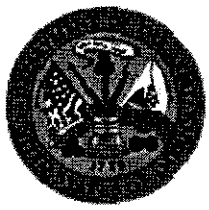
Department of Defense Health Care Quality

A report to Congress
on the quality of health care
provided by the
health care programs of the
Department of Defense
during FY 2003



Quality Health Care

Health Programs of the Department of Defense

The requirement for this report is outlined in Public Law as follows:

> Health Care Quality Information and Technology Enhancement - section 723 of the National Defense Authorization Act FY 2000 (Public Law 106-65): The Assistant Secretary of Defense for Health Affairs shall submit to Congress on an annual basis a report on the quality of health care furnished under the health care programs of the Department of Defense. The report shall cover the most recent fiscal year ending before the date the report is submitted and shall contain a discussion of the quality of the health care measured on the basis of each statistical and customer satisfaction factor that the Assistant Secretary determines appropriate, including, at a minimum, a discussion of the following:
>
> (1) Health outcomes.
> (2) The extent of use of health report cards.
> (3) The extent of use of standard clinical pathways.
> (4) The extent of use of innovative processes for surveillance.

The preparation of this report was coordinated through the TRICARE Management Activity, Office of the Chief Medical Officer.

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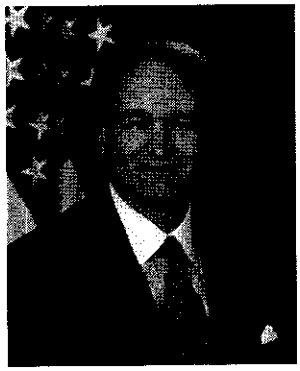


William Winkenwerder, Jr., MD, MBA
Assistant Secretary of Defense (Health Affairs)
Director of the TRICARE Management Activity

I am pleased to submit this annual report to Congress on the quality of health care provided during FY 2003 by programs of the Department of Defense (DoD). The Military Health System (MHS) provides healthcare services to a special group of people. The men and women who volunteer to defend this country, and the families that support them in that sacrifice, are a national treasure, along with our retired military service members and their families. Enhancing the Department's and our nation's security by providing health support for the full range of military operations and sustaining the health of all those entrusted to our care is paramount, and the demands have been greater than ever.

It is critically important for the MHS to benchmark with civilian healthcare organizations whenever possible. DoD participates in Joint Commission for the Accreditation of Healthcare Organization hospital performance measures, Health Plan Employer Data and Information Set measures, and the National Research Corporation's Health System Satisfaction Surveys. These comparisons permit us to assure our beneficiaries, as well as senior defense and national leaders, that the care provided to DoD beneficiaries is as good or better than the care one might receive in the employment of a Fortune 500 company, or as a Member of Congress.

The MHS leads the healthcare industry in exciting, innovative ways. The DoD has developed an enterprise-wide patient safety reporting database to find and proactively preempt systemic patterns and practices that place patients at risk across military Services. The Agency for Healthcare Research and Quality and the DoD have partnered to study the impact of medical team communication training on outcomes in the high-risk area of labor and delivery. The DoD Pharmacy Data Transaction Service routinely identifies medication safety or quality issues, which are immediately resolved to prevent patient harm across the MHS.

I am proud to serve with the finest military and civilian medical professionals ever assembled, and join with them in commitment to provide the highest quality of medical care to those who have selflessly answered the call to defend our nation and our way of life. As stakeholders in the MHS, your continued support and leadership are critical to our future success.

William Winkenwerder, MD

Executive Summary

The Military Health System (MHS) is a worldwide healthcare delivery system operated by the DoD, offering healthcare benefits to an estimated 8.9 million beneficiaries. With its mission to enhance the Department's and our nation's security by providing health support for the full range of military operations and sustaining the health of all those entrusted to our care, assessing the quality of health care is vitally important. The MHS is composed of two complementary parts: the direct care system provides services to patients in military treatment facilities while the purchased care system provides care to military beneficiaries through civilian providers in private offices or non-military facilities. The information in this report focuses on the direct care system.

The assessment of the quality of health care provided by the DoD is measured in a variety of ways, with use of civilian benchmarks whenever possible. Evaluation involves information obtained from electronic administrative and clinical data, abstraction of medical records, and, perhaps most importantly, surveys of DoD beneficiaries.

Health Outcomes

Health outcomes are the actual end results of health care interventions. In FY 2003, DoD used three separate and distinct programs to evaluate health outcomes:

- Joint Commission on Accreditation of Healthcare Organizations ORYX® Performance Measures
- National Perinatal Information Center (NPIC) Benchmark Database
- National Quality Management Program (NQMP) Special Studies

The ORYX® and NPIC programs use recognized and validated measures that allow DoD to compare its performance to national norms. NQMP Special Studies use a combination of DoD-specific norms and national norms to assess the care provided.

With rare exception, DoD performed as well as, if not better than, the national norms on the various indicators in the core ORYX® measure sets (Pregnancy and Related Conditions, Acute Myocardial Infarction, Heart Failure, and Community Acquired Pneumonia) and on the NPIC perinatal measures. The FY 2003 NQMP Special Studies revealed successful implementation of the Post-Deployment Health clinical practice guideline and significant compliance with the use of beta-blocker medications after an acute myocardial infarction.

Health Report Cards

The term "health report card" refers to compiling and reporting comparative data on healthcare organizations, plans or providers. The Military Health System (MHS) participated in three nationally-respected sets of standards and clinical measures during FY 2003. Taken together, these measures create a multi-dimensional picture of the TRICARE Program and its clinical and service performance as compared with large American commercial health plans. The FY 2003 measures include:

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO) Standards
- National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS®)
- The National Research Corporation and the Picker Group Survey

JCAHO accreditation survey scores, which reflect compliance with JCAHO standards, typically exceeded 90 percent for military treatment facilities. The DoD average scores were higher than the averages of comparable non-DoD healthcare organizations.

HEDIS® measures how well health plans deliver preventive care and how well members with acute illnesses or chronic diseases are managed to avoid or minimize complications. For those HEDIS® measures used within the MHS (cervical cancer screening rates; breast cancer screening rates; use of appropriate medications for people with asthma; and diabetes care), DoD performed at least as well as other health plans that voluntarily agreed to participate in reporting.

The National Research Corporation in partnership with the Picker Group (NRC+Picker), a leader in health system performance measurement, conducted inpatient surveys for medicine, surgery and obstetric care in FY 2003. MHS findings were generally as good as or better than NRC comparative data, suggesting that the majority of MHS patients were more satisfied with their care than the NRC reference patients.

Evidence Based Clinical Practice

Evidence based clinical practice guidelines (CPGs) focus on the delivery of consistent, high quality care and expedite the diffusion of proven best practices in medicine. With twenty guidelines available for use throughout the MHS and the VA, DoD initiated evaluation of the degree to which the direct care system is implementing and following relevant CPGs. During FY 2003, the implementation of the Post-Deployment Health CPG was evaluated, revealing a 93 percent implementation rate for this CPG. All future special studies that include a clinical condition for which a CPG exists will include an evaluation of compliance with the guideline. The MHS Dental Services initiated publication of practice guidelines to

provide a framework for high quality oral healthcare services and to sustain continuous quality improvement in dental care.

Innovative Processes for Surveillance

The DoD has implemented or expanded the capabilities of several innovative surveillance methodologies to ensure essential health information is available for planning, response and decision-making. During FY 2003, representative programs included:

- Department of Defense Patient Safety Program
- Pharmacy Data Transaction Service
- Military Health System Population Health Portal
- Global Emerging Infections Surveillance and Response System
- Electronic Surveillance System for the Early Notification of Community-based Epidemics
- Millenium Cohort Study

The DoD Patient Safety Program seeks to avoid medical harm and improve patient safety by improving systems and increasing communication among members of health care teams. The Patient Safety Center received and analyzed data from 144 military treatment facilities through Monthly Summary Reports and the MEDMARX® medication error reporting system.

The Pharmacy Data Transaction Service, a centralized data repository containing information about prescriptions filled worldwide for DoD beneficiaries, monitored more than 100 million pharmacy transactions in FY 2003 and identified nearly 35,000 events for review.

The MHS Population Health Portal transforms clinical and administrative data into actionable information for DoD healthcare teams. The information provided helps medical professionals monitor the health of their enrollees and improve the delivery of preventive services and chronic disease management programs, thus contributing to improving the overall health of the DoD beneficiary population.

Health Outcomes

Quantifying results of care for continuous performance improvement

Health Outcomes

Health outcomes are the actual end results of health care interventions. They are an extremely important indicator of the quality of care provided by a health plan or healthcare delivery system.

In 2003, DoD monitored health outcomes through three separate and distinct programs:

- Joint Commission on Accreditation of Healthcare Organizations ORYX® Performance Measures
- National Perinatal Information Center Benchmark Database
- National Quality Management Program Special Studies

Additionally, a pilot project involving the National Surgical Quality Improvement Program was implemented.

Joint Commission on Accreditation of Healthcare Organizations ORYX® Performance Measures

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is a nationally recognized healthcare accrediting body focusing on continuous improvement in safety and quality of care. JCAHO introduced its ORYX® initiative to integrate performance measures into the accreditation process. As of January 1, 2003, accredited hospitals serving patient populations with conditions covered under the initial core measures were required to report results in three of four available core measure sets:

- Acute Myocardial Infarction
- Heart Failure
- Community Acquired Pneumonia
- Pregnancy and Related Conditions

Each core measure set includes scientifically-proven **process measures** (the percentage of cases in which widely accepted evaluations or interventions essential to quality care took place) and/or **outcome measures** (end results of care). An example of a process measure would be how often aspirin is given to a patient seen in the emergency room with an acute heart attack. Examples of outcome measures include the rate of major lacerations (tears) occurring in labor and delivery, and neonatal mortality. Since JCAHO publishes national averages for each set each quarter, the ORYX® program allows DoD to gauge its clinical performance against the benchmarks established by the Joint Commission national rates. This program provides the Department with an abundance of clinically-relevant data in each of the four core measure sets.

The **ORYX® Pregnancy and Related Conditions Measures (PR)** set includes three measures that assess obstetrical care (vaginal birth after cesarean section (VBAC) and perineal lacerations during vaginal deliveries) and neonatal care (neonatal mortality). The DoD performed better than the JCAHO national rate on all three indicators, with the DoD rates for VBAC and neonatal mortality being significantly better than the national rates.

