Report to Congress

Quality of Health Care Furnished under the Defense Health Program FY 2002

CONTENTS

Statutory Requirement

Section 723 of the National Defense Authorization Act for Fiscal Year 2000, Health Care Quality Information and Technology Enhancement, requires an annual report to Congress.

"(e) ANNUAL REPORT – 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; and,

(4) The extent of use of innovative processes for surveillance."

Report Structure

The report is divided into three areas of focus: the foundation for providing high quality care, performance improvement initiatives that address clinical outcomes and processes of care, and the perspectives on quality of care by the Military Health System beneficiary population.

Acronyms used in the report are contained in Appendix A.

Figures

Tables

Executive Summary

Overview of Effort

The military health system (MHS) is an integrated system comprised of the direct care system of military treatment facilities, hospitals and clinics, and a civilian care component, administered by support contractors which purchase and manage care for DoD beneficiaries in the civilian sector. The MHS serves 8.9 million beneficiaries around the world, operates 75 hospitals and more than 400 clinics, supported by more than 130,000 medical personnel and a $26 billion annual budget.

The statutory requirements for this report are integrated within the context of the following three dimensions of quality:

1. Are the foundations for providing high quality health care robust?
2. How does the healthcare system function with respect to performance improvement efforts relating to process and clinical outcomes?
3. What are DoD beneficiaries' perspectives on the MHS in terms of quality of health care and administrative services they are entitled to receive?

The data discussed in the report relate primarily to the status of the TRICARE program at the conclusion of FY 2002 as required by statute. However, in some instances more recent data are included where appropriate.

Foundation for Providing High Quality Care

This section of the report establishes the basis for providing high quality health care.

Key findings:

1. Medical/Dental Licensure: Ninety-nine percent of the 11,557 military physicians and 3,256 military dentists are either licensed or in post-graduate training. The few officers who do not currently have licenses are fully supervised while pursuing licensure. The lack of licensure is primarily

related to varying state licensure requirements and the timing of licensure activities which to some extent conflict with officer accession and assignments and is not a reflection on the quality of the providers.

2. Medical/Dental Board Certification: The proportion of military physicians and military dentists who have achieved board certification status exceeds civilian norms, attesting to the high qualifications of military providers. Ninety-three percent of board eligible military physicians are board certified, the highest recorded rate for DoD. More than 62 percent of military dentists are board certified.
3. Graduate Education Programs: All 208 military graduate medical/dental residency programs for which accreditation programs exist are accredited; nearly 50 percent have been granted the maximum period determined by the accreditation agencies.
4. DoD Risk Management Activities and Participation in the National Practitioner Data Bank (NPDB): Paid malpractice claims on behalf of military providers were fewer in number for FY 2002 as compared to FY 2001, and paid malpractice rates per military hospital remain comparable to civilian institutional experience. Processes for assessment of individual claims remain sound and are validated by a rigorous external peer review process. There were 105 reports to the NPDB of healthcare professionals who were determined to have provided care which does not meet acceptable standards, and 33 reports for providers who have had their privileges to practice altered.
5. Joint Commission on Accreditation of Healthcare Organizations (JCAHO) – Accreditation Status: All military hospitals, clinics and laboratories retain JCAHO accreditation, and cumulative grid scores match or exceed those of civilian institutions nationally.

6. Network Credentials Management: Some challenges and discrepancies in management of network provider credentials files by managed care support contractors were identified in 2002 and have served as the basis for corrective action plans now successfully being implemented across all regions. Considerable improvements have already been noted and new standards applicable to the new TRICARE contracts will enhance oversight further through the requirement for network accreditation by national accrediting agencies.
7. National Quality Monitoring Program - External Peer Review of Purchased Care: Keystone Peer Review Organization (KePRO) oversight activities reveal broad agreement with contractor utilization decisions and consistency in the identification of quality and utilization concerns. Only small numbers of medical necessity denials are appealed to KePRO, and a majority of these are upheld.
8. DoD Patient Safety Program: The DoD Patient Safety Program continues to mature. Non-attributional reporting is a fundamental component of this program. The initial 10-month view of data reveals that the vast proportion of reported events are medication related and are either near misses (identified before reaching the patient) or events which reached the patient but did not result in harm.
9. The Pharmacy Data Transaction Service: This initiative has identified thousands of potential adverse drug interactions from over 200 million prescriptions tracked resulting in prescription changes in nearly 10 percent of instances where potential for harm has been identified.
10. Program Integrity (PI): Program Integrity activities related to fraudulent claims resulted in savings to the government of nearly $2,300,000 during FY

2002. The TMA PI department is nationally recognized for excellence and is involved in educational activities across the nation.

Performance Improvement – Process and Clinical Outcomes

How the healthcare system performs in terms of process and clinical outcomes related to preventive and interventional strategies, and compliance with evolving standards for providing care, are both viewed by the healthcare industry as critically important perspectives on health plan performance.

Key findings:

1. Clinical Practice Guidelines: During FY 2002, the DoD/VA CPG working group issued one additional guideline, Uncomplicated Pregnancy, and five toolkits, Major Depressive Disorder, Substance Use Disorders, Post-Operative Pain, Post-Deployment Health. Implementation, which is not mandated with exception of the post-deployment CPG, is somewhat variable across the Services based on differing implementation priorities and strategies.
2. National Quality Management Program (NQMP) Clinical Quality Studies: In FY 2002, the NQMP clinical quality studies focused on DoD/VA CPG pre or early implementation where applicable. Health Employer Data Information Set (HEDIS®) methodology, an industry standard, was adopted for most studies where appropriate. The DoD results reveal some decrease in performance, compared to earlier studies. These differences, however, are largely explained by methodological issues. The FY 2002 studies serve as a useful baseline for performance assessment and improvement over time and continued application of HEDIS® methodology. Fact sheets relating to all NQMP clinical quality studies may be found in the appendix.
3. Direct Care Dental Programs: Nearly 95 percent of active duty service personnel remain available for world-wide deployment in dental class 1 or 2 status. Although a smaller percent of reserve component personnel are available for

deployment, due to dental classification, strategies to address these discrepancies are being introduced.

4. Preventable Admissions: Preventable admission rates for the active duty forces are excellent in comparison to civilian norms; rates for non-active duty enrollees are comparable to, or slightly better than civilian norms. The following benchmarks for the United States population were compared with active duty enrollees: angina, 60 per 100,000 vs less than 5 per 100,000; asthma, 100 per 100,000 vs. 10 per 100,000; bacterial pneumonia, 180 per 100,000 vs. 25 per 100,000; cellulitis, 80 per 100,00 vs. 55 per 100,000; congestive heart failure, 120 per 100,000 vs. less than 5 per 100,000, chronic obstructive pulmonary disease, 118 per 100,000 vs. less than 5 per 100,000; diabetes, 130 per 100,000 vs. 10 per 100,000; gastroenteritis, 38 per 100,000 vs. 35 per 100,000; and, urinary tract infection, 80 per 100,000 vs. 20 per 100,000.
5. Centers of Excellence (COE): The Department's COE program is moving toward adoption of and integration with, similar VA programs designed to assess and improve surgical quality of care performance over time.

Beneficiaries' Perspectives on Quality of Care

The final section of this report portrays the perspectives that our DoD beneficiaries have on the services and quality of health care they receive across the MHS. Multiple surveys are described in the report relating to both medical and dental services. The results of survey data serve as the basis for more focused analysis. In most instances the perspectives of our beneficiaries are based upon standardized industry-wide applicable, and utilized, survey methodologies; most specifically the survey tools developed by the Consumer Assessment of Health Plans which is funded by the U.S. Agency for Healthcare Research and Quality (Department of Health and Human Services). Dental care survey data is based upon DoD developed surveys or

proprietary contractor developed surveys as part of the TRICARE dental insurance contracts.

Key findings:

1. Beneficiary Health Plan Ratings: Beneficiary health plan ratings continue to improve in all beneficiary categories and are approaching civilian norms.
2. Beneficiary Ratings of Health Care: Beneficiary ratings of health care remain good to excellent for all beneficiary groups and are stable over time.
3. Satisfaction with Access: Beneficiary perspectives on access to healthcare services continue to improve and approach civilian norms.
4. Dental Surveys: Satisfaction with dental care and services remains very high in the direct care system and for dependents of active duty personnel receiving care through the TRICARE dental insurance program. However, retirees are generally less satisfied with their retiree dental insurance program. We are assessing satisfaction changes with the implementation of the new TRICARE retiree dental plans in 2003. Utilization of dental services by beneficiaries who have subscribed to both of the TRICARE dental insurance programs matches or exceeds civilian norms.

Summary

The MHS provides a comprehensive program of high quality health care services for its many beneficiaries. The foundations for providing high quality health care are robust. Performance measurement activities are improving consistently as are the tools we provide to managers to assess performance and adopt strategies for improving care and services. Comparisons between the MHS and civilian health plans, though desirable, are confounded by the complexity and geographic scope of our program. Beneficiary surveys reveal increasing satisfaction with the TRICARE health plan and broad satisfaction across all beneficiary groups with health care. However, opportunities remain for improvement and serve as a strategic goal of the Department.

FOUNDATION FOR PROVIDING HIGH QUALITY CARE

This section of the report describes the structural components of quality assurance and risk management that provide the foundation for providing high quality care across the TRICARE Military Health System (MHS). The discussion below relates to the healthcare provided through the direct care system of military hospitals and clinics except where otherwise annotated.

Medical Staff Licensure

DoD Directive 6025.13, "Clinical Quality Management Program (CQMP) in the Military Health Services System", July 20, 1995, requires that all physicians practicing in military facilities must obtain and retain at least one current, valid, unrestricted state medical license as a condition of practice. The Department does grant waivers for physicians who retain licenses which require substantial financial contributions to support the state malpractice funds, but are otherwise unrestricted.

There are three major difficulties regarding licensure for new military providers. The first is the requirement by some states to have completed two years or more of post-doctoral training prior to consideration for a full license. Second, the timing of the exam cycles may conflict with either assignment orders for general medical officers or the indoctrination of new medical or dental officers. Third, the infrequent timing of the individual state licensing boards may delay licensure for those applicants who have fulfilled all the requirements but are awaiting board actions.

Aggregate data for Fiscal Years (FY) 2000, 2001, and 2002 are portrayed in Table 1. The data include physicians with full valid unrestricted licenses or approved waivers as well as categories of physicians who possess neither. Categories of physicians without licenses (as of March 2003) are depicted by the gray or yellow shading on the table. The yellow shading reflects physicians in training programs; the blue shading

GRADUATE MEDICAL EDUCATION ACCREDITATION

All DoD Graduate Medical Education (GME) programs for which an accrediting agency exists are accredited. The distribution of length of accreditation for the various programs is portrayed in Figure 2. Nearly 50 percent of military GME programs receive accreditation for the maximum period of time. This pattern is stable over time.

