

Department of Veterans Affairs

VistA



Winner of the
2006 Innovations in American Government Award

Presented by

**The Ash Institute for Democratic Governance and Innovation at
Harvard University's John F. Kennedy School of Government**





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About the Award

The Innovations in American Government (IAG) Program recognizes and promotes excellence and creativity in the public sector. Through its annual awards competition, the program demonstrates that government can improve the quality of life for citizens and generate greater public trust. Agencies and organizations across jurisdictions and in a variety of policy areas replicate many of the award-winning programs while others are inspired to become forerunners for state and federal legislation. The program serves as a catalyst for continued progress in addressing the nation's most pressing public concerns by highlighting exemplary models of innovative performance.

Innovations Award winners receive national press attention, serve as examples of model programs worthy of duplication, and spark research and teaching cases at Harvard University and other schools across the country.

The Ash Institute for Democratic Governance and Innovation at Harvard University's John F. Kennedy School of Government, in partnership with the Council for Excellence in Government, founded the Innovations in American Government Awards program in 1986.

The Veterans Health Information Systems and Technology Architecture (VistA) is one of seven government initiatives drawn from a pool of 1,000 applicants to receive this year's Innovations Award, and it is the only Award winner in the Health and Education category. Each winner takes a unique approach to meeting community needs and achieving real results. Because each of these programs is a model for government's capacity to do good, and do it well, the \$100,000 prize specifically supports initiatives that disseminate their models and practices to other districts.

Introduction

As a result of a rigorous system of performance measurement tools and improvements supported by VA's Electronic Health Record (EHR) system, the Veterans Health Information Services and Technology Architecture (VistA), veterans treated by the Veterans Health Administration (VHA) now receive "the best care anywhere." Although the costs of health care in the United States continue to soar, VistA and active performance measurement are reducing costs while increasing quality, safety and efficiency.

VistA enables VHA clinicians to view and edit electronic health records, and provides access to images such as x-rays, photos, or documents, throughout VA's 1,400 site system. Veterans increasingly have access to their records and more opportunity to successfully manage their own health because of personalized electronic health records, through a derivative of the EHR called My HealtheVet.

The involvement of front-line providers in developing specifications for VHA's EHR, VHA's universal use of the EHR, and use of performance measures have enabled VHA to set the national benchmark in quality of care. VistA's computerized system enables proper decision-making by error checking for incompatible medications, providing decision support and increasing efficiency through links to automated drug distribution. While it is reported that 1 in 20 outpatient prescriptions are complicated by medication errors, VHA's process fails at a rate of 7 per million (5.85 sigma performance).

In addition to enhancing quality, safety, and efficiency, the EHR also provides a foundation for supporting remote or isolated patients anywhere in the world, through the use of telehealth and remote physiological monitoring technologies.

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VistA is innovative because of its unique linkage with standardized real-time and summary performance measurement tools. VHA's electronic health records provide patient-specific information that support time and context sensitive clinical decision-making. The ability to assess comportment with "best evidence" results in a performance measurement system that facilitates evidence-based practices.

For example, the use of clinical decision support and performance measurement to improve pneumonia vaccination rates helped save the lives of 6,000 veterans with emphysema. As VHA's vaccination rate became the national benchmark, pneumonia hospitalizations were halved even while VHA's patient population doubled - all while reducing taxpayer costs by \$40 million.

VHA's transformation, including the use of performance measures and VistA as a platform, have received international interest. A manuscript in a Canadian Journal (Morgan MW, "The VA Advantage: The Gold Standard in Clinical Informatics" Healthcare Papers. 2005;5(4):26-29.) wrote that "...among VistA's many achievements are the following: clinicians actually use it; it is reliable, responsive, accessible, and available at the time care is being provided; it is available in a wide variety of care settings (inpatient, outpatient, home, long-term care and intensive care units) and provides a longitudinal patient record; and it supports physicians, nurses, pharmacists, and other health care professionals." Similarly, RAND investigators found that VA outperforms all other sectors of American health care across the spectrum of 294 measures of quality in disease prevention and treatment. (Asch SM et al., "Comparison of Quality of Care for Patients in the Veterans Health Administration and Patients in a National Sample," Annals Internal Medicine, 2004;141:938-945)

VA Overview

The Veterans Health Administration (VHA) is the largest integrated health system in the United States. VHA provides care to an extremely vulnerable (older, sicker, poorer, ethnically diverse) population of approximately 5.3 million patients (among 7.7 million enrollees or "covered lives") through 1,400 sites of care, including 171 medical centers and hospitals, 876 outpatient clinics, and a variety of other long-term, community mental health, and home care programs.





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Veterans Health Information Systems and Technology Architecture (VistA) Overview

VistA fully supports safe, effective, and efficient care by providing integrated, longitudinal health information and management system throughout VA medical facilities and clinic sites.

