir Harry Platt reported the hospital's successes to Her Majesty's Government. He believed that accident hospitals should serve as the apex of a three-tiered system that should be centered upon principles of regional organization and coordination of accident services and constructed on the premises of large teaching hospitals. He estimated that about 80% of the injured could be adequately treated with ordinary emergency department or casualty care facilities, 10%–15% needed the facilities of a regional hospital, and about 5%–7% required tertiary care at a trauma center. Interestingly, this three-tiered approach found its way into the development of American trauma centers and systems and since 1979 has been the hallmark of the much-publicized Maryland system. Unfortunately, the changes necessary to establish regionalized systems of trauma care throughout the United Kingdom were never realized, owing in large part to lack of funds

for nationwide implementation. Thus the advances in trauma care that Gissane started were not immediately integrated into the care of the injured in the United Kingdom.

I had the privilege of training at the Birmingham Accident Hospital in the late 1960s. While there, I was able to absorb the importance of Gissane's principles of hospital organization in securing effective trauma care for the critically ill.

After Birmingham, I went to the Royal Infirmary of Edinburgh to the Department of Clinical Surgery, chaired by Sir John Bruce, Regis Professor. There I met Bill Long, and he and I established a shock unit. Not only did I learn much about the treatment of shock, but working with Sir John also taught me an important principle that, I believe, underscores the need to address our problems in recruitment and retention. He believed that, as physicians, the best legacy that we can leave is not our individual achievements, but rather those we train to carry on after us. This principle has grown in importance to me as I have continued my career in trauma surgery and surgical critical care.

#### UNITED STATES

Between the wars, his work on organized fracture care gained Charles Scudder his place in the development of trauma systems in the United States. The American College of Surgeons (ACS) Fracture Oration is now the Scudder Oration, in recognition of his contributions. After World War II, William Fitts, Deke Farrington, Oscar Hampton, Harrison McClaughlin, and Pep Wade all made sentinel contributions and furthered the debate about the need for a trauma specialty. However, unlike the situation in Europe, several factors created the momentum for U.S. trauma care to shift rapidly from the realm of orthopedics into that of general surgery. War is a great impetus to trauma care development and the modern practice of trauma care was born during the Korean and Vietnam conflicts, which were not experienced by European surgeons. These conflicts restated the importance of rapid transport to definitive care and introduced the helicopter as the transportation mode of choice. In addition, they produced a cadre of U.S. surgeons interested, experienced, and competent in general trauma care. After Vietnam, these surgeons transferred their skills to the practice of civilian trauma care. They were greatly aided by the development and growth of intensive care units that enabled organ system support and effective treatment of shock and respiratory distress, which dramatically increased the chances for improved trauma outcome. Although the technology of critical care in Europe was placed in the hands of anesthesiologists, in the United States it remained within the purview of surgeons. United States trauma care was further benefited by a number of legislative actions, including the Highway Safety Act of 1966, the National Academy of Sciences' 1966 white paper,<sup>4</sup> and the Emergency Medical

Services System Act of 1973,<sup>5</sup> which all worked to improve the prehospital and hospital treatment of trauma.

I arrived in the United States in 1972 when Bill Gill became clinical director of the Shock Trauma Unit at the University of Maryland. At this time, many now-famous surgeons were beginning to focus on the development of trauma centers and systems as a way to improve outcome from severe injury. On a steamy September morning, I landed in Baltimore to work under the direction of R Adams Cowley. Dr. Cowley had managed to secure funds from the army for a clinical trauma unit building that included a 12-bed intensive care unit; it was almost entirely occupied by open-heart-surgery patients. The trauma unit had no resuscitation bays at that time; the ICU served as the resuscitation area. The helicopter program at the University of Maryland was just starting, and Dr. Cowley was negotiating with the Maryland State Police to fly patients to the hospital. (One of these police officers took a patient at gunpoint from the back of an ambulance and loaded him into the helicopter in order to get him to the University of Maryland Hospital. He boasts of it to this day.)

