VETERANS HEALTH ADMINISTRATION (VHA)
ADMINISTRATIVE HISTORY PROJECT
EXECUTIVE SUMMARY OF VHA

During the Clinton Administration, the Veterans Health Administration (VHA) underwent the most dramatic metamorphosis of its history. The sweeping transformation was so outstanding that it was and continues to be chronicled in the annals of business and management, as a model of improved performance for organizations, private and public.

The transformation entailed a 180-degree turnaround from a monolithic, military-style top-down organization, into 22 Veterans Integrated Service Networks (VISNs). At the same time, headquarters substantially reduced its staff and instituted a new focus - providing support to the field. This new management structure has placed emphasis on decentralizing day-to-day operations, pooling and aligning resources with local needs, and improving service to veterans. VISN design reflected patient referral patterns among VHA hospitals and other service organizations. Resource allocation became dependent on capitation, i.e. the number of veterans served rather than "historical" costs. This new system eliminated layers of bureaucracy, and emphasized collaboration and efficiency. Case management was applied, with the patient assigned to a dedicated physician or physician-led team of caregivers, responsible for providing a continuum of care.

As part of the transformation of the veterans health care system, a strategic management framework was designed that clearly articulated the core values of the organization, its goals and missions and how well it performed. This initiative ensured that the medical centers, headquarters, clinical and administrative service line managers, clinical teams and all staff would be able to link their activities to the organization's mission and would align the organization to accomplish its goals. Several tools were used in this effort, including the strategic goals of 10 for 2002. These clearly-understood performance expectations, many of which were incorporated into performance agreements with the top field management, were instrumental in helping to achieve a rapid transformation. They have recently been updated and reflected in the 6 for 2006.

VHA's journey to date has been described in three documents appropriately titled *Journey of Change I (1997), Journey of Change II (1998), and Journey of Change III (1999).* These documents were crucial for communicating the mission, vision, and goals to all levels of employees. Never before had VHA had such a clear roadmap for all to follow. The *Journey of Change I* introduced the strategic targets built around a strategic framework consisting of the Mission, Goals, and Domains of Value articulated in the *Prescription for Change.* Continuing refinements to the strategic direction outlined in *Journey of Change II* included a full integration with the VA Strategic Plan and a focus on critical strategic initiatives. *Journey of Change III* continued the documentation of VHA's

progress and integrated network strategic plans with related national goals and strategies.

Another major force in the transformation was the implementation of the Performance Measurement System. This system was initiated to meet challenges of improving healthcare quality, patient and stakeholder satisfaction, and economic efficiencies. The foundation of the Performance Measurement System is broad, statistically reliable, ongoing measurement of performance objectives. Senior managers are held accountable through annual performance agreements containing explicit goals. A Performance Measurement Workgroup was established to provide a team approach to coordination of measures. The Performance Measurement System articulates Veterans Health Administration's domains of value: clinical quality, access, satisfaction, cost effectiveness, functional status, and community health. Establishment of a consistent measurement system has allowed VA to demonstrate that it delivers high quality care in compassionate and courteous manner; that VA care frequently surpasses governmental goals and sets national benchmarks; and VA care results in positive outcomes for our patients.

VHA today, in addition to its model transformation (and perhaps because of it), leads the nation in the areas of patient safety, quality emphasis, and dissemination of innovations and lessons learned. Substantial improvements were made on a number of important performance indicators.

To better meet the changing healthcare needs of veterans, VHA initiated a number of programs to encourage field facilities and leaders to shift the focus in health care delivery to ambulatory care. This change in focus has resulted in increased numbers of veterans served by VA as well as reduced costs associated with early medical treatment and intervention. Additionally, the change in operational doctrine has brought VHA in compliance with the best industry practices of the private health care delivery industry. Outpatient-based care, including outpatient surgeries have dramatically increased, resulting in an increase of outpatient visits by 44 percent and a decrease in Acute Bed Days of Care by 68 percent during 1994 –1999. The shift to outpatient care reduced the need for inpatient beds and correspondingly increased the need for ambulatory care space throughout the health care industry. VA responded by refocusing construction expenditures on ambulatory care. From FY 1993 through FY 2000, $1,329,918,000 has been utilized for ambulatory care focused projects.

Access to care has also been enhanced through the expansion of primary care to the over 650 new community-based outpatient clinics. Telephone triage and advice programs were implemented at all hospitals.

The Feedback Center was created in 1993 to facilitate organizational movement at VA medical centers towards a patient-driven culture. Based on results of nationwide focus groups of veterans and their families to determine priorities for

high quality care experiences, annual inpatient and outpatient patient satisfaction surveys were developed. Patient service standards were developed as well, and specialty surveys, such as long term care, have been added over the years. The surveys allow for comparisons with the non-VA sector of healthcare.

VHA is committed to providing both quality and timely care to the veterans enrolled in our health care system. In an effort to improve efficiency and measurement of quality of care, VHA developed a monitoring system and policy initiative to reduce waiting times for primary care medical appointments.

To create better ways of serving veterans with VHA's limited resources, some of the Medical Centers underwent Facility Integration, the combination of two or more facilities, and generally their various clinical and support operations under single management. Another program to improve the delivery of health care to veterans was the Capital Asset Realignment for Enhanced Services program. This program establishes a process for review of capital asset infrastructure and market demands to enhance delivery of services through improved alignment.

