Trauma in Transition: A Fantastic Voyage

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Because I have the dubious distinction of being the oldest living ex-chairman of the Committee on Trauma (COT), it is perhaps fitting that I should be allowed to reflect on my experiences and observations relating to the growth of the COT and its effect on American and, indeed, global trauma care. The experiences occurred during my active years with the COT starting in 1966 and ending in 1986. After 1986 I continued to be involved with the verification program as a senior reviewer. The reflections have continued to the present day and are highly colored by the passage of time, the ever-changing faces of trauma care, and the cultural changes in society itself. The Scudder Oration is always a great honor, and I am truly grateful for this opportunity.

Medical history is replete with examples of trauma operations in the earliest civilizations; our surgical heritage is one of caring for the injured. We have progressed from clubs, rocks, and sticks, to spears, arrows, and swords, and now to firearms, artillery, and bombs. Nuclear havoc is a constant threat. The advent of industrialization, automobiles, and the penchant for violence in our global society has created a worldwide trauma epidemic. Planning for military trauma uses the evolution of systems for transport, care, and rehabilitation of our injured. In civilian life, we have been slow to embrace the need for a system for optimal care of our injured.

The seminal transformation of the COT itself occurred in the early period that culminated in American College of Surgeons' (ACS) Regental approval of our verification program in 1986. This established a solid foundation for the ACS through the Committee on Trauma to be the "voice" of trauma, with its key effect of working to ensure better care for our injured patients. In my opinion, this was a turning point for the COT to act on the standards outlined in the Optimal Care documents.

Committees are made up of people, and it is these people who set the agenda for action. In my experience with the COT, there were surgeons with great minds, great leadership ability, and surgeons who could make things happen.

In 1961, I was elected president of our Oklahoma chapter. It was disturbing to me that there seemed to be no useful mission for the chapter, other than to hold an annual meeting and screen new member applicants. But my appointment in 1966 as Chairman of the Committee on Trauma for Oklahoma started me on a journey that was rewarding in so many ways. It has led to my profound respect for those surgeons dedicated to trauma; they, perhaps, we, truly are unique.

The trauma patient is also unique because he cannot speak for himself, has little choice in where he goes, and is dependent on "the system" itself to be his advocate. What an enormous responsibility to put on the trauma surgeons and institutions committed to the care of that trauma patient.

My tenure as state chairman did not start off particularly well. I could not find the previous chair. The region chief suggested I report to Dr Oscar Hampton, then the chairman of the COT at the ACS Clinical Congress in San Francisco. I went to the trauma office, met the staff and Dr Hampton. Oscar introduced me to Bob Gillespie and Henry Cleveland, who were to advise me on how to be a state chairman. Bob was chairman in Nebraska and Hank in Colorado. They invited me to join them for dinner. What I remember vividly is a discussion between Henry and Deke Farrington about prehospital care, which became so "spirited" we were invited to leave the restaurant. You might ask: Who is Deke Farrington? JD Farrington was an orthopaedist in Chicago and then Minocqua, Wisconsin, who became the greatest, certainly the most vocal, champion of prehospital medical care. Can you forget "Death in a Ditch" and his great efforts to establish standards for ambulances? I was honored to be escorted out in such company.

The Committee on Trauma in 1966 was a prestigious committee of 40 members, largely from the academic world. There were names like Bill Drucker, Curt Artz, Rudy Noer, George Curry, and Pep Wade. Attention was

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focused on publications like *Early Care of the Injured Patient* and numerous posters for the emergency rooms on the treatment of shock and, of course, snake bites.

At my first business meeting, I was struck that the state and regional chairmen did not meet with the main COT. Our meetings were separate, and we discussed emergency medical services issues and what we, as state chairmen, were supposed to do. We were then invited to hear what the COT had decided. I heard no dialogue there on "systems."

I concluded early that the state and regional organizations did not play an important role in the activities of the COT itself. It did present an opportunity for the various state chairs to speak with each other and learn about our various common problems. That strange dichotomy prevalent in our meetings ended in 1978. In my view, it helped to galvanize the COT to an active role in the development of trauma systems.

In a review of Scudder Orations before 1986, there are many calls to action on behalf of the injured patient. As far back as 1954, Dr Robert Kennedy gave an eloquent plea for emergency services and states, "The emergency room is our weakest link." In 1957, Harrison McLaughlin, in his plea for education in trauma, stated, "There is wide agreement that standards for treatment of trauma remain at a lower level than any other branch of surgery." In 1970, William T Fitts said, "Were Scudder alive today, I believe he would agree with me that the voice of his committee has not proved powerful enough. For, with the exception of those wounded by enemy action, we are failing to provide adequate care for our injured."