During that time, when a patient arrived at the University of Maryland Hospital he or she was taken directly to the fourth-floor ICU of the shock trauma unit. There neurosurgery, orthopedic surgery, general surgery, and support staff would descend on the patient en masse—roles and routines had not been formalized. Dr. Cowley would appear on the scene, watch the confusion for several minutes, and then order everyone to stand back, observing that nothing worthwhile had been done for the patient since hospital arrival. Thus I was easily able to implement Gissane's team system as a viable method of bringing order to patient care. We also began using Gissane-type resuscitation protocols as a way to secure effective treatment for all trauma patients, and quickly incorporated them into routine practice. Finally, over Dr. Cowley's objections, we moved the resuscitation equipment out of the ICU to a sparsely equipped resuscitation area that was set up on the second floor.

In the spring of 1973, the Chairman of the Department of Surgery at the University of Maryland sent a message that he would be taking over Dr. Cowley's budget and personnel and subsuming the trauma unit and trauma research. However, through an interesting combination of politics, hardballing, and the state's democratic process, something quite different occurred: the trauma unit was separated from the University of Maryland. The appellation Maryland Institute for Emergency Medicine (MIEM) was bestowed at Sabatino's Restaurant in Baltimore's Little Italy, at a celebration of this victory and freedom. The name was subsequently changed to Maryland Institute of Emergency Medical Services Systems (MIEMSS).

Dr. Cowley left an indelible print on my life as a trauma surgeon. At the time, what I thought I learned from him was, "When you know you are right, you have a moral obligation to impose your will on others." In fact, how-

ever, Dr. Cowley's lessons were much deeper and much broader. He lived the principle that being a good surgeon isn't good enough; rather, in order to be a good trauma surgeon, one also needs to be a tireless advocate for trauma care. Such an advocate misses no opportunity to advance the cause of improving trauma care, whether that opportunity presents itself through prevention, treatment, research, training, or EMS and trauma system development through legislation, patronage, politics, or persuasion. Dr. Cowley also stressed the importance of action over inaction. One of his favorite aphorisms (not original) was "We learn by the mistakes we make, but if we do nothing, we cannot make mistakes, and thus we cannot learn." Above all, Dr. Cowley's professional life was a testament to the principle of tenacity in the face of adversity.

In the early 1970s, although what we were doing in terms of trauma surgery and snatching patients by helicopter looked good, felt good, and clearly benefitted some patients, there was no scientific way to document these benefits. First at MIEMSS, and later at the Washington Hospital Center, I had the privilege of working with an applied mathematician, William Sacco, PhD, who was pivotal in the development of methods like the Trauma Score, the TRISS methodology, and the "z" statistic, which are of great utility in the effort to control for case mix differences and thus to document the benefits of trauma care (they also serve to confuse the multitudes). At that time, trauma care was developing throughout the United States, and many individuals were devoting their professional lives to improving trauma care and trauma systems and providing scientific evidence of the benefits of trauma systems through clinical and basic science research. Bill Blaisdell (San Francisco) and Tom Shires (Dallas) sponsored new generations of trauma surgeons and leaders. Hank Cleveland established the first hospital-based helicopter system in the United States at St. Anthony's Hospital in Denver.

Recognition and documentation that rapid transport of the injured to definitive care was vital to reducing mortality and morbidity spurred the growth and integration of helicopters into both urban and rural trauma systems. Air ambulance guidelines were developed that specified necessary medical and safety equipment for effective trauma care en route from the accident site to the trauma center.<sup>6</sup>

Trunkey and West's preventable-death study galvanized support for the development of trauma centers and systems.<sup>7</sup> Through the early 1980s, many hospitals subsequently undertook the financial commitments and programmatic changes necessary to function as trauma centers. The ACS devised personnel and equipment guidelines for trauma centers, and a process for verifying that the criteria are met.<sup>8</sup> Currently, state governments use this and other information to designate trauma centers of varying capabilities.