Enhanced-Use lease authority has allowed VA to develop cost-effective alternatives to traditional means of acquiring and managing its facility and capital holdings. This authority enables VA to lease underutilized VA property, on a long-term basis, to non-VA users for uses compatible with VA programs in return for obtaining facilities, services and/or money for VA requirements that would otherwise be unavailable or unaffordable. Since FY 1993, VA has used this program to significantly reduce costs and provide corresponding benefits to veterans, employees and local communities. To date, 18 Enhanced-Use leases have been awarded, winning 5 Hammer awards from the National Partnership for Reinventing Government. This program has resulted in over $200 million dollars of private investment into VA facilities with over $2 billion anticipated in the next five years.

As part of the VA reorganization, the Office of Dentistry has completed re-engineering the Central Dental Laboratories. The total number of laboratories has been reduced from four to two. Data from a two year pilot study evaluating private sector costs compared to the same work done in VA demonstrated that VA was 30 percent more cost effective.

Other mechanisms to increase efficiency included the establishment of Consolidated Mail Outpatient Pharmacies and the development of a national formulary. This resulted in large savings in drug costs due to national contracts and more consistent care across the system.

VHA has a medical care budget of more than $19 billion, approximately 180,000 staff and over 650 ambulatory care and community based clinics, 132 nursing homes, 40 domiciliaries, 206 readjustment counseling centers and various other facilities. Between FY 1993 and FY 2000, VA completed many facility

construction projects. These included 12 clinical improvements, 3 domiciliaries, 11 nursing homes, 22 ambulatory care/outpatient clinics, 10 parking garages, 4 research additions, 7 seismic corrections, 12 medical center replacements, 17 general medical, 5 regional offices and 11 cemeteries major projects. Also, during this same time, VHA received $1.9 billion in funding for 58 major construction projects.

From 1997 – 1999 VHA reduced unique patient costs by 16 percent in constant dollars, while the number of treated patients increased by 24 percent.

VHA, the nation's largest integrated health-care system, has four congressionally mandated missions: Patient Care, Research, Training, and Medical Emergency Backup for the Department of Defense.

It was recognized that the use of evidence based, clinical practice guidelines would have an appreciable impact on patient care. The development of National Clinical Practice Guidelines was initiated in 1995. Implementation of guidelines was incorporated into senior management's' performance agreements. Guidelines were established for many high volume, high risk diseases. An Advisory Council on Guidelines was established to select and approve system wide guidelines. National conferences on guidelines have been held. A joint effort between VA and the Department of Defense has led to the development of more than a dozen clinical practice guidelines intended to assure quality and continuity of care.

VHA is uniquely positioned to serve as a national laboratory for finding and implementing ways to prevent health care errors and improve patient safety. VHA is in the vanguard of the efforts to improve patient safety, ensuring safe, high-quality care. In an effort to understand the issues and to act for patient safety, VHA has joined a public-private consortium of organizations with a shared interest and commitment to patient safety improvement through the National Patient Safety Partnership (NPSP) that was formed in 1997. One of the primary initiatives is to investigate not only accidents, but also close calls. The analysis of close calls provides the best opportunity to learn and institute preventive strategies, as they will unmask most system weaknesses without having to experience a tragedy. An Office of the Medical Inspector reported helped to raise the consciousness of VHA clinicians to the need to focus on prevention of adverse events. It also encouraged more, rather than less reporting of untoward outcomes in order to study how to avoid these events in the first place. This has led to the development of new safety strategies and processes to improve patient safety and prevent future health care errors.

Another major patient safety initiative was the Bar Code Medication Administration (BCMA). This initiative increases efficiency in medication administration, improves medication administration accuracy, and provides online patient medication records. The Heartland Veterans Health Network (VISN)

developed a software system that was modified to meet the general needs of all VA medical centers. The nationally released BCMA software enables users to electronically document medications at the bedside or other points of care.

In 1997, as a part of the "VHA Lessons Learned" Project, the Virtual Learning Center (VLC) was created. The VLC is an Intranet and Internet web site that provides a systematic mechanism for sharing informal knowledge, innovations, best practices, and safety lessons. The VLC is also a tool to save resources otherwise expended on reinventing solutions which already existed. The VLC facilitates the rapid sharing and adoption of innovations, successes, system redesign, and solutions throughout VA and makes information available, which was previously difficult, if not impossible, to obtain with phone calls or through e-mails.

VHA has initiated programs to address significant health issues such as Hepatitis C. Hepatitis C Virus (HCV) has a particular importance for VHA because the prevalence in the VA's service population is substantially higher than in the general population. To address needs of HCV-positive patients, VA designated medical centers in Miami, FL and San Francisco, CA as Centers of Excellence to serve as research and education lynchpins of VA 5-point strategic initiative to respond to HCV. The five-point strategic initiative includes: patient education; health care provider education; epidemiologic assessment; treatment and research. Additionally VHA conducted a nationwide surveillance activity and tested over 26,000 veterans from across the country for HCV in a single day. The data collected from this sample will be utilized to assess risk factors, prevalence rates, and serve as a basis for VA's ongoing HCV planning.