VistA is the underlying architecture for VHA health information technologies. It provides a graphical user interface. VistA also includes links that allow users to incorporate commercial software and products with existing and future platforms. This integration increases the range of uses for electronic health records and meets the documentation needs of providers in ancillary and sub-specialty care areas. Health care providers can directly access and retrieve health information, regardless of their specific site of care, because of VHA's common framework for VistA systems.

VistA safeguards the privacy of veteran information with unique authentication and access privileges for all users. VistA systems provide health care managers the ability to roll up day-to-day administrative and clinical workloads into a corporate database. Management of a corporate database gives the organization the ability to improve standards of care, health care outcomes and patient safety significantly.

The central application within VistA is the electronic health record management system known as the Computerized Patient Records System (CPRS). To assure CPRS interoperability with external health data systems, VHA recently established the Data Standardization (DS) program to develop and implement a common set of data standards for use throughout VHA and to facilitate consistent health care delivery among government agencies and private organizations. This is a key component of the President's Federal Health Initiative and will foster improvements ranging from better quality of care and increased patient safety to the production of a longitudinal health care model. The Health Data Repository will allow clinicians to access information from more than one independent platform.

In 2004, the President's Information Technology Advisory Committee (PITAC) estimated that 1 in 7 hospitalizations occur because previous health records were unavailable. Similarly, PITAC estimated that 1 in 5 lab tests are repeated because previous test results were not available at the point of care. The cost of maintaining VistA is \$87 per patient per year, only slightly more than the cost of one unnecessarily repeated lab test. In the last 10 years, VistA has helped improve operating efficiencies approximately 6 percent per year. (Evans DC, Nichol WP, Perlin JB., "Effect of Implementation of an Enterprise-Wide Electronic Health Record on Productivity in the Veterans Health Administration," *Health Economics, Policy and Law.*, 2006;1:163-169)

Remarkably, despite a patient population with multiple vulnerabilities and at risk for high health care resource utilization, the cost per patient in VHA in nominal dollars is identical to a decade ago. Adjusted for inflation, VHA care is 32% less expensive than a decade ago, with measurably better outcomes in quality, satisfaction, access and patient function. (Perlin JB., "Transformation of the US Veterans Health Administration," *Health Economics, Policy and Law.*, 2006;1:99-105) Notably, the nominal dollar medical consumer price index has increased 50% for the United States at large over that same period of time.

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...VistA Overview continued

In addition to saving money and improving quality, VistA ensures continuity of care even under the most extreme circumstances. Many of the thousands of residents who fled the Gulf Coast because of Hurricanes Katrina and Rita left behind vital health records. Records for 40,000 veterans in the area were almost immediately available to clinicians across the country, even though the VA Medical Center in Gulfport, Mississippi was destroyed and New Orleans VA Medical Center was evacuated and closed. Veterans were able to resume their treatment, refill their prescriptions and get the care they needed because their medical records were accessible to providers at other VA facilities.

VistA includes the following components:

- Computerized Patient Records System (CPRS)
- VistA Imaging
- Bar Code Medication Administration (BCMA)
- My HealtheVet





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VistA Imaging

VHA has created a multimedia online patient record that integrates traditional medical chart information with medical images of all kinds, including x-rays, pathology slides, cardiology motion views, wound photos, and pictures acquired during endoscopy, surgery, and eye exams. Document scanning allows the inclusion of handwritten records, diagrams, and outside medical reports in patients' online records. Clinicians load images using clinical workstations or automated standard interfaces to commercial devices.

The primary goal of the VistA Imaging software is to enhance patient care by providing clinicians with a tool to aid communication and consultation among physicians - whether in the same department, in different services or at different facilities across the country. VistA Imaging allows specialists from all medical disciplines to simultaneously view images acquired during diagnostic procedures, improving the consultation process.

The VistA Imaging System is available in all VA Medical Centers and many ambulatory clinics and has generated many qualitative benefits in terms of improved patient care:

- Clinicians can access all images and records during the patient's visit, including images captured at other VA locations, resulting in an improved quality of care;
- Procedure, pathology, and narrative reports, along with x-rays and associated images, are directly available to any clinician that needs them;
- Specialty clinicians located at larger VA Medical Centers can offer remote image interpretation or consultation;
- Including scanned documents provides a more complete online patient record; and
- Patient treatment and education increase when patients can view their own images and participate in their own treatment decision-making.

Some of the tangible benefits realized at VistA Imaging sites include:

- Customer service improves, reducing waiting times for patients;
- Because film cannot be lost, procedures do not need to be unnecessarily repeated;
- The use of telemedicine reduces travel time by patients and increases access to care;
- Fewer days of bed care are needed;
- Hospital productivity increases, improving efficiency in routine activities for staff, including care providers, radiologists, technologists, and film and patient records clerks;
- Higher levels of quality control are achieved;
- Teaching conferences and daily rounds become more efficient; and
- Clinician services can be shared by multiple facilities.





