



## The role of the Veterans Affairs Medical Centers in patient care, surgical education, research and faculty development

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### Abstract

Veterans Administration (VA) medical centers have had a long history of providing medical care to those who have served their country. Over time, the VA has evolved into a facility that has had a major role in graduate medical education. In surgery, this had provided experience in the medical and surgical management of complex surgical disease involving the head and neck, chest, and gastrointestinal tract, and in the fields of surgical oncology, peripheral vascular disease, and the subspecialties of urology, orthopedics, and neurosurgery. The VA provides a venue for the attending physician and resident to work in concert to allow the resident to shoulder increasing accountability in decision-making and delivery of care in the outpatient arena, the operating room, and the intensive care unit. Medical students assigned to a VA hospital are afforded a great opportunity to be exposed to preoperative planning, discussions leading to informed consent for surgery, the actual operation, and postoperative care. Numerous opportunities at the VA are available for novice and experienced medical faculty members to develop and/or enhance skills and abilities in patient care, medical education, and research. In addition, the VA offers unique opportunities for academic physicians and other healthcare professionals to administer its many programs, thereby developing leadership skills and experience in the process. The VA is uniquely situated to design and conduct multicenter clinical trials. The most important aspect of this is the infrastructure provided by the VA Cooperative Studies Program. Of the four missions of the Department of Veterans Affairs, research and education is essential to provide quality, state of the art clinical care to the veteran. The National Surgical Quality Improvement Program (NSQIP) is an example of how outcomes based research can favorably impact on patient outcome. Looking across the horizon of information solutions available to surgeons, the options are limited. This is not the case for the Department of Veterans Affairs. With the congressionally mandated charge for the VA to compare its quality to private clinicians, the advent of the “Surgery Package” became possible. The VA will continue its leadership position in the healthcare arena if it can successfully address the challenges facing it. © 2005 Excerpta Medica Inc. All rights reserved.

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The United States has the most comprehensive system of assistance for veterans of any nation in the world. It has historically provided pensions for soldiers who were disabled but has evolved into direct medical and hospital care to veterans and assistance to their widows and dependents. Congress established a new system of veterans' benefits when the United States entered World War I in 1917. Included were programs for disability compensation, insurance for servicepersons, and vocational rehabilitation. By the 1920s, the various benefits were administered by three different Federal agencies: the Veterans Bureau, the Bureau of Pensions of the Interior Department, and the National Home for Disabled Volunteer Soldiers.

The establishment of the Veterans Administration (VA) came in 1930 when Congress authorized the President to consolidate and coordinate government activities affecting war veterans. The three above-mentioned agencies became bureaus within the VA with Brigadier General Frank T. Hines directing the Veterans Bureau and named the first Administrator of Veterans Affairs. The VA Healthcare System has grown from 54 hospitals in 1930 to include 171 medical centers, more than 350 outpatient community and outreach clinics, 126 nursing home care units, and 35 domicilaries. VA healthcare facilities provide a broad spectrum of medical, surgical, and rehabilitative care. The responsibilities and benefits programs of the VA grew enormously over the past six decades. World War II resulted in a vast increase in the veterans population, as well as a large number of new benefits enacted by Congress. Educational benefits such as the GI Bill created following World War II led to continuing educational assistance acts passed for Veterans of the Korean War, Vietnam, Persian Gulf War, and the All-Volunteer Force. The Department of Veterans Affairs was established as a Cabinet-level position in March 1989. President Bush hailed the creation of the new department saying, "There is only one place for the veterans of America, in the Cabinet Room at the table with the President of the United States" [1].

### Brief Historical Overview of Veterans' Care

Historically, the care of our veterans can be traced back to the earliest days of our country when the Pilgrims of Plymouth Colony were at war with the Pequot Indians in 1636. They passed a law indicating that disabled soldiers would be supported in their time of need by the colony. The law stated: "If any man shall be sent forth as a soldier and shall return maimed, he shall be maintained competently by the colony during his life." This commitment became further solidified when the 13 original colonies declared their independence from Great Britain. Not only did the Continental Congress of 1776 provide pensions for the soldiers who were disabled during the Revolutionary War, but the first US Congress in 1789 passed a law committed to the

responsibility of providing pensions to disabled veterans and their dependents.

As our country grew and the 19th century commenced, veterans assistance programs further expanded. In 1811, for example, the first domiciliary and medical facility was mandated by Congress. In 1866, the National Home for Disabled Volunteer Soldiers was founded. This included domiciliary, hospital and medical care for disabled veterans. After the Civil War, benefits to veterans were further expanded to include incidental medical and hospital treatment for all injuries and diseases, whether or not they were service connected. As the century moved on, these services were extended to veterans of other wars, including the Indian Wars, Spanish-American War, and the Mexican Border disputes. By the end of the century, the veteran's assistance program not only included benefits and pensions for veterans but for their widows and dependents as well.

The 20th century experienced even more profound changes in veterans' health care. After World War I, benefits were further expanded to include disability compensation, insurance, and vocational rehabilitation for the disabled. Administering these multiple benefits to a growing veteran population required a reorganization of the various Federal agencies responsible for these functions. Thus, in 1930 Congress formally established the Veterans Administration "to consolidate and coordinate government activities affecting war veterans." Even more profound growth occurred by the end of World War II with the return of some 16 million veterans. Not only were the health needs of these servicemen and women profound, but the passage of the GI Bill (with its education and housing benefits) in 1944 for serviceman's readjustment made administration of these various components enormous. Accordingly, Congress created the Department of Veterans' Affairs.

Over the succeeding 60 years the growth of the VA Healthcare System has been phenomenal. It is currently the largest healthcare system in the world, having its own cabinet status since 1989, and responsible for providing a broad spectrum of health care to millions of veterans. It employs more than 264,000 people, and operates 173 hospitals, more than 399 outpatient and community clinics, 132 nursing home units, and 39 residential facilities. The VA medical centers are affiliated with over 152 medical and dental schools, and more than half of the practicing physicians in United States have received a substantial component of training in VA hospitals. The unique partnership that exists between many VA Hospitals and US medical schools has made the VA a leader in pioneering research involving a wide spectrum of medical and surgical disorders. Many VA researchers are the best and brightest in their respective fields and have won such distinguished awards as the Albert Lasker Award and the Nobel Prize.

Surgeons always consider and single-mindedly measure outcomes in general and for specific operative procedures: this has been particularly so in the VA. Such measurements give us insights into how to improve, overall, the quality of

surgical care. For more than 200 years American veterans have ensured our freedom and our survival of as a nation. Their surgical care must at least equal or surpass the best available. A brief historical overview of veterans' care will be useful in this context. As will be seen, surgical care is one of the benefits provided by the Veterans Health Administration (VHA); my intent is to depict our role in the broadest possible manner.