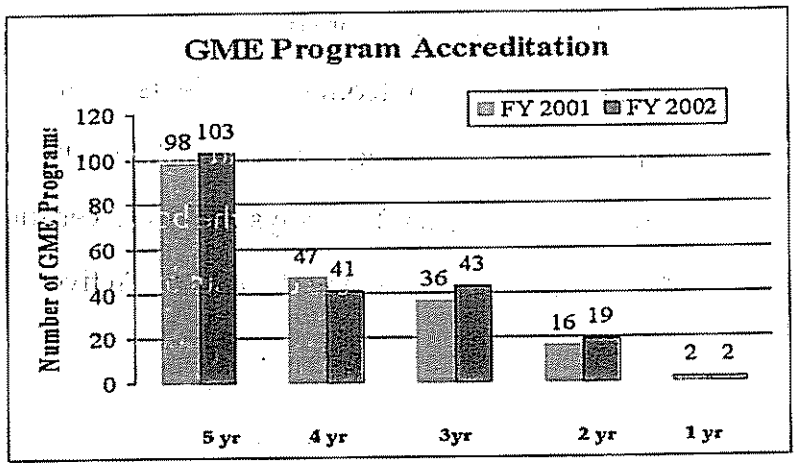


FIGURE 2 - GME Program Accreditation

DENTAL LICENSURE

DoD requires all Active Duty dentists to obtain dental licenses within the first year of active service. Although many dentists are accessed before they have completed the licensure requirements, those without licenses practice under the direct supervision of licensed dentists. A small number of dentists in initial entry graduate dental education (GDE) programs do not have licenses. However, only 0.3 percent of dentists on Active Duty lack licenses. Table 2 portrays aggregate data for FY 2001 and FY 2002. The gray shaded cells in the table show the number of unlicensed dentists.

TABLE 2 – Dental Licensure

	FY 01	FY 02	
Dentists on Active Duty (AD)	3352	3256	
Dentists with a state license	3318	3226	99.1 %
Dentals in initial entry GDE programs without licenses	23	20	
Dentists on AD less than one year without a license (not in residency programs)	11	9	0.28%

BOARD CERTIFICATION

DoD does not require board certification for dental officers. Board certification pay is an incentive for dentists who have completed GDE. In general, civilian dentists are not residency trained, and therefore, are neither board eligible nor board certified. Since the rate of board certification is not tracked by the American Dental Association, we are unable to establish a civilian benchmark for comparison. Board certification in dentistry often involves a review of clinical outcomes of patients several years following residency training and, it is therefore, a rather rigorous and noteworthy achievement for dentists to attain these credentials. Figure 3 portrays the board certification rate for dentists on Active Duty; 62 percent of board eligible dentists on Active Duty are board certified.

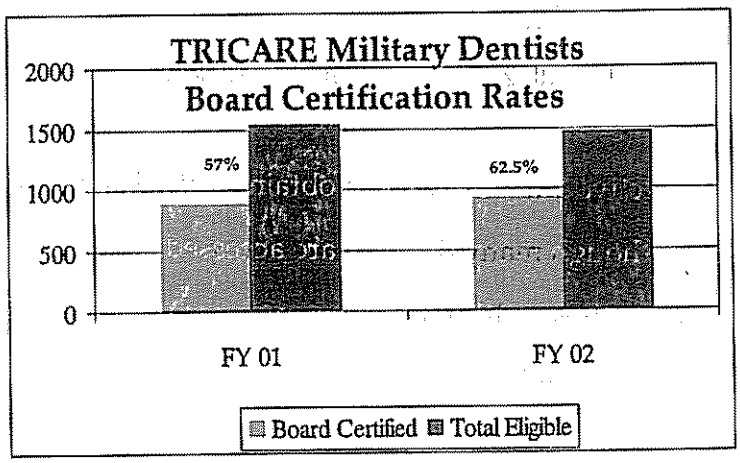


FIGURE 3 – TRICARE Military Dentists - Board Certification Rates

DOD RISK MANAGEMENT AND PARTICIPATION IN THE NATIONAL PRACTITIONER DATA BANK (NPDB)

The Department of Defense aggressively manages its medical malpractice cases. The process by which DoD evaluates malpractice cases is complex with multiple legal and medical levels of review. Appendix B contains a flowchart portraying an explanation of the various stages through which medical malpractice cases proceed within the federal government.

Each Service Surgeon General has a highly structured method for the analysis of malpractice claims with multiple reviews. For paid malpractice claims where the Service Surgeon General has determined that the standard of care has been met by military providers, the records are sent to the Keystone Peer Review Organization (KePRO) for an external review of the case. In those cases where the final determination of a Surgeon General is that the standard of care has not been met for particular providers, those providers are reported to the National Practitioner Data Bank, maintained by the Department of Health and Human Services.

External Data Review

In 1998, DoD began a program of external review of DoD malpractice cases by the Keystone Peer Review Organization (KePRO). Cases where the internal reviews determined that the standard of care (SOC) was met or cases that involved a system problem (in contrast with a provider problem) have been sent to KePRO for an external review of the SOC.

In 88 percent of the DoD cases reviewed in CY 2002, the civilian external review agreed with the determinations made by internal reviews. This pattern is consistent over several years. In our estimation, the high external-internal agreement rate validates the integrity of our internal review process.

For the purpose of trending malpractice in DoD, the Department of Defense has a standing Risk Management (RM) Committee. This body consists of senior staff from

DoD Health Affairs, TRICARE Management Activity, the three military Services, the DoD Office of the General Counsel, the three military Judge Advocate Generals (JAGs), the Department of Justice, and the Armed Forces Institute of Pathology Department of Legal Medicine. The major activities of the RM Committee have been oversight of DoD participation in the NPDB, the monitoring of the external Peer Review Program of certain DoD malpractice cases, and a continued relationship with the Department of the Treasury.

National Practitioner Data Bank Report Data

The Department of Defense participates in the National Practitioner Data Bank through a Memorandum of Understanding (MOU) between DoD Health Affairs and the DHHS. In addition to adverse privileging actions, DoD submits malpractice reports to the NPDB when the Surgeon General of the involved Service determines that the standard of care has not been met in a case involving a paid malpractice claim. Since 1991, the Department of Defense has made 886 medical malpractice reports regarding practitioners involved in malpractice claims to the NPDB. From 1998 through 2002, DoD has continued to report malpractice payments and adverse clinical privileging actions to the NPDB. The aggregate summary of these reports is portrayed in Table 3. Since 1997, based on malpractice payments, DoD has reported an average of 103 providers annually; 42 providers are reported annually due to adverse privileging actions. There has been no discernable pattern for either type of reporting. The yearly variation in reporting, portrayed in Table 3, is linked to the accumulation and elimination of a backlog of cases.

TABLE 3 - Reports to the NPDB 1997 - 2002

Year	DoD Providers Reported for Malpractice Payments	DoD Providers Reported for Clinical Privileging Actions
1997	46	58
1998	146	54
1999	101	38
2000	77	29
2001	143	40
2002	105	33

Table 4 depicts the profession of licensure for the healthcare providers reported to the NPDB in 2002. Eighty-one percent of the providers reported for medical malpractice were physicians (allopathic and osteopathic); nine percent were registered nurses. This proportionate pattern is consistent over the past four years.

TABLE 4 – DoD Malpractice Reports to the NPDB for CY 2002 by Profession of Licensure

	Number	Percent
Allopathic Physician	82	78
Registered Nurse	10	9
Nurse Practitioner	4	4
Osteopathic Physician	3	3
Physician Assistant	2	1
Dental Resident	2	1
Pharmacist	1	1
Nurse Anesthetist	1	1
Nurse Midwife	1	1

The NPDB Public Use File also contains information concerning the acts or omissions connected with the reports. The act or omission codes are those used by the Harvard Risk Management Foundation, adopted by DoD in 1988 and by the NPDB in 1990. Table 5 portrays the four categories with the greatest number of occurrences in 2002: diagnosis related (36 percent), obstetrics related (18 percent), surgery related (15 percent), and treatment related (13 percent). These data are reasonably consistent over the past decade.

TABLE 5 – Categories of DoD Malpractice Reports to the NPDB CY 2002

Act or Omission	Number	Percent
Diagnosis related	38	36
Obstetrics related	19	18
Surgery related	15	15
Treatment related	13	13
Miscellaneous	9	9
Medication related	7	7
Equipment related	2	2
Anesthesia related	0	0
Monitoring related	0	0
Total	105	

The Miscellaneous category includes failure to follow institutional policy; improper behavior; failure to protect third parties; breach of confidentiality/privacy; failure to maintain infection control; and, failure to review provider performance.

DoD Malpractice Claims Characteristics Using Service Claims Databases

Table 6 provides a breakout of paid DoD medical malpractice claims where the standard of care (SOC) was not met in CY 2002. These cases are identified by primary specialty. Obstetrics and gynecology (OB/GYN) had the largest number of paid claims in CY 2002 where the standard of care was not met, with a payout of $16.8 million dollars. The six specialty areas reflected in the table account for approximately 75 percent of paid claims for DoD.

TABLE 6 – Primary Clinical Specialties for Paid DoD Claims - Standard of Care Not Met CY 2002

Specialty	SOC Not Met (No. of Cases)	Amount Paid (Millions of Dollars)
OBGYN	21	16.8
General Surgery	17	5.6
Family Practice	8	3.7
Pediatrics	7	12.9
Internal Medicine	5	1.3
Radiology	5	1.6

conducting unannounced surveys beginning in January 2006. The intent of the accreditation process is to ensure that organizations:

- Establish and maintain mechanisms to perform processes and functions;
- Measure those processes and functions to assess effectiveness; and,
- Influence continuous improvement in the performance of those important processes and functions.

The accreditation scores for the MTFs are compared to non-DoD facilities in the following tables. The average JCAHO scores for 2000 through 2002 for hospitals and ambulatory clinics are displayed in Tables 8 and 9. Tables 10 and 11 portray accreditation scores for CY 2002 for behavioral health facilities and laboratories, reported by JCAHO for the first time in the aggregated format. The numbers in parentheses indicate the number of facilities surveyed by JCAHO.