VHA is the single largest direct care provider for homeless persons in the country, a critically important element in the Nation's public safety net. Throughout the 22 VISN, VA provides direct services such as outreach, case management, residential treatment, therapeutic work opportunities and assistance with permanent housing for homeless veterans and those at risk for homelessness. VHA has expanded the range of services available to homeless veterans through partnerships with other federal agencies, veterans service organizations, state and local governments and non-profit organizations. A National Dental Homeless Program has also been established. This office provides assistance nationally to any dental service that is interested in developing a program of care for homeless veterans. It has been instrumental in numerous homeless veterans receiving oral/dental care which has contributed positively to their rehabilitation process.

VA is leading the healthcare field in its pain management strategy, a system-wide approach to pain management to improve the care of patients with pain so that no patient cared for in VHA health care systems suffers from preventable pain. Pain management protocols and "Pain" as the 5th vital sign are some of the

procedures being implemented. In addition the program includes a component for patient and Health Care Professional education.

VA Dentistry is actively involved in Dental Implantology as a leader in the field. One of the largest implant studies in the nation addressing case selection and success and failure rates was published. This study is providing data and information that will offer alternative treatment for patients who have experienced unsuccessful conventional oral rehabilitative therapy and will enhance the health and quality of life of numerous people. The results of these data contribute to the entire profession and impact nationally.

The Traumatic Brain Injury (TBI) Network of Care provides case-managed, comprehensive, specialized rehabilitation spanning the period from discharge from the acute surgical treatment unit until permanent living arrangements can be made. A significant number of these patients are referred to VA facilities from the military. The TBI continuum of care plan was accepted in 1993. TBI centers were established and programs began receiving accreditation from the Commission on Accreditation of Rehabilitation Facilities.

VHA recognized the aging of America's veteran population through the expansion of programs targeted for the elderly. For instance, the number of Geriatric Evaluation and Management (GEM) Programs were increased. GEMs provide both primary and specialized care services to a targeted group of elderly patients. An interdisciplinary hospice consultation team was established at each Medical Center and the number of hospice programs was increased. In addition, pilot programs were begun to provide contract adult day health care, homemaker, and home health services. Home Based Primary Care programs were also expanded.

A National Initiative for Seriously Mentally Ill (SMI) Veterans was begun in 1993. This program provides state-of-the-art diagnosis and treatment to improve the mental and physical functioning of SMI veterans through the continuum of inpatient, partial hospitalization, outpatient, and community care. Mental Illness Research, Education, and Clinical Centers (MIRECCs) were established in 1997 to generate new knowledge and improve care for patients with mental illness. Standardized clinical baseline assessment for substance abuse patients and Comprehensive Substance Abuse Treatments Guidelines and Algorithms were also developed.

The Hypertension care improvement initiative serves to better control hypertension in veterans and supports VHA's position as a long-standing leader in clinical care, education, and research hypertension.

During this administration, Prosthetic Services have been expanded. There are nearly 1 million patients receiving prosthetics.

During this time Telemedicine capability was developed. This technology is now used in some Community Based Outpatient Clinics. Telemedicine and home-care teleconsultation initiatives have also been implemented for the Spinal Cord Injury patients. In 1998 and 1999 the Vet Center program implemented the Vet Center-Linked Primary Care project. These initiatives make use of telemedicine technology in 20 Vet Centers to promote access to primary care for high-risk, under-served veterans closer to their respective communities.

Readjustment counseling in VA is provided through a national system of 206 community-based Vet Centers. There have been several initiatives to provide culturally sensitive services to high-risk minority veterans close to their homes. The Vet Center outstation, established in 1993 in Keams Canyon, Arizona on the Hopi Reservation was the first VA facility ever sited on reservation land and dedicated to serving the Native American veteran. Based upon the success of this effort, a second outstation was established in 1997 in Chinle, Arizona on the Navajo Reservation. In 1998 Readjustment Counseling Service (RCS) advanced this effort by opening its Vet Center outstation in Martin, SD serving the Pine Ridge and Rosebud Reservations. The Vet Center outstation dedicated to serving the Cherokee in Tahlequah, OK was authorized for implementation in 1999.

The Veterans Health Administration (VHA) has designated certain clinically-related areas for "special program" status. Typically, special programs address illnesses or medical care specific to the service-connected veteran population or are areas of special VHA expertise. Two special programs include Gulf War Veterans and Women Veterans.

VA has initiated many programs to respond to the needs of the Gulf War veterans including scientific research, medical care, disability compensation, and outreach efforts. One of the initiatives included a revision of the Gulf War Registry Protocol to gather more exposure and health data from veterans. A National Survey of Gulf War Veterans was done as a means of evaluating the health and exposure of all Gulf War veterans. To explore new ways of treating Gulf War veterans and to improve veteran satisfaction with VA health care, five Gulf War Clinical Health Demonstration Projects were established. Outreach to Gulf War veterans includes a quarterly newsletter on Gulf War health and compensation issues; a corresponding Web Site, posters describing VA health care and compensation services; answers to frequently asked questions; Spanish language translations; and an 800-HotLine number for Gulf War veterans inquiries. VA Gulf War Referral Centers were established to deal with Gulf War veterans with particularly difficult to diagnose illnesses. VA has supported legislation covering compensation of Gulf War veterans with undiagnosed illnesses – a VA first.