Soldiers' benefits began with rewards derived for plunder in the ancient civilizations of the Tigris-Euphrates Crescent, where our country is currently involved in warfare, though we must keep in mind that the war with terrorists is worldwide and may affect us again in our homeland. In ancient times medical care was absent or rendered by slaves; usually little was needed as the wounded were slaughtered on battlefields and fit captives were taken as slaves [2]. Later, in Greece and Rome, primitive awards gradually converged into two areas: (1) benefits or pensions for retired soldiers and specific benefits for the wounded and disabled; and (2) medical care, which was largely secondary to the benefits. The reader will appreciate that this sequence was repeated during the early development of the Veterans Administration. In the United States similar benefits began during and after the Revolutionary War, the War of 1812, the Mexican War, and early wars with Native Americans, then called the Indian Wars. Among many, the following distinguished Americans received land grants: Abraham Lincoln (led in the Black Hawk Indian War), Jefferson Davis, Robert E. Lee, Ulysses S. Grant, Philip H. Sheridan, William T. Sherman, David G. Farragut, and Winfield Scott. The confederates named received grants for service prior to the civil war: confederate soldiers and their widows were excluded from VA benefits. The benefit consisted of 160 acres of land; the last was awarded in July 1917. Until 1930, these grants, benefits, compensations, and insurance were the main business of a large Federal agency in Washington, DC that ultimately became the Veteran's Administration. In 1918 this agency moved into a new building on Vermont Avenue North West across from Lafayette Park, in a spot that had once been the Arlington Hotel. This building is still the site of VA central office. The concept of what became the Department of Veterans Affairs was birthed in the midst of our bloody Civil War with words from the second inaugural address of Abraham Lincoln:

To care for him who shall have borne the battle . . . and for his widow and his orphan . . . This motto that appears on the entrance of the VACO building at 810 Vermont Avenue.

In 1946 just after World War II, President Truman signed Public Law 293, "An act to establish a Department of Medicine and Surgery in the Veterans Administration." As the reader can see, healthcare was a relative newcomer to a giant administrative agency that long had more employees than several other major departments of the Federal Government. The agency administrator often

conferred directly with the President and Congress. Virtually all of these administrators were remarkably capable and hard working men; all were laymen. Their relationships at the highest political levels underscored the nation's concept of importance of duty to veterans. In March 1989, the VA became a Cabinet-level agency with responsibility for veterans' benefits (VBA), cemeteries and, importantly, healthcare through the VHA, where we serve. VHA now dominates the agency numerically: in December 2004, the VA had almost 240,000 employees on the roles, with an estimated 220,000 employed in VHA and 13,000 in VBA; the cemetery and monument service employs fewer than 1,600.

### VA Scholarly Activity and the Role of Central Office

The office of patient care services provides patient-centered leadership, expertise, and guidance, including policy development, to decision-makers throughout the VHA and other agencies. The surgical service, within Patient Care Services, belongs to group now called simply Medical-Surgical Services rather than the former "Acute Care Strategic Health Care Group." The surgical service provides surgical expertise in policy matters to VHA central and field organizations as well as to VA other components. It is responsible for administrative oversight and clinical input into the National Surgical Quality Improvement Program (NSQIP) and to the Continuous Improvement in Cardiac Surgery Programs (CICSP). Myriad opportunities for contributions exist for physicians and surgeons in the VHA. The system has grown to over 6 million enrollees and 5 million patients served in 157 hospitals, more than 800 ambulatory care clinics, and 134 nursing homes domiciliary and home healthcare clinics.

During 1994–1995, the VA consolidated into 22 (now 21) decentralized Veterans Integrated Service Networks (VISNS), which offered important organizational and professional opportunities to improve healthcare within these networks. While the VHA is the largest healthcare system in the world, the flexibility of 21 VISNS operating in 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and the Philippines, provides an important dynamic in relating to its Washington base at VA Central Office (VACO). Importantly, VISN directors and medical staff officers are held responsible for certain performance standards while they provide field communications and their needs to VACO. This is a system that works at once from the top down and from the bottom up. This transformation, brought about by system-wide engineering, resulted in substantial improvement in quality of care as judged by nine of 17 indicators as compared to Medicare performances [3]. Today, the VA is widely recognized for its leadership in clinical informatics and performance improvement [4].

The VHA is run by the government; the agency responds to the President and to Congress, and to veterans and their representatives. Virtually everything we do is governed by

law. In spite what some might consider impediments to progress in a large organization, the VHA has made remarkable, even enviable, strides in healthcare as pointed out by Longman [5]. These results relate to a lifelong relationship with our patients, incentives to invest in quality (possibly lacking, Longman suggested, in for-profit medicine) and the VA's public commitments to excellence in patient care, teaching, and research, all of which are transparent and are directed by law.

In 1946 and 1966, the VA made fundamental decisions to affiliate with medical schools outlining relationships between the Dean's Committees and the VA hospitals with public law 89-785, the so called Magna Carta of affiliation [6]; its statutory recognition now needs re-examination among the 107 affiliated medical schools in changing economic times that have influenced the medical schools' practice missions. The VHA is involved with 83,000 trainees: 28,000 residents, 17,000 medical students, and 38,000 associated health trainees. Before 1945, there had been reluctance on the part of certain senior VA administrators to affiliate with medical schools: a perception, rightly or wrongly, existed that medical school affiliation might encourage lack of supervised care and even "experimentation" on veterans. Negative perceptions recently surfaced publicly when an attending surgeon was absent from the facility and the operating room suite while orthopedic residents, admittedly senior in status, were performing procedures. This event stimulated a change in surgical and clinic supervision policies in all disciplines. These policies were made as consistent as possible with educational responsibilities in a recent directive from the Office of Academic Affiliations.

A study just completed by Itani et al [7] shows that the former level 3 (attending supervision: attending immediately available, not in room) had not been associated with overall increased morbidity or mortality and, in fact, was protective. However, a past NSQIP study [8] had shown an increased morbidity (not mortality) in teaching versus non-teaching VA hospitals. Admittedly these two studies examined differing databases. We continue to monitor data from our surgical informatics package, developed by Dr. McDonald and the Birmingham informatics group [9]. These data, transmitted quarterly, form the basic input into the NSQIP and CICSP data bases. The Surgery Package also assesses compliance with the five steps to Ensure Correct Surgery. It serves as a "cockpit" checklist for the surgical team. We hope to harness the operating room package to examine on-time and appropriate antibiotic usage. We will then see if this process measure reduces an already low clean wound infection rate or has an effect on contaminated and infected cases. Risk-adjusted methods unique to NSQIP need further development for this task.

Opportunities exist to further aggregate and improve performance by sharing NSQIP data with other VACO entities, including the Office of Academic Affiliations, the National Center for Patient Safety, and the Office of Performance and Quality Improvement. The Office of The

Medical Inspector now provides important help in auditing data collection. We will need to see if introduction of evidence-based process measures reduces crude and risk-adjusted outcomes. VA surgery is also collaborating on a pilot study with the Department of Defense, our brothers and sisters in arms, to develop mutually compatible information technology systems to track their data using NSQIP methodology, and to facilitate transfer of data from operations on wounded soldiers into the VHA long-term data system. We will see the entry of about 250,000 new veterans into the system and face challenges in dealing with about 11,000 wounded veterans as they transition into the system. Many are National Guardsmen, not previously cared for by VHA.