Obstetrical care is DoD's largest and most important product line, with more than 50,000 babies delivered in the direct care system in FY 2003. High quality perinatal care is extremely important to MHS beneficiaries.

Pregnancy and Related Conditions Measures (PR)

PR-1 Vaginal birth after cesarean section (risk-adjusted)

PR-2 Inpatient neonatal mortality: live born infants who expired less than 2 days after birth (stratified by birth weight) (risk-adjusted)

PR-3 Third- or fourth-degree laceration: patients with third- or fourth-degree perineal laceration during vaginal deliveries (risk-adjusted)

2003 ORYX® Pregnancy Measures data demonstrated:

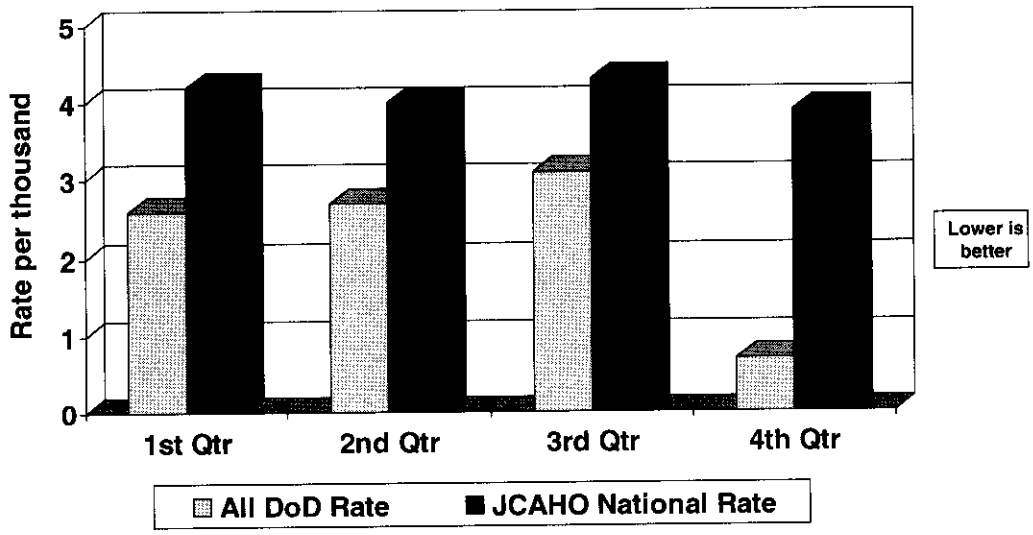
DoD performed better than the Joint Commission national rate on all three indicators.

The inpatient infant mortality rate for DoD patients was significantly less than the Joint Commission national rate.

ORYX® Pregnancy and Related Conditions:

Inpatient Neonatal Mortality

FY 2003



The **ORYX® Acute Myocardial Infarction (AMI)** set measures processes of care recognized to improve survival and recovery from an acute myocardial infarction (heart attack). The nine indicators assess care provided immediately after a heart attack, during the hospital stay, and at the time of discharge, as well as mortality.

Analysis of the 2003 data for the AMI set revealed that medical management of DoD's patients with acute heart attack was consistent with the national benchmarks established by the Joint Commission data. In fact, DoD performed better than the national rates in seven of the nine measures. The two areas in which the national rate was better than the DoD rate were time from arrival to initiation of primary percutaneous transluminal coronary angioplasty (PTCA), an intervention intended to reestablish blood flow to the injured part of the heart, and smoking cessation counseling. The worse than expected result on AMI-8 was due to a single case in an unusual clinical setting (an "outlier"). Analysis of AMI-4 revealed that smoking cessation counseling was provided in military treatment facilities (MTFs) more frequently than it was documented in the medical record. Prompted by this finding, DoD has implemented an ongoing initiative to standardize and improve documentation of smoking cessation counseling. Additionally, smoking cessation has been identified as an area of focus across the MHS.

Acute Myocardial Infarction (AMI) Measures

AMI-1 Aspirin at arrival
AMI-2 Aspirin prescribed at discharge
AMI-3 Patients with left ventricular systolic dysfunction prescribed angiotensin converting enzyme inhibitor (specific blood pressure medication) at discharge
AMI-4 Smoking cessation advice or counseling
AMI-5 Beta blocker (class of medication active on heart and blood pressure) prescribed at discharge
AMI-6 Beta blocker administered upon arrival
AMI-7 Time from arrival to initiation of thrombolytic (clot-breaking) medication
AMI-8 Time from arrival to initiation of primary percutaneous transluminal coronary angioplasty
AMI-9 Inpatient mortality (risk-adjusted)

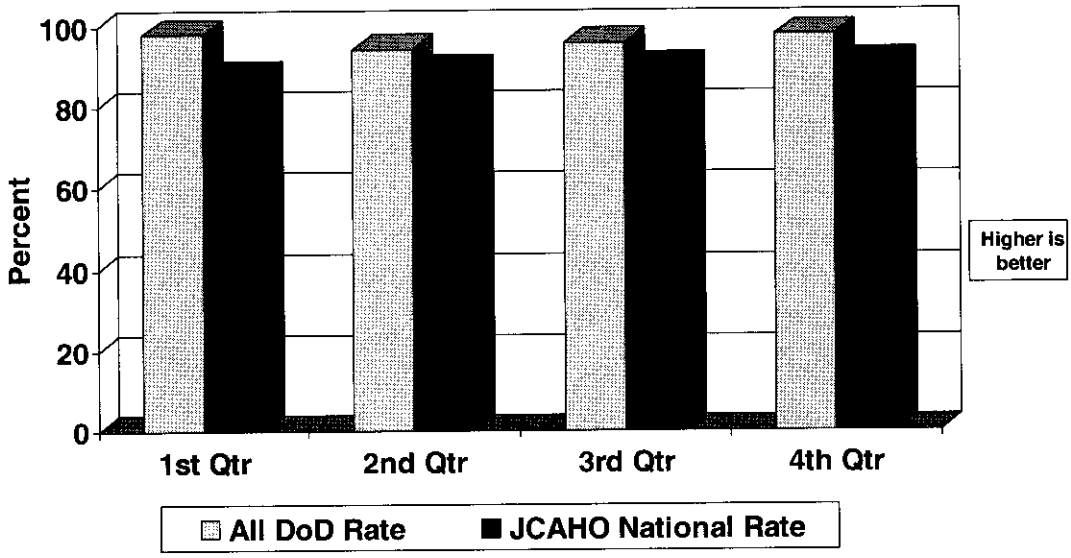
2003 data for the AMI measure set revealed that the medical management of DoD patients with acute heart attacks was consistent with national benchmarks established by Joint Commission data. DoD performed better than the national benchmark in seven of the nine measures.

One area identified for improvement was counseling about smoking cessation. A review of practices at MTFs indicated that smoking cessation advice or counseling was frequently provided, but was not documented in the medical record. The DoD has implemented an ongoing initiative to standardize and improve the documentation of smoking cessation counseling. Smoking cessation has also been identified as an area of focus across DoD.

ORYX® Acute Myocardial Infarction:

Beta Blocker Prescribed at Discharge

FY 2003



The **ORYX® Heart Failure (HF)** set assesses processes of care that are known to improve outcomes in patients hospitalized with heart failure (decreased pumping capacity of the heart). The four measures include the assessment and care of patients during their hospitalization and at the time of discharge. The data for DoD patients indicated that evaluation of left ventricular pumping function and prescription of angiotensin converting enzyme (ACE) inhibitor medications at discharge, two processes that improve patient outcomes, were frequently better than data for other hospitals participating in these ORYX® indicators. Two areas where the national benchmarks exceeded the DoD rates were documentation of discharge instructions and smoking cessation counseling. With focused attention to discharge documentation, this indicator improved significantly during the last two quarters of the year. Additionally, an initiative to improve the documentation of smoking cessation counseling was implemented.

Heart Failure (HF) Measures

HF-1 Heart failure patients with complete discharge instructions in the medical record

HF-2 Heart failure patients not admitted on ACE inhibitor or angiotensin receptor blockers (blood pressure medication) with left ventricular function evaluated before or during hospitalization or planned after discharge

HF-3 Patients with left ventricular ejection fraction <40 percent (Left Ventricular Systolic Dysfunction or LVSD) prescribed ACE inhibitor at discharge

HF-4 Adult smoking cessation advice/counseling

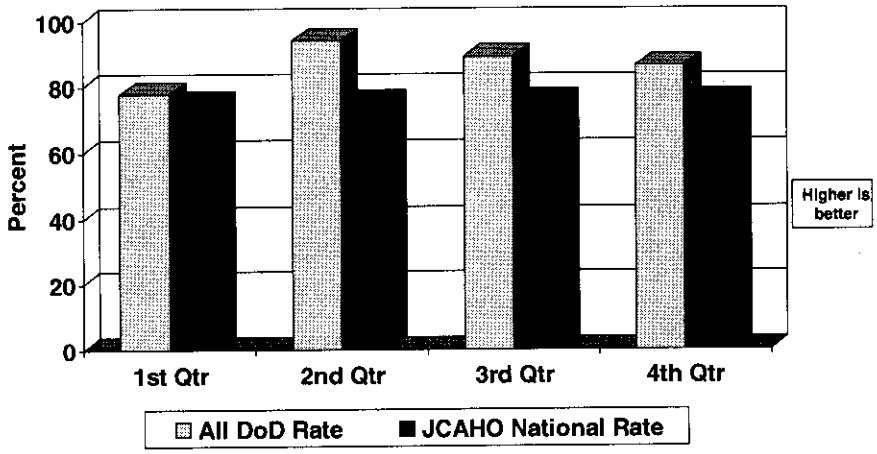
The data for DoD patients indicated that evaluation of left ventricular function and prescription of angiotensin converting enzyme (ACE) inhibitors at discharge were frequently better than for patients at other hospitals participating in these ORYX® indicators.

Documentation of discharge instructions improved significantly after the first two quarters of the year. An initiative to improve the documentation of smoking cessation advice/counseling was implemented.

ORYX® Heart Failure:

ACE Inhibitor for LVSD

FY 2003



The **ORYX® Community Acquired Pneumonia (CAP)** set measures four processes of care of proven value in improving outcomes for patients with community-acquired pneumonia. During 2003, the DoD data for all measures except smoking cessation counseling were consistent with data reported by other ORYX® participating organizations across the nation. The data on smoking cessation revealed results similar to those seen in other ORYX® smoking cessation-related measures. Smoking cessation counseling was frequently provided, but was not well documented in the medical record. Standardization and improvement in the documentation of smoking cessation counseling are underway.