Significant accomplishments were also achieved in enhancing services in the area of health care for women veterans. VHA established 8 comprehensive

women veterans health centers and designed 3 Centers of Excellence in Women's Health. A new division within the National Center for PTSD was established to study the effect of military trauma on women. VHA funded 66 sexual trauma counselors in Vet Centers. Maternity benefits were provided to women veterans and almost 200 babies were born in 1999. Ten grants for homeless women veterans were awarded. In 1994, the first Women's Health fellowships were established in VA.

Significant accomplishments were also achieved for other programs for special populations such as veterans exposed to Agent Orange, ionizing radiation, or cold injury; veterans with AIDS, smoking prevention; and occupational health and safety. A series of Institute of Medicine (IOM) reports on health effects from exposure to Agent Orange were initiated to support VA compensation policy for Vietnam veterans. An IOM supported study on dose reconstruction of Agent Orange exposure of Vietnam veterans was also initiated. Outreach to Vietnam veterans was provided through regular publications on Agent Orange health and compensation issues, a corresponding web site, and posters describing VA health care and compensation services for Vietnam veterans. Outreach also included Agent Orange Fact Sheets on illnesses associated with Agent Orange exposure, and Spanish language translations of relevant materials.

The Department of Veterans Affairs is co-sponsoring a project with the Department of Health and Human Services to update and expand radioepidemiological tables used in the adjudication of compensation claims. The new tables will be in the form of computer software designated as the Interactive Radioepidemiological Program and are currently under review by an expert scientific panel.

The Veterans Health Administration and Veterans Benefits Administration have collaborated to issue a special Cold Injury Protocol Examination and Protocol Examination History for veterans who experienced freezing and non-freezing cold injuries in service including frostbite and trench foot. Continuing Medical Education programs entitled "Cold Injury: Diagnosis and Management of Long Term Sequelae" also were issued in 1998 and 1999.

VA is recognized as the largest provider of HIV care in the United States (approximately 18,000 patients/year). In 1992, VA developed and implemented the VA Immunology Case Registry, the largest clinical database on HIV infection in the world. As of FY 2000, this database contained complete blinded (not linked to patient name) clinical and utilization information on nearly 50,000 patient with HIV infection. With the establishment of the Center for Quality Management in HIV Care in 1999, this Immunology Case Registry is being used as a tool to continuously improve HIV care across all VA settings.

Research was supported through continual funding four research centers on HIV and AIDS Infection. Research findings were applied to the clinical setting. In

1998, VA was able to demonstrate that the comprehensive care and case management model of HIV care reduces inpatient utilization. Education has been a major component of the program. A VA AIDS Information Center was established to provide up-to-date information about HIV/AIDS for VA staff and patients. In addition, VA conducted multiple HIV clinical update conferences to educate VA clinicians about treatment advances in this rapidly changing field. An HIV Prevention Strategic Plan (2000) has been developed. One of the goals in the plan included a National VA HIV Prevention Conference to provide training in HIV risk identification and interventions to front-line staff.

VHA has established smoking cessation clinics for veterans in each of its medical centers. Clinical Practice guidelines were developed to monitor the effectiveness of each program.

Occupational health and safety has also received increased visibility. Some of the specific accomplishments in this area included the creation of a tracking system for occupational injuries and illnesses, Latex Allergy Evaluation Program, Partnership agreement with OSHA in work site evaluation, and Co-sponsorship with NIOSH, OSHA, and NIEHS on the IOM report, "Safe Work in the 21st Century".

The Environmental Epidemiology Service has initiated and completed a number of health studies. The areas for study included WWII veterans exposed to radiation or mustard gas, veterans who participated in atmospheric nuclear weapon tests (Atomic veterans), Vietnam veterans potentially exposed to Agent Orange, Women veterans who served in Vietnam, and Gulf War veterans. Studies were completed and published in peer-reviewed scientific journals.

Through the National Center for Ethics, VHA has demonstrated its commitment to addressing the challenging ethical issues that arise in health care today. Throughout its history, ethics education and consultation have been some of the Center's major strengths. Each year the Center offers dozens of educational programs at sites around the country and provides consultation on ethical questions to personnel throughout VHA. Since 1994, the Center has been responsible for the development of three important policies: *Informed Consent, Do Not Resuscitate,* and *Advance Health Care Planning.*

During the Clinton Administration several Laws were enacted which enhanced care for veterans. One example is the Veterans Health Care Eligibility Reform Act of 1996, P.L. 104-262. This Act realigned access to VA health care by basing care delivery on patient need and by expanding the spectrum of care available to eligible veterans. Prior to the enactment of this law, the Department of Veterans Affairs (VA) was required by law to have different rules for who could receive outpatient care and who could receive inpatient care. P.L. 104-262 eliminated the distinctions between eligibility for inpatient care and eligibility for outpatient care. It also required most veterans to enroll in the VA system in order

to receive care. By September 1999, the VA had enrolled about seventeen percent of the total veteran population. About twenty-two percent of those enrolled were new enrollees (veterans who had not received care between October 1, 1995 and September 30, 1998). Eligibility Reform has brought about some of the most significant changes since the creation of the veterans health care system. These changes have helped VA provide the right care, at the right time, in the right place.