The VHA has the ready implements and the opportunities to examine such data close at hand with our electronic medical records system. Further, advances in information technology within the VHA, our history of collaborative efforts, and our cadre of dedicated nurses and doctors are important assets. Most of us working in the VHA recognize our strengths, our problems, and the challenges that inevitably surface within this vast system. We do not fear self-criticism and have available a wide range of opinions from bright analytic individuals. A bright professional future exists, particularly for individuals willing to solve complex problems in a complicated environment, an attitude to be encouraged rather than dwelling upon quandaries that perennially confront all of us caring for the sick and injured. The past history of the VHA shows that many of these problems can be overcome.

### Development of and Rationale for Academic Affiliation

Academic ties between the VA and medical schools formed just after World War II. The United States was faced with the return of nearly 20 million veterans, which comprised about 43% of the adult male population at the time. Assimilation into a peacetime economy was problematic, because although most had assumed military responsibilities that far exceeded their pre-war expectations, they lacked formal education and work experience. More importantly, a large number returned with medical problems and disabilities. Congress responded in 1945 by introducing 2848 bills that broadened veterans' benefits.

Unfortunately, the VA was ill-prepared to administer these programs. Significant public criticism arose, exemplified by a series of articles in the New York newspaper *PM* in which Albert Deutsch described the VA as a "vast dehumanized bureaucracy . . . prescribing medieval medicine" [10]. The controversy led to the resignation of Army Brigadier General Frank T. Hines, the VA administrator for 22 years, leaving the agency without leadership at a very critical time. President Truman, in a bold and unexpected move, appointed General Omar Bradley as the head of the VA. Although he had significant reservations about poten-

tial untoward effects the appointment would have on his career, General Bradley accepted the challenge announcing to the press: “I don’t think there’s any job in the country I’d sooner not have nor any job in the world I’d like to do better. For even though it is burdened with problems, it gives me the chance to do something for the men who did so much for us.” He approached the position with enthusiasm, effectively expanded the system, and provided all of the veterans’ benefits afforded by Congress, including education, jobs and jobs training, disability pensions, loans, and insurance.

The most difficult challenge, however, was providing healthcare to veterans. General Bradley recruited Dr. Paul R. Hawley, the former chief surgeon in the European Theater of Operations, to join him at the VA. After careful study, they concluded that the VA hospital system was woefully understaffed and would need almost seven times more doctors than were in the system. In addition, the quality of care was inadequate for the large number of returning disabled and severely injured veterans. A radical change was needed, and it was needed quickly.

Dr. Hawley argued that an elite, non-Civil Service VA medical corps, with pay in line with the pay for doctors in the military and formal affiliations “with class-A medical teaching institutions,” was needed. His rationale was “to gain the services of hundreds of interns and residents who could treat veterans under supervision of the teaching staffs” [10]. This required major changes in philosophy and political structure, which shook government bureaucracy. In particular, affiliations with medical schools required location of new VA hospitals adjacent to medical schools rather than in the rural areas where they were planned. This had clear political implications, especially for the Congressional districts that were expecting a new VA facility in their communities.

The matter required direct intervention by President Truman, who fought for and obtained Congressional approval to build new hospitals near medical schools. He facilitated establishment of affiliation by engaging academic medicine and appointing a special VA medical advisory group headed by Dr. Charles W. Mayo. The group reviewed VA medical plans, helped to establish affiliation programs, and enabled recruitment of consultants and specialists. With public support and cooperation of the academic medicine, affiliations were established with 63 of 77 US medical schools. Nearly 4,000 doctors were recruited within 6 months of establishing affiliations and, most importantly, the affiliations were used to change the entire mission of the VA. The system transformed from essentially housing disabled veterans to providing the acute care and physical/mental rehabilitation required to return veterans to their homes and to productive lives. The success of the approach is best exemplified by Albert Deutsch, the journalist who exposed the VA controversy in 1945. He wrote, “VA medicine had undergone a ‘revolution,’ and Hawley had ‘infused the whole hospital program with a spirit of modern, scientific medicine’” [10].

Although General Bradley and Dr. Hawley’s initial intent was to entice large numbers of high-quality physicians into the VA system for World War II veterans, the system continued to serve veterans well through the Korean War, the war in Vietnam, and Desert Storm. Over the ensuing 60 years, academic affiliations placed large numbers of trainees at VA hospitals, provided veterans with access to an unending flow of bright, enthusiastic physicians, and enticed significant numbers of physicians to remain and dedicate major portions of their careers to the care of veterans. In turn, VA hospitals made a major contribution to medical student and resident education. Most physicians trained in the United States since World War II have spent a major portion of their training in a VA hospital, and experience gained there contributed greatly to the high quality of medicine practiced throughout this country.

The affiliations that General Bradley, Dr. Hawley, and President Truman established were unique and markedly altered both the VA healthcare system and healthcare in the nation in the last half of the 20th century. The care provided to veterans over that time validates both the quality and durability of the system. We owe a great deal of thanks to President Truman, General Omar Bradley, and Dr. Paul R. Hawley for their vision and leadership in establishing these symbiotic relationships between VA hospitals and academic medicine. Our gratitude, however, is best expressed by remembering how and why they established these relationships, especially when we are asked to reassess or to defend affiliations when the government considers programs to contract for more care in the private sector, to curtail VA research programs or to reduce spending for other programs key for the recruitment and retention of academic physicians. In my presidential address to the Association of VA Surgeons in April 2004, which dealt with this subject, I summed up my feelings, and I believe from research that the attitudes that General Bradley and Dr. Hawley would express if here today are as follows:

“As long as there are wars and veterans, it is the dual role of the government and academic medicine to ensure that veterans receive the highest quality medical care that the nation has to offer. The VA could not attract either the number or quality of physicians it currently enjoys without these affiliations, and with the military challenges of the twenty-first century and the return of our newest set of veterans, it is essential that medical school affiliations not only remain intact, but that they are strengthened” [11].

### **The Role of the VA in Surgical Resident Education**

“More than half of US-trained physicians receive some of their training at a VA medical center” [12,13]. Currently 130 VA medical facilities are affiliated with 107 of the nation’s 126 medical schools. Through these partnerships, more than 28,000 medical residents and 16,000 medical students receive some of their training in VA hospitals

every year. Accounting for approximately 9% of US graduate medical education (GME), the VA supports 8,800 physician resident positions (FTEE) in almost 2000 residency programs accredited in the name of university partners [22]. For those of us involved in general surgery residency education, the VA is currently affiliated with 81 (76 university, four community, one military) of the 253 general surgery residency programs comprising over 3300 preliminary and categorical residents [23]. In reality, the VA manages the largest medical education (and health professions) training program in the United States. The VA acknowledges that delivering its high-quality patient care would be difficult without the physician staff and residents made available through these affiliations [14].

The VA medical education program began in the post-World War II years, initially between the Hines VA and Northwestern in Chicago. Still in effect today, VA Policy Memorandum No.2 (1946) decreed that the VA would retain full responsibility for patient care while the school of medicine would accept responsibility for all graduate education and training. The VA educational role has continued to evolve for nearly 60 years and has thrived or survived through the introduction of Medicare, the advent of managed care, and the Ken Kizer-led Veterans Integrated Service Networks (VISN) reorganization [15].