Community Acquired Pneumonia (CAP) Measures

CAP-1	Oxygenation assessment within 24 hours of hospital arrival
CAP-2	Inpatients screened for and/or given pneumococcal vaccination
CAP-3	Blood cultures obtained prior to first antibiotic administration
CAP-4a	Adult smoking cessation advice/counseling
CAP-4b	Pediatric smoking cessation advice/counseling
CAP-5	Time from initial hospital arrival to first dose of antibiotic

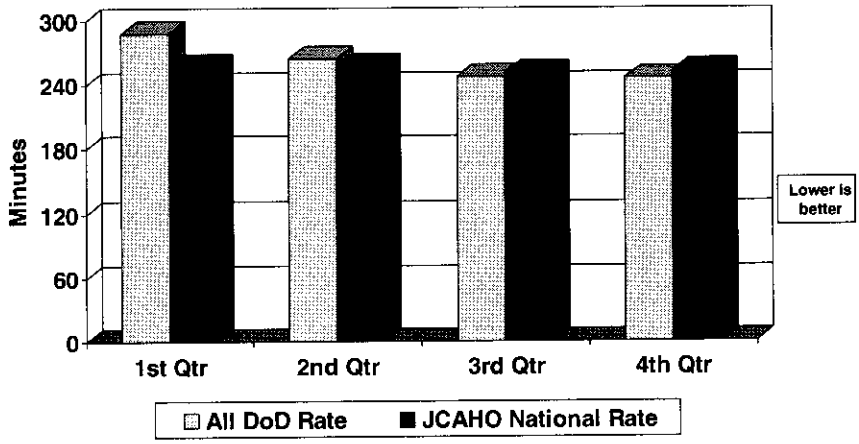
The 2003 DoD data on oxygenation assessment, inpatient pneumococcal vaccination screening, and timing of first dose of antibiotics were consistent with other ORYX® participating organizations across the nation.

The data on smoking cessation advice/counseling for this measure were consistent with the results seen in other ORYX®smoking cessation related measures.

ORYX® Community Acquired Pneumonia:

Time to Antibiotic Administration

FY 2003



Perinatal Outcomes

Today's military is a dedicated and resilient force composed of a significant number of young people, many of whom are just starting their families. The medical professionals of the MHS are privileged to be a part of a significant event in the lives of the military families – the birth of a child. Childbirth is the number one reason for hospitalization in the Military Health System with over 50,000 births in the military hospitals per year.

During FY 2003, a transformation was designed to change the delivery of care before, during and after childbirth. The transformation involved changing the focus from a staff-centered view to a focus on the family. Through the family-centered care initiative, military hospitals offer an extended "family", knowledgeable about the separation aspects of military life, to ensure that expectant mothers and families get the best possible coordinated care during this special time in their lives. Information-sharing and collaboration between patients, families and healthcare staff are cornerstones of family centered care and ensuring the best possible health outcomes for the mother and infant.

The Perinatal Database created by the National Perinatal Information Center provides a means to compare childbirth data from across the nation. Validated, risk-adjusted, perinatal information from multiple women and infants hospitals, including the MHS, is analyzed to provide benchmarks for infant and maternal outcomes, utilization of services and staffing data.

The data from twenty-two MTFs with the highest volume of deliveries were submitted for analysis of perinatal processes and outcomes.

National Perinatal Information Center Comparative Data

Outcome Measures	Military Treatment Facility	Perinatal Center Database
Cesarean birth rates	18.3%	26.8%
Major complication rates	11.6%	13.3%
Extreme complication rates	0.2%	0.5%
Operative delivery rate	9.8%	10.7%
Induction rate	13.2%	17.4%
Major complications for the neonates	2.7%	6.0%
Extreme complications for the neonates	0.4%	2.3%
Mortality rate for special care neonates	1.2%	3.2%

Note: Lower scores are better

The MHS results, which exceed the national norms established through the Perinatal Information Center benchmark database, attest to a high quality of care delivered to military families.

National Quality Management Program Special Studies

DoD uses the National Quality Management Program (NQMP) to monitor clinical performance in military treatment facilities and compare that performance to the civilian sector. NQMP Special Studies quantify the impact of the DoD healthcare system's structures, processes, and outcomes on quality of care for MHS beneficiaries through systematic, state-of-the-art data collection, analyses, reviews, and reports. Information and clinical outcomes gleaned from collected and analyzed data are provided back to military treatment facility (MTF) staff, enhancing the ability of MTFs to serve beneficiaries throughout the enterprise.

Each year, a multidisciplinary panel of MHS experts, the NQMP Scientific Advisory Panel (SAP), selects several areas of interest and identifies research questions to enhance the understanding of what is occurring in the MHS, usually at the corporate or national level. Selection criteria include:

- High prevalence or incidence
- Significant preventable disability
- High cost
- Problem prone
- Operationally significant

The SAP also considers whether there is a recognized standard of care with national benchmarks available for comparison, as well as whether a proposed study is feasible and the results likely to be actionable. If a DoD Clinical Practice Guideline (CPG) exists for the condition being evaluated, the SAP incorporates an evaluation of compliance with the guideline into the study framework. Finally, the SAP identifies the metrics that will be explored through analysis of electronic data sets, record abstraction, and/or survey tools.

During FY 2003, four special studies were completed, including one for which a CPG had previously been implemented in the direct care system (Post-Deployment Health) and one for which a CPG was scheduled for later implementation (Ischemic Heart Disease). A synopsis of each study follows.

Post Deployment Health

Symptoms and health concerns after a deployment are often indistinguishable from those reported in routine primary health care settings. However, deployment also presents unique and often difficult challenges for military members, veterans, and their families. The military members may experience physical or psychological trauma resulting from a variety of factors, such as combat, environmental extremes, illness or infectious disease, injury, weapons of mass destruction, and toxic environmental threats. Female military members may experience additional health concerns during deployment, including decreased

privacy and hygiene, urinary tract and fungal infections, unplanned pregnancy, and sexual assault that may impact their reproductive future post-deployment.

Deployment may create or exacerbate existing family problems and strain already fragile family relationships and coping mechanisms. Family members may experience heightened personal and interpersonal stress as a result of sudden changes within the family unit – both the military member's separation and return. The heightened stress may adversely affect the physical and mental health of each family member and may also lead to domestic violence.

In February 2002, the Military Health System implemented the Post-Deployment Health Evaluation and Management Clinical Practice Guideline (CPG). This guideline, developed by military and Veterans Health Administration experts, is intended to minimize adverse health effects of military service – regardless of whether experienced during military service or years later.

The Post-Deployment Health Care Study for FY 2003 focused on:

- Implementation Post-Deployment Health Evaluation and Management CPG
- Timeliness of service members' primary and specialty referrals

Conclusion

Over 90 percent of military treatment facilities had implemented the Post-Deployment Health and Management CPG. Although a previous special study in 2002 had found that only 56 percent of MTFs had implemented the CPG, in this FY 2003 study, the total number of military treatment facilities that had implemented CPG was 126, or 93 percent of the 135 sites available for survey.

Only 0.9 percent of visits were identified as being deployment-related by beneficiaries. Of those active duty Service members who noted a deployment-related health concern, orthopedic and dental referrals were the most frequent types of referrals recommended.

The majority of referrals were completed within 30 days and over 80 percent were completed within 90 days. However, documentation proving completion of the referral was found in the Service members' health records only 46 percent of the time, a finding that may reflect lack of administrative data with insufficient detail to conclusively establish referral completion as well as the fact that not all recommended follow-up care required specialty consultations.

Service representatives are using the results of this Post-Deployment Health special study to improve compliance with the CPG. In light of the increasing tempo of operational deployments, further special studies on the topic of post-deployment health are anticipated.

Ischemic Heart Disease in the MHS

Ischemic heart disease, a form of coronary artery disease characterized by narrowing of the coronary arteries, is the leading cause of death in the U.S. for both men and women, and a serious public health problem in the DoD. Although ischemic heart disease can be asymptomatic, it can also lead to anginal chest pain, acute myocardial infarction (AMI) and sudden death.

More than 40 percent of the people who suffer an AMI in a given year will die. Fortunately, the rate of survival following an AMI has increased, primarily due to the use of beta-blocker medications as an early intervention immediately following an AMI event. The single practice of prescribing beta-blocker medications immediately following an AMI has been shown to significantly lower morbidity and mortality rates, and long-term use of beta-blockers after an AMI has been shown to reduce mortality by 23 percent.

During FY 2002, the DoD and Veterans Health Administration collaboratively developed the Ischemic Heart Disease in the Primary Care Setting Clinical Practice Guideline (CPG), which includes, as one of its three main interventions in post-AMI care, the use of beta-blockers. Although this CPG had not yet been implemented at the time of this special study, the study provided an excellent opportunity to evaluate baseline usage of beta-blocker medications as an early intervention immediately following an AMI event.

The FY 2003 Ischemic Heart Disease Study focused on:

- Beta-blocker medication received by MHS beneficiaries discharged from military treatment facilities (MTFs) following AMI
- Beta-blocker medication received by MHS beneficiaries discharged from civilian hospitals following AMI

Conclusions

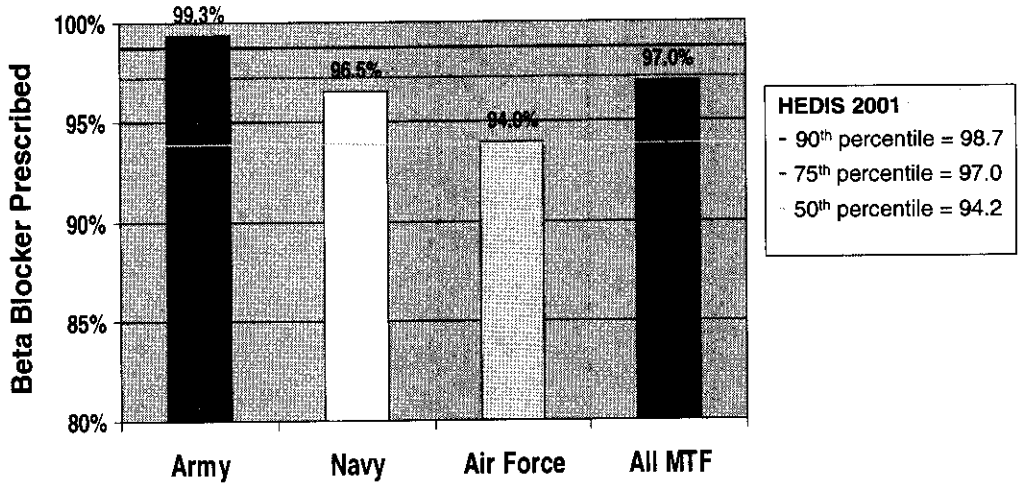
97 percent of AMI patients in the direct care system received beta-blocker medication, better than the mean of 93 percent reported for Medicare beneficiaries and comparable to the HEDIS® 75th percentile rate.