TABLE 8 –DoD Compliance with JCAHO Standards – Hospitals - CY 2000 - 2002

Average JCAHO Scores for DoD Hospitals			
Year	2000	2001	2002
DoD Hospitals	92 (24)	92.6 (34)	92.8 (22)
Non-DoD Hospitals	90.8 (1513)	91.3 (1508)	92.4 (1543)

TABLE 9 – DoD Compliance with JCAHO Ambulatory Care Standards – CY 2000 - 2002

Average JCAHO Scores for DoD Ambulatory Care Clinics			
Year	2000	2001	2002
DoD Ambulatory Care	96 (22)	93.8 (26)	94 (23)
Non-DoD Ambulatory Care	93.3 (396)	93.6 (539)	92.9 (438)

TABLE 10 – DoD Compliance with JCAHO Behavioral Health Care Standards - CY 2002

Average JCAHO Scores for Behavioral Health Care CY2002	
DoD Behavioral Health	96.8 (31)
Non-DoD Behavioral Health	93.6 (562)

Table 11 – DoD Compliance with JCAHO Laboratory Standards – CY 2002

Average JCAHO Scores for Laboratory Accreditation CY 2002	
DoD Clinical Laboratories	96.9 (7)
Non-DoD Clinical Laboratories	94.9 (1038)

For summary purposes, these data are aggregated in Figure 5 for DoD and non-DoD Healthcare facilities. DoD facility accreditation scores match or exceed non-DoD facility scores across the range of accreditation standards.

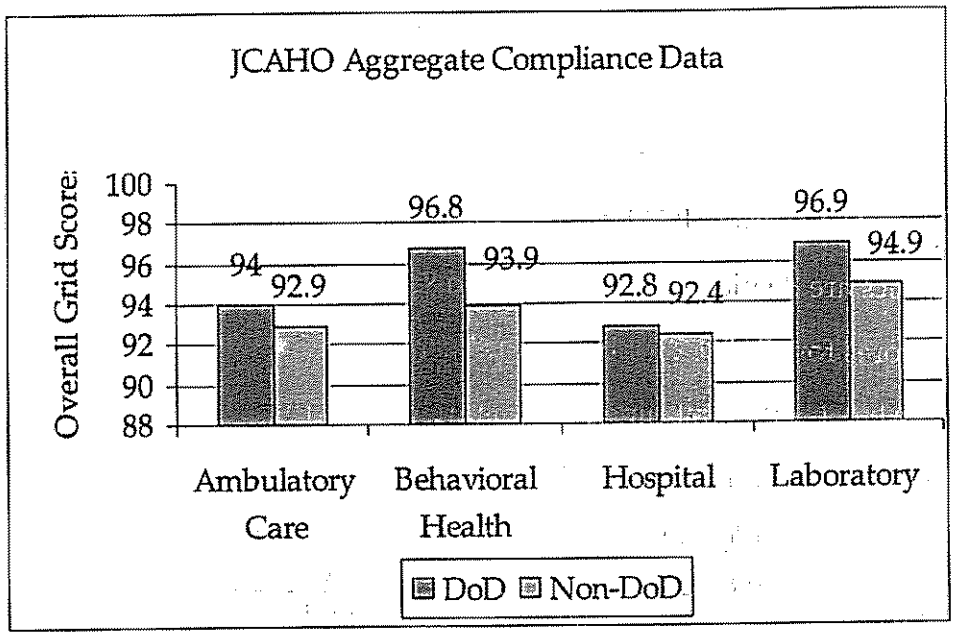


Figure 5 – JCAHO Aggregate Compliance Data DoD vs. Non-DoD CY 2002

ORYX®

ORYX® is the name of the JCAHO initiative that integrates performance measurement into the accreditation process. In order to facilitate comparison across systems of care nationally, JCAHO chose conditions with considerable clinical importance and standardized definitions and measurement methodologies to assess these conditions. The conditions are referred to as Core Measures and the metrics associated with these as Core Measure Sets.

The Department is fully integrating its processes to comply with these ORYX® requirements. All 75 MTFs with inpatient capacity are participating in the ORYX® initiative. Comprehensive data portraying the performance of MTFs in accordance with these core measures will be reported in next year's report to Congress.

Future Program Enhancements

Under the next generation of TRICARE contracts all health service support contractors will be required to obtain network accreditation by one of the nationally recognized accrediting agencies. These accrediting agencies have rigorous standards and measurement parameters linked to credentials management, assessment of quality performance, healthcare resource utilization and beneficiary satisfaction. The application of this requirement will standardize and improve the assessment of the quality of health care provided across our networks and move toward the achievement of comparability of oversight recommended by the DoD Healthcare Quality Initiatives Review Panel in its report to Congress, 2001.

NATIONAL QUALITY MONITORING CONTRACT PROGRAM

The National Quality Monitoring Program (NQMC) meets the external peer review function mandated by Congress in 10 U.S.C. §1079(o)(2). Under statute, TRICARE is directed to adopt or adapt the Medicare peer review process to assure appropriate utilization of healthcare services. The purpose of this program is to assist the TRICARE Management Activity and the Lead Agents by providing an independent impartial evaluation of the health care provided to the TRICARE beneficiaries in both the direct and purchased care components of our program by:

- Validating utilization management decisions;
- Monitoring the quality of care provided;
- Providing an external second level review for beneficiaries who appeal the denial of clinical services;
- Providing an external, independent review of paid MTF malpractice cases (see National Practitioner Data Bank Reporting section of this report); and,
- Conducting facility certification activities for Residential Treatment Centers, Psychiatric Partial Hospitalization Programs, and Substance Use Disorder Rehabilitation Facilities, to include onsite surveys.

During FY 2002, KePRO reviewed more than 17,000 medical records relating to care in the purchased care sector of which approximately 70 percent were related to medical or surgical care and 30 percent to mental health care. Each record undergoes a screening review based upon specific criteria for utilization review and quality management. Potential utilization or quality of care concerns are routed to the Health Service Support Contractors and/or DPs for follow-up action and analysis. Semi-annual discrete data reports are provided to the regional Lead Agents and both discrete, contractor specific and summary aggregate data semi-annual reports are provided to TMA.

The data portrayed in Figure 6 relate to the reviews of care provided by civilian providers and thus monitored by the HSSCs or DPs.

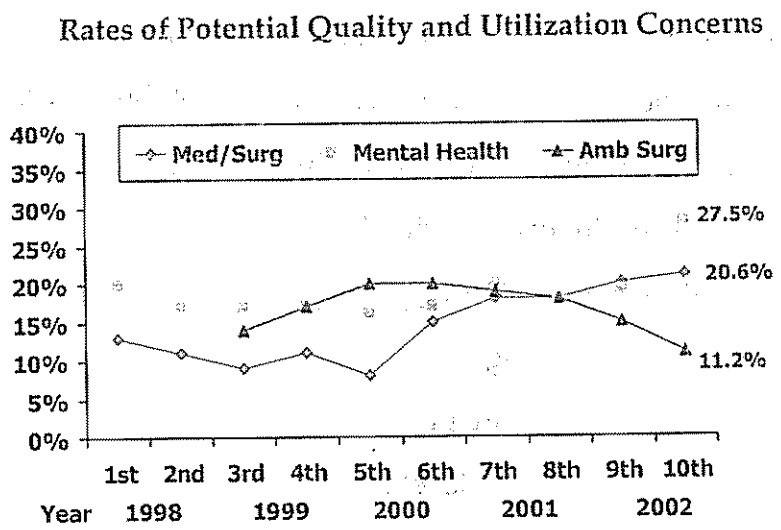


FIGURE 6 – Rates of Potential Quality and Utilization Concerns - Purchased Care

Approximately 15-20 percent of record reviews reveal concerns related either to utilization (usually prolonged stays) or quality of care. The increase in medical-surgical concerns reflected between the 5th and 7th semiannual reports (2000-2001) was, for the most part, due to the application of new screening criteria. Between the 7th-9th semi-

at the present time. More broadly, there appears to have been a drop of nearly 40-50 percent in admission denial disagreements over the duration of the KePRO contract. The actual number of disagreements is small (note the total number of disagreements in parentheses in Figure 8).

Level of Agreement with KePRO Determinations

An important measure of the integrity of the contractors quality and utilization administrative processes and the validation of this by the external peer review process is the close rate of agreement between the Health Service Support Contractors and KePRO when issues related to utilization or quality are examined, as reflected in Figure 9.

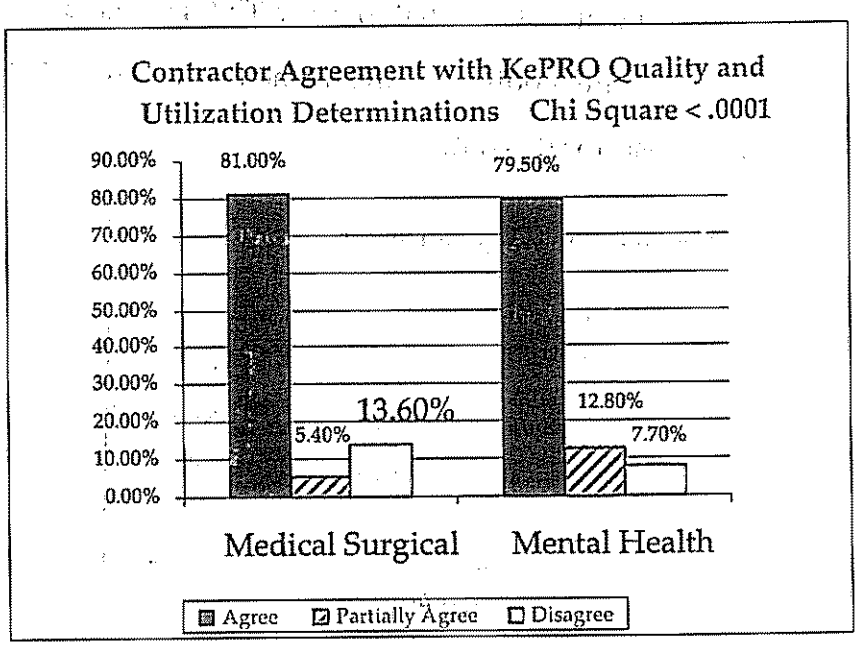


FIGURE 9 – Contractor Agreement with KePRO Quality and Utilization Determinations

When MCSCs and KePRO review the same records against the same criteria there is broad agreement in 85 to 90 percent of instances.

Appeal Decisions

When the MCSCs or DPs deny care based upon a determination that the care is not medically necessary, the beneficiary can ask the NQMC to perform a second level appeal review. Data from our regions reveal that about 2-3 percent of inpatient admissions or ambulatory surgical procedures may be initially denied based upon non-compliance with standardized, nationally applied utilization review criteria as required contractually. Of that proportion, about one-third are subsequently approved by the MCSCs on reconsideration, usually because additional information is provided which justifies the interventions. A small proportion are subsequently appealed to KePRO and the data in Figure 10 reveal that just over half of the MCSCs denial determinations are upheld while just under half are modified or overturned. There were 266 appeals to KePRO which served as the basis for this data.