By the late 1970s, trauma system development was in high gear in the United States and West Germany. In

the United Kingdom, very little was changing, and trauma care in England stagnated for several years, having never shifted from the orthopedic template of the 1930s–1950s to the general surgical template of the 1960s. The Birmingham Accident Hospital remained an island of excellence and organization in an otherwise sterile milieu for trauma care. In the early 1980s, the Royal College of Surgeons of Edinburgh introduced the specialty of “Accident and Emergency Physicians,” i.e., surgeons who become nonoperative as they go into the practice of emergency medicine. In the late 1980s, Miles Irving, a surgeon in Manchester, England, and colleagues replicated Trunkey’s preventable-death study and found results similar to those in the United States.<sup>9</sup> This stimulated the Royal College of Surgeons of England to issue a report outlining the need for advances in trauma care. Subsequently, the TRISS methodology has been used to determine whether there is any change in outcome as a result of trauma system development in two or three trauma centers in the United Kingdom.

Growing global recognition of injury as a public health problem is reflected by the increasing number of countries actively involved in trauma system development. Germany and Austria have countrywide systems of acute care and rehabilitation in place, England is studying the issue, and Australia is moving to implement a nationwide trauma system. The United States is progressing slowly toward the same, despite the adverse financial climate resulting from losses from uncompensated care. Further advancement of trauma systems and care, however, requires people, and therein lies our most pressing problem.

#### RECRUITMENT AND RETENTION OF TRAUMA SURGEONS—A WORLDWIDE PROBLEM

Despite the progress in trauma care being made on both sides of the Atlantic, I have a growing concern about the future of trauma surgery and critical care because of our increasingly impaired ability to recruit and retain highly qualified surgical personnel into this discipline. In his 1991 Scudder Oration, George Sheldon noted that only 3% of the approximately 1,000 candidates taking the American Board of Surgery examination indicated that they wished to pursue a career in trauma.<sup>10</sup> Many of the reasons given for this lack of interest were similar to those cited in Richardson and Miller’s 1992 paper to the American Association for the Surgery of Trauma (AAST).<sup>11</sup> Their survey of 715 third-, fourth-, and fifth-year residents documented a number of perceived problems with choosing trauma as a career.

Some of these problems are endemic to the disease of trauma; however, of greater concern are the problems that emanate from shortcomings and failures that we as practicing surgeons have failed to remedy. Surgeons generally consider care of patients with injuries resulting from blunt trauma to be unrewarding because there is little effective surgical intervention. The lifestyle of a trauma surgeon is undesirable, as many do not wish to

spend nights in house, on call, after completion of residency training. In addition, there are many poor role models to be found among trauma surgeons, which leaves younger surgeons looking to other specialty areas for leaders. Furthermore, it is not uncommon for young surgeons to be advised away from trauma and critical care by their mentors. Trauma surgeons in administrative roles essentially become nonoperative bureaucrats. Lack of commitment from departments of surgery tends to relegate trauma care to a subordinate status, subsumed by more profitable or mainstream general surgical specialties. Regionalization of trauma care increases the burden on trauma center hospitals, making it very difficult for trauma surgeons to care for other types of patients and blend the practice of trauma surgery with other types of general surgery. Regionalization also takes the practice of trauma away from the general surgeons in private practice in community hospitals. Finally, choosing trauma as a specialty often guarantees second-class status among the surgical specialties, as trauma is labeled in a manner that hampers development in broad general surgical practice. Unfortunately, this problem is not confined to the United States, as colleagues in Australia, South Africa, and Europe report similar problems.

The perception that trauma is an undesirable specialty has detrimentally affected recruitment of young surgeons into the practice of trauma surgery and critical care. In December 1991, we conducted a telephone survey of 31 U.S. trauma/critical care fellowship programs to look at recruitment issues. Many programs reported increasing problems in filling their available slots (Fig. 1), and the quality of applicants appears to be declining (Table 1). The fellowship applicants also reported many disincentives for choosing trauma and surgical critical care that are similar to those cited by Richardson and Miller<sup>11</sup> (Table 2).