This is perhaps a fitting segue for my thesis that the COT itself underwent a profound, near revolutionary transformation in the next decade to become the voice of trauma in the United States and, today, in the world. This did not occur without some degree of discomfort, certainly a lot of blood, sweat, and tears. I think the COT took seriously Shakespeare's words in *Henry VIII*, "And 'tis a kind of good to say well: and yet words are no deeds." Or, as more recently in the first of the *Star Wars* movies, Yoda said, "Try not. Do or do not. There is no try."

There was a remarkable series of events and movements in the late 1960s and 1970s that set the stage for the transformation of the COT:

1. The 1966 publication of *Death and Disability: The Neglected Disease of Modern Society*, by the National Academy of Sciences and National Health Institutes. This was a clarion call for action.
2. The *Highway Safety Act*, which provided funds from the Department of Transportation. Included in this Act was a requirement for each state to provide a plan for emergency medical services.
3. The war in Vietnam. This war, as in all wars, was certainly a great influence on the thinking about trauma care at that time. Helicopter transport of the seriously injured was initiated in Korea to move patients from the aid stations to the mobile army surgical hospital (MASH) units, evacuation hospitals, and hospital ships. In Vietnam, this was perfected to overfly forward medical facilities directly from the battlefields to military trauma centers. This lesson was not lost as the civilian world looked to improve its time from injury to a tertiary care center. This was particularly important in transport from remote or rural areas to the urban trauma center. Henry Cleveland was an early champion of the use of the helicopter in trauma care in civilian life. He demonstrated not only its efficacy, but also its economic accountability. In Vietnam also, we saw remarkable development of independent corpsmen and paramedics. System-wide radio communication became the norm. The understanding and treatment of vascular injuries were well documented by Norman Rich. But the politics and polemic of Vietnam overshadowed the valuable medical lessons.
4. Tom Shires in his 1972 Scudder Oration entitled, "Care of the Injured—The Surgeons Responsibility," called for better organization and triage in the emergency department. More importantly, he reiterated those alterations in cell membrane function that occur during hemorrhagic shock. The scientific basis for use of Ringer's lactate was fundamentally important in the clarification of fluid resuscitation in the severely injured.
5. The Advanced Trauma Life Support course pioneered by the Lincoln Medical Education Foundation and championed by Paul "Skip" Collicott was another step in pursuit of the ACS to be the voice of trauma. This course, now familiar to us all, was patterned after the highly successful Advanced Cardiac Life Support course. The program refreshed surgeons about an organized approach to the seriously injured patient and to teach nonsurgeons the basics of the resuscitative care of those patients. Once again, the state chairmen were of vital importance in the implementation of these courses. In the early days, the camaraderie inherent in becoming instructors led to bonding of trauma surgeons in a common cause. The 2005 celebration of the 25th anniversary of the ATLS course is a fitting tribute to

its founders and to the COT for its sponsorship. Early discussions about "certifying nonsurgeons" in trauma care almost derailed ACS approval, but the overwhelming demand for the courses would attest to their value. It has been of enormous influence overseas, where countries not particularly friendly to American values have welcomed with open arms our instructors in the courses.

6. The Emergency Medical Services (EMS) Movement. This movement was of vital importance in the redefinition of the work of the COT. The numerous criteria outlined by the *Highway Safety Act* was largely lifted from David Boyd's Illinois experiences and included communication among ambulances and hospitals, basic training for emergency medical technicians (EMTs), and regional planning for the seriously ill and injured.

A number of competing organizations strove to be heard in the trauma world. The American Association of Orthopaedic Surgeons, with Dr Walter Hoyt as the spearhead, published the *Orange Book*, an early standard for EMT training. The AMA joined with plans for categorizing emergency rooms (note the use of the word *room*). These were variously described as "horizontal, vertical, and circular" and obviously were destined for the dusty shelf. The then-fledgling American College of Emergency Physicians followed suit with a plan for control of the prehospital and emergency department trauma system. Into this cacophony of voices, the state and regional chairs found a legitimate cause and a raison d'etre. Virtually all state chairs were asked to join the Governor's Councils for EMS. These councils were formed so that individual states would not be left out of highway funding.

In my years as state chairman, there were loud voices in the state/regional meetings for the COT to get more involved in setting trauma standards and to take the lead in EMS development. As late as 1972 at the 50th anniversary of the COT, state chairs were debating EMT training, radio communication, and whether or not the ACS would "ever weigh in" on the EMS movement. There was wide disparity in the attitudes of the state chairs and of the COT itself toward the importance of EMS.