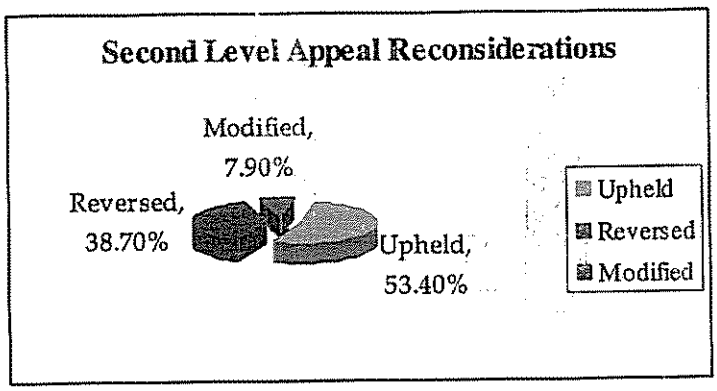


FIGURE 10 – Second Level Appeal Reconsiderations
Source: 10th Semi-Annual Report (May '02 – Oct '02)

It should be pointed out that KePRO often has access to additional information not previously provided to MCSCs or DPs, and that there is some measure of disagreement between providers about what is the appropriate level of medical care or intervention. The experience portrayed above is common in the healthcare industry.

QUALITY OVERSIGHT OF PURCHASED CARE IN EUROPE

TRICARE Europe's area of responsibility covers all of Europe, including Russia, the Middle East countries, and Africa. More than one-third of hospital admissions and greater than 10 percent of outpatient visits occur in host-nation settings in locally developed individual preferred provider networks (PPN). There is no MCSC oversight of network development or quality in Europe and there has been little in the way of centrally managed oversight of quality.

The TRICARE Europe Office (TEO) has embarked on a strategic initiative to improve quality of care monitoring for care provided in host-nation settings. An increased reliance on the network resources, especially in times of contingency support when network utilization may increase, makes it even more important that the TEO emphasize quality of care monitoring in the host-nation.

During the summer of 2002, the TEO surveyed all MTFs in the region and catalogued how each MTF currently conducts quality of care monitoring in four different domains including inpatient settings, outpatient settings, network management/oversight and patient satisfaction. In September 2002, the findings served as the basis for policy development.

The theater quality of care monitoring policy has specific requirements for networks affiliated with each MTF in eight separate elements:

- Individual provider files;
- Institutional provider files;
- Inpatient facility site visits;
- Outpatient facility site visits;
- Inpatient monitoring;
- PPN consult reviews;
- PPN oversight function; and,

- Patient satisfaction monitoring.

The policy was designed to standardize data collection in each domain, while preserving flexibility for MTF commanders to customize their quality monitoring and target the primary concerns in each host-nation. Different host-nations within Europe have different standards of practice and quality monitoring which make an overly rigid policy counterproductive. In addition, coding for services and the quality of coding in the purchased care sector overseas presents significant challenges.

To assist MTF commanders in targeting the most appropriate areas for monitoring, TRICARE Europe analyzed high frequency and high-risk potential targets for intervention. Because 37 percent of inpatient admissions and 50 percent of occupied bed-days in Europe occur in host-nation facilities, a focus on inpatient care was felt to be a reasonable area of emphasis. Though the majority of host-nation hospitalizations occur in Germany, hospitals in some of the other European countries represent areas of greater concern with regard to quality and consistency of care.

TRICARE Europe will have unique challenges monitoring quality indicators via claims data because of the variability in data quality provided but is committed to this initiative.

THE DOD PATIENT SAFETY PROGRAM

Ensuring patient safety is a high priority of the Department. During FY 2002, the DoD Patient Safety Program (PSP) experienced significant growth, shifting from a conceptual to an operational mode. Administration, coordination, budget, contract management and oversight of the DoD PSP shifted to the TMA, residing within the Patient Safety Division of the Office of the Chief Medical Officer. The DoD Patient Safety Center (PSC), previously known as the Military Health System PSC, within the Armed Forces Institute of Pathology (AFIP) focuses on the management and analysis of the Patient Safety Registry/Database and reports data to the PSP office on a quarterly basis. The Uniformed Services University of the Health Sciences (USUHS) Center for Education and Research in Patient Safety (CERPS) focuses on patient safety education and research for continuing education. Finally, the MHS Patient Safety Working Group was transformed into the DoD Patient Safety Planning and Coordination Committee (PSPCC) with representation from all the Services, Health Affairs (HA), TMA, CERPS, PSC and ad hoc representatives from the VA and the DoD Office of the General Counsel. The Chair of the PSPCC reports to the Patient Safety Executive Council (PSEC), chaired by the Chief Medical Officer, TMA. Members of the PSEC include the Service Surgeons General, the President of the Uniformed Services University of the Health Sciences (USUHS), the Office of General Counsel, and the Commander of the AFIP. The mission of the PSEC is to recommend DoD patient safety policy, promote initiatives, and establish collaboration with the VA National Patient Safety Center.

By the end of August 2002, all of the MTF patient safety representatives had received the DoD Patient Safety Program Training. The training introduced standardized processes for monthly reporting of medical errors; this should improve data quality and analysis. Table 12 portrays PSC data accrued between January 2002 and September 2002.

TABLE 12 - Categories of Patient Safety Events FY 2002

Categories of Events	Near Miss	Adverse Event SACs				# Grand	% Grand	% Category	% Total
		SAC 1	SAC 2	SAC 3	Sentinel	Total	Total	Near Miss	Near Miss
Medication Errors/MEDMARX Systems	2031	676	31	0	0	2738	59.47%	74.18%	77.82%
Miscellaneous	24	121	0	0	0	150	3.26%	16.00%	0.92%
Discrete Reportable Events									
Assault	0	3	0	0		3	0.07%		
Consent Issues	15	5	0	0		20	0.43%		
Delay in Diagnosis or Treatment	34	150	12	2	0	198	4.30%		
Documentation	17	13	1	0	0	31	0.67%		
Elopement	15	51	0	0	0	56	1.22%		
Environment of Care	14	20	0	0	0	34	0.74%		
Equipment Related	18	62	0	0	0	80	1.74%		
Identification Problems	4	8	0	0	0	12	0.26%		
Infant to Wrong Family	0	1	0	0	0	1	0.02%		
Infant Abduction	0	0	0	0	0	0	0.00%		
Laboratory	365	167	5	0	0	537	11.66%		
Nosocomial Infection	1	11	0	0	0	12	0.26%		
Obstetrics	1	17	6	0	0	24	0.52%		
Unanticipated Full-term Infant Death	0	0	0	0	0	0	0.00%		
Operative/Other Procedure Related	27	157	14	0	1	199	4.32%		
Patient Falls	6	199	17	0	0	222	4.82%		
Patient Injury in Restraints	0	2	0	0	0	2	0.04%		
Patient Suicides/Attempts	12	3	0	0	0	15	0.33%		
Patient Suicide *	0	0	0	2	0	2	0.04%		
Policy and Procedures	6	47	10	0	0	63	1.37%		
Radiology	8	9	1	0	0	18	0.39%		
Rape	0	0	0	0	0	0	0%		
Staff Injuries	13	109	8	0	0	130	2.82%		
Transfusion Errors	6	39	2	0	0	47	1.02%		
Hemolytic Reaction	0	0	0	0	0	0	0%		
Visitor Injuries	0	5	0	0	0	5	0.11%		
Wrong Site Surgery	3	1	1	0	0	5	0.11%		
Total Events Minus Med Errors & Misc.	555	1079	77	4	1	1716	37.27%	32.34%	21.26%
GRAND TOTALS	2610	1876	113	4	1	4604	100%	56.69%	100%

* Patient Suicides reported as SAC3 Non-Sentinel because these events actually occurred outside the hospital setting.

"Near miss" events are potential adverse events that have not yet harmed or reached the patient. "Near misses" reveal many of the vulnerabilities of healthcare systems. If these vulnerabilities are noted and corrected, problems that could cause serious harm can be averted before they ever do. The SAC, or Severity Assessment Code, is an index to determine the severity of the event and its probability of recurrence. Severity is divided into four categories – catastrophic, major, moderate, and minor. Probability is also divided into four categories – remote, uncommon, occasional, and frequent. In general, SAC 1 is an event which reached the patient but resulted in no harm or minimal harm, while SAC 2, 3, or SAC 3 sentinel imply increasing levels of harm and need for additional care as a result.

Nearly 60 percent of the events reported during the first ten months of the DoD Patient Safety Program (PSP), were medication-related events. The other top reported events were laboratory events, patient falls, operative or procedure events, and delays in diagnosis. Just over half of the events reported, 57 percent, were near misses. Medication-related events comprised 78 percent of the near misses. Figure 11 portrays the distribution of severity of reported patient safety events. The vast proportion of reported events, 97 percent, did not result in patient harm and were classified as near miss or SAC 1; these events did not result in increased length of stay or an increased level of care.

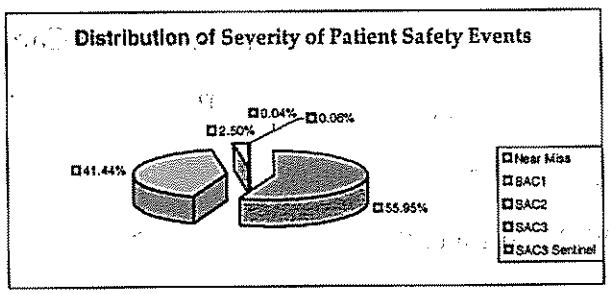


FIGURE 11 – Distribution of Severity of Patient Safety Events

Enhancing Patient Safety with the Pharmacy Data Transaction Service

The Pharmacy Data Transaction Service (PDTS) improves the quality of the Department of Defense (DoD) prescription service and enhances patient safety by reducing the likelihood of adverse drug-drug interactions, therapeutic drug overlaps, and duplicate treatments. The PDTS provides an aggregate screening capability across all MHS beneficiaries. To accomplish this, the PDTS conducts an on-line prospective drug utilization review against a patient's complete medication history for each new or refilled prescription before it is dispensed to the patient. Information about these prescriptions is available to authorized PDTS providers as a seamless enhancement to the current workflow processes. This initiative is unprecedented in connecting high-level and disparate pharmacy systems resulting in higher quality medical care, reduction of fraud and abuse, and better information for managing the pharmacy benefit.