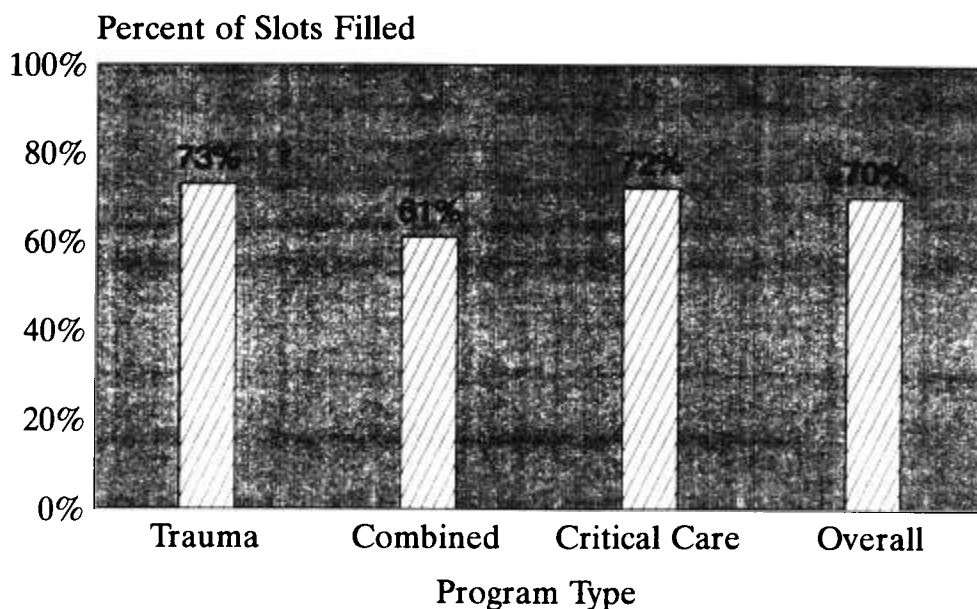
Even if a surgeon is initially recruited into the practice of trauma surgery, there are a number of factors that work against remaining in trauma surgery for the duration of his or her professional life.

- First, many private practitioners caring for trauma patients perceive regionalization of trauma care as placing an inequitable burden (increasing the number of patients and limiting the quality of care) on their surgical practices.

- Urban trauma surgeons may lose elective patients and referrals whenever a trauma patient enters the waiting room handcuffed to a police officer.

- Once one is labeled a trauma surgeon, the appellation becomes permanent and the possibility of securing referrals of elective surgery patients may become remote.

- Caring for severely injured or critically ill surgical patients requires a degree of stamina not commonly required in other surgical disciplines. Trauma is episodic, nocturnal, and often occurs during holidays and weekends when most people prefer to relax with their families. The physical rigors associated with trauma care seem to become more onerous with advancing age; thus there is



n = 57 slots

**Figure 1.** Fellowship survey slot fill rate by program type.

**Table 1**

**Fellowship survey—Recruiting problems specific to quality of candidates**

- Attracting surgeons who do not operate
- Surgeons are not interested in critical care fellowships that have no surgery
- Insufficient surgical residency experience
- Candidates come from weak or multiple residency programs
- Candidates not really interested in program but just doing it to mark time until they decide what they want to do or until another program is available
- Too many foreign medical graduates who are not well prepared
- Candidates select location, not program

**Table 2**

**Fellowship survey—Applicant's self-reported problems with fellowships**

- Trauma
  - Negative impact on lifestyle
  - Poor job opportunities because of trauma center closings
  - Discouragement by general surgery instructors
  - Type of patient
  - Poor patient reimbursement
- Critical Care
  - Length of program (24 months)
  - Not enough operative experience