Currently the VA is experiencing increased regulation and supervision. This educationally important institution with a unique patient population and healthcare system is now under stress from financial, regulatory, and political fronts:

- (1) Cost-recovery initiatives (i.e., billing the insurers of veterans when applicable, etc.) requiring Health Care Financing Administration guidelines and compliance for documentation
- (2) Difficult conditions of service and noncompetitive surgery salary scales (physician reimbursement scales are under review in the Congress) presently and historically [16]
- (3) Increased resident supervision requirements
- (4) Accreditation Council for Graduate Medical Education resident work hours initiatives

Patients, affiliates, attendings, and residents benefit from the VA medical education program. Residents derive both clinical and research dividends from their time in the VA.

“A three-corded rope is hard to break.” The VA, university, and community hospitals form a trio of exposure for many surgical residency programs around the nation. The VA, along with city-county hospitals, provides residents and medical students with experience in taking care of the less-advantaged members of our society. Often these patients are older with many comorbidities, including diseases of self-abuse, and they may lack financial and/or educational resources or support. This patient cadre supplements the experience in the university tertiary/quaternary referral centers and in the community hospitals. Together these three systems of care help address the sixth core competency of the ACGME on systems-based prac-

tice. The rich clinical experience is enhanced by research opportunity. Some residents receive research support from VA programs such as the VA National Quality Scholars Fellowship Program through which they can even obtain an Master of Public Health for outcomes, safety, and best practices research at some centers [14].

The VA provides a venue for the attending and resident to work in concert to allow the resident to shoulder increasing accountability in decision-making and delivery of care in the outpatient arena, the operating room, and the intensive care unit. Traditionally, VA patients have been seen as “the chief resident’s patients.” Key to the “finishing” of the surgical chief is this graded assumption of responsibility that insures the resident has earned endorsement by the program director to the American Board of Surgery as being “competent and able to practice independently.”

### The Role of the VA in Medical Student Education

In 1986 Dr. John Gronvall noted that “over half of US physicians in practice have had a significant part of their professional education in the VA” (personal communication). During that same year, Dr. Robert Petersdorf (then President of the Association of American Medical Colleges) stated, “I readily admit that a number of medical schools could not operate without their VA hospitals” (personal communication). The former statement speaks for itself. That latter statement would probably startle much of the lay population. Education at the medical student level has, in fact, at times been threatened by proposed VA closures or realignments. An example occurred in Philadelphia in the mid 1960s. As recounted by Dr. Stanley Dudrick, the Philadelphia VA was to align exclusively with the University of Pennsylvania in 1967. The Dean at the Women’s Medical College quickly realized that his school’s education program would be devastated by the loss of the VA as a resource. Fortunately, after discussions, the association between the Philadelphia VA and the Women’s Medical College was maintained and teaching did not suffer.

Why are VA medical centers so important in medical education? There are many reasons. One of the greatest reasons is that the VA shares many of the missions of non-VA academic medical centers. By providing funds, space, and support for research and education, the VA has always attracted ambitious, inquisitive academic physicians. As such, VA hospitals are naturally appealing to medical students and residents alike.

Surgical services within academic centers have traditionally used the team approach to patient care. The VA is no exception. A typical surgical team at a teaching VA hospital consists of faculty, surgeons, a chief resident, other residents, and medical students. This team approach is ideally suited to provide education. Although much teaching may be “top to bottom” in the hierarchy, it is frequently the medical student who asks the piercing question, which has no immediate answer. This often stimulates a literature

search and on occasion becomes the seed for a clinical research project.

Medical students assigned to a VA hospital are afforded a great opportunity. With the VA health system frequently strapped for funds, most VA hospitals are not rich in support staff. As such, medical students may get the opportunity learn how to start intravenous lines, place nasogastric tubes, insert Foley catheters, etc. Fourth-year students may learn to place monitoring lines under supervision in the intensive care units. At non-VA hospitals, these tasks are more likely to be completed by technicians, nurses, physician assistants, etc. This certainly held true for this author. As a medical student, I recall having an anesthesiologist teach me how to place large-caliber intravenous catheters at our VA hospital. The technique had a humanistic approach as I was taught to raise a subcutaneous wheal with .5 cc of lidocaine via a 25-gauge needle prior to placing the catheter.

Medical education, of course, goes far beyond the technical aspects. At the VA, the student is exposed to preoperative planning, discussions leading to informed consent for surgery, the actual operation, and postoperative care. The student learns to consider the social needs of the veteran patient who may be married with family or may be alone or homeless. VA outpatient clinics allow for exposure to continuity of care. This important aspect of medical education is frequently missed by students at non-VA facilities. Finally, all students learn to appreciate that the American veteran is usually the most grateful of patients. Dr. Thomas Lawley, Dean of Emory University School of Medicine, estimates that more than 20,000 medical students rotate through the VA system on an annual basis. This figure underscores the importance of the VA in undergraduate medical education.

### **The Role of the VA in Faculty Development**

The Department of Veterans Affairs and its Veterans Health Administration, which we know as the “VA,” play a vital role in academic medical and surgical faculty development. The VA has scores of teaching hospitals that are affiliated with academic medical centers. VA teaching hospitals have contributed to the education of the large majority of physicians trained in the United States in the latter part of the 20th century, and continue this training mission in the 21st century [1]. Numerous opportunities at the VA are available for novice and experienced medical faculty members to develop and/or enhance skills and abilities in patient care, medical education, and research. In addition, the VA offers unique opportunities for academic physicians and other healthcare professionals to administer its many programs, thereby developing leadership skills and experience in the process. To support this work and effort, the VA provides salary and other resources to academic faculty as they perform the work essential to the VA mission.

There is increasing socioeconomic diversity among veterans presenting to VA facilities. Traditionally, veterans

seeking care for their medical and surgical problems were older men, who often presented unique treatment challenges due to their comorbid conditions and severity of disease. With our nation’s current war in Iraq and the growing number of women in the military, an increasing number of younger veterans and women are expanding the diversity of health problems presenting to VA healthcare facilities. Rising costs of prescription drugs caused many veterans to seek a lower cost treatment option at the VA, irrespective of co-payments required from veterans who have a greater ability to pay for their treatment. Policies and practices of VA and its supportive environment enable the academic surgeon to minimize market pressures and, perhaps, to apply evidence-based practices to clinical and other treatment decisions more readily than in the “private” sector. It is often easier in the VA to “do the right thing” for the patient, rather than what is marketed in various media. The VA electronic medical record (EMR), known as CPRS (Computerized Patient Record System), which has been continually improved over the last decade and is rated one of the best EMRs [2], offers academic faculty an easily accessible record-keeping and communications tool to support safe healthcare practices. The VA patient care system is very conducive to supporting academic clinical faculty as they develop clinical acumen, experience and expertise in an environment that encourages team work and group practice.