The implementation of the MHS integrated pharmacy system began with the development of a centralized data repository and a common drug profile for all DoD beneficiaries, accomplished through a contract with WebMD®, a private sector pharmacy claims manager. The program for the movement of data between the MHS activities and WebMD® gave the integrated program its name, the Pharmacy Data Transaction Service.

The PDTS is fully deployed to all DoD MTFs, Managed Care Support Contract network pharmacies, and the TRICARE Mail Order Pharmacy (TMOP) Program sites. Under the PDTS, all MHS pharmacy points of service (MTFs, MCSC retail network pharmacies, and the TMOP contractor) have been required to electronically transmit selected patient, drug, and provider data elements to WebMD®. The data are transmitted over communication lines using national standard message codes established by the National Council of Prescription Drug Programs. With these transmissions, WebMD® builds centralized patient profiles within the integrated data

repository. Each MHS activity is required to receive additional standard codes for warning messages and alerts generated from these transactions. During this process, PDTS conducts on-line prospective drug utilization reviews (clinical screenings) against the patient's complete medication history for each new or refilled prescription *before* it is dispensed. The clinical screenings identify the potential for any two or more prescriptions to have a drug-drug interaction, therapeutic duplication, and earlier than anticipated refills. The screenings also monitor for excessive or insufficient dosing, as well as well as under- or over-utilization.

Wherever a patient's prescription is filled within the MHS, the information about that prescription is sent to the PDTS for clinical screening and stored in the central data warehouse. From December 2000 through the end of April 2003, the PDTS processed 209,737,229 transactions. During this same time period, over 75,100 *potentially* life-threatening drug interactions were identified. The potential interactions are flagged for clinical intervention and resolution by the provider or the dispensing pharmacy. These notifications resulted in an overall reversal rate of 10.8 percent, or 8,111 potentially serious drug interactions. The fact that the PDTS performs these clinical drug screenings online in real-time without disrupting patient care has been a major factor in its success.

PROGRAM INTEGRITY

The TRICARE Program Integrity (PI) Office is responsible for all anti-fraud activities worldwide for the purchased care sector. PI is responsible for developing policies and procedures regarding prevention, detection, investigation and control of TRICARE fraud, waste and program abuse, monitoring contractor program integrity activities, coordinating with DoD and external investigative agencies and initiating administrative remedies as required.

TMA PI provides technical assistance, program expertise and support to the DoD Office of the Inspector General (IG) for Investigations and to U.S. Attorneys in developing cases for prosecution, to include expert witness testimony. Through a Memorandum of Understanding, PI refers its provider fraud cases to the Defense Criminal Investigative Service. PI coordinates investigations with offices and agencies of the Department of Justice, DoD IG, various Military Departments and federal, state and local agencies. PI administers procedures related to provider exclusions, suspensions, terminations and reinstatements.

TMA PI takes an active role in training and educational efforts related to fraud and abuse. In 2002, the Office was directly responsible for providing fraud and abuse training and computer and technical program support to more than 1,550 people. Organizations that attended the varied training programs include the Departments of the Army, Air Force, Navy, Coast Guard, Justice, Health and Human Services, Federal Bureau of Investigation, Defense Criminal Investigation Service and organizations outside of the federal Government. Speakers from the Program Integrity Office provided training at the following courses: the TRICARE Basic and Advanced Student Course; the Federal Health Care Acquisition Conference, multiple Lead Agent conferences; the orientation for the Lead Agent Medical Directors; the Department of Health and Human Services, training for Defense Criminal Investigative Service; and the TRICARE National Conference.

Impact of Fraud on the Quality of Care

The ability to provide affordable, quality health care to TRICARE beneficiaries in a cost effective manner continues to be a goal of the TRICARE program. Fraud can adversely impact quality of care and result in patient harm when profit is more important than what is in the patient's best interest. Identification of potential patient harm cases (regardless of the dollar amount) and determining and notifying TRICARE beneficiaries as quickly as possible that they may be affected continues to be a TMA PI

priority. Toward this end, TMA PI staff members meet with the staff from the various HA/TMA directorates to better integrate Managed Care Support Contractors (MCSCs) and quality oversight with the work in TMA PI and Office of the Chief Medical Officer.

TMA Program Integrity Activity Report, 1999-2002

During 2002, TMA PI opened 239 new cases, responded to 562 requests for assistance, evaluated 201 new *qui tam* cases and closed 247 cases. A *qui tam* is a provision of the Federal Civil False Claims Act that allows private citizens to file lawsuits in the name of the U.S. Government charging fraud by Government contractors and others (e.g., healthcare providers) who receive or use Government funds and share in any money received. This unique law facilitates the effective identification and prosecution of Government procurement and program fraud and the recovery of revenue lost as a result of the fraud.

Table 13 portrays the results of TMA PI's activities over the last four years. Launched in late 1999, OPERATION TRICARE Fraud Watch, with its increased emphasis on anti-fraud programs, has had an impact on the early identification of fraud, thus minimizing dollar losses within the program.

Table 13 – TMA Program Integrity Activity Report 1999-2002

DESCRIPTION	1999	2000	2001	2002
Qui-Tams	256	181	141	201
Civil Cases Settled	92	138	61	67
DoD Hotlines	32	11	31	12
Written requests for consultation, case support, or assistance from DCIS, DOJ, and other law enforcement entities	584	600	532	562
Cases referred to DCIS	202	128	122	206
Cases referred to Military Criminal Investigative Offices	8	5	5	0
Balance Billing and Violations of Participation Agreement	57	29	42	56
Providers Sanctioned	2,976	2,709	3,756	3,582
TRICARE dollars identified for recovery (Fiscal year)	$2.9 million	$1.12 million	$11.2 million	$2.3 million

Thus far, TRICARE has received judgments for $2.3 million dollars for fiscal year 2002. The dollars returned are shared with the managed care support contractors at the rate of approximately 20 percent of the dollars recovered, depending on the dates of care involved in the judgment and the terms of the contract. The remaining dollars are disbursed among the various branches of the Uniformed Services as TRICARE benefit dollars. It should be noted that the sharp decline in fraud judgment dollars between fiscal years 2001 and 2002 is directly attributable to the shift in law enforcement priorities as a result of the 9/11 attack on the Pentagon and the destruction of the World Trade Center in New York. Their investigative efforts have focused on anti-terrorist activities and homeland security during this time frame.

CLINICAL PRACTICE GUIDELINE IMPLEMENTATION

Evidence-based clinical practice guidelines (CPGs) are focused on the delivery of consistent high quality care. They form the basis of population health prevention and condition management initiatives. The objective of any CPG-based condition management program is to expedite the diffusion of innovations in medicine. Expected outcomes in the management of a specific condition are improved quality and cost-effective care.

The Department of Defense/Veterans Affairs (DoD/VA) CPG initiative is in line with the Institute of Medicine's (IOM) recommendation to ensure the effectiveness of health care via the use of CPGs, as described in Crossing the Quality Chasm (March 2001). The following organizations also recommend the use of evidence-based clinical practice guidelines: the Joint Commission on the Accreditation of Healthcare Organizations, the National Council on Quality Assurance, the Institute for Healthcare Improvement and the Healthcare Quality Forum. CPGs can assist in improving patient safety, as described by the IOM in To Err is Human (December 2000), by decreasing errors of omission and commission.

Ideally, CPGs are evidence-based best practices grounded in the best available research rather than anecdotal experiences of individual providers. CPGs aim to decrease variation in the management of specific conditions, thereby improving quality of care. In some instances, there is not sufficient clinical evidence to support one particular approach over another. Hence, many guidelines include, where applicable, consensus-based proposals which may not be exclusively supported by available evidence. The DoD/VA Working Group selects high-cost or high-volume conditions specific to the DoD and VA healthcare systems for CPG implementation.

To date, sixteen CPGs are available for use across the three Services and the VA. Five more CPGs are under development and six are being updated. Appendix C lists these guidelines. The CPGs are also listed on the AHRC National Quality Measures Clearinghouse website at http://www.qualitymeasures.ahrq.gov/ and thus are available for use by the general public.

CPG toolkits are essential to guideline implementation. Provider support tools include documentation forms to streamline and standardize clinician assessment, medical education videos and provider reminder cards. Patient self-management tools include self-care brochures, videos and CD-ROMs. System support tools include guideline metric measurement and feedback loops. By developing and deploying the toolkits centrally, toolkit items are standardized throughout the MHS. Each of the guidelines and the supporting tools are available on line at both the Army Quality Management Office website: http://www.QMO.amedd.army.mil and the VA Office of Performance and Quality website: www.OOP.med.va.gov/cpg/cpg.

Implementation of Clinical Practice Guidelines

In 1998, the Army Medical Department contracted RAND Corporation to develop the best method for implementation of the DoD/VA CPGs. RAND recommended the following implementation steps:

- Develop and incorporate provider and patient tools into CPG specific toolkits;
- Pilot the CPG toolkits to ensure utility of the products;
- Introduce the CPGs and toolkits into MTF primary care portals through an educational satellite broadcast by showcasing the implementation done at the pilot sites to MTF clinical teams; and
- Measure CPG metrics for process improvement and to establish internal and external benchmarks.

Each of the Services has taken a slightly different approach to CPG implementation. The Army focused on development, piloting, and deployment of

toolkits. The Air Force focused on making CPG outcome metrics available to their facilities in real-time so that patient data could be acted upon by providers. The Navy focused on implementation of selected CPGs based on the characteristics of the local patient populations and input from clinicians caring for those patients. With the exception of the Post-Deployment Health CPG, mandated by the ASD/HA, implementation of CPGs, though strongly recommended, is not a requirement of the MHS; thus individual MTF implementation is highly variable. Consistent, systematic data which may confirm the impact of implementation is lacking, though health policy literature and selective data from selected facilities support the use of CPGs. Improvements in clinical or process outcomes and cost-savings have not as yet been realized system-wide.

Overall, the DoD/VA CPG Working Group deployed one new guideline and five toolkits for MTFs in 2002.

Guideline Issued - Uncomplicated Pregnancy

Toolkits Issued -

- Post-Deployment Health
- Post-Operative Pain
- Major Depressive Disorder
- Substance Use Disorder
- Uncomplicated Pregnancy

Metrics are essential to CPG implementation and evaluation. Outcome measures provide feedback to clinics and primary care managers, spark provider interest in guideline implementation, and provide benchmarks against other federal and civilian healthcare facilities. In the MHS, metric measurement is supported through the National Quality Management Program Special Studies and the Population Health Operational Tracking and Optimization Program which are discussed in following sections.