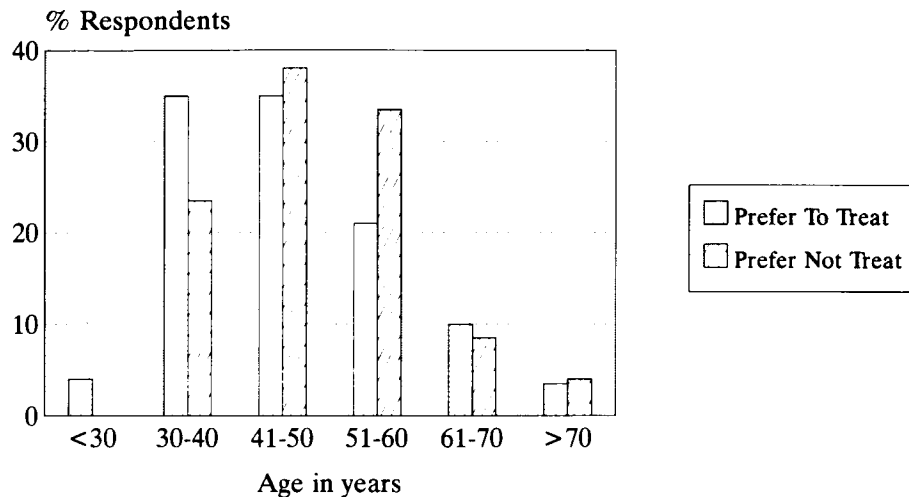
an almost palpable physiologic tendency away from the practice of trauma surgery in the later years of practice. This tendency was documented in a study by Esposito et al. of ACS-member surgeons in Washington State, which found that 39% of all respondents did not want to treat *any* trauma patients<sup>12</sup> (Fig. 2). Past the age of 45 years it becomes more difficult to take call, to be as competent at the 23rd hour as at the first, and to maintain the level

of excellence in trauma care that had been provided with impunity at age 35.

• Additional unsavory aspects regarding care of trauma patients include personal risk from viral transmission, including HIV and hepatitis B, and the inability to establish the traditional preoperative patient/physician relationships enjoyed by surgeons who have elective surgical practices.

Finally, the less-established, younger trauma surgeons, whose interests may be divergent from those of the established surgical leadership, are somewhat disenfranchised in many of the organizational decision-making processes. This issue is particularly apparent in two arenas: (1) academic advancement for surgeons interested in trauma and critical care as a career, and (2) compensation for trauma surgery.

**Academic Barriers.** There are problems to be found in academic surgery in the ambivalence of many department chairpersons with respect to trauma. Although the practice of trauma surgery and surgical critical care is an intellectually rewarding discipline, it is one that is generally regarded as an "also-ran," or stepchild, in the classic academic surgical world. Activities outside this classical scope of surgery, teaching, and related basic science laboratory work and, to a lesser degree, clinical research are of equal if not greater importance to the success of trauma care and trauma systems (e.g., the process of dealing with local and state governments, cultivating strong links to prehospital personnel, and securing the strong support of professional colleagues). Conversely, climbing the academic ladder in American surgery requires significant involvement in basic science research, excluding much important work in trauma. At the present time, program development, injury control,



Esposito et al., 1991

Figure 2. Age distribution of surgeons by preference to treat trauma patients.

and epidemiology, which are critical components of trauma systems development, are not recognized and rewarded with the same level of academic advancement and tenure, nor is protected time allowed for these sociomedical pursuits.