It was not possible to complete a comparable evaluation of beta blocker prescribing for MHS beneficiaries discharged from civilian hospitals. Detection of contraindications to beta blocker usage, necessary to determine which patients appropriately should not have received beta blockers after their AMIs, required access to information available only in medical records. The electronic data sets available for civilian hospital analysis did not permit identification of contraindications and thus precluded an accurate comparison with the direct care systems and the national benchmarks.

The Department is considering further assessment of network hospital performance through the DoD National Quality Monitoring Contract which focuses on care delivered outside the direct care system.

FY 2003 NQMP Ischemic Heart Disease Special Study:

Beta Blocker Prescribed at Discharge



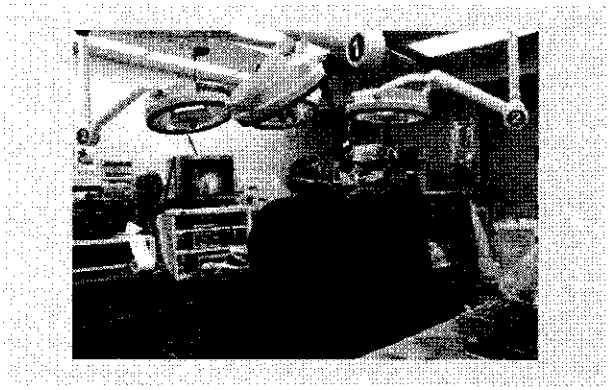
National Surgical Quality Improvement Program (NSQIP)

The National Surgical Quality Improvement Program (NSQIP), initiated by the Veterans Health Administration in 1986, is a quality improvement program that compiles reliable, objective data to measure and improve surgical outcomes. From the data collected, NSQIP calculates risk-adjusted operative morbidity and mortality, allowing determination of "observed to expected" ratios at each hospital and identification of best practices.

NSQIP is the only surgical benchmark process of its kind in the United States. In recognition of its demonstrated efficacy improving outcomes and reducing costs associated with preventable surgical complications, the American College of Surgeons identified NSQIP as one of the most promising tools available to effect improvement in surgical care.

In 2003, the Military Health System initiated a NSQIP pilot as a means to promote data-driven surgical quality improvement within the DoD, and to validate DoD excellence in surgical care. The information derived from DoD NSQIP will serve as the keystone as DoD transitions from centers of excellence to a system of excellence.

With the initiation of NSQIP in the DoD, the MHS has "raised the bar" in the area of surgical care delivery.



DoD NSQIP Timeline

2003

- NSQIP selected as DoD's Surgical Quality Improvement Program
- Pilot program designed:
  - Two year program
  - Three MTFs:
    - Walter Reed Army Medical Center
    - Wilford Hall Air Force Medical Center
    - Naval Medical Center San Diego
  - Projected to capture ~10,000 surgeries over duration of pilot
  - Joint VA/DoD site visits to pilot sites assessed feasibility of data collection

2004

- Initiate NSQIP at pilot sites
  - Hire and train a dedicated clinical nurse reviewer at each pilot site
  - Validate data consistency and quality
  - Establish a DoD NSQIP web portal for data entry
  - Collect and submit data from standardized instruments (at least 800 surgeries per facility)
  - Validate that the sample is representative
- Analyze 2004 data and compare to national clinical database

2005

- Obtain formal report of 2004 data
- Provide feedback to pilot sites
- Identify and disseminate "best practices"
- Ongoing collection of 2005 data
- Complete first full year of data collection; submit and analyze
- Determine next steps for the program

Health Report Cards

Measuring today's performance, shaping tomorrow's care

Health Report Cards

Increased public attention to healthcare quality in the United States has stimulated consumer and purchaser interest in performance information for health plans, healthcare facilities, and providers. Patients and payers want to make informed choices. Health plans strive to optimize cost, quality and access to care without compromising competitive position in the marketplace. Establishing consistent comparative measures, collecting of accurate, timely data, and reporting actionable information to consumers and other stake-holders has posed challenges for the healthcare industry.

In this report the term "**health report card**" refers to comparative data on healthcare organizations, plans or providers. A number of organizations have led the way in establishing well-defined measures and informative reports. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has been a leader in evaluation of health care institutions (including hospitals and clinics) in areas that impact patient rights, health, and safety using published sets of standards and clinical measures. Data from the Joint Commission accreditation process facilitates comparison of healthcare organizations, and highlights potential improvement opportunities for the participating facilities. While the Joint Commission is perhaps the best recognized accreditation organization for U.S. healthcare institutions, the National Committee for Quality Assurance (NCQA) has developed methodology for comparison of health plans. The NCQA Health Plan Employer Data and Information Set (HEDIS®) monitors health plan performance in delivering preventative health services, and in managing selected chronic and acute illnesses according to widely accepted standards of practice. Perception of care measures capture service and interpersonal aspects of the patient experience that are not well captured by clinical process or outcome measures. The National Research Corporation and the Picker Group are industry leaders in the standardized measurement of patient perception of care.

In FY 2003, the MHS participated in each of the above nationally-respected measures. Taken together, they create a multi-dimensional picture of the TRICARE Program and its clinical and service performance as measured against large American commercial health plans. As a learning organization, the MHS welcomes opportunities to look at structure, process, and outcome indicators to continuously improve the experience of our beneficiaries.

Information from a representative sample of the measures, data, and other reports used by the MHS in FY 2003 is provided for review.

Joint Commission Accreditation Report for Department of Defense Military Health System

The Joint Commission on Accreditation of Healthcare Organization (JCAHO) is an independent organization established to evaluate the performance of healthcare facilities in the areas that most affect patient health and safety. It evaluates the quality and safety of care of nearly 16,000 health organizations for compliance with established standards. The standards are grouped into three functional areas:

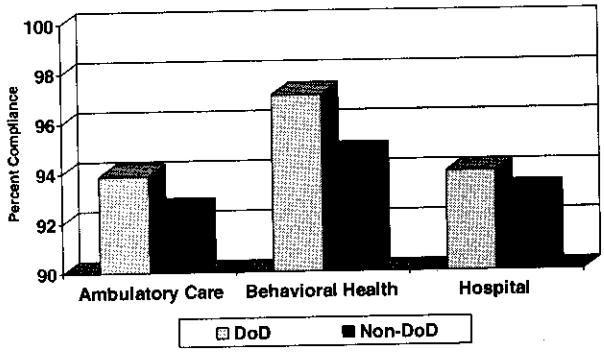
- Patient-focused: related directly to the provision of patient care, services and treatments.
- Organization: not directly experienced by the patient but essential to the organization's ability to operate effectively
- Structure: linked to the management of the medical staff and nursing services.

To maintain accreditation, MTFs undergo on-site review by a team of Joint Commission surveyors at least once every three years. At the conclusion of the survey process, a facility receives a score indicating the percent of the total number of possible points obtained, and recommendations on areas to focus improvement activities. Best practices identified during the survey are recognized, and may be shared with other healthcare organizations.

The DoD has participated in the Joint Commission accreditation process since the late 1980's to facilitate the comparison of care provided in MTFs with civilian healthcare organizations. The 2003 JCAHO survey results demonstrate that, on average, the Joint Commission survey scores for DoD military treatment facilities exceeded the average of participating civilian facilities.

The average of the survey scores for MTFs exceeded 90 percent compliance with JCAHO standards. The average of the DoD scores was higher than the average of comparable non-DoD healthcare organizations.

2003 Comparison Data
DoD and Non-DoD JCAHO Survey Scores



DoD health facilities, as a group, have consistently received higher average Joint Commission survey scores than participating non-DoD facilities for several years.

Average JCAHO Scores for Hospitals								
Year	2000		2001		2002		2003	
DoD Hospitals	92.0	(24)	92.6	(34)	92.8	(22)	94.0	(21)
Non-DoD Hospitals	90.8	(1513)	91.3	(1508)	92.4	(1543)	93.1	(1487)

( ) – Number of hospitals surveyed

Average JCAHO Scores for Ambulatory Care								
Year	2000		2001		2002		2003	
DoD Ambulatory Care Sites	96.0	(22)	93.8	(26)	94.0	(23)	93.9	(19)
Non-DoD Ambulatory Care Sites	93.3	(396)	93.6	(539)	92.9	(438)	92.5	(414)

( ) – Number of ambulatory care sites surveyed

Average JCAHO Scores for Behavioral Health Care				
Year	2002		2003	
DoD Behavior Health	96.8	(31)	97.1	(24)
Non-DoD Behavior Health	93.6	(562)	94.7	(712)

( ) – Number of behavioral health programs surveyed

Joint Commission
on Accreditation of Healthcare Organizations

After the survey process is complete, the Joint Commission compiles results and issues each accredited facility its organization-specific performance report. MTFs use this report to improve patient care and services.

Committed to providing meaningful information about the performance of accredited organizations to the public, the Joint Commission posts survey results on the JCAHO website. Survey results for DoD military treatment facilities can be compared to all other accredited healthcare organizations by beneficiaries and other interested members of the public. DoD regulations also require that Joint Commission accreditation results be posted in a public area in each MTF for the benefit of beneficiaries, visitors and staff.

JCAHO is revising its accreditation process. Accreditation scores will be eliminated in 2004, and surveys will be unannounced in 2005. The DoD has worked collaboratively with the Joint Commission, and has already implemented the unannounced survey process to insure that military treatment facilities maintain a consistently high level of performance throughout the survey cycle. More in-depth information on the changes in the Joint Commission survey process and the performance of the DoD will be provided in future reports.

Joint Commission ORYX® Measures

The JCAHO ORYX® initiative provides comparative data on inpatient clinical measures developed from current medical literature and expert consensus. Each military treatment facility receives a report card of its performance on a quarterly basis. MHS senior leadership receives a system level report comparing the performance of the DoD with the Joint Commission national averages. The 2003 DoD JCAHO ORYX® measures were presented in the Health Outcomes section of this report.