THE NATIONAL QUALITY MANAGEMENT PROGRAM – SPECIAL STUDIES

The National Quality Management Program (NQMP) focuses on the direct care system of military treatment facilities and is specifically designed to measure clinical and process outcomes and improvement. The goals of the NQMP enable the MHS to:

- Participate in the JCAHO ORYX® performance metrics process by submitting MTF data to JCAHO (as described earlier in this report in the Foundation Section);
- Perform clinical quality studies as directed by the TRICARE Scientific Advisory Panel;
- Compare MHS outcomes with civilian clinical benchmarks;
- Perform internal comparisons within the TRICARE MHS;
- Identify 'best clinical practices'; and,
- Facilitate performance improvement.

The FY 2002 special studies focused on asthma care, breast cancer screening, cervical cancer screening, childhood immunizations, chlamydia testing, diabetes care, dyslipidemia, management of depression, post-deployment health assessment, and tobacco use cessation. Where applicable, the special studies were linked to pre or early implementation phases of DoD/VA CPGs discussed above. Fact sheets related to all FY 2002 NQMP Special Studies are contained in Appendix D.

Where practicable, the methodology applied to data accrual and management has been closely tied to the required methodology employed by the Health Employer Data and Information Set (HEDIS®), a common healthcare industry standard. It should be noted however, that comparison of TRICARE MHS data with nationally reported HEDIS® performance measures has limitations. As reporting of HEDIS® data is voluntary, the percentiles portrayed

as civilian benchmarks on figures that accompany this report may be biased because not all health plans report their data. The voluntary nature of reporting may skew the performance of reporting health plans toward better performance than is generally the norm. Finally, it should be noted that differences in methodology between FY 2001 and FY 2002 NQMP studies make comparisons difficult. The Department did not employ HEDIS® in its FY 2001 studies. Methodology significantly affects data accrual, management and portrayal.

The primary differences in methodology relate to the requirements for continuous enrollment for approximately one year in order for beneficiary data to be included in the HEDIS® data set and capturing the varied sources of patient encounter data. Hence, HEDIS® looks at health plan performance over an extended timeframe resulting in somewhat different results than those obtained when looking at data from a more limited period. Given the annual approximate 20-30 percent turnover in our TRICARE Prime enrolled population each year, (associated primarily with changes of duty stations), there is ongoing debate as to the most appropriate way to view this data. Providers focus on the clinical needs of their active patients, those who they see with some frequency in their offices. Health plans engaged in HEDIS® focus on providing services to a continuously enrolled population over time which will also include many who are seen less frequently and not actively managed. These issues notwithstanding, the decision of the Scientific Advisory Panel was to apply strict HEDIS® methodology to permit comparison with HEDIS® reporting plans.

Both asthma and diabetes are clinical conditions identified as DoD/VA clinical practice guidelines. The following discussion serves as an example of the clinical quality studies that address key aspects of the CPGs as they are practiced in the MTFs. The study population includes TRICARE Prime enrolled beneficiaries receiving services primarily at one of the MTFs.

Asthma Care - Appropriate Use of Medication in the TRICARE Military Health System

Asthma is highly prevalent in all beneficiary categories, and the DoD/VA CPG for treatment of patients with persistent symptoms is well established, even if not consistently implemented. Patients with persistent asthma should usually receive controller medications to prevent symptoms that may progress in severity.

HEDIS® assesses asthma management in relation to the use of appropriate medications by health plan members with persistent asthma. HEDIS® data are reported in percentiles, i.e., the proportion (percentile) of health plans that are reporting at a particular rate of compliance with the HEDIS® standard.

Figure 12 portrays appropriate use of asthma medications for TRICARE Prime MTF enrolled persistent asthmatic patients compared with the varied percentiles for plans that report to HEDIS®.

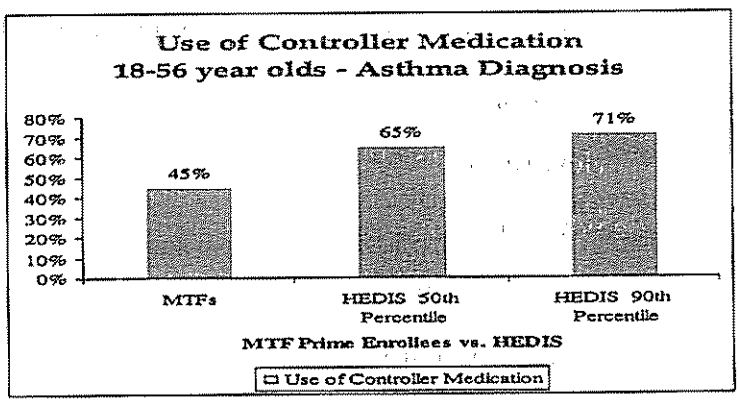


FIGURE 12 - Use of Controller Medication MTF Prime Enrollees Compared with HEDIS®

In contrast to last year's asthma study, the application of strict HEDIS® methodology resulted in lower rates of compliance with standard guidelines for the use

of controller medications by the TRICARE MTF enrolled population. The data were similar across services and, though not portrayed graphically, use of controller medication was proportionately higher among younger beneficiaries, especially children, compared to older beneficiaries.

Tables 14 and 15 portray the impact of controller usage on both emergency department (ED) utilization and hospital admissions. In both instances healthcare resource utilization was decreased when controller medications were used appropriately. Underutilization of controller medications resulted in nearly 93 percent of emergency department visits and 96 percent of hospitalizations for asthma. This translates to considerable expenditures of healthcare resources including personnel time, medical equipment, consumable supplies, and pharmaceuticals. Further efforts to increase controller medication utilization are underway through publication of key points in DoD newsletters and Fact Sheets and advocacy for enhanced employment of the DoD/VA Asthma CPG. The potential for improvement in the health of the population of patients with asthma is great, as is the potential for substantial savings in Defense Health Program funds.

TABLE 14 – Emergency Department Utilization by Patients with Asthma
Effect of Underutilization of Appropriate Medication Prior to ED Visit

MTF Affiliation	ED Visits by Enrollees with Asthma	Controller Medication Prior to ED Visit N (%)	No Controller Medication Prior to ED Visit N %)
All MTFs	3,150	231 (7.3%)	2,919 (92.7%)
Army	1,043	89 (8.5%)	954 (91.5%)
Navy	621	41 (6.6%)	580 (98.4%)
Air Force	1,486	101 (6.8%)	1,385 (93.2%)

TABLE 15 – Hospital Admissions for Asthma
Effect of Underutilization of Appropriate Medication Prior to Hospitalization

MTF Affiliation	Hospital Admission for Asthma	Controller Medication Prior to Hospitalization N (%)	No Controller Medication Prior to Hospitalization N (%)
All MTFs	485	18 (3.7%)	467 (96.0%)
Army	155	4 (2.6%)	151 (97.4 %)
Navy	92	6 (6.5%)	86 (93.5%)
Air Force	238	8 (3.4%)	230 (96.6%)

Diabetes Mellitus Care in the Military Health System

Diabetes is a major chronic illness that is increasing in prevalence most likely because of dramatic increases in Type-2 diabetes related to increases in persons who are overweight or obese. The MHS is not immune to this problem, and although the proportion of active duty service members with diabetes is low, the rate of diabetes in their family members and in retirees and their family members, including elderly TRICARE for Life beneficiaries, makes diabetes management a priority for the MHS.

The measurement of Hemoglobin A1c (HbA1c) is the most effective way to ascertain control of blood sugar over time, and is critically important in the management of patients with diabetes. Periodic measurement of HbA1c is a parameter of the DoD/VA CPG. Figure 13 reveals that when applying strict HEDIS® methodology, approximately 72 percent of MTF-enrolled TRICARE beneficiaries with diabetes have had this test. This proportion, when compared to other plans that voluntarily report this HEDIS® measure, places the TRICARE health plan below the 50th percentile.

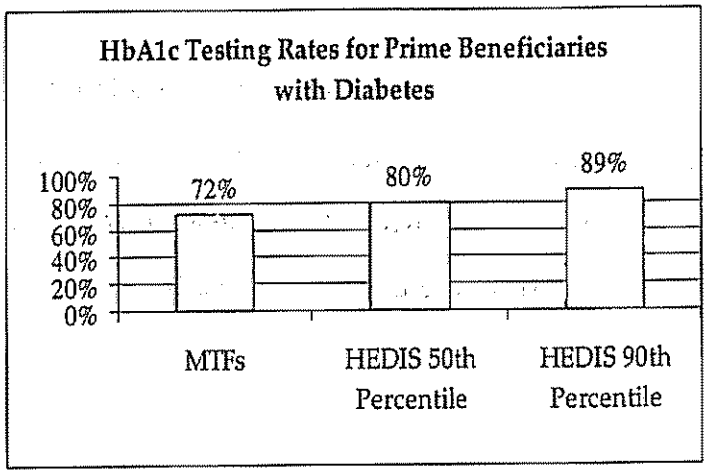


FIGURE 13 - HbA1c Testing Rates for Enrolled Beneficiaries with Diabetes

It is notable however, as portrayed in Figure 14, that HbA1c control is achieved in approximately 63 percent of beneficiaries with diabetes, which places the TRICARE health plan above the HEDIS® 50th percentile.

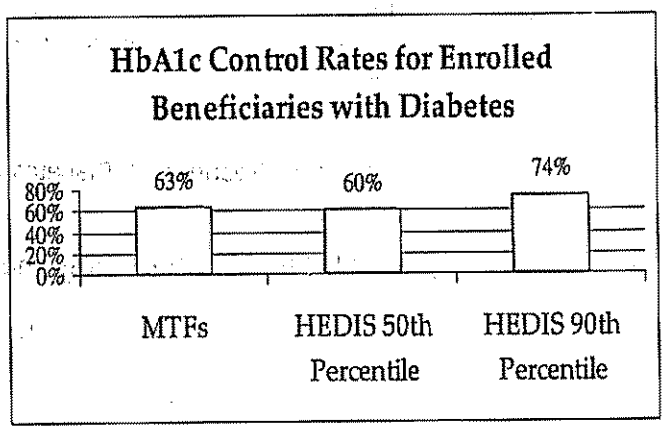


FIGURE 14 – HbA1c Control Rates for Enrolled Beneficiaries with Diabetes

One should appreciate that application of strict HEDIS® methodology results in lower proportions of patients reflected with HbA1c in control because those patients with no test result recorded (due to missing data or lack of compliance with healthcare recommendations) are defined as 'not in control'. Data from the Services own surveillance of diabetes care reveal that 85-90 percent of patients who have had testing

performed, have HbA1c results within acceptable limits for good diabetes management.