**Reimbursement.** It is extraordinarily difficult to recruit and retain surgeons in trauma and surgical critical care, given the dismal state of reimbursement for these services. Trauma surgery is woefully undercompensated, particularly in the urban inner city environment, where most trauma patients lack any health insurance and government programs are inadequate to cover the costs of providing treatment. Young surgeons cannot reduce the substantial debt incurred through medical education and training when they are poorly reimbursed for providing care in their area of expertise. The financial burden is such that a surgeon is penalized if he or she practices trauma surgery for very long. Many of those who initially choose trauma eventually opt out to practice less rigorous and more lucrative surgery. Surgical critical care is labor- and resource-intensive, requiring highly complex medical decision making. Inequitable reimbursement creates disincentives to care for seriously ill patients, promotes disjointed and uncoordinated treatment, and results in less efficient and effective patient care. There are a myriad of reimbursement problems. These include:

- Nearly one third of all Americans are uninsured or underinsured. As a result, in many parts of the United States, the hospital costs of providing trauma care are not entirely recovered, and the trauma surgeon may not be paid at all. Our group of surgeons in Washington, DC, for example, provides approximately \$1.5 million worth of *pro bono* trauma surgery each year.

- Current procedural terminology (CPT) coding has always been sparse in its recognition of trauma surgical procedures, perhaps due to the fact that trauma and surgical critical care are not represented on the AMA CPT Code Advisory Committee as are other medical

specialties. Diagnosis Related Groups (DRGs) barely recognize the existence of trauma, as evidenced by the number of DRG codes for trauma, compared with those available for cardiovascular disease or cancer. Recently, major CPT code changes were made, with trauma and critical care inequitably and sparsely treated, and without input from contemporary practitioners.

- Two major new threats to reimbursement for surgical critical care are embodied in the Resource-Based Relative Value Scale (RBRVS) reimbursement scheme of the Health Care Financing Administration (HCFA). First, the global surgical fee combines all preoperative and postoperative care into one reimbursement package. While this approach may work for a cholecystectomy or appendectomy, it is extraordinarily difficult to use for critically injured patients with multiple diagnoses, whose care and treatment involves multiple specialties. In trauma patients, preoperative evaluation and postoperative critical care demands are not linked in any consistent way to the general surgical, orthopedic surgical, or neurosurgical procedure performed. Second, the new critical care CPT codes are not specific to care provided in the intensive care environment. The Relative Work Value for critical care presently not only is less than the value for emergency physicians and anesthesiologists but is the only code to include all procedures performed. This severe undervaluing of critical care, unless urgently corrected, could have a dramatic and devastating impact on critical care. Fortunately, as of this writing, HCFA has recognized that a serious problem exists. Whether this recognition produces an appropriate response, however, remains to be seen.

## SOLUTIONS

At this time in trauma system development, we have an unfortunate paradox: trauma systems heal the patients but hurt the trauma surgeons. We need to attend



to the surgeons to some degree, to treat the malaise that has resulted from the advances in trauma care. H. L. Mencken is credited with having said, "... [f]or every complex question, there is a simple answer and it is wrong." It has been somewhat humbling to review the past 50 years' literature on training, education, human resources, specialization, and systems and find that the problems we are realizing now through our own intellectual meanderings have been identified in one form or another by others before us many times over. Although comprehensive solutions have yet to be found, concrete strides can be made in improving fellowship training and the relationship between general surgery and trauma, increasing surgery department support for trauma surgeons, and effecting needed changes in the structure of reimbursement for trauma care.

**Fellowship Training.** I would like to begin my discussion of solutions by suggesting certain improvements in our training of young surgeons.

- Trauma fellowships are vitally important to ensure ample opportunity for honing surgical skills on critically injured patients, conducting needed research to advance trauma care, and developing the leadership skills that are so vital to the success of trauma systems. However, trauma fellowships that do not achieve these basic tenets are of no value in our profession. Thus trauma fellowships must be reviewed and evaluated against standards necessary for the advancement of the profession. Those that meet such standards should be afforded an imprimatur, not from the Residency Review Commission, but rather from AAST. As such, AAST should move to approve trauma fellowship *programs*, not the products of the programs. Trauma fellowships should be available only to board-certified individuals, or their equivalent, and not result in a new board certification. Upon completion of a trauma fellowship, a fellow would receive a certificate documenting completion of a qualified program in trauma fellowship training.