Clinical Performance Metrics

The National Committee for Quality Assurance (NCQA) developed the Health Plan Employer Data and Information Set (HEDIS®) to provide reliable, comparative data about health care quality, using data from health plans across the country. HEDIS® was intended to monitor how well health plans deliver preventive care (e.g., breast cancer screening or cervical cancer screening), and how well members with acute illnesses (e.g. acute myocardial infarction) or chronic diseases (e.g., asthma or diabetes) are managed to avoid or minimize complications.

HEDIS® measures selected for use in the MHS are related to outpatient processes, since the Joint Commission ORYX® initiative includes inpatient process and outcomes measures. Based on a review of the beneficiaries served by the MHS, the selected outpatient HEDIS® measures in FY 2003 included:

- Cervical cancer screening rates (Pap tests)
- Breast cancer screening rates (mammography)
- Use of appropriate medications for people with asthma
- Diabetes care (HbA1c testing and control, retinal exams, low density lipoprotein screening and control)

The data for these clinical performance metrics were gathered from an electronic central database which includes inpatient, outpatient, and pharmacy information. Reports on the clinical performance measures, with comparative data internal and external to the MTF were provided to MTF and MHS leadership. The following examples of the data and comparative analysis included in the report card demonstrate the value of using consistent, nationally recognized measures.

For those HEDIS® measures used within the MHS (cervical cancer screening rates; breast cancer screening rates; use of appropriate medications for people with asthma; and diabetes care), DoD performed as well as or better than the 50th percentile of health plans voluntarily agreeing to participate in reporting in FY 2003.

DoD FY 2003 Clinical Performance Measures

Cervical Cancer

The performance measure for cervical cancer screening was the percentage of women, ages 21 to 64, continuously enrolled in a MTF, who had a Papanicolaou (Pap) test in the preceding 36 months.

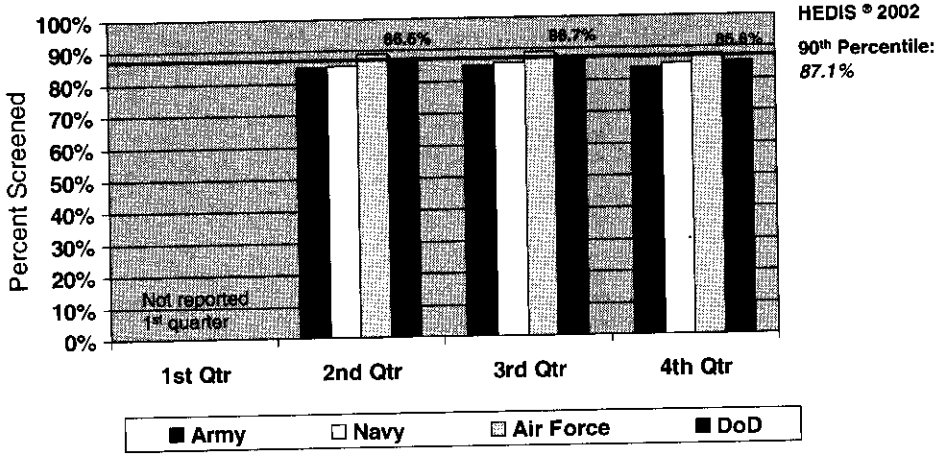
Cervical cancer is one of the most successfully treated cancers, if detected early. Cervical cancer screening with a Pap test reduces cancer cervical mortality by 70 percent.

The DoD data on cervical cancer screening approached the HEDIS® 90th percentile for health plans performance.

HEDIS®

MHS Cervical Cancer Screening

FY 2003



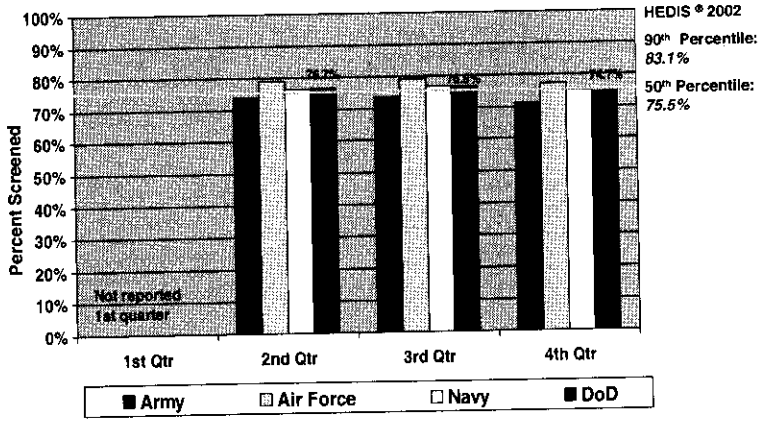
Breast Cancer

The HEDIS® defined measure of performance for breast cancer screening was the percentage of women, continuously enrolled to a MTF, ages 52 to 69, who had a mammogram in the past 24 months.

HEDIS®

MHS Breast Cancer Screening

FY 2003



Mammograms can detect breast cancer one to three years before a woman can feel a lump. Early detection and improved treatment have led to a decline in the death rates from breast cancer.

The MHS rates for breast cancer screening were comparable to the HEDIS® 50th percentile for health plan performance.

Diabetes Care – HbA1c Testing

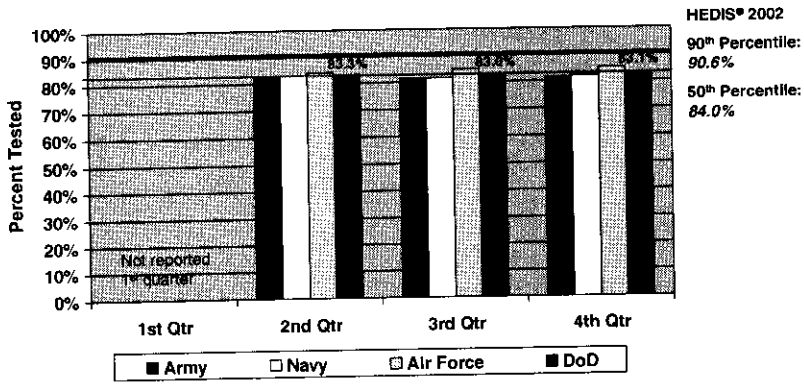
The performance measure HbA1c testing was the percent of beneficiaries with diabetes mellitus, ages 18 to 75, continuously enrolled to a MTF, who had a HbA1c test during the preceding 12 months.

The HbA1c (glycosylated hemoglobin) test reveals the average blood glucose over a period of two to three months and provides the patient and provider with a good idea of how well a patient's diabetes treatment plan is working. Keeping the blood sugar at ideal levels helps prevent or delay the start of diabetes complications.

HEDIS® Diabetes Care:

MHS Annual HbA1c Testing

FY 2003



The MHS rates for glycosylated hemoglobin testing were comparative to the HEDIS® 50th percentile for health plan performance.

The information gathered from the comparative analysis of these measures established baseline data which allowed providers and leadership to identify areas for improvement. During the FY 2003, the MHS Population Health Portal was deployed to all the services as a tool to facilitate the identification of patients requiring the above screenings or tests. Once completely implemented, the portal will support clinical staff in meeting these performance measures. More information on the Portal is included in the Innovative Processes for Surveillance section of this report.

National Research Corporation and Picker Group Surveys

The National Research Corporation in partnership with the Picker Group (NRC+Picker) is the leader in health system performance measurement and has the world's largest patient experience database. The inpatient comparative database contains response data from a large number of treatment facilities, with many belonging to larger health care systems.

In FY 2003, NCR+Picker conducted MHS inpatient surveys for medicine, surgery and obstetric care. The information obtained from the obstetric surveys played an essential role in validating the focus areas of the DoD Family Centered Care initiative which was discussed in the Health Outcomes section of this report.

The report on DoD patient perceptions of care for the medical and surgical conditions with national comparative data was provided to the military treatment facilities and to the leadership of the MHS. This information, together with patient satisfaction information on indicators related to the TRICARE health plan, primary care provider, customer service, ease of access for appointments, communication and clinical care, provide a richly textured picture of DoD patient satisfaction. Data on DoD patient satisfaction is posted on the TRICARE website and published in the annual "Evaluation of the TRICARE Program" report.

Inpatient Satisfaction Survey for Medical Conditions

A survey of 6,676 Military Health System patients who had received care while hospitalized for medical conditions in military treatment facilities was conducted from July 1, 2003 through September 30, 2003. The response rate was 48 percent. This valid and reliable survey instrument, administered according to the specifications of the National Research Corporation, covered seven dimensions of care.

Dimensions of Care

- Respect for patient preferences
- Information and education
- Involvement of family and friends
- Physical comfort
- Continuity and transition
- Coordination of care
- Emotional support

Conclusions

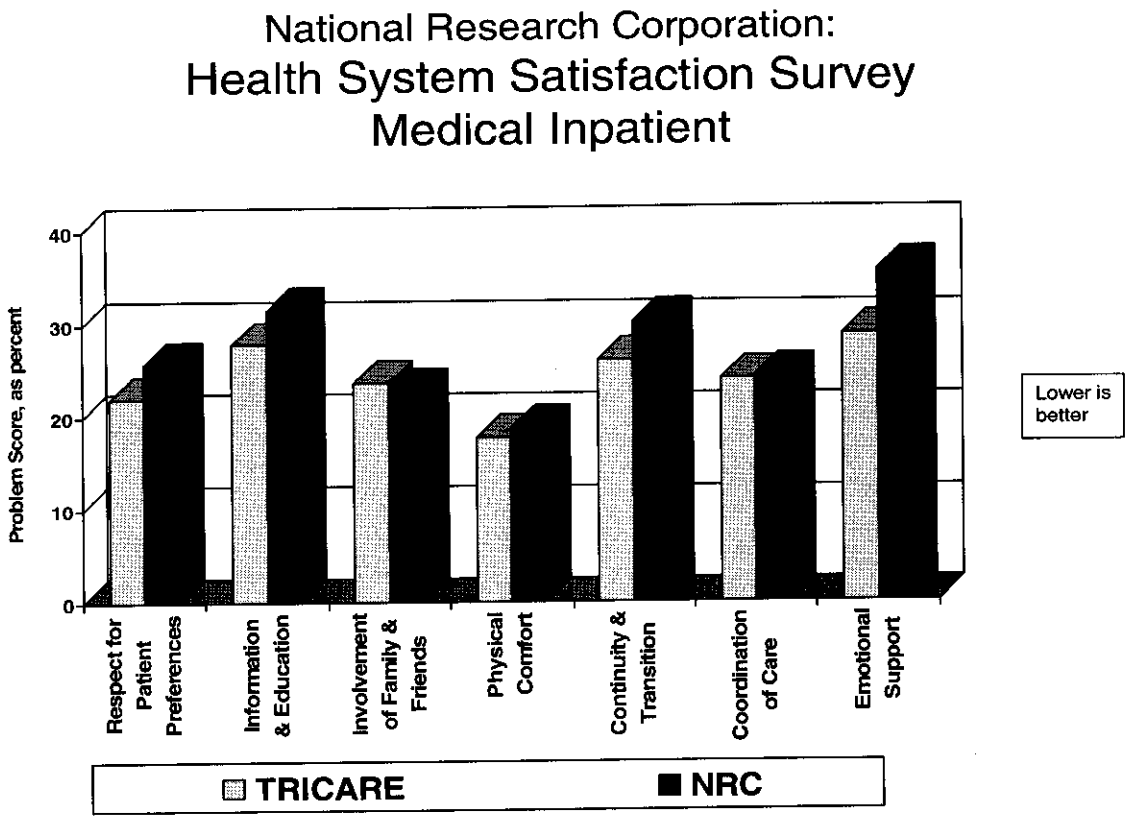
The survey results revealed that MTFs were rated more favorably than civilian hospitals on four of the seven dimensions of care:

- Respect for patient preferences
- Information and education
- Continuity and transition
- Emotional support

MTFs were comparable to civilian hospitals on the remaining three dimension of care areas:

- Involvement of family and friends
- Physical comfort
- Coordination of care

These findings portray a consistent trend from two previous surveys.



Source: National Research Corporation Inpatient Satisfaction Survey – Medicine; Military Health System July – Sept 200

Evidence-Based Clinical Practice

Bringing the best of medical knowledge to every patient

Clinical Practice Guidelines

Evidence-based clinical practice guidelines (CPGs) focus on the delivery of consistent, high quality care and expedite the diffusion of proven best practices in medicine. Using a collaborative approach, the DoD and Veterans Administration (VA) develop and maintain the CPGs that serve as the foundation for interagency population health prevention and condition management initiatives. With expanding use of CPGs, we expect to see improvement in the quality and cost-effectiveness of care provided.

Guideline Selection and Implementation Process

The process for selecting and implementing CPGs includes:

- **Selection** – concentrate on high volume and high cost conditions within both the VA and DoD
- **Adaptation** – assess current peer reviewed literature, with a focus on primary care, and use the information to form a guideline meeting unique DoD requirements
- **Toolkit Development** – develop provider, patient and system-specific tools to aid guideline implementation
- **Dissemination** – launch with a live satellite broadcast, facility conferences and site assistance visits
- **Implementation** – establish and empower facility champions and action teams to implement guideline
- **Evaluation** – monitor patient outcomes locally and centrally, using appropriate metrics
- **Maintenance** – review and update guidelines every two years to incorporate current clinical evidence and provider feedback

As of June 2003, twenty guidelines were available for use throughout the Military Health System and the VA.

Available Guidelines

- Hypertension
- Glaucoma
- Low Back Pain
- Tobacco Use Cessation
- Asthma
- Diabetes Mellitus
- Chronic Obstructive Pulmonary Disease
- Major Depressive Disorder
- Dysuria in Women
- Pre-End Stage Renal Disease
- Chronic Heart Failure
- Erectile Dysfunction
- Substance Use Disorder
- Post-Deployment Health
- Dyslipidemia
- Ischemic Heart Disease
- Post-Operative Pain
- Health Promotion and Disease Prevention
  - Breast Cancer
  - Cervical Cancer
  - Chlamydial Infection
  - Colorectal Cancer
  - Lipid Abnormalities
  - Problem Drinking
  - Tobacco Use
  - Immunizations (influenza, pneumococcus)
- Uncomplicated Pregnancy
- Stroke Rehabilitation

Each guideline has been posted on the websites of both the Army Medical Command Quality Management Office and the Agency for Healthcare Research and Quality.

During FY 2003, the MHS continued to pursue CPG development and implementation. Accomplishments included the implementation and revision of guidelines, as well as the initiation of compliance audits.

Uncomplicated Pregnancy Guideline and Toolkit

With over 50,000 deliveries in the direct care system in FY 2003, obstetrical care represented DoD's single largest service line. This newly deployed CPG will enable DoD to reduce variation in the care of pregnant women across the system.

Gastroesophageal Reflux Disease, Opioid Therapy for Chronic Pain and Stroke Rehabilitation guidelines

Gastroesophageal reflux disease, chronic pain, and stroke are common within the DoD and VA patient populations. These CPGs, newly developed for approval in 2003, offer the potential for patients in both systems to benefit from recent advances in medical practice.

Guideline Updates

Keeping CPGs up to date is critical to insure each guideline is consistent with the latest research evidence. In 2003, the Diabetes Guideline and Toolkit, and the Biological, Chemical and Ionizing Radiation Pocket Cards, were revised to reflect current standards of practice.

Online Ordering

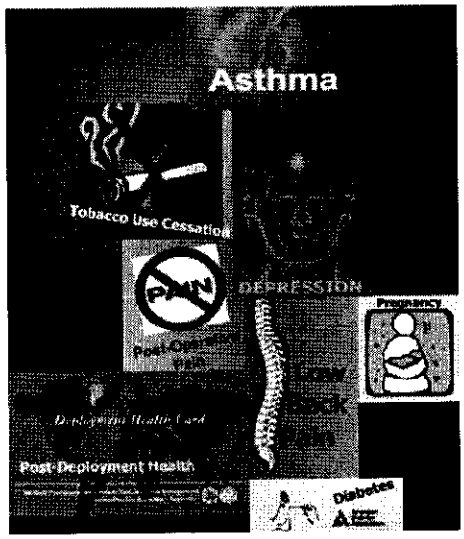
To facilitate provider access to CPGs and related products, the Army Medical Command Quality Management Office implemented an online ordering system to improve access to CPG-related products and enhance customer service.

Psychosis and Post-Traumatic Stress Disorder (PTSD) guidelines

CPGs to streamline the care of patients with these potentially disabling mental health disorders will ensure the well-organized, multidisciplinary approach that has been shown to minimize morbidity. Work on these two guidelines was initiated in 2003.

CPG Compliance

Beginning in 2003, evaluation of the degree to which the direct care system is implementing and following relevant CPGs was initiated through the National Quality Monitoring Program (NQMP). During FY 2003, the NQMP evaluated the implementation of the Post-Deployment Health CPG, demonstrating a 93 percent implementation rate (as noted in the Health Outcomes section). All future special studies that include a clinical condition for which a CPG exists will include an evaluation of compliance with the guideline.



Dental Clinical Practice Guidelines

Dental practice guidelines support the implementation of evidence-based dentistry. These statements, developed by the MHS Dental Services, are based on valid, scientific evidence and are designed to assist practitioners in making diagnostic or treatment decisions regarding specific patient care issues in dentistry. Dental practice guidelines enhance dental quality of care, and facilitate performance improvement by increasing the consistency of treatment processes, and reducing patient risk to produce the best achievable outcomes.

Evidence Based Dentistry

"An approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences."

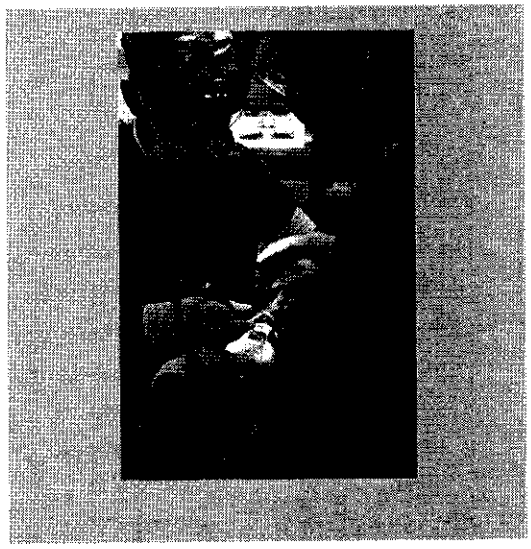
American Dental Association

In FY 2003, the MHS Dental Services initiated publication of practice guidelines to provide a framework for high quality oral healthcare services, reduce unnecessary variation in practice and sustain continuous quality improvement in dental care.

Individual practitioners from all three Services received copies of the guidelines. Additionally, the Air Force and Army have posted the guidelines on their websites for easy reference. They were also incorporated into the Air Force's internal Clinical Practice Assessment and Improvement Program which audits a sample of providers' records against one of the CPGs on a monthly basis.

Available dental practice guidelines include:

- Biopsies
- Examination / Diagnosis
- Dental Implants
- Obstructive Sleep Apnea
- Oral Disease Risk Management
- Orofacial Pain
- Sealants
- Sedation and Anxiety Control
- Third Molar
- Topical Fluoride



Innovative Processes for Surveillance

Identifying potential threats to the health of our beneficiaries

Military Health System Surveillance Processes

Effective health surveillance processes provide timely, actionable health information to decision-makers at all levels. The DoD has implemented several innovative surveillance methodologies to ensure essential health information is available for planning, response and decision-making. Representative programs include:

- Department of Defense Patient Safety Program
- Pharmacy Data Transaction Service
- Military Health System Population Health Portal
- Global Emerging Infections Surveillance and Response
- Electronic Surveillance System for the Early Notification of Community-based Epidemics
- Millennium Cohort Study

Department of Defense Patient Safety Program

The goal of the DoD Patient Safety Program (PSP) is to avoid medical harm and improve patient safety by focusing on improving systems and communication among health care teams. This program continually monitors the data submitted to identify and report to the military leadership actual and potential problems in medical systems and processes and to implement effective actions to improve patient safety and healthcare quality throughout the Department.

FY 2003 Accomplishments

- Establishment of the Patient Safety Executive Council
- Distribution of a medication error reporting system (MEDMARX®) and a root cause analysis tool (TAPROOT©) to field activities
- Identification of the requirements of an enterprise-wide patient safety reporting system.
- Implementation of mandatory monthly reporting of medical errors and near misses to the Patient Safety Center

Department of Defense Patient Safety Initiatives

Patient Safety Center

The DoD Patient Safety Center (PSC) is dedicated to improving patient safety in all military health care settings through the study of adverse patient care events in MTFs. During FY 2003, the PSC received and analyzed data from 144 MTFs through Monthly Summary Reports and the MEDMARX® medication error reporting system. In addition, the PSC collected and studied MTF root cause analyses conducted in response to more serious patient safety events. Using the results of these and other inputs, the PSC produced a number of publications including quarterly and annual reports, a quarterly newsletter "Patient Safety", and a bi-monthly publication "Hot Topics" on safety issues and initiatives. "Patient Safety Alerts" were published when hazardous conditions posed an immediate threat to patients.