There was more frustration than celebration at this Golden Anniversary in 1972 as the COT continued its reluctance to take an active role in EMS development. That frustration boiled over in New Orleans in 1973, when many state chairs wrote to the ACS, demanding action. The only action was a quick summons to Chicago for a sound scolding of the COT chair and the state chairs.

With that as background, it is easy to see how change was necessary if the COT was to become effective in the actual care of the trauma patient.

Accordingly, my first agenda item as Chairman of the COT in 1978 was to make certain that the COT and the state/regional committees spoke with the same voice about EMS. Second on the agenda was to secure approval from the Regents for the ATLS course as an ACS program. These were necessary steps in our movement to additionally develop the Optimal Care documents and then move to implementation.

7. The trauma meetings pioneered in Las Vegas by Cuth Owens, Henry Cleveland, and John Batdorf led to later similar meetings in Atlantic City by Charlie Wolferth and in Kansas City by Frank Mitchell. These meetings, held under the auspices of the COT, served to emphasize the leadership of the COT in the trauma world. Content in all of these meetings was directed at decreasing death and morbidity through discussion of optimal care of common injuries. Arcane mitochondrial subjects were generally left to other organizations. Money was set aside for resident paper competitions, and this continues currently.
8. In 1976, the COT published its first attempt at defining the trauma center concept. Publication of *Optimal Hospital Resources for the Care of the Seriously Injured* gave us a preliminary tool. The 1979 revision reflected a more pragmatic definition of what a trauma center should be. The title change to *Hospital Resources for Optimal Care of the Injured Patient* (emphasis on optimal care) better described the intent of our task force. The most obvious ingredient in the 1979 document was commitment—commitment from the institution to provide the personnel and the dollars necessary for sophisticated equipment, laboratory, and radiologic services. This meant priority access to the surgical suites and critical care units. For the medical staff, commitment was measured by prompt responses to the severely injured patient by personnel committed to excellence. This could be measured by participation in conferences, seminars, and other quality indicators related to trauma. The document has undergone many revisions and addenda, but the overriding thesis remains commitment. The Optimal Care documents have clearly become the defining standards of the trauma center and, in many respects, the trauma system itself. Approval by the ACS Regents of these standards was quick and decisive. It is worthy of note that in most state plans for designation of trauma centers, reference is made to

"ACS Standards." In most countries, worldwide, these standards are unofficial but real.

It was the overwhelming view of the COT that the next logical step would be the process of verification of the trauma center. After all, standards and guidelines, though valuable, were useless without some means of verifying compliance. The COT developed an extensive model for a verification program. Its early heroes were many, including Don Trunkey, Henry Cleveland, Frank Mitchell, Charlie Wolferth, Erwin Thal, and David Root. In October 1980, the *Bulletin* published "Verification Program for Hospitals" and "Comments on the Verification Program." We happily went into business.

Suffice to say we fully expected quick approval by the ACS Regents because the program itself provided its own funding. The first reviews were successful because the reviewers not only viewed facilities, interviewed personnel, including administrators, but actually studied individual patient medical records. Chart reviews of deaths, complications, and critical care management left little doubt whether trauma institutions did what they said they did. This is the heart of verification.

After a number of verification visits, the Regents did not approve the verification program; the reason given was that the ACS simply did not want to develop a "mini" Joint Commission on Accreditation of Healthcare Organizations program. We naturally disagreed, but did have some degree of understanding based on history. In 1918, the ACS had developed its program on hospital standards and bore the burden of verification alone for many years. We see the reluctance of the Regents to embark on a large visitation program with all the inherent problems. Money was refunded, and it was back to the drawing board for the COT. In October 1982, publication in the *Bulletin* of an "Update on the Trauma Consultation Program" basically downgraded the whole process. The efforts to get approval from the Regents for this vital program continued annually throughout my chairmanship and Don Trunkey's, and into Erwin Thal's, until 1986 when the verification program became an official ACS activity. Why did it take 6 years? The reason, I believe, was because it did represent a paradigm shift.

Published standards are helpful, but are fraught with danger. Unrealistic expectations simply become fodder for lawsuits. It is my opinion that any organization that publishes standards has to prepare a mechanism for verifying compliance, allowing for continuous assessment on reasonability and whether the goals of the standards are met. The recent decisions of the ACS to undertake a similar approach to specific surgical problem areas, such as bariatrics, attest to that opinion.