- As Lewis Flint indicated, trauma and surgical critical care are "inextricably intertwined."<sup>13</sup> Surgical critical care fellowships must be reconfigured to be available only after general surgical training. Surgical critical care fellows must be allowed to operate, preferably on trauma patients, and also to continue their general surgical practices during their fellowship. It is flatly unreasonable to ask a newly qualified surgeon not to operate for 12 months in order to obtain his or her special competency certificate in critical care. Other disciplines, such as pediatrics and medicine, do not ask their critical care fellows to separate from their specialty for a defined time period in order to obtain an added competency certificate.

- Separating trauma from the critical care fellowship experience must cease as soon as possible. Many programs have configured a two-year fellowship that provides for one year in critical care and one year in trauma, combined with some research. I believe such an approach

should serve as a model for configuring trauma/surgical critical care fellowships.

**General Surgery and Trauma.** General surgery is our common training base, and we should not separate trauma from general surgery. In fact, we should try to make sure that trauma and general surgery are inseparable, although, as with cancer, endocrine, and hepatobiliary surgery, it is possible to focus and specialize, particularly in the academic centers of excellence. We must recognize that most trauma care will be and should be rendered by general surgeons throughout the country. Therefore it should be possible to practice trauma and emergency surgery as well as general surgery. We must not force the standards of surgeons like myself, who have chosen to specialize in trauma and critical care, on others who clearly cannot and do not wish to make a full-time professional commitment to trauma. Rather, the private-practice general surgeon involved in trauma care needs leadership, continuing education, and ongoing support. Thus a new path must be forged to allow for relationships with general practicing surgeons that are collaborative, not competitive. Further, the practice of hiring young surgeons just to provide trauma care, and effectively foreclosing them from performing other types of surgery should be banned. Such a practice serves only to further compartmentalize the surgical subspecialties and further alienate trauma care from the practice of general surgery—a poor surrogate for true commitment.

**Academic Surgical Departments and Their Chairpersons.** Leadership in American surgery must liberalize the old surgical model to allow for the needs of this surgical subspecialty. While department chairpersons have responsibilities to all areas of surgery, not just trauma, it is already past the time to ask them to make a major commitment to the care of the injured. They need to support young surgeons in the development of trauma/critical care as a specialist career within general surgery. During the next decade, surgery chairpersons must make injury control a priority for academic departments and medical school curricula. The emergency call schedule for severe trauma must not be the first stop for the newly graduated surgeon. The oft-repeated line "My senior resident is best for trauma patients" is a disservice to the patients and the profession. Department chairpersons must support young trauma surgeons as they develop programs for injury control, and give them protected time and the staff necessary to conduct the types of research (including program development in trauma systems, injury control, prevention, and epidemiology) that are important to care of injured patients. These young surgeons are the key to the future of trauma care. Sir William Osler once said, "Take the sum of human achievement in action, in science, in art, in literature [and, I would add, in medicine], subtract the work of men above 40, and while we should miss great treasures, even priceless treasures, we would practically be where we are today. The effective moving vitalizing work of the world is done between the ages of 25 and 40."<sup>14</sup> Depart-



ment chairpersons are uniquely positioned to ensure that these young surgeons (30 to 45 years old) have the opportunity to do the "effective moving vitalizing work" of trauma care and systems development and to be rewarded for their efforts.

An academic forum for young surgeons interested in trauma is needed because it is the young surgeons who operate and provide the insights into necessary changes in the practice of trauma care. Yet young surgeons do not have an academic forum available from which to voice their ongoing concerns and direct needed changes in American surgery. The most appropriate forum to hear surgeons is in our prime academic organization, AAST. EAST was created so that young surgeons can raise their voices and be heard; however, the surgeon under the age of 40 years must also be heard by the leadership of AAST and ACS.