Healthcare Team Coordination Program

To achieve the goal of improving patient safety by reducing adverse events, the DoD implemented medical team training focused on improving communication techniques and teamwork behaviors in day to day practice. During FY 2003, two medical team training programs were piloted. The MedTeams™ training program was primarily utilized within the Army and Navy. The Air Force developed and presented its own curriculum, Medical Team Management. The Agency for Healthcare Research and Quality designed a methodology to independently evaluate these two training methodologies. Feedback obtained once this study is completed will guide program improvements.

Medication Safety

The management of medications is a complex system that poses a number of challenges to healthcare providers and patients. In light of these challenges, an area of focus in FY 2003 was the development of a systems-based approach to medication safety to ensure continuous data collection, analysis, and dissemination for process improvement and enhanced patient safety.

The deployment of MEDMARX®, an automated medication error reporting system developed by the U.S. Pharmacopeia, standardized the medication error reporting process across direct care system. This national, internet-based anonymous reporting program supports hospitals in preventing medication errors and making system changes to improve patient safety.

Additional DoD medication safety activities focused on "high-alert" medications – those medications that have the greatest risk of causing injury when misused, and on dangerous abbreviations. Key undertakings involved the identification of prevention strategies and the replication of best practices.

The Pharmacy Data Transaction Service

The Pharmacy Data Transaction Service (PDTS) is a centralized data repository containing information about prescriptions filled worldwide for DoD beneficiaries, regardless of whether the prescription was filled at a military treatment facility or through the TRICARE Retail Pharmacy (TRRx) network or the TRICARE Mail Order Pharmacy (TMOP) program. PDTS involves continuous, concurrent electronic screening of medication usage to enhance the quality and safety of pharmacy services provided to DoD beneficiaries.

PDTS was designed to enhance patient safety and the quality of medical care by reducing the likelihood of:

- Adverse reactions between two or more prescriptions
- Duplicate medications prescribed to treat the same condition
- Same medication obtained from multiple sources
- Excessive or insufficient dosing
- Over- or under-utilization of medications

During 2003, PDTS was used at approximately 350 direct care military treatment facilities worldwide, with more than 700 dispensing pharmacies, and more than 40,000 individual providers using online order entry. The service also supported over 53,000 pharmacies in the TRICARE retail pharmacy network. PDTS monitored more than 100 million transactions in FY 2003 and identified nearly 35,000 events for review.

Pharmacy Data Transaction Service

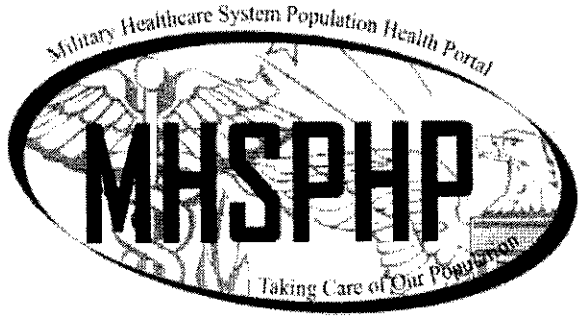
	FY 2001	FY 2002	FY 2003
Transactions Processed	20,700,726	97,552,907	110,888,704
Potentially Life-Threatening Drug Events Identified and Resolved	11,630	37,384	34,660

PDTS was named one of the seven finalists for the President's Quality Award. Additionally, Harvard's Innovations in American Government Program selected PDTS as an "Innovations in American Government Award" semifinalist, one of 17 programs selected from a pool of nearly 1,000 applicants.

Military Health System Population Health Portal

The MHS Population Health Portal (MHSPHP) is a centralized web-based population health management system that transforms encounter, pharmacy, laboratory, radiology, immunization, claim and enrollment data into actionable information for Army, Navy, and Air Force healthcare teams. The information provided helps the healthcare team improve the delivery of preventive services and chronic disease management programs, thus contributing to improving the overall health of their MTF TRICARE Prime enrollees.

Through a secure website, all MTF healthcare teams can now proactively manage the health status of their patients through the MHSPHP.



Surveillance with the Portal

The Portal provides enrollee data stratified by, age, gender, and needs for preventive services and allows users to:

- Aggressively manage 10 diseases or conditions with action lists, prevalence reports and aggregate counts
- Proactively monitor execution of six preventive services
- Track MTF/Service success with following national recognized performance measures such as HEDIS® metrics for:
  - Asthma medication management
  - Breast cancer screening
  - Use of beta-blocker after an acute myocardial infarction
  - Cervical cancer screening
  - Diabetic patient care

The MHSPHP improves population health and healthcare delivery by putting actionable information in the hands of Military Health System healthcare teams.

Portal Features

- Standardized collection, evaluation, and dissemination of health care information to the MTF/Services
- Aggregated information using HEDIS® - based methodology
- Patient specific lists by provider
- Refreshed monthly
- Includes MTF direct and purchased care data
- Exportable to Microsoft Excel

Global Emerging Infections Surveillance and Response System

New surveillance using innovative technologies allows faster identification of epidemics and pre-epidemic signals, which can stimulate rapid response to mitigate spread, severity, and impact on operations, productivity, health, and well-being of military personnel. More timely surveillance can lead to improvements in medical care for ill and injured service members.

Department of Defense Global Emerging Infections Surveillance and Response System (DoD-GEIS) is a network of DoD medical professionals in multiple partnerships focused on outbreak response preparation. The activities of the DoD-GEIS partnerships support both domestic and foreign programs in surveillance, response, capacity building, and training. All these programs are consistent with the promotion of force health protection and with national-security-through-defense against microbial threats. Many DoD-GEIS programs provide direct benefit to the global war on terrorism.

Partnering in the Fight Against Emerging Infections

DoD-GEIS was designed to strengthen the prevention of, surveillance of, and response to infectious diseases that:

- Pose a threat to military personnel and families
- Reduce medical readiness or
- Present a risk to United States national security.

The mission of DoD-GEIS is to:

- Increase DoD's emphasis on prevention of infectious diseases
- Strengthen and coordinate its surveillance and response efforts
- Create a centralized coordination and communication hub to help organize DoD resources and link with U.S. and international efforts

A selection of the DoD GEIS professional network accomplishments for FY 2003 is provided for review.

Respiratory Disease Surveillance

A cornerstone of the DoD-GEIS MHS activities has always been surveillance for respiratory diseases. Historically, these are common causes of morbidity and mortality in military settings. Pandemic influenza probably is one of the most serious emerging infectious disease threats globally and is a particular threat to the military given the mobility and crowding that characterize military populations. The instability in the influenza vaccine supply, with its periodic shortages, has further raised the level of concern.

Detecting newly emerging strains of the influenza virus is fundamental to the DoD global influenza surveillance program. The DoD global influenza surveillance program, which is supported by DoD-GEIS, performs etiology-based and population-based surveillance as well as surveillance of high-risk populations, such as recruits at basic training centers.

The 2002–2003 flu season was remarkable in large part because of the variety of influenza strains isolated. Generally, one strain predominates, but during this season, both influenza A viruses and B/Hong Kong circulated. In the midst of this variety, a new variant was detected in samples collected from Korea in December 2002. The DoD, Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) worked collaboratively to analyze this new influenza variant.

Medical Research

DoD tropical overseas medical research units of Walter Reed Army Institute of Research and Naval Medical Research Command receive support from DoD-GEIS mission-related initiatives. Each laboratory has established an extensive broad-based DoD-GEIS program focused on microbial threat surveillance, outbreak response, laboratory and public health training, and host nation capacity building in support of U.S. force health protection and U.S. national security as well as humanitarian assistance projects from the DoD Combatant Commands. The overseas laboratories build regional partnerships with host nation ministries of health, national scientific research facilities, and academic institutions.

The U.S. Navy medical research laboratories in Cairo and Jakarta are designated as WHO Collaborating Centers for Emerging and Reemerging Infections. The other three overseas DoD laboratories are pursuing the multiyear process to obtain this designation.

The DoD-GEIS program at the overseas laboratories emphasizes the following four conditions that remain significant issues for U.S. force health protection:

- Influenza
- Drug-resistant malaria
- Antibiotic-resistant enteric pathogens
- Fevers of undetermined etiology

Additionally, the laboratories conduct syndromic surveillance.

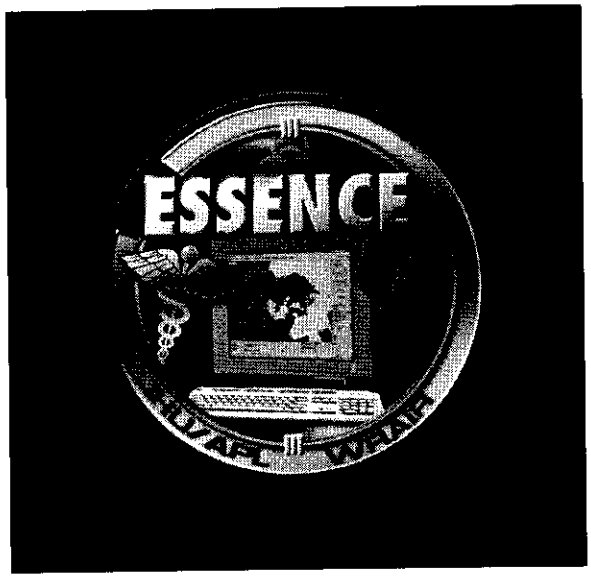
Electronic Surveillance System for the Early Notification of Community-based Epidemics

The Walter Reed Army Institute of Research (WRAIR) has developed a system for early detection of infectious disease outbreaks in military communities. This system, the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), uses data from outpatient encounters for syndromic surveillance analysis.

Three times a day, data is downloaded from 121 Army, 110 Navy, 80 Air Force, and 2 Coast Guard installations around the world and processed to identify any trends. Over 2700 syndrome- and location-specific graphs are prepared each day and analyzed for patterns that suggest a need for further investigation.