The educational mission of the VA offers academic surgeons a unique teaching opportunity in the current era of ambulatory and cost-effective managed care. VA policies provide students and residents a role and significant involvement in veterans’ health care, albeit with specific involvement and oversight by the attending physician (supervising practitioner) who is ultimately responsible for the care and treatment provided. In the outpatient clinics and on the inpatient wards, academic physicians teach basic history-taking and physical examination skills to students and surgical residents, who participate actively in the process and who hone their skills. In the operating room and other procedure units, teaching surgeons actively encourage involvement of residents in the performance of simple and complex procedures and operations. It is remarkable how the large majority of veterans truly enjoy the extra attention as they receive their care and treatment, while helping students, residents in-training, and other professionals learn. VA supports medical research and provides “protected time” and salary support to academic physicians for their scholarly activities. The academic physician or surgeon is granted time away from clinical activities to pursue research interests. VA provides many administrative databases (e.g., the Patient Treatment File [PTF], the NSQIP, and others), from which information may be extracted to help answer clinical questions and better describe aspects of clinical problems. For many years, the VA has given priority to the new investigator applying for initial extramural funding as it encourages more academicians, especially our newest colleagues in the discipline, to find new and better means to

treat the medical and surgical problems afflicting our patients. While VA Merit Review and Career Development funding is competitive, VA supports medical research of many different types, including research in basic science, clinical trials, health systems, outcomes, and others. The VA may be the best hospital system in which to perform certain types of cooperative human trials. In many ways, VA-supported medical research is a precious resource that is under-utilized. VA research has been very instrumental in successfully launching hundreds of academic and scholarly careers.

Administering the affairs of VA Surgical Services involves all surgical specialties and disciplines, and often crosses many medical school and departmental lines. An understanding of the relationships among clinical and support services of a hospital can be learned in VA Surgical Service administration. Involvement of the novice academic surgeon in VA administration mandates development of effective communication and “people” skills. Learning how to allocate resources appropriately and fairly is a challenging and sensitive matter, especially in the VA, due to its primary funding source from federal tax dollars, the accompanying Federal government oversight and scrutiny, and the constituents (veterans, healthcare providers) receiving and using the resources. Frugal use of human resources, equipment, physical space, and supply items is essential to the survival of all organizations and institutions. Skills learned by academicians in VA administration are transferable to virtually all types of healthcare and professional administration, public or private.

### VA Cooperative Trials

The VA is uniquely situated to design and conduct multicenter clinical trials. The most important aspect of this is the infrastructure provided by the VA Cooperative Studies Program (CSP). The VA Cooperative Studies program started with a study in the 1940s of veterans suffering from tuberculosis. Since that time, the VA Cooperative Studies Program has grown to become a major clinical research activity, supporting VA investigators engaged in clinical research across facilities.

Moreover, the size and scope of the VHA, along with its innovation and leadership in electronic systems (medical records, information technology and databases), make it an exceptional laboratory for conducting such large-scale clinical trials.

CSP itself has a structure that provides the framework for clinical trials. The program allows for flexible proposal development by investigators that is supported by an extensive network of professional biostatisticians, health economists, pharmacists, programmers, administrators, and support staff within CSP. This network of professionals are affiliated with several CSP coordinating centers, a clinical research pharmacy, and three epidemiologic research and information cen-

ters. Investigators can also call on the expertise of the VA Resource Center. The mission of CSP is to conduct clinical research on health issues vital to our nation’s veterans, define research results that establish new standards of care and improve veterans’ health, improve the efficiency of the VA healthcare system, and improve the health of the population as a whole. With this mission in mind, the CSP can organize research involving multiple medical centers within VHA and reap greater benefits than can be achieved from a single-site study.

The VA has funded many multicenter clinical trials through this mechanism. Some of the important trials in surgery have included: development of clinical methodologies for testing the potency of standard and new analgesics, value of oral and intravenous antibiotic therapy in preparing patients for colon surgery, role of total parenteral nutrition in malnourished surgical patients, outcome of carotid endarterectomy in the treatment of asymptomatic and symptomatic carotid stenosis, comparative efficacy of vascular bypass materials in lower extremity revascularization, evaluation of percutaneous transluminal angioplasty in the lower extremity, multiple studies in coronary artery bypass and heart valve surgery, the NSQIP (started as a cooperative trial), comparison of H2 blockers, and open Nissen fundoplication. We recently completed the open versus laparoscopic inguinal hernia trial and there is an ongoing trial of open versus endograft repair of aneurysm. For more information and instructions for potential applications, along with a listing of the publications generated from the VA CSP trials, see [www.vacsp.gov](http://www.vacsp.gov).

### The National Surgical Quality Improvement Program

A system that reliably identifies and reports adverse events is a prerequisite for process improvement in healthcare. Since its inception in 1994, the NSQIP has filled such a need within the VA healthcare system [17–25]. Using clinically risk-adjusted data, this validated, outcome-based program compares the performance of all VA hospitals performing major surgery and anonymously ranks these hospitals by ratio of observed to expected (O/E) adverse events. These results are provided to each hospital and used to identify areas of poor performance and potential excessive adverse events. The NSQIP has been most successful; it has garnered the acceptance of VA surgeons and healthcare managers and has provided annual feedback that has contributed to improving the standard of surgical care. Since 1991, unadjusted 30-day mortality and morbidity rates for major noncardiac surgery within the VA have decreased from 3.2% and 17.4% to 2.3% and 9.9%, respectively [23].

The NSQIP methodology has been extensively reviewed in previous publications [17–25]. Briefly, at each VA hospital performing major surgery, both workload (case volume categorized by speciality and “major or minor” classification including Current Procedural Terminology codes) and risk-ad-



justment (45 preoperative, 17 intraoperative, and 33 outcome variables) data are collected by a dedicated, trained surgical clinical nurse reviewer. This individual works closely with the Chief of Surgery to ensure accurate collection and timely transmission of data. Uniformity is maintained by use of an operations manual detailing data collection processes and variable definitions, as well as regularly scheduled conference calls with all nurse reviewers.

The risk-adjustment data are entered by the nurse reviewer into a special risk-adjustment software module, integrated into the surgical module of the VA's decentralized hospital computer system. Forty-five days after each surgical procedure, the nurse reviewer completes the patient's data entry and, with the Chief of Surgery's concurrence, transmits the data to the national data coordinating center; workload and laboratory data are automatically transmitted.

Data received at the national center are edited for missing or out-of-range values and data inconsistencies. Cleaned data are then entered into the NSQIP master file. Logistic regression analysis is used to develop the models predicting probability of death or complication (within 30 days in or out of hospital). These probabilities are calculated for each patient based on that patient's preoperative risk factors. Within each subspecialty and for all surgical procedures, probabilities are then summed for each hospital providing "expected" number of events and allowing calculation of O/E event ratios. Statistically significant low ( $O/E < 1$ ) or high ( $O/E > 1$ ) outliers are then identified to support continuous quality improvement activities, primarily via generation of an annual report distributed to the Chief of Surgery, the nurse reviewers, each hospital's director and chief of staff, and the regional chief medical officer. In the report, each hospital is identified by a specific code known only to the providers, the managers at that hospital, and the regional chief medical officer. This information allows directed chart reviews or other quality improvement efforts to be focused on areas of concern, knowing that the assessments have been adjusted for patient factors [26].