Clinical management of patients with diabetes mandates that they receive periodic eye examinations. Figure 15 below demonstrates very good compliance with this requirement with 76 percent of TRICARE Prime MTF enrollees receiving appropriate periodic eye exams, exceeding the HEDIS® 90th percentile.

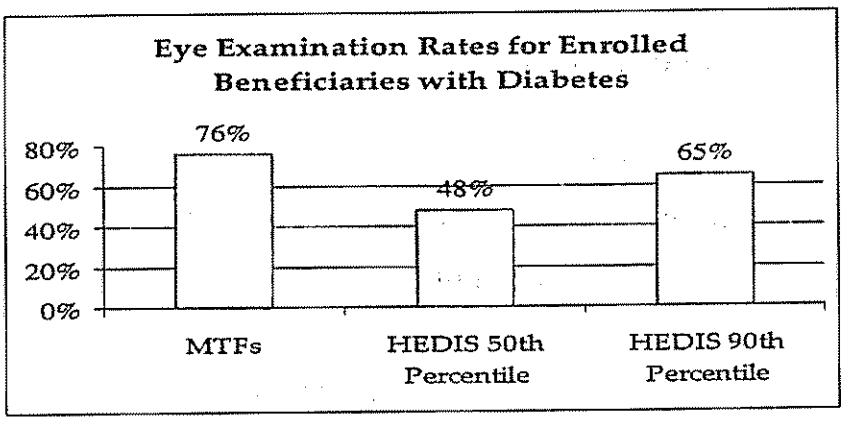


Figure 15 – Eye Examination Rates for Enrolled Beneficiaries with Diabetes vs. HEDIS®

In conclusion, the application of strict HEDIS® methodology has resulted in portrayals of MTF clinical and process outcome data which are at some variance from previously reported data. When viewed from the health plan perspective and utilizing the stricter enrollment and ascertainment methodology of HEDIS®, there is considerable opportunity for improvement in the MHS.

DIRECT CARE DENTAL PROGRAMS

Dental health and readiness is best assessed by measurement of the proportion of active duty service members (ADSMs) who are available for worldwide deployment. In 1996, the Tri-Service Dental Chiefs established a Dental Readiness goal that required the Services maintain at least 95 percent of all active duty service members (ADSMs) in Dental Class 1 or 2. Figure 16 portrays the dental readiness from FY 1997 – 2002.

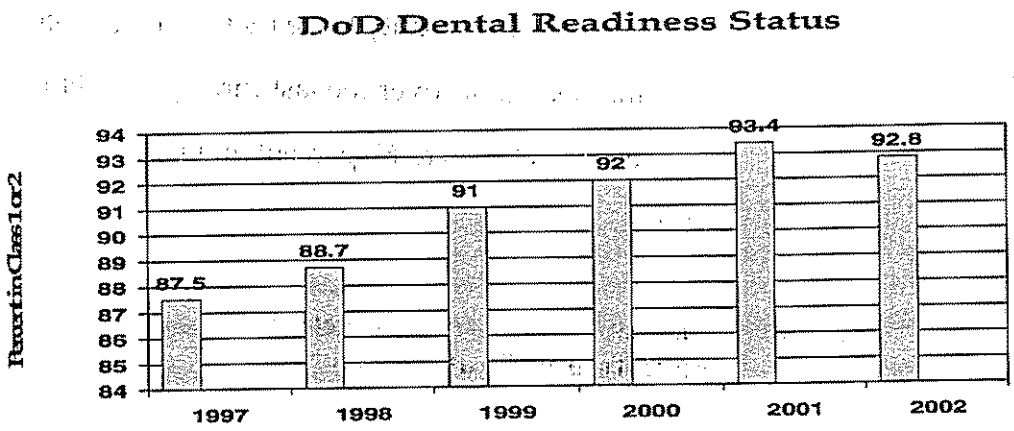


FIGURE – 16 DoD Dental Readiness Status

The DoD Dental Readiness (Health/Wellness) Classification System is as follows:

- Dental Class 1 Patients with a current dental examination, who do not require dental treatment or reevaluation – *worldwide deployable;*
- Dental Class 2 Patients with a current dental examination, who require non-urgent dental treatment or reevaluation for oral conditions, which are unlikely to result in dental emergencies within 12 months – *worldwide deployable;*
- Dental Class 3 Patient who require urgent or emergent dental treatment – *not worldwide deployable;* and,
- Dental Class 4 Patients who require periodic dental examinations or patients with unknown readiness classifications – *not worldwide deployable.*

Over the past six years, the combined dental class 1 and 2 rate has improved resulting in a 92.8 percent average for DoD active duty service members in FY 2002. The remaining seven percent are nearly equally distributed between classes 3 and 4. A recent study of those in class 4 resulted in a reclassification of over 90 percent to class 1 or 2 following examination. Hence the dental readiness status of the active force is excellent.

Dental Wellness

Figure 17 portrays the proportion of the active duty force that is categorized as Dental Class 1. This proportion has remained stable over the last three years. However, the Tri-Service goal is to increase the dental wellness to 65 percent and this goal is the basis for planning at the present time.

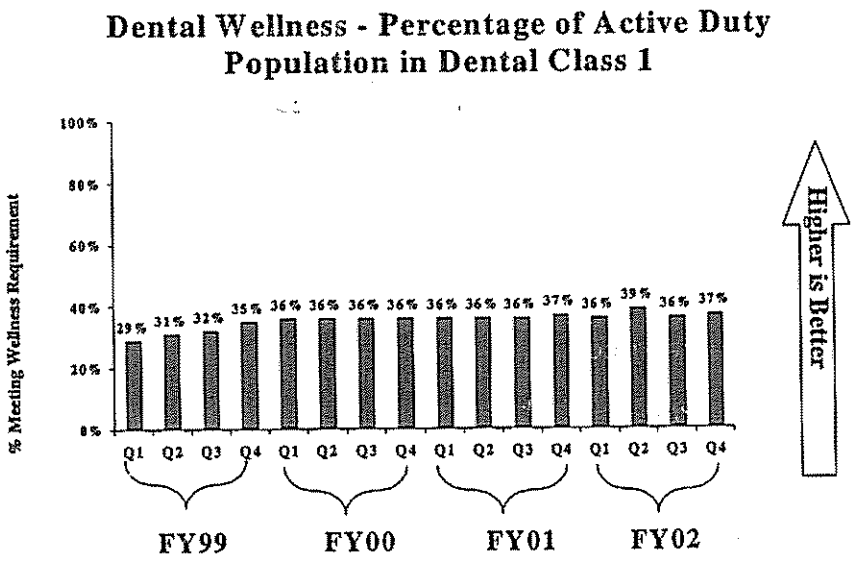


Figure 17 – Dental Wellness – Percentage of ADSMs in Dental Class 1

Study of the Oral Health Status and Treatment Needs of the Reserve Component

During reserve mobilizations/activations before and after September 11, 2001, field reports from military dental treatment facilities indicated that the dental health

and readiness of the Reserve Component (RC) had not improved since Operations Desert Shield/Desert Storm. Since there was limited documentation on the dental health status of the RC, TMA funded a project by the Tri-Service Center for Oral Health Studies (TSCOHS) at the Uniformed Services University of the Health Sciences to assess the dental health of mobilized reservists. The study began in October 2001 and concluded in August 2002. In the study, Public Health Dentists at TSCOHS evaluated the treatment records of over 10,000 reservists from all the Services mobilized for Operations Enduring Freedom/Noble Eagle.

The data showed that reservists had high rates of Dental Class 3 conditions (not worldwide deployable) and that the predominant treatment needs were restorative and oral surgery. The proportion of reservists categorized as Dental Class 3 ranged from 8 to 25 percent and therefore, are not deployable. Furthermore, on average, an activated reservist required approximately two procedures or oral surgery interventions. Although reservists with no insurance required a slightly higher proportion of procedures, their dental treatment needs were otherwise not affected by their insurance status. These findings are the basis for forward planning within the Department at the present time.

PREVENTABLE ADMISSIONS AND THE TRICARE PRIME HEALTH PROGRAM

Preventable admission rates are used by various healthcare organizations to gauge adequacy of timely and efficacious outpatient care. Thus, to some extent they are measures of access to care. In Access to Care in America, (1993), the Institute of Medicine recommended monitoring preventable admissions, especially for vulnerable populations. The MHS monitors preventable admissions related to nine illnesses of importance to our system. The data portrayed below reflect preventable admission rates for MHS Prime beneficiaries, ages 18-64, enrolled in the direct care system of military hospitals and clinics. The MHS rates are compared to National Hospital Discharge Survey (NHDS) data compiled annually by the Centers for Disease Control/National Center for Health Statistics. This is the nationally recognized reference database. Figure 18 below portrays preventable admission rates for active duty service personnel for FY 2001 and 2002 as compared to our own internal benchmark experience (1999-2000 defined-benchmark) and to the NHDS database.

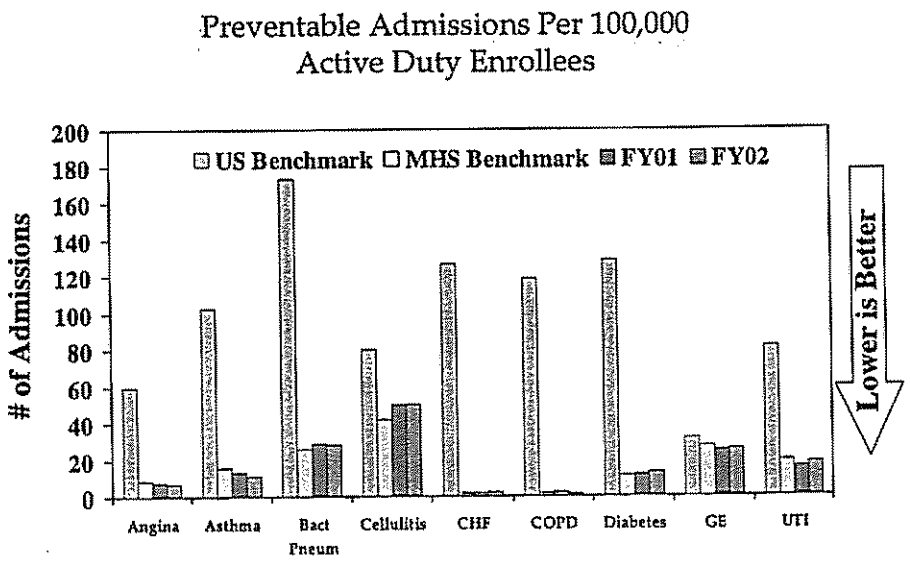


FIGURE 18. Preventable Admissions, Active Duty Forces, FY 2001 & 2002, Compared with Previous MHS and National Data

Bact Pneum	Bacterial pneumonia
CHF	Congestive heart failure
COPD	Chronic obstructive pulmonary disease
GE	Gastroenteritis
UTI	Urinary tract infection

Source: MHS Mart (M2) [Standard Inpatient Data Record (derived from MTFs), Health Care Service Record – Inpatient (derived from claims), TRICARE Enrollment Summary File]
Benchmarks: US = MHDS mean for 1999-2000; MHS = MHS mean for 1999-2000

Notable are the low rates of preventable admissions of active duty personnel for these conditions. The extremely low rates of admissions for congestive heart failure, chronic obstructive pulmonary disease and diabetes reflect the very low prevalence of these conditions in the active duty forces, each of which is generally disqualifying for continuation on active duty.