While Public Law 104-262 removed restrictions on the site of care and has resulted in improved access to care, it did not address the difficult issue of eligibility for and prioritization of long term care. On November 30, 1999, Congress enacted Public Law 106-117, the Veterans Millennium Healthcare and Benefits Act. The long-term care provisions of the Millennium Act build on the recommendations of the Advisory Committee and address the discretionary nature of long-term care in the VA. The Law also expanded reimbursement for emergency treatment in non-Department of Veterans Affairs facilities.

In 1993, as part of VA's extension of services to women veterans under Public Law 102-585, RCS Vet Centers were identified by VHA for implementation of a sexual trauma-counseling program for women veterans experiencing the traumatic aftermath of sexual assault and/or harassment during their active military service. Resources were distributed nation-wide to staff approximately 60 Vet Centers with a qualified mental health professional with specialized training in sexual trauma counseling. Subsequent legislation passed in 1994 authorized VA to provide these services on a gender-neutral basis.

Through passage of Public Law 104-262 in October 1996, Congress extended eligibility for Vet Center services to any veteran who served in the military in any war, or in an area during a period in which armed hostilities occurred. This law authorized Vet Centers to serve all war veterans, thereby adding World War II and Korean War veterans to the list of eligible veterans. VA had now been authorized to provide timely outreach and PTSD counseling through its Vet Centers to all eras of returning war veterans.

Public Law 105-33, the Balanced Budget Act of 1997, extended all co-payment authority and provisions for billing of insurance carriers for Non-Service Connected treatment for Service Connected Veterans. In addition, it established a Medical Care Collections Fund and authority to establish Reasonable Charges for Non-Service Connected medical treatment. The law allowed VA to retain health collections.

During the Clinton Administration, VHA enhanced and improved information technology throughout the VA medical facilities by creating and incorporating many new innovations and technologies. The veterans benefited directly by improvements in the quality and timeliness of service throughout all VHA medical care facilities. Outreach to both veterans and employees were vastly improved

through the use of updated and integrated automated systems and techniques. In 1996, VistA (Veterans health Information Systems and Technology Architecture) was introduced. VistA is built on a client-server architecture, which ties together personal computers with applications by utilizing graphical user interfaces at VHA facilities. VistA, which includes both "in-house" developed and commercially purchased software, provides automation for major clinical, management, and administrative functions throughout VHA. Some examples of significant improvements to VistA during this administration include:

- Occurrence Screen – Identifies events requiring follow-up review.
- Clinical Monitoring System – Allows users to design monitors that capture patient data to support quality assurance and management efforts.
- Prosthetics Module – Enhances patient care by expediting the determination of veteran eligibility, determining what prosthetic services and devices have been provided to the veteran in the past, and decreasing the time required to order, deliver, and/or repair new and existing prosthetic devices.
- Women's Health Package – Assists in the management and assessment of women's healthcare.
- Automated Medical Information Exchange (AMIEII) – Provides an information linkage between VHA and Veterans Benefits Administration and supports a shift away from paper documents.
- Computerized Patient Record System (CPRS) – A comprehensive suite of clinical applications that creates an electronic medical record to assist health care providers perform their clinical responsibilities.
- VistA Imaging – Captures clinical images, scanned documents and other non-textual files and makes them part of the patient's electronic medical record.

The Decision Support System (DSS) was implemented in 1994. This provided data on patterns of care, patient outcomes, and resource consumption. With DSS, users at medical centers are able to perform product line analyses, modeling, and clinical performance measurement. DSS supports an enhanced data-driven management process at VA medical centers aimed at improving the policies and practices of VA facilities in an evolving competitive health care environment.

The Government Computer Based Patient Record Framework Program originated as a joint VA and Department of Defense (DOD) response to satisfy a 1997 presidential directive to create a comprehensive, life-long medical record for all service personnel. In February 1999, the VA, DOD, and the Indian Health Service signed a Memorandum of Agreement authorizing this collaborative effort. The goal was to achieve an easily accessible, yet secure life-long medical record for each of our Nation's veterans, military personnel, their dependents, and Native Americans.

A newly redesigned veteran focused VA web site made its debut on January 31, 2000. This web site was designed using feed back from all major stakeholders

including veterans and family members, Veterans Service Organizations (VSOs), business partners and congressional staff members. A great deal of emphasis was placed on accessibility issues to assure the web design adhered to the Rehabilitation Act of 1973, Section 508 standards.

Research is another mission. VHA has made major contributions to medical and scientific research over this administration. Some of the major research findings since 1993 include:

- Computer-aided wheelchair prescription system assures better fit for veterans.
- New functional electrical stimulation walking system provides paraplegics with local are mobility.
- Identification of pathways linked to motor recovery from stroke.
- New computer technology advances orthopedic footwear design.
- Implantable insulin pump shows good results in multi-center trial.
- Optimal medical treatment for prostate disease identified.
- Smoking linked to abdominal aortic aneurysms.
- Shortened corticosteroid treatment for chronic obstructive pulmonary disease found to be cost-effective.
- Early treatment with corticosteroids reduces damage from SCI.
- Breakthrough in brain tumor treatment.
- Genes discovered in aging and Alzheimer's disease.
- Important link found between youthful drinking and later alcoholism.
- Study shows benefits of 'clot-busting' drugs compared with angioplasty.
- New kidney cancer treatment identified.
- Estrogen and vaccine combination may stop multiple sclerosis.
- Steroid therapy found to be effective for common forms of pulmonary disease.
- Colonoscopy may be the best way to screen for colon cancer.