Tables of the observed and expected outcomes and O/E ratios at each medical center are also reviewed annually by the NSQIP national executive committee, which forwards recommendations regarding specific hospitals in accordance with preset guidelines. The latter are disseminated with the annual report.

Feedback and performance comparisons such as that offered by the NSQIP are uniquely effective in changing physicians' behavior [27–31]. Despite this evidence, with the exception of specific clinical programs such as cardiac surgery [32,33], the private sector currently does not possess a standard method for comprehensive surgical outcomes assessment and comparative institutional risk-adjusted performance feedback. Given this critical void, a pilot study was undertaken to assess the applicability of the NSQIP within private sector hospitals.

In this study [34], surgeons at three academic medical centers (Emory University, Atlanta, GA; University of

Kentucky, Lexington, KY; and University of Michigan, Ann Arbor, MI) volunteered to participate in the study and arranged for a dedicated nurse reviewer to collect and transmit the data. For this initial pilot study, data collection was restricted to general and vascular surgery patients.

The nurse reviewers collected patient data on paper forms and then entered the data into a consolidated database using an Internet-based system developed specifically to support the project (developed and supported by QCMetrix, Waltham, MA). To maintain patient security, each site assigned identification numbers to patients entered into the system. These patient identifiers were only kept at the local sites, maintained separately from other patient information. Hospital identifiers were stripped from the data during initial data. After initial transmission, data were checked for completeness and consistency and then transmitted to the national data coordinating center where analysis was performed in conjunction with the NSQIP data analysis.

All Internet-based user interactions with the database were protected by use of secure socket layer (SSL) technology using 128-bit encryption. All sensitive data were also encrypted within the database to reduce the possibility of unauthorized access to the data. Each site received designated user IDs and passwords for accessing the Web-based data entry system. In addition, each site was only allowed to view its own data.

Once recruited and appropriately trained, the nurse reviewers at each private sector hospital were able to abstract most of the data elements required by the NSQIP, although each site had to develop unique processes to collect the data, dependent primarily upon the local information technology systems. During this time period, after excluding multiple operations, 41,360 VA and 2737 private sector cases were used for subsequent analyses. As expected, there was greater variability in the nonfederal patient populations than in the VA, suggesting that the pilot study had addressed an appropriately broad spectrum of hospital settings.

The bivariate relationships between the individual risk factors utilized by the NSQIP and 30-day mortality and morbidity were similar in the VA and private sector hospitals for approximately two thirds of the risk variables. The calculated C-indices, which assess the models' predictive abilities, were also quite good. Most striking was the similarity between C-indices for the models generated with VA data and those generated with the combined private sector data, which approximated those typically noted within the NSQIP. These data suggested that the NSQIP methodology was able to generate reasonable surgical models within the private sector.

Obviously, a need to create disparate models for the two different healthcare environments would be a major shortfall to the NSQIP's expansion into the nonfederal sector. In seeking a solution to this concern, mortality and morbidity models created using the top 10 VA risk predictors were applied to the private sector data. When the risk variables used in the models were assessed by order of entry into the

Table 1  
Order of entry of top ten predictor variables into mortality and morbidity risk models for VA and combined non-VA for general plus vascular surgery

Step	Mortality		Morbidity	
	VA	Non-VA	VA	Non-VA
1	ASA class	Ventilator dependence	ASA class	ASA class
2	Abnormal albumin	ASA class	Contaminated wound	Contaminated wound
3	Emergency case	Emergency case	Complexity score	Emergency case
4	Disseminated carcinoma	Age	Emergency case	Abnormal albumin
5	DNR status	Ascites	Abnormal albumin	Complexity score
6	Ascites	Complexity score	Dyspnea	Ventilator dependence
7	Age	Abnormal alkaline phosphatase	Weight loss	COPD

predictive systems (Table 1), similarities were evident: four of the top seven variables for mortality and five of the top seven variables for morbidity were common to both the VA and the private sector. Abnormal albumin, consistently the most important risk variable in the NSQIP [17,19,21–23], correlated with both mortality and morbidity in the non-VA. These models also afforded excellent C-indices for mortality (Table 2) and morbidity (Table 3), suggesting that VA models might be directly applicable to the non-federal data.

These preliminary results were limited by the selection of two surgical subspecialties from only three private sector institutions. Since that study, the VA and American College of Surgeons (ACS) began collaboration for further application of the NSQIP into the private sector. With support from a grant from the Agency for Healthcare Research and Quality (AHRQ) to the ACS, the NSQIP was introduced into 11 additional university hospitals. Data were subsequently included from four additional affiliated community hospitals.

The NSQIP continues to function quite well in these 18 private sector hospitals; as of this date, the program has accumulated 3 years of complete data (n = 59,743 patients) and successfully modeled risk-adjusted surgical outcomes for the first 2 years. The top clinical risk factors remain quite similar between the VA and the private sector. This private sector

experience has demonstrated the effectiveness of the NSQIP as a quality improvement tool. Interestingly, when the O/E ratios from the 18 private sector hospitals are plotted with those of their VA counterparts, the private sector hospitals' data are distributed across the spectrum for the VA.

Based on these results, the ACS has decided to offer this program nationwide, beginning with general and vascular surgery, to all interested hospitals. Over the next 18 months, the ACS hopes to enroll 150 non-federal hospitals. The VA program will continue as the VA NSQIP and the private sector initiative will become the ACS NSQIP. Given the profound decrease in mortality and morbidity seen within the VA, it seems realistic to expect similar improvements in surgical outcome—with the associated cost savings [35]—within the private sector.

### Basic Science Investigation

Of the four missions of the Department of Veterans Affairs, research and education is essential to provide quality, state of the art clinical care to the veteran. Research and Development (R&D) in the VA is an intramural program with eligibility

Table 2  
C-indices for mortality models

Speciality	Learning model	Test data	C-index
General + vascular	VA	Same data	.891
	Non-VA	Same data	.944
	VA + non-VA	Same data	.895
	VA top 10	VA + non-VA	.881
	VA top 10	Non-VA	.934
General	VA	Same data	.912
	Non-VA	Same data	.970
	VA + non-VA	Same data	.915
	VA top 10	VA + non-VA	.900
	VA top 10	Non-VA	.942
Vascular	VA	Same data	.821
	Non-VA	Same data	.856
	VA + non-VA	Same data	.824
	VA top 10	VA + non-VA	.820
	VA top 10	Non-VA	.915

Table 3  
C-indices for morbidity models

Speciality	Learning model	Test data	C-index
General + vascular	VA	Same data	.761
	Non-VA	Same data	.776
	VA + non-VA	Same data	.761
	VA top 10	VA + non-VA	.754
	VA top 10	Non-VA	.760
General	VA	Same data	.793
	Non-VA	Same data	.787
	VA + non-VA	Same data	.793
	VA top 10	VA + non-VA	.786
	VA top 10	Non-VA	.778
Vascular	VA	Same data	.655
	Non-VA	Same data	.705
	VA + non-VA	Same data	.665
	Non-VA	VA + non-VA	.603
	VA top 10	VA + non-VA	.659
	VA top 10	Non-VA	.638

Adapted from Fink et al.<sup>33</sup>

Adapted from Fink et al.<sup>33</sup>

requirements that must be met to apply for funding. R&D is divided into four main services: Biomedical Laboratory, Clinical Sciences, Rehabilitation, and Health Services R&D. The CSP is administered through the Clinical Sciences R&D service. Each of the four services has an administrative director who reports to the Chief R&D Officer.