Additionally, data from the Pharmacy Data Transaction Service is merged into ESSENCE to independently track fluctuations in drug usage that could provide early alerting for disease outbreaks.

The ability of ESSENCE to detect syndromic clusters consistent with emerging infections, including bioterrorism, makes it a key biosurveillance resource for DoD and the nation.



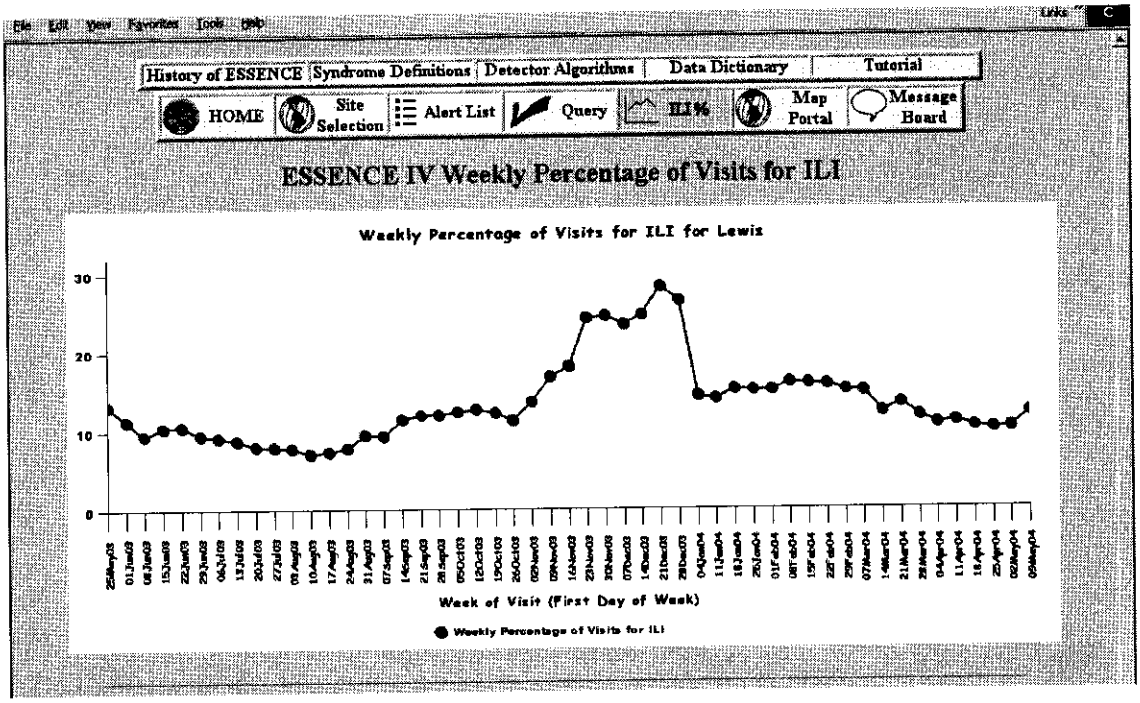
A critical dimension of ESSENCE development has been military-civilian partnerships to improve system performance.

WRAIR has teamed with the Johns Hopkins University Applied Physics Laboratory (JHU/APL) in development of the web-based system and an expansion to include civilian outpatient, emergency room visits, over-the-counter pharmacy sales and school absenteeism.

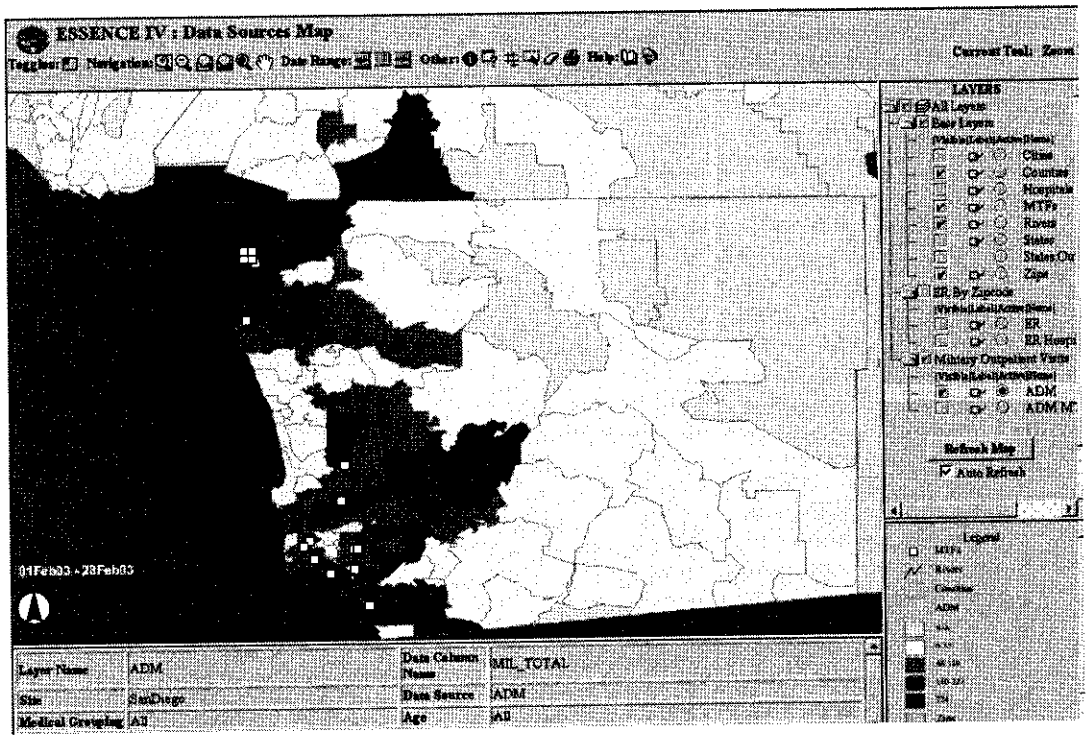
The follow example of the available reports from the ESSENCE system illustrates the robust surveillance capabilities of the program.

ESSENCE Sample Reports

The ESSENCE weekly data reports include a display of health care visits to a primary care clinic or emergency room for influenza-like illness (ILI). The data is analyzed for patterns and trends.



The ESSENCE Mapping Component provides a graphic image of the surveillance area with data displayed by geographical areas.



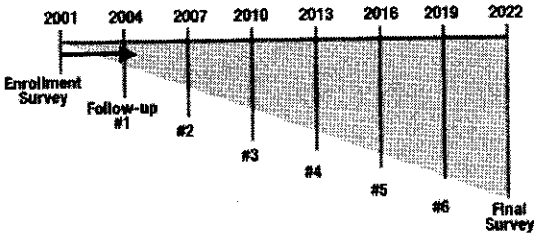
Millennium Cohort Study – Longitudinal Surveillance

The Millennium Cohort Study is a scientific research project recommended by the United States Congress and the Institute of Medicine and sponsored by the DoD. The study will eventually follow a total of 140,000 U.S. military personnel during and after their military service for up to 21 years

MILLENNIUM COHORT STUDY

The purpose of the Millennium Cohort Study is to evaluate the long term health risk of military deployment, military occupation, and general military service.

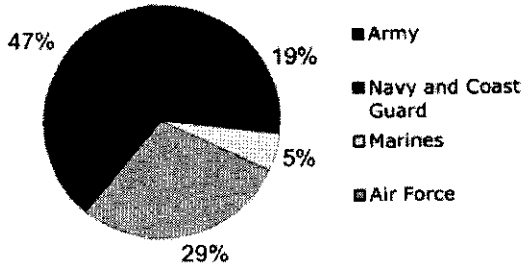
Data



Data will be collected by surveying the study population once every three years until the year 2022. This survey data will be linked to other data on military exposures and health outcomes.

Participants in the Millennium Cohort Study have been randomly selected from DoD databases. All branches of military service are represented. All ranks and rates are included as well as both males and females.

The graph below shows participation in the original Cohort by service branch.



The survey includes standard instruments to measure functional status, health outcomes, and health-related behaviors. Data sets to be linked to core survey data include:

- Demographic and deployment
- Occupational exposures
- Immunizations
- Outpatient care
- Hospitalizations
- Reproductive health
- Disability
- Mortality

The information gathered from the study will help guide future military health related policies for the DoD and Department of Veteran Affairs. The Millennium

Cohort will also serve as a foundation upon which other epidemiological studies may be constructed.

Additional Benefits Identified

As with any long-term project, the greatest value of the Millennium Cohort will not be evident for several years. However, Cohort information is already anticipated to be valuable in these ways:

- Describing the health of service members before and after the terrorist attacks of September 11, 2001
- Describing the health of service members in relation to recent deployments
- Describing the effects of certain medications on the health of service members, especially the antimalarial medication mefloquine

The leadership of the MHS understands the value of utilizing innovative surveillance processes on the battlefield, in the treatment facilities and within the communities we serve. The processes presented represent the type of high quality work performed on a daily basis by those who proudly support the defense of our country.

Acronyms

ACE	Angiotensin Converting Enzyme
AHRQ	Agency for Healthcare Research and Quality
AMI	Acute Myocardial Infarction
CAP	Community Acquired Pneumonia
CDC	Centers for Disease Control and Prevention
CPG	Clinical Practice Guideline
DoD	Department of Defense
ESSENCE	Electronic Surveillance System for the Early Notification of Community-based Epidemics
FY	Fiscal Year
GEIS	Global Emerging Infections Surveillance and Response System
HbA1c	Glyosylated Hemoglobin
HEDIS®	Health Employer Data Information System
HF	Heart Failure
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
JHU/APL	Johns Hopkins University Applied Physics Laboratory
LVSD	Left Ventricular Systolic Dysfunction
MHS	Military Health System
MHSPHP	Military Health System Population Health Portal
MTF	Military Treatment Facility
NCQA	National Committee for Quality Assurance
NPIC	National Perinatal Information Center
NQMP	National Quality Monitoring Program
NRC + Picker	National Research Corporation in partnership with the Picker Group
NSQIP	National Surgical Quality Improvement Program
PAP Test	Papanicolaou Test
PDTS	Pharmacy Data Transition Service
PR	Pregnancy
PSP	Patient Safety Program

Qtr	Quarter
SAP	Scientific Advisory Panel
TMOP	TRICARE Mail Order Pharmacy
TRRx	TRICARE Retail Pharmacy
VA	Veteran Affairs
VBAC	Vaginal Birth after Cesarean Section
WHO	World Health Organization
WRAIR	Walter Reed Army Institute of Research