In 1998, VA Research launched the VA Quality Enhancement Research Initiative (QUERI). The QUERI mission is to translate research discoveries and innovations into better patient care and systems improvements. It is founded on the principle that practice needs determine the research agenda, and research results determine interventions that improve the quality of patient care. Medical Research Service established the REAP in 1998 to promote and support groups of VA investigators studying medical areas of importance to the veteran population. Twenty programs from 18 VA medical centers have been selected for funding to date. These REAPs focus on a wide variety of medical areas of particular importance to veterans including pulmonary disease, bone disease, Parkinson's disease, vascular disease, renal disease, disorders of the gastrointestinal system, wound healing, multiple sclerosis, Hepatitis C, depression, and prostate cancer.

Although nurses have always been an integral part of VA research teams, VHA nurses have been underrepresented as principal investigators (PIs). The Nursing Research Initiative (NRI) encourages the development of nurse investigators to conduct independent research aimed at high priority and VA mission-oriented areas of investigation.

Evidence-based clinical practice guidelines have been widely accepted as a means to increase the use of appropriate clinical practices and to reduce the use of inappropriate practices, thereby improving quality of care and reducing unnecessary health care costs. The effectiveness of practice guidelines, however, depends on their consistent and accurate implementation. This initiative invites research to study alternative strategies for implementing evidence-based clinical practice guidelines in VHA and to identify implementation strategies that may be replicated system-wide. Only guidelines that were developed nationally and are based on scientific evidence are eligible for study. The research will focus on alternative ways of introducing guidelines into practice, for example, incentives, computerized reminders, administrative rules, and penalties. These studies will also address the impact of guideline implementation on such outcomes as quality and cost of care, practitioner knowledge and practice patterns, and patient behavior.

Gulf War veterans are a particular focus as we learn more about their special health concerns. Three new large-scale treatment trials have begun in order to seek answers to explain illnesses for these veterans. They will be exploring symptoms and illnesses such as chronic fatigue syndrome, neurological abnormalities, and generalized body pain of unknown origin.

The Cooperative Studies Program (CSP) conducts multi-center clinical trials to determine the effectiveness of promising new therapies. As one of the most important large-scale clinical trial programs in the world, the CSP has achieved international recognition for its accomplishments in many areas. Some of the areas of research that are prevalent among our veterans as well as the general population include ischemic heart disease, chronic lung disease, benign prostate disease, chronic renal failure, and schizophrenia. In addition, CSP investigators conduct population-based research focusing on critical health care issues, such as the epidemiology of hepatitis C, the occurrence of amyotrophic lateral sclerosis (Lou Gehrig's disease) in Gulf War veterans, and the progression of prostate cancer and rates of illness among deployed veterans. The CSP has four Coordinating Centers, a Clinical Research Pharmacy, and three Epidemiological Research and Information Centers. Clinical trials results obtained through the CSP inform VA's health care policy makers so that they can make the appropriate changes in clinical practice that result in improved patient care for veterans and the nation.

In fundamental biomedical research, new initiatives in diabetes, environmental hazards, emerging infections, and wound repair reflect new priorities in medical

research. VA's Medical Research Service (MRS) contributes to improved health care for veterans and the nation through the study of the cause, development, diagnosis and treatment of a wide variety of diseases and disorders. Recently, MRS researchers reported advances against many health problems affecting veterans. For example, and MRS team studied gene therapy that may offer new hope to millions of diabetics who need daily insulin injections. Another MRS team identified a part of the brain that is involved in the thinking process, the motor cortex, an area scientists previously believed was limited to controlling voluntary movements. Investigators also developed a laboratory technique to grow mouse stem cells, the bone marrow 'mother' cells that evolve into all the different types of mouse blood cells. If human stem cells can be similarly grown, this VA finding could have a major impact on gene therapy for blood cell disorders and bone marrow transplantation for cancer and other diseases.

New rehabilitation centers have also been established in the areas of sensory loss, brain injury, aging with a disability, patient outcomes from rehab care, and spinal cord regeneration.

Health Services Research and Development Service (HSR&D) pursues research at the interface of health care systems, patients, and health care outcomes. The priorities have expanded to include access to health care, managed care strategies, affect of facility integrations, changes in clinical services organization with line management, and ethnic, cultural, and gender issues as they relate to health services use. Many HSR&D studies have been used within and outside VA to assess new technologies, explore strategies for improving health outcomes, and evaluate the cost-effectiveness of services and therapies. HSR&D carries out its mission through peer reviewed research and through its key centers which include eleven Centers of Excellence, the Management Decision and Research Center, and the Veterans Affairs Information Resource Center (listed below). The newly funded VA Health Economics Resource Center will bring additional depth to HSR&D's expertise.

VA Research established three Epidemiological Research and Information Centers (ERICs) to enhance VA health care delivery by promoting VA-based population research and to convert those results into a format that VHA providers and administrators can apply to improve patient care.