9. Data Bank. A necessary component to move trauma care to accountability and high-performance levels is a data bank or registry. The early efforts of Don Trunkey and Howard Champion to effect this vital component through a grant from the Robert Wood Johnson Foundation were not approved. But the stage was set to develop the National Trauma Data Bank under the auspices of the ACS. In the January 2005 *Bulletin*, Drs Fantus and Fildes reported on 1.1 million records from 405 trauma centers dating back to 1999. This continuing emphasis on valid data should provide the framework for evidence-based trauma care, which in turn leads to higher performance standards, accountability, and public credibility.

What, then, have we learned? We have learned that a paradigm shift in the COT has provided a solid foundation for the committee to deal with trauma as a defined disease. Disease management by definition is evidence-based, deals with best-practice medicine, crosses turfs, and is accountable economically and medically, helping clinical trials and continued updates on standards and performance.

What are the major problems facing trauma care? In my view, there are several: staffing; the transformation of medical care from a profession to big business; and the viability of our health-care system itself. The staffing issue in trauma will continue to plague us for a long time. Much has been written about medical students not opting for surgery careers; lifestyle issues are real and will not go away; and whether it is protected time off, maternity leave, or more money, these are symptoms of a cultural paradigm shift in medicine.

Residents in surgery face issues of the 80-hour workweek with its attendant problems with accountability. The shift from personal responsibility to team (or committee) responsibility is perhaps easier for the student than the teacher.

Each generation has to define itself: whether it is the "Depression generation," "the greatest generation," "baby boomers," "the Vietnam generation," "Gen-X, Y, or Z." If we could agree that the oldest generation, the current generation, and the younger generation are not each better or worse, but certainly different, then we might approach the problem differently. I start by asking

each prospective physician or surgeon what it means to be a doctor or surgeon. Most of us had a clear definition of what it meant to be a surgeon in terms of responsibility, work ethic, duty, and service. Few of our younger colleagues are called to any type of service to country, community, or anything beyond their own ambitions. This, I believe, makes it difficult for "them" to define themselves. This is an identity crisis that we cannot resolve for them, but we can provide guidance or advice based on experience and wisdom.

Traditionally, medicine as a profession evokes images of dedication, service, duty, and, in the best of circumstances, honor. As the current generation and future generations grapple with how to achieve the highest aims of our great profession, perhaps they can see that lifestyle alone should not define them. Our young surgeons in Iraq and Afghanistan are serving ably with honor and could perhaps rekindle interest in trauma as a profession. Our current leaders in trauma are largely schooled in the lessons of Vietnam; our future leaders might come from the current wars and the civilian battlefields of terror.

What about staff for other components of the trauma "team"? Huge sums of money are being spent for call pay for surgeons, orthopaedists, neurosurgeons, and others. Will they continue to step up and commit to care of the trauma patient? My instincts would suggest the answer is probably no. If that is the case, will we attempt to define a new type of surgeon? Will the acute care surgeon, now under discussion, be possible?

The difficulties of having yet another type of surgeon are considerable. Crossing the turf lines of orthopaedics and neurosurgery in the necessary training and certification processes will require political skills beyond my comprehension. Would the economic and professional rewards be sufficient to attract surgeons into this new specialty? Why would this be any different from attracting people into trauma to start with? Answers to those perplexing problems are not easy, and adopting a European-type trauma hospital into our system could require a cultural shift of overwhelming proportions.

I am particularly struck with the plight of the general surgeon. This strikes a special emotional chord with me because I was a general surgeon for my entire career. Alec Walt, in his elegant Scudder Oration in 1978, called for the broadly trained "hedgehog" of surgery, and John Davis, our editor of the *Journal of Trauma* for many years, in the very next year called for reassessment of surgical training in trauma. Why, then, is the general surgeon less involved in trauma care? I would like to speak to our training programs and then to the general surgeon himself. I believe that our academic programs have played a large part in the downgrading of general surgery by a general haste to develop Fellowships in virtually every organ system imaginable. If general surgery is to remain a viable field, and it might not be possible, attention must be paid to graduating residents competent to deal with a broad range of problems. How does he compete with Fellows in trauma, in minimally invasive surgery, endocrine surgery, and others? Can the general surgeon trainees feel confident that they have become technically proficient and broadly enough trained to exercise judgment in their particular surgical practice? Most of the trauma programs now are headed by Fellowship-trained surgeons of very high caliber. But those programs often rely heavily on the general surgeons to cover much of call for the trauma patient. As fewer and fewer general surgeons feel comfortable or wish to work in the field of trauma, those programs dependent on them will suffer.