Figure 19 portrays the same measures, this time related to non-active duty Prime enrollees.

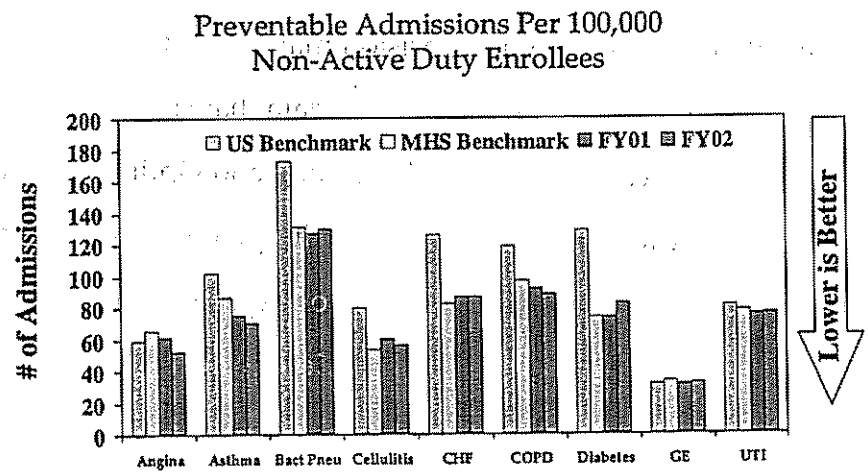


Figure 19. Preventable Admissions, Non-Active Duty TRICARE Prime Enrollees, FY 2001 & 2002 Compared to Previous MHS and National Data

The non-active duty population of Prime enrollees is characterized by having greater illness burden than the active duty forces. Hence, the admission rates for the

targeted conditions are somewhat higher than those portrayed on Figure 17 above. This is especially the case when looking at data relating to bacterial pneumonia, congestive heart failure, chronic obstructive pulmonary disease and diabetes, all of which are much more common in this population. Bacterial pneumonia is linked intimately with asthma and chronic obstructive pulmonary disease. Preventable admissions for these conditions remain comparable to or below the NHDS survey data and the FY 2002 data are stable as compared to FY 2001 and the MHS defined benchmark period.

Hence, the MHS does an excellent job of preventing admissions for the targeted illnesses. This supports the goals of ensuring sufficiency of access and quality of healthcare services provided to our TRICARE Prime enrolled beneficiaries.

POPULATION HEALTH OPERATIONAL TRACKING AND OPTIMIZATION

The Executive Information /Decision Support (EI/DS) Program Office for the MHS provides decision support information and tools used by manager, clinicians, and analysts to manage the business of health care within the MHS. To enable the flow of complete and accurate information to the decision-makers, EI/DS manages the receipt, processing, and storage of tremendous volumes of data that characterize operations and performance. Population Health Operational Tracking and Optimization (PHOTO) provides, in a single application, a concise set of health plan performance measures to give healthcare executives and managers information regarding the effectiveness and efficiency of their program execution as well as a friendly and easy-to-use browser interface that ensures fast and reliable access.

PHOTO enables visibility via the web browser interface into the TRICARE Prime beneficiary healthcare patterns for decision-making purposes. Personnel at all levels of the direct care MHS can access standardized metrics to measure performance, outcomes, satisfaction, population, and resource data from all facets of the healthcare delivery system. Multiple levels of aggregation allow managers at corporate, regional

and keeping costs down. Often, one facility does not know what another has accomplished, nor has the time to research this. The Office of the Chief Medical Officer hosted a Poster Exhibit during the 2003 TRICARE Conference. The Poster Exhibit was a tremendous success because of the committed efforts and dedication of many organizations. Sixty-eight innovations from FY 2002 were submitted and twenty-eight posters were ultimately highlighted at the conference. Abstracts related to these innovations are contained in Appendix F.

The goal of the poster exhibit was to showcase MHS innovations, link people with ideas, and provide information and tools for organizations within the MHS. Innovations were also posted to the public domain Healthcare Innovations Program (HIP) website (www.tricare.osd.mil/innovations) after the conclusion of the annual TRICARE Conference. The HIP website assists healthcare facilities in transforming business or clinical processes—with simple improvements to state of the art practices.

Beneficiaries' Perspective on Quality of Care

HEALTHCARE SURVEY ACTIVITIES FY 2002

The TRICARE Management Activity (TMA) actively evaluates the quality and performance of TRICARE healthcare services by gauging beneficiary perspectives through the administration of several healthcare surveys. These surveys supply information that helps focus quality oversight and improvement efforts. The healthcare surveys are designed to gather data on beneficiary satisfaction, utilization and needs. To provide a frame of reference, civilian benchmarks are reported with the MHS survey results when possible, and survey tools utilized are similar or identical to those used across the healthcare industry. Though the specific issues to be addressed by surveys may vary over time, depending on programmatic needs or policies, common themes addressed include the following:

- Sources of health care utilized by beneficiaries;
- Preventive healthcare services received by beneficiaries;
- Experiences related to obtaining health care;
- Experiences with administrative issues such as claims, benefits information and appointing services;
- Confidence in quality of health care;
- Health status of beneficiaries; and,
- Beneficiary demographic factors (which facilitates comparison across categories).

Major Healthcare Surveys

TMA centrally manages and conducts five major healthcare surveys:

- The Healthcare Survey of DoD Beneficiaries (HCSDB);
- Health Related Behaviors Survey (HRBS);
- Customer Satisfaction Survey (CSS);

- Purchased Care Survey (PCS); and,
- Inpatient Care Survey (ICS).

These surveys are categorized into two broad classifications:

1. Population-Based Surveys which assess cumulative experience or health status, and use of preventive services over time; and,
2. Event-Based Surveys which assess experience with specific encounters, focusing on customer service, appropriateness of, and access to, care.

Dental Surveys

Apart from the TMA administered surveys, dental treatment facilities (DTFs) administer surveys to patients randomly selected. In addition, both dental contractors, charged with administering the TRICARE dental insurance programs for non-active duty beneficiaries, administer proprietary surveys to assess satisfaction with the dental plans.

Representative examples of survey data are portrayed below.

The Healthcare Survey of DoD Beneficiaries (HCSDB)

The HCSDB is a non-event-based quarterly survey of a sample of 200,000 beneficiaries per year over four quarters. The core of the survey is the Consumer Assessment of Health Plans (CAHPS) which is a mainstream survey instrument developed by a consortium of RAND, Harvard University, and Research Triangle Institute. This survey tool is used by many civilian healthcare organizations, including the Centers for Medicare and Medicaid Services. The HCSDB consists of questions on the status of respondents' health, their needs for health care, use of healthcare services, and experience with accessing health care from military and civilian sources.

To further facilitate military and civilian efforts to measure and improve quality in managed care, TMA shares survey data with the CAHPS Benchmark Database, which is administered by the Agency for Healthcare Research and Quality (AHRQ) of the Department of Health and Human Services.

Results of the HCSDB are posted in *The TRICARE Consumer Report* on the web at http://www.tricare.osd.mil/tricaresurveys/.

Survey Results

Figure 20 portrays beneficiary satisfaction with the TRICARE health plan over time (including both the direct care component of military hospitals and clinics and the purchased care component).

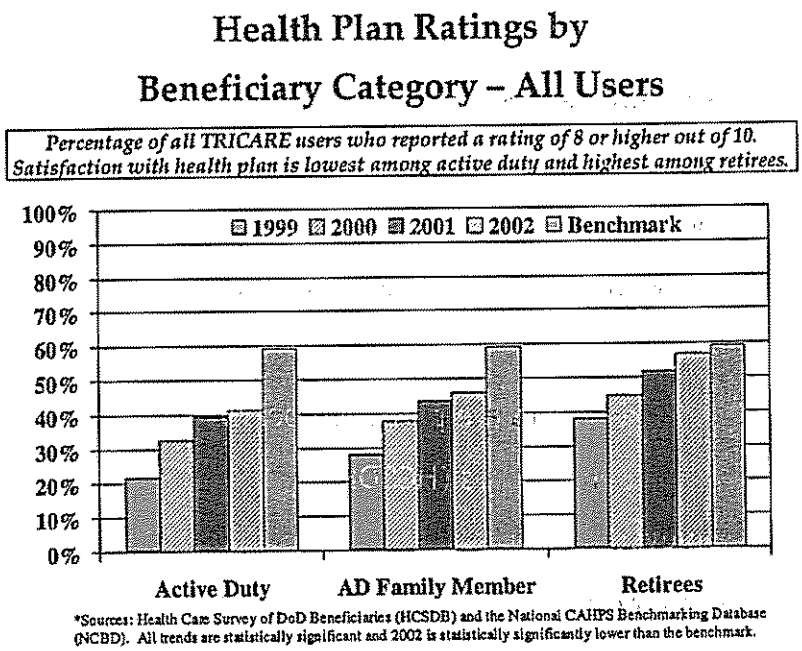


FIGURE 20 - Satisfaction with TRICARE Health Plan by Beneficiary Category

Though the difference between TRICARE health plan satisfaction scores and the civilian averages derived from the National CAHPS Database are statistically significant, the trends for satisfaction with TRICARE have been continually rising over time. Satisfaction with health plan relates to satisfaction with varied aspects of plan administration (appointing, claims processing, network sufficiency, etc.). Modest satisfaction with health plans nationally is evident in the CAHPS Database and our figures are consistent with this view of national plans. Given the complexity of our

health plan, its triple option, broad geographic diversity, and varied beneficiary categories, our data may not be completely comparable to CAHPS. More important is the comparison of FY 2002 data to previously reported performance over time, and that trend is positive. The patterns are consistent also across all users of the TRICARE options. Though not portrayed graphically, associated data reveal that TRICARE Prime enrollees are generally more satisfied than TRICARE Standard/Extra beneficiaries. Figure 21 portrays satisfaction with health plan among TRICARE Prime enrollees over time.