VA Research created four Environmental Hazards Research Centers in 1994 to focus on toxic and other environmental health hazards, particularly as such studies relate to veterans' potential exposure to chemical and biological hazards during active military duty. Research at these centers has identified even further needs for studies of environmental exposure. An additional center, the Environmental Hazards Research Center for Reproductive and Developmental Outcomes, was established to study the health of offspring to those veterans that served in military service and the concerns with respect to ionizing radiation, Vietnam Veterans and exposure to herbicides, and Persian Gulf veterans. These

centers focus on topics such as carcinogenesis, autoimmune or allergic responses, neurobehavioral alterations, reproductive developmental outcomes, genotoxicity, or prevention or consequences or exposure.

VA Research established the Technology Transfer program in 1999 to assist VA investigators in identifying, protecting, and commercializing inventions. This office inventories and tracks all tech transfer activities to insure that documents are reviewed and evaluated and that recommendations are acted upon in an appropriate and timely manner. This will help clinicians concentrate on moving beyond creating prototypes of rehabilitation aids, such as wheelchairs and prosthetics, to putting them into practical use. Expanded efforts enhance these activities, bringing new discoveries into clinical practice. Investigators are assisted with patenting and necessary partnering with industry. The goal of this effort is commercial production of such devices so they may benefit the greatest number of people. Researchers are also enhancing the capacity for conducting clinical trials with newly devised technologies.

Among joint research efforts are those by VA and Department of Defense (DOD) investigators. Shared research interests between the two federal departments initially prompted, and have since fueled, this VA/DOD Collaborative Research Program. The current initiatives include: Prostate Diseases including Cancer; Military Operational Stress-related Illnesses; Mechanisms of Emerging Pathogens; Combat Casualty and Wound Repair; and Physiological Foundations of Physical Performance and Combat Readiness.

The Office of Research Compliance and Assurance was created and reports directly to VA's Under Secretary for Health. The goal of the office is to ensure that VA's research programs place the highest priority on the welfare and dignity of patients who enroll in clinical studies. It also ensures the VA's efforts to continuously improve high ethical standards in research. It provides independent and routine assurance that VA research is conducted legally, safely and with integrity.

VHA's training mission is accomplished through academic affiliations with many of the nations' medical and other schools in health sciences. VHA is the nation's largest provider of graduate medical education. The shift to primary care had a major impact on the Medical training program. In 1996, the Residency Realignment Review Committee, an advisory committee to the Under Secretary for Health, recommended replacing 1,000 specialist positions with 750 generalist positions over a three-year period and eliminating 250 specialist positions. This recommendation was successfully implemented. The Primary Specialist Program defined seven broad criteria in 1997 for the residency training programs in VA that encompassed primary care of seriously ill patients by specialists.

The National Medical Informatics Fellowship Program was initiated in 1995 to provide a fellowship program in Medical Informatics. A review of all VA medical

school affiliation partnerships was completed in 1997. The National Quality Scholars Fellowship Program, a new program initiated in 1998, provided a fellowship program in which physician-scholars learn to develop and apply new knowledge in quality improvement for the ongoing improvement of healthcare services for VA and the nation. Through a generous grant of nearly $1million from the Robert Wood Johnson Foundation in 1998, a two-year initiative was launched to focus greater attention on training of resident physicians in end of life care. The Resident Orientation Pocket Card and web site programs were introduced in 1998. They have become part of the orientation of medical and allied health students and residents to VA medical facilities. The initiative reflects a commitment to making the veteran patient aware that unique experiences as a veteran are of concern to VA clinicians. A revised associated health education methodology to allocate trainee positions was developed in 1999 to include more emphasis on the quality of profession-specific and inter-professional clinical education at the facilities.

The agency has augmented its employee education programs by establishing the VA Learning University (VALU) and emphasizing a "One VA" approach to organizational learning. VALU addresses cross-cutting learning initiatives of VBA, VHA and NCA and provides ways for Department employees to have learning at their fingertips through the use of distance learning. VALU establishes products and services that integrate technology to make learning more affordable and accessible, and more tailored to the needs of Department workers. By overcoming barriers of space and time, technology enables educators and other VA professionals to reach larger audiences, not only expanding and enhancing communities of learning and practice, but saving scarce travel dollars and staff time. Technology improves both the responsiveness and timeliness of education, and improves the correlation between what an employee needs to learn right now and their access to learning opportunities.

Beginning in 1999, VALU staff coordinated four regional One VA Conferences, and one national conference in support of the One VA initiative. These five conferences were held over the course of a year to enhance Department employees' understanding of ways to provide seamless services to our nation's veterans. These conferences increased awareness of VA's need to promote a department-wide, systematic approach to the education, training and development of VA employees in order to provide high-quality, seamless service to veterans.

Another initiative impacting employees of VHA was the initiation of Labor Management Partnership Councils. VHA initiated local partnerships to enhance cooperation between labor and management to improve patient care for veterans. Additionally, by working with representatives of labor as participants in the National Partnership Council, VHA has improved processes for identifying serious issues and improved relations through enhanced negotiating procedures.