All research sponsored by VA is categorized into one of nine designated research areas, which include aging, chronic diseases, mental illness, substance abuse, sensory loss, trauma-related impairment, health systems, special populations, and military occupational and environmental exposures. The overall research budget within the VA is about \$770,000 with an additional \$900,000 in funding obtained extramurally by VA investigators. The latter includes support from other government agencies, industry, and local and national agencies each devoted to sponsorship of disease-specific research.

Over 75% of investigators are physicians who provide direct clinical care to veterans, which contrasts to the 25% of overall National Institutes of Health funding awarded to those with an M.D. degree. VA research supports more than 15,000 projects conducted in at least 115 VA and 106 medical schools, by more than 3000 investigators. Over two thirds of the overall VA research budget is awarded to researcher initiated projects and 13% to multisite clinical trials. Almost 200 career development awards were given out to scientists in 2003. Collaborative endeavors with the National Cancer Institute, the National Institute of Diabetes, Digestive and Kidney Disorders, Centers for Disease Control and Prevention, Department of Defense, and American Diabetes Association have led to important clinical trials in areas of disease relevant to veterans. Collaboration with private industry remains strong and clinical trials in VA are sponsored by almost 100 different private companies. There are more than 85 centers of excellence related to specific areas of disease and include the 44 Research Enhancement Awards Programs (REAPS) to train young investigators.

Investigator-initiated studies are funded primarily through the Merit Review program, of which there are at least 19 different subcommittees including surgery. Many members of the AVAS have served on this subcommittee and several have chaired it for a 3-year period. The subcommittee for surgery reviews applications covering a broad area, including wound healing, orthopedics, urology, cardiovascular, trauma/critical care, oncology, and gastrointestinal. Most applications from surgeons are reviewed by this subcommittee, or the oncology or subcommittees. The Merit Review Entry Program (MREP) is available to investigators within the first 5 years of completion of clinical training or Ph.D. These grants are for formally mentored junior faculty and are 3-year nonrenewable, and the applicant must have at least a five eighths appointment at the VA. The purpose of these awards is to recruit young investigators into a mentored situation and enhance their opportunity to obtain Merit Review funding at the completion of the 3-year period. Merit Review funding periods last from 3 to 5 years depending on the experience of the investigator. Approx-

mately 20% to 25% of applications are funded across all the subcommittees.

At the conclusion of World War II, Omar Bradley was appointed head of VA and quickly realized that the system needed to be upgraded to care for a massive influx of veterans. He directed a reorganization of care with strong affiliation with the nation's medical schools from 1945 to 1948. During this time the research program began with clinical trials into the therapy of tuberculosis, prosthetics, and rehabilitation of the blind. There have been a number of important seminal contributions to overall knowledge and clinical care by VA-funded investigators over the last half century. In 1958, the first portable, implantable cardiac pacemaker was developed by Chardack, a thoracic surgeon, at the Buffalo VA. Shortly thereafter concepts pioneered by VA researchers led to the development of the first computed tomography scanners in 1960. The first successful liver transplants and associated immunosuppressive drugs were performed by Dr. Starzl at the Denver VA. The nicotine patch was developed in 1984 and computerized ventilators in 1989 by investigators at VA medical centers. The Nobel Prize for medicine in 1977 was awarded to Rosalyn Yalow of the Bronx VA for development of the radioimmune assay for tiny amounts of protein hormones and Andrew Schally of the New Orleans VA for the discovery of several hypothalamic releasing factors. Ferid Murad of the Palo Alto VA became the 3rd Nobel laureate in 1998 for his pioneering work with nitric oxide as a new mechanism for nitroglycerine-mediated vasodilation.

Over the past decade, basic research has focused even more on the subcellular and molecular levels, with VA investigators discovering genes related to Alzheimer's disease, Werner's syndrome, and schizophrenia, and neurotransmitters associated with chronic pain transmission. The VA has led the world in rehabilitation research over the last half century with development of artificial limbs, advanced wheel chairs, and nerve-stimulation techniques. The VA CSP and the NSQIP, discussed earlier, are outstanding clinical research programs that have effectively utilized the VA patient population to enhance quality of care through multicenter studies. The overall research portfolio is therefore directly related to clinical illnesses specific to veterans, and its aim is to promote both basic and clinical investigation that will lead to improvement in clinical care of the veteran.

### **Information Technology in the Department of Veterans Affairs**

Looking across the horizon of information solutions available to surgeons, the options are limited. This is not the case for the Department of Veterans Affairs. With the congressionally mandated charge for the VA to compare its quality to private clinicians, the advent of the "Surgery Package" became possible [36]. The package effectively became the information technology solution for

VA to schedule surgical cases, track quality efforts, develop national reports, and integrate with the electronic medical record (Vista/CPRS) [37]. These successes have placed the VA at the forefront of information technology solutions nationwide [38].

Some of the cutting edge efforts are related to patient safety initiative through the “time-out” process. Documentation of patients required markings, confirmation of the patient, and viewing of radiology studies is now done in the Surgery Package. This is all done within the usual work flow and in the operating room along with patient input. All of these data are tracked by the national office and reports are delivered back to local facilities. Additionally, the VA surgeons have embraced “informed consent” computer technology to interface with CPRS and effectively document and track this essential part of the patient/provider relationship.

Quality “risk-adjusted” outcomes are only possible through database that the Surgery Package has become. Specific perioperative data elements are recorded within the package are used to analyze postoperative morbidity and mortality. This program has demonstrated a tremendous improvement in the VA and is now being adopted by the private sector nationally. There has been recent interest by VA in responding to Joint Commission on Accreditation of Health Care Organizations recommendations, as well as Medicare’s efforts to measure appropriate antibiotic use. Through the “Performance Measure” systems in VA we have the ability to leverage the Surgery Package again to document the timeliness and type of antibiotic used. This will facilitate the analysis of “process” measures, done well, through the performance measurement system along with the “outcomes” measurement the NSQIP [39]. The advantages of these parallel programs have promise in completing the loop of quality evaluations for improving patient care.

Some of the future opportunities available to the VA include integrated “Anesthesia Record Keepers,” resource allocation scheduling software, and decision support tools. The modernization of the Surgery Package planned for 2006 will result in robust integration of these data bases affecting even better access to relevant clinical information. The decision-support tools, alerts, and reminders will assist clinicians at the “point of care.” As with the implementation of the VA’s electronic medical record, we are hopeful that sophisticated systems of the future will continue to show VA as a leader. Collaborative efforts with the Department of Defense are also ongoing to improve care for soldiers transitioning from the Department to the VA. The clinical information systems are now being developed to share relevant data elements in order to make this transition as seamless as possible. The horizon is challenging and the VA intends to meet these with ever more creative solutions.