**Reimbursement.** Critical reimbursement issues will not be resolved until action is taken at the federal and state levels to cover the costs of care for uninsured and underinsured patients. Because the AMA's 1992 version of the CPT codes abandons the pre-existing critical care codes, the ability to code for trauma procedures has, once again, been severely compromised. General trauma surgeons must follow the lead of the American Burn Association and the Orthopaedic Trauma Association to address this issue with the editorial committee of CPT. HCFA must redefine and "unbundle" critical care for the multiple trauma patient population; otherwise, the global surgical fee template will likely be adopted by all other insurers. Failure to compensate adequately, or worse, not to compensate at all, for what is appropriate and necessary may result. As surgeons, we must move vigorously and in a unified fashion to prevent the combined effects of these changes from becoming the financial *force majeure* that finally and ultimately impedes access to timely and qualified care of injured patients.

### THE FUTURE

As noted, I learned from Sir John Bruce that our best legacy is the people we train to carry the message forward. Therefore, we who are in the twilight between the vigor of youth and the sagacity of age have a special responsibility. We must assume and vigorously pursue the responsibility of improving the professional milieu for surgeons practicing trauma and surgical critical care, meeting the needs of injured patients in terms of organized systems of care, and requiring the highest standards in academic and scientific pursuits.

We in these middle years have to be the advocacy group so that the younger surgeons, who now do the job better than we do, can thrive in the future. We must

work with academic chairpersons to expand the profile of injury care within surgical departments. We must work with the surgical profession to enable surgeons to sustain viable practices until retirement that include the care of the injured. And we must ensure that surgeons in the practice of trauma and surgical critical care are adequately compensated for their labors.

I have been blessed in Washington, DC, to have worked with many talented and dedicated individuals, Bikram Paul, Mario Golocovsky, and Mark Buchly among them, who have devoted a substantial portion of their professional lives to trauma care. To them, I express my gratitude for their continued dedication and loyalty over the years. I also have a number of surgeons specializing in trauma/critical care, comprising the younger generation who are the future of trauma care, Gage Ochsner, Grace Rozycki, and others, who represent the future of our department. I hope these surgeons will retain their enthusiasm for the practice of trauma as the years advance. Let us work together to help and nurture them and others like them so that the gains realized in trauma care over the past 50 years will not be lost and advances in trauma care may continue.

### REFERENCES

- Hunter R: Introduction in honour of Professor William Gissane. *Injury* 10:5, 1978
- London PS: Personal reminiscences of William Gissane by past and present colleagues. *Injury* 10:7, 1978
- Harrison SH: Accident surgery—The life and times of William Gissane. *Injury* 16:145, 1984
- National Research Council: *Accidental Death and Disability: The Neglected Disease of Modern Society*. Washington, DC, National Academy of Sciences, National Research Council Committee on Trauma, 1966
- Law of the 93rd Congress: Emergency Medical Services System Act of 1973, Public Law 93-154. Washington, DC, 1973
- Commission on Emergency Medical Services: *Air Ambulance Guidelines*. Washington, DC, U.S. Department of Transportation, 1986 p. 1981
- West JG, Trunkey DD, Lim RC: Systems of trauma care: A study of two counties. *Arch Surg* 114:445, 1979
- Committee on Trauma, American College of Surgeons: *Resources for Optimal Care of the Injured Patient*. Chicago, American College of Surgeons, 1990
- Anderson ID, Woodford M, deDombal FT, et al: Retrospective study of 1000 deaths from injury in England and Wales. *Br Med J Clin Res* 296:1305, 1988
- Sheldon GF: Trauma manpower in the decade of aftershock. *ACS Bulletin* 77:6, 1992
- Richardson JD, Miller FB: Will future surgeons be interested in trauma care? Results of a resident survey. *J Trauma* 32:229, 1992
- Esposito TJ, Maier RV, Rivara FP, et al: Why surgeons prefer not to care for trauma patients. *Arch Surg* 126:292, 1991
- Flint L: Achievements, present-day problems, and some solutions for trauma care, surgical critical care, and surgical education. *Am J Surg* 161:207, 1991
- Cushing H: *The Life of Sir William Osler*. New York, Oxford University Press, 1940, I:24