In providing medical contingency backup for the Department of Defense, VHA provides wartime support to the DOD's medical system, assists the Public Health Service, The Federal Emergency Management Agency (FEMA) and the National Disaster Medical System (NDMS) in providing emergency care to victims of natural and other disasters.

Natural and man-made disasters in which VHA played a direct role during the time from 1993 to present are listed below. These missions included regional casualty and health care coordination, medical supply support and transportation, VA volunteer personnel recruitment, and additional duties in support of the FRP. The details of VA's commitment are contained in the EMSHG After-Action Reports for each catastrophic event:

(1) Mid-West Floods (1993)
(2) Northridge Earthquake (1994)
(3) Southeast Floods (1994)
(4) Oklahoma City Bombing (1995)
(5) Hurricane Felix (1995)
(6) Hurricane Luis (1995)
(7) Hurricane Marilyn (1995)
(8) Hurricane Opal (1995)
(9) Northeast Floods (1996)
(10) Hurricane Bertha (1996)
(11) Hurricane Hortense (1996)
(12) Hurricane Fran (1996)
(13) North Dakota/Minnesota Floods (1997)
(14) New York Ice Storm (1998)
(15) Hurricanes Bonnie/Earl (1998)
(16) Hurricane Georges (1998)
(17) Oklahoma/Kansas Tornadoes (1999)
(18) Hurricane Bert (1999)
(19) Hurricane Floyd (1999)
(20) Egypt Airlines 990 Crash (1999)
(21) Hurricane Lenny (1999)

In conjunction with the Federal Response Plan (FRP), there has been an additional emphasis in recent years on preparing for terrorism. In June 1995, the White House issued Presidential Decision Directive 39 (PPD-39), "United States Policy on Counterterrorism." PPD-39 evoked a number of measures to reduce the Nation's vulnerability to terrorism, to deter and respond to terrorist acts, and to strengthen capabilities to prevent and manage the consequences of terrorist use of nuclear, biological, and chemical (NBC) weapons of mass destruction (WMD). As a result, four National Medial Response Teams (NMRTs) were developed by Health and Human Services (HHS). VA entered an agreement with the United States Public Health Service (USPHS) to maintain National

NDMS/WMD caches, which are located at five strategic locations within the United States. Four of these cache components are for support of each NMRT, while the fifth component is designated for support of "special events."

With this National Security emphasis on counter-terrorism, VA has become a strong advocate for preparing for domestic incidents involving WMD. As part of VA's Comprehensive Emergency Management (CEM) approach to disaster preparedness, and in concert with the Clinton Administration's Policy on Critical Infrastructure Protection (PDD- 63), VA is preparing all of its health care facilities for all hazards, including WMD. Another Presidential Decision Directive (PDD-62: Combating Terrorism) provides for VA to work with HHS "to ensure adequate stockpiles of antidote and other necessary pharmaceuticals nationwide and the training of medical personnel in NDMS hospitals." Accordingly, VA has entered into an agreement with the Centers for Disease Control (CDC) for assistance in the development of caches of supplies and equipment that could be used by metropolitan areas that have been subjected to a WMD attack. Also under PDD-62, PHS has the authority to transfer up to one million dollars to VA for training of NDMS hospital personnel. VA is uniquely positioned to do this training since it represents a large portion of the Nation's medical capability and has facilities located throughout the country.

Another area of VA support provided in response to threats emanating from a natural, accidental or terrorist event is the area of response to a radiological incident. The Federal Radiological Emergency Response Plan (FRERP) was developed by FEMA, the Department of Energy (DOE), and 15 other Federal agencies or departments in response to Executive Order (EO) 12241 and EO 12657. This plan provides procedures for Federal Agencies to discharge their responsibilities during a wide range of radiological emergencies. During the Clinton Administration, VA organized and trained a medical response team that can provide technical assistance, decontamination and direct medical support to a hospital or other health care facility located close to an area when a radiological disaster has occurred. Called the Medical Emergency Radiological Response Team (MERRT) it consists of 25 specialized VA physicians and health physicists who receive additional training and participate in various federal exercises on an annual basis.

In order to test VHA plans and provide readiness training for VHA personnel, throughout the eight years of the Clinton Administration, numerous seminars, exercises, and practical hands-on training have been conducted with other federal agencies and departments dealing with medical emergency preparedness. In concert with VA's federal partners, these events were keyed to patient care/survivability and patient evacuation through appropriate channels to receiving hospitals where definitive care could be provided. Two of the largest VA training events were Consequence Management '98 and Consequence Management '00 which were conducted at Fort Gordon, GA in April 1998 and May 2000. These exercises and training events were developed through a joint

effort of VA, DOD and PHS. These training events were designed primarily for Federal Emergency Medical Response Team personnel who have specific and/or assigned duties during a WMD related emergency. The primary objectives of these joint exercises and training events were to provide specialized NBC training, offer an opportunity to perform emergency medical functions at a field location, and evaluate performance in responding to a WMD-based scenario.

VHA's performance data demonstrate improved access, quality, safety, patient satisfaction, efficiency, and accountability. VHA's transformation, nonetheless, is still a work in progress, reflecting the challenges inherent in large scale organizational change, as well as the reality that the entire health care industry is in transition. However, VHA is steadfastly set on a course to continue to improve in its provision of quality, timely, and veteran-focused health care.