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Bar Code Medication Administration (BCMA)

Bar Code Medication Administration (BCMA) addresses the serious issue of inpatient medication errors by electronically validating and documenting medications for patients. It ensures the patient receives the correct medication in the correct dose at the correct time and visually alerts staff when the proper parameters are not met.

Deriving from the observation of the secure "check-in" of a rental car, a VA nurse thought of using bar coding for secure medication information. Using BCMA, the nurse uses a wireless handheld bar code reader to match the bar code on the patient's wristband with the bar code imprinted on every medication in VA. While Bates and Leape estimate inpatient medication errors or adverse events occurring at a rate of 1 in 6.5 hospitalizations in America, the use of BCMA essentially eliminates administration errors at the point of care. It assures that the right medication is given by the right person to the right patient at the right time.

By September 2003, all VA inpatient units were documenting medication administrations using BCMA. Through the use of the BCMA system, VA reduced by two-thirds the occurrence of medication errors.

Quantitative and qualitative benefits achieved through BCMA are numerous:

- Automated documentation of medication administration detects, mitigates and reports medication errors;
- Immediate access to patient and drug information at the point of care provides for improved quality of care;
- Medication administration processes and procedures are standardized;
- Multiple software applications allow for integrated and full use of BCMA equipment; and
- Breakdowns in the medication administration process are more readily observed and rectified.





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My HealtheVet

My HealtheVet is a personal health record accessible through a secure web-based application that optimizes health care involvement, participation and awareness for veterans, family members and clinicians. Proper authorization is required to access the system. My HealtheVet offers an opportunity to enhance communication between veteran and his or her VA or private health care provider to improve overall quality of care with access to health information.

On My HealtheVet:

- Users can build their own Personal Health Record by entering the following information: personal biographical information; use of prescription medications, over-the-counter drugs, and herbal remedies; HealthLog blood pressure, blood sugar, cholesterol, body weight, body temperature, pain, and pulse oximetry (these items can be entered in the HealthLog); health journals, such as food or activities; and military health history.
- Veterans receiving health care at a VA Medical Center can order prescription refills online;
- Veterans or family members can apply for VA benefits and services;
- Users can access for free the VA Health Education Library, Medline Plus®, and Healthwise®;
- Users can review the latest news about VA;
- Users can learn about online computer and internet training.

It is anticipated that, within one year, patients will have access to their entire health record. A pilot of full access is currently in place, and new business rules to address new challenges are being developed. For example, it is imperative that patients never receive "bad news" without appropriate counseling, and a "toggle" to indicate that the clinician has provided such counseling has been developed before certain data are released to the health record. However, patients using the pilot have indicated that they are more engaged and empowered in their health care with access to their full electronic health record.





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VistA Milestones

VistA has achieved a number of significant milestones that provide the best care possible:

- Decentralized Automated Data Processing allows each facility to implement centrally developed software and builds strong local support among medical center staff.
- Computerized Patient Record System Graphical User Interface (VistA CPRS GUI) enables clinicians to enter, review and continuously update all order-related information connected with any patient. Clinicians can order lab tests, medications, diets, radiology tests, and procedures; record a patient's allergies or adverse reactions to medications; request and track consultations; and enter progress notes, diagnoses, treatments for each encounter, and discharge summaries. Electronic health records allow hospital personnel to keep comprehensive patient records and enables clinicians, managers, and Quality Assurance staff to review and analyze data on any patient to directly support clinical decision-making.
- VistA Remote Data Views and VistAWeb provide access to clinical information on individual patients from other VA Medical Centers or, to a limited degree, from Department of Defense medical facilities. Clinicians can view clinical reports, nationally released Health Summary components and lab test results.
- VistA Imaging facilitates medical decision-making by delivering complete multimedia patient information to the clinician's desktop. Computer workstations make images and associated text data available any time, anywhere, and in any hospital and many ambulatory clinics. VistA Imaging handles high-quality image data from any specialty and can also process textual reports from hospital information systems, electrocardiograms, and scanned documents, such as Do-Not-Resuscitate Orders.
- Bar Code Medication Administration (BCMA) automates the medication administration process by providing a real-time, point-of-care solution for validating the dispensation of unit dose and intravenous medications to inpatients. Nurses scan each patient's bar coded wristband and medication; BCMA immediately validates the patient and medication and that the medication is administered on time and in the correct dosage. BCMA also electronically updates the patient's medication administration history.
- My HealtheVet creates an online environment where veterans, family members and clinicians come together to optimize a veteran's health care. A web-based application, My HealtheVet went into production on Veterans Day, November 11, 2003, and provides one-stop shopping for information on VA benefits, special programs, and health information and services. My HealtheVet also provides services and tools to enable veterans to increase their knowledge about health conditions, record their health status, and communicate with their care providers. Veterans now can partner with their clinicians to gain a better understanding of their health status and take a more active role in self-management and in shared health care decision-making.