"What is wrong with trauma care?" Don Trunkey asked in his 1989 Scudder Oration. He pointed to many examples of abdication of surgical leadership and provided much evidence that the "hunger for more" syndrome directly affects trauma care. That hunger for more does not just include money, but now seems to include an increasing number of lifestyle perquisites. I would add perhaps that trauma care with its inherent demands in critical care units and the operating suite are no longer in the comfort zone of most general surgeons. Where most of us believed that being "on call" was a traditional part of our duty to hospital and community, that is now becoming an archaic whimsy. Why? Is it the nature of the patient? That patient could be any of us. Is it money? Look at the large sums spent by hospitals for call coverage. Is there no sense of duty or responsibility to community? Does it interfere with elective practice or family life? Is it just because trauma is most often a nocturnal disease? Is it just "somebody else's" problem?

Into this mix of problems, perplexing to the trauma world, is an overriding problem: the health-care system itself. While we debate methods to improve the lot of the injured patient, perhaps we should pay some attention to where we are going with health care in general. Health-care policy out of Washington generally deals with the problems of Medicare, Medicaid, and payment for drugs. The politics related to issues like aging and

Social Security implies that these are the only medical problems. Though there is a lot of talk about access to medical care, a quick look at our emergency department would belie that there is any effort to solve that problem. The emergency department has become a primary-care center, not only for the poor but also for those with ability to pay who cannot find their doctor after 4:00 PM or on weekends. According to the CDC, there were 114 million emergency department visits in 2003, up 26% since 1993. In that same period of time, 12.3% of our emergency departments closed. Additionally, there was a 26% increase in patients 65 or older, which bodes ill for the future. Who, then, will address the problems of access to medical care? Will everyone continue to point with alarm and call for action?

There is little doubt that medicine has become "big business." The corporate culture has necessarily made the bottom line the driving force. Note the gobbling up of community hospitals into large for-profit chains. The buying and selling of hospitals and the development of niche hospitals place an additional burden on those institutions that have service as a component of their community responsibilities and mission.

As medicine becomes big business, the line between profession and business becomes a problem. Professional ethics and business ethics have some things in common, but as the professional migrates toward business, there is less emphasis on personal professional accountability.

If we look at value of services, it is obvious that mere lifesaving in our trauma system is of less value than quality of life. People will pay anything to see better, hear better, look better, and even "wait for the right moment" better. Is it any wonder that our young medical students and residents find less arduous careers more attractive?

The malpractice issue is another symptom of the major problems in our near-broken health-care delivery system. This might be solved by legislation, but more likely it will only be resolved by us looking at medical errors, mishaps and misadventures, bad luck, and poor results through a different prism or lens. Though newspapers report many outrageous malpractice awards, they also report in increasing numbers the plethora of errors that plague our profession. We alone must address systemic problems, judgment problems, and technical problems to maintain public credibility. Our anesthesia colleagues have done admirable work in developing standards for patient safety. The ACS is making patient safety a high priority. The plaintiff bar, which has its own credibility problems, somehow must act with some degree of societal responsibility, maybe a forlorn hope.

Jim Carrico, in his 1998 Scudder talk, challenged the COT with his title, "In Search of a Voice." Ken Mattox, in 1999, called for the COT to be a "change agent." There is no doubt that the challenges of the 21st century in trauma, and in health care generally, are daunting.

I have a few suggestions for the COT:

1. Evaluate all of the problems in trauma care from several views: the patient, the physician, the institution, and society itself.
2. Because the hustle and bustle of emergency medical care is always present, lead the charge for patient safety in our emergency departments and operating rooms.
3. Enlist our colleagues in the American Association for Surgery of Trauma for clinical studies to test elements of our Optimal Care documents for validity. Evidence-based standards are golden and increase credibility.
4. Keep in mind that our goal is improved trauma care for our patients, not simply making standards more difficult to attain.
5. Choose your leaders wisely. Challenge the ACS on current methodology, if necessary. The notion that senior members cannot be chairs of important committees might be outdated.
6. Continue to challenge organized medicine. After all, if we cannot care for our acutely ill and injured appropriately, the rest of medical care soon will follow.

As I review my own career as a general surgeon in private practice, a clinical teacher, an administrator, and my efforts in the ACS, particularly in the COT, it strikes me that those efforts have one thing in common: improvement in the care of my patients.

The COT has earned prestige by its action on behalf of the injured patient through education, ATLS, optimal care, and verification. Some of that prestige might have to be risked to face up to the challenges ahead. I believe that we are up to that task.

Emulate Ralph Waldo Emerson's exhortation in *Ode Concord*: "Go put your creed into your deed."