## The Association of VA Surgeons

Until World War II, the VA was mostly concerned with pensions, old soldiers’ homes, and cemeteries. In 1946 the VA created its Department of Medicine and Surgery to retain, retrain, and give research opportunities leaving military service. Surgeons who took these opportunities found VA hospitals to be ideal setting for controlled, collaborative clinical trials. Collaborators in studies became close friends, inspired one another, and achieved the scientific credibility that drew medical schools to affiliate with VA hospitals in the mid 1950s. The VA became vital to American medical education and the world’s largest provider and investigator of high-quality hospital care.

In 1964, a group of VA surgeons met for a testimonial dinner. Their enthusiasm led to reunions at Clinical Congresses of the American College of Surgeons, and in 1967, sixty-eight surgeons founded the Association of Veterans Administration Surgeons (AVAS). Its purpose was to improve patient care, medical education and research in surgery in the VA. Its first president, Lloyd Rogers, set the stage for the subsequent meetings for over 37 years. Since 1977, Annual Surgical Symposia have been hosted by urban, university-affiliated VA medical centers. In three-day meetings, VA surgeons, or their residents present 30 to 40 scientific papers selected from abstracts submitted to the Program Committee. The presented papers were initially published in *Archives of Surgery* for a number of years until 1992 when publication was moved to the *Journal of Surgical Research* due to many manuscripts being involved in basic science research. As a shift to more outcomes clinical research became apparent, the *American Journal of Surgery* became the publication instrument in 2001. At each meeting, prizes are given to residents for the best clinical or best research papers. A Distinguished Service Award and Presidents Citation is given to a physician who has contributed eminently to the AVAS mission.

Members of the Association continue to design or participate in authoritative cooperative studies, such as those ascites, reflux esophagitis, carotid stenosis, inguinal hernias, and small abdominal aneurysms. A very important study has been of surgical risk assessment that led to the NSQIP in which all VA surgical services participate. Studies such as this are possible only in the VA. They have helped sustain surgical excellence during years in which funding for basic research declined and the VA shifted its priority from hospital to ambulatory, preventive care. The AVAS is a nonprofit, nonpolitical educational organization. It refrains from lobbying in Congress, but its opinions on managing the VA are communicated to Central Office or headquarters by its members of the Surgical Field Advisory Group. The AVAS annual meetings remains a priority to most members as it remains truly an avenue to excite residents for a potential academic career, allows for exposure of junior faculty to interact with senior, well-established leaders in surgery, and allows all who work within the VA to come together for a common mission.

## Future Challenges

Progress has continually been achieved within the VA healthcare system over the past few years. In 2004, VHA led the nation in 18 of 18 measurements of healthcare quality. For 5 years in a row, the Department of Veterans Affairs set the benchmark for patient satisfaction in the American Consumer Satisfaction index for inpatient, outpatient, and pharmacy care. In addition, quality survey scores from the Joint Commission on Accreditation of Health Care Organizations exceeded the national average of all healthcare providers [40].

The VA offers 8700 full-time medical residency-training positions. More than half of the nation's physicians receive some part of their medical training in VA hospitals, evidenced by the over 28,000 medical residents and 22,000 medical students that rotate through the VA healthcare system each year. The training opportunities make the VA the nation's single largest healthcare workforce producer, and its facilities support approximately 3% of all graduate medical education in the United States [41]. Continuity of patient care and strong attending supervision are in addition special educational assets within the VA system.

The VA Medical and Prosthetics Research Program is one of the nation's premier research endeavors. It was established to improve healthcare for veterans and to stress research into injuries and illnesses specifically relevant to the veteran population. The FY2005 omnibus appropriation bill (H.R.4818, H Rept. 108-792) includes \$402.3 million for the VA Medical and Prosthetics Research Program. This represents a decrease of \$3.24 million (0.80%) that is accounted for by the across-the-board cut that was applied to all nondefense, non- homeland security spending [42].

The VA will continue its leadership position in the healthcare arena if it can successfully address the challenges facing it. First and foremost among them is the reduction in allocated resources to hospitals having to deal with an older sicker patient population, and an expanding veteran population with the returning soldiers from Afghanistan and Iraq. This usually translates into hiring freezes, increased patient to nurse ratio, and decreased ability to update or replace equipment, overcrowded clinics with delayed access to patients. Although the VA hospital staff has been able to manage this increased capacity, with more complex needs and resources it is conceivable that individual areas within the system might crack, resulting in deleterious effect on quality of care and outcomes.

This challenge is compounded by the fact that nurses and physicians' salaries have remained poorly competitive within the VA system. Although nurse's salaries and benefits have recently improved in some areas, physician's salaries, especially in the subspecialties, have lagged behind. There is hope that with the approval of the physician pay bill, the VA will be able to compete with local regional medical centers for the best and brightest physicians. The increased clinical demands on physicians were lately coupled by stricter rules in resident supervision and decreased resident work hours. As compared to other affiliated hospitals where this challenge was met by the

hiring of additional staff such as nurse practitioners and physician assistants, the VA was slow to respond in most instances, putting more strain on an already overburdened physician workforce. With salaries at the tenth percentile of colleagues working in academic centers across the street, the major appeal to work at the VA is the protected time for research and protection from liability suits. With increasing clinical pressure, decreasing support, and a reduction in an already small research allocation budget, physicians will find it more advantageous to work elsewhere and migrate out of the VA. The need to increase physician salaries, protect allocated research time, and an increased research budget will assure the continued success rate in research that is already higher than the National Institutes of Health.

The VISN structure, which was designed in the mid 1990s to eliminate inefficiencies and duplication of services, resulted in strained relationships with the affiliated medical centers. The individual hospitals often received various mandates from VISN staff inexperienced in dealing with the affiliated medical centers that resulted in deleterious effects on education and research issues of importance to the academic medical centers. In addition, the VISN structure has also resulted in duplication of administrative demands within medical centers that have to respond to VISN mandates as well as central office mandates; these demands and oversight will at times divert scarce financial resources to administrative support rather than patient care.

The computerized medical record system, a flagship within the VA information technology infrastructure has been the envy of all healthcare systems. Since its introduction, this system has received upgrades to improve its navigability. However, it remains difficult for a provider in one city to access the full record of a patient transferring from another city. Its full potential for clinical research as well as the integration of evidenced based practices into routine clinical and administrative operations through that system have not been explored and are poorly developed.

Facilities issues are a major concern to both the VA and the academic affiliates. Many VA facilities were built in the rush to expand following World War II and are now, at 50 years old, getting to the end of their useful life. This makes the VA hospital a less appealing place for residents and students to train compared to other hospitals within the affiliated medical centers. Trainees can practice in the state-of-the-art affiliates, with robotic instrumentation in versatile operating rooms with endovascular and laparoscopic ergonomic suites. By the same token, research facilities have reached state of dilapidation in need of minor and major construction. Failure to upgrade these facilities will hinder the recruitment process for faculty at both the VA and the affiliated medical school.

Despite these challenges and its unique mission, the VA system is best suited to serve a wider community and have a bigger role in healthcare with the expected changes in healthcare financing and the restructuring of social security. The VA and Department of Defense have already started some joint ventures in patient care, informatics and outcome measurements. It remains to be seen whether these pro-

grams can be pushed forward and expanded to the greater community.

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