Today, veterans receive trusted health information, enter their next health appointment, learn more about benefits and services, refill their prescriptions, track their blood pressure and weight, and record and securely store their health information. Tomorrow, veterans will be able to communicate directly with their health care providers, review their electronic health records at home, receive information and reminders targeted for their own specific health needs and interests, and monitor their health conditions at any time or from any place.

The My HealtheVet National Website is located at www.myhealth.va.gov. A My HealtheVet Demo User Account is available for those wishing to see how My HealtheVet works by accessing the My HealtheVet National Website. In the login box, enter mhvuser as the User ID and mhvdemo#1 as the password.





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Conclusion

VA is committed to providing safe, effective, efficient, compassionate health care for America's veterans who seek our care. Through the use of rigorous performance measurement tools supported by VHA's electronic health record system architecture, VistA, veterans cared for by VHA now receive what is referred to as "the best care anywhere." (Longman P., "The Best Care Anywhere," Washington Monthly. 2005;37(Jan/Feb):38-48.)

Previous Innovations in American Government- Education & Health Care Award Winners

2004 Winners

Clinical Trials.gov, U.S. Department of Health and Human Services

2003 Winners

The Ohio Appalachian Center for Higher Education (OACHE), State of Oklahoma

2001 Winners

Mathematics, Engineering, Science Achievement, State of California
National Center for Patient Safety, U.S. Department of Veterans Affairs
Toledo Plan, Toledo Public Schools, Ohio

2000 Winners

Charter School Law, State of Minnesota
Mental Hospital Seclusion and Restraint Reduction, Commonwealth of Pennsylvania
Perritech, Perry Local Schools, Ohio
Public Health Model for Corrections, Hampden County, Massachusetts

1999 Winners

Behavioral Health System, City of Philadelphia, Pennsylvania
PulseNet, US Department of Health and Human Services

1998 Winners

BCMS Project Access, Buncombe County, State of North Carolina
Edwin Gould Academy: Unified Approach to Foster Care, Ramapo Union Free School District, New York
Puente Project, State of California
Smart Start, State of North Carolina

1997 Winners

Recreating Public Education for Results, Commonwealth of Kentucky
Voluntary Pre-Kindergarten, State of Georgia
ConnectCare, State of Arkansas
Pathways to Teaching Careers Program, State of Georgia

1996 Winners

Florida Healthy Kids Corporation, State of Florida
Greater Avenues for Independence, Riverside County, California
Oregon Health Plan, State of Oregon

1995 Winners

Hillsborough County Health Care Plan, Hillsborough County, Florida
Hamilton Terrace Learning Center, Caddo Parish School Board, Louisiana
Elder CHOICE, Commonwealth of Massachusetts

1994 Winners

Student Conflict Resolution Experts (SCORE), Commonwealth of Massachusetts
"Here, Thayer, and Everywhere," Winchester School District, New Hampshire
Citywide Central Insurance Program, City of New York, New York
Partnership for Long-Term Care, State of New York
Sexual Assault Nurse Examiners Program, City of Tulsa, Oklahoma

1993 Winners

Lansing Housing Commission's Computer Learning Centers, City of Lansing, Michigan
Central Park East Secondary School, City of New York, New York

1992 Winners

HUMANITAS, Los Angeles Unified School District
CityWorks, City of Cambridge, Massachusetts

1991 Winners

K-6 Early Intervention Partnership, Fresno County, California
KET Star Channels, Commonwealth of Kentucky
School-Based Youth Services, State of New Jersey
Monroe Maternity Center, Monroe County, Tennessee

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...Conclusion continued

1990 Winners

Specialized Treatment and Rehabilitation Services for Sexually Abused Boys (STARS), Merced County, California

Project Deliver: Assuring Quality Obstetrical Care, Montgomery County, Maryland

Work Force Unemployment Prevention Program, City of Cambridge, Massachusetts

Medical Care for Children Project, Fairfax County, Virginia

1988 Winners

Public/Private Partnerships in Education, City of Tupelo, Mississippi

Project Match, State of Illinois

Parent and Child Education Program, Commonwealth of Kentucky

1987 Winners

Parents as Teachers, State of Missouri

1986 Winners

Family Learning Center, Leslie Public Schools, Michigan

Block Nurse Program, City of Saint Paul, Minnesota

Rehabilitation Engineering Program, State of North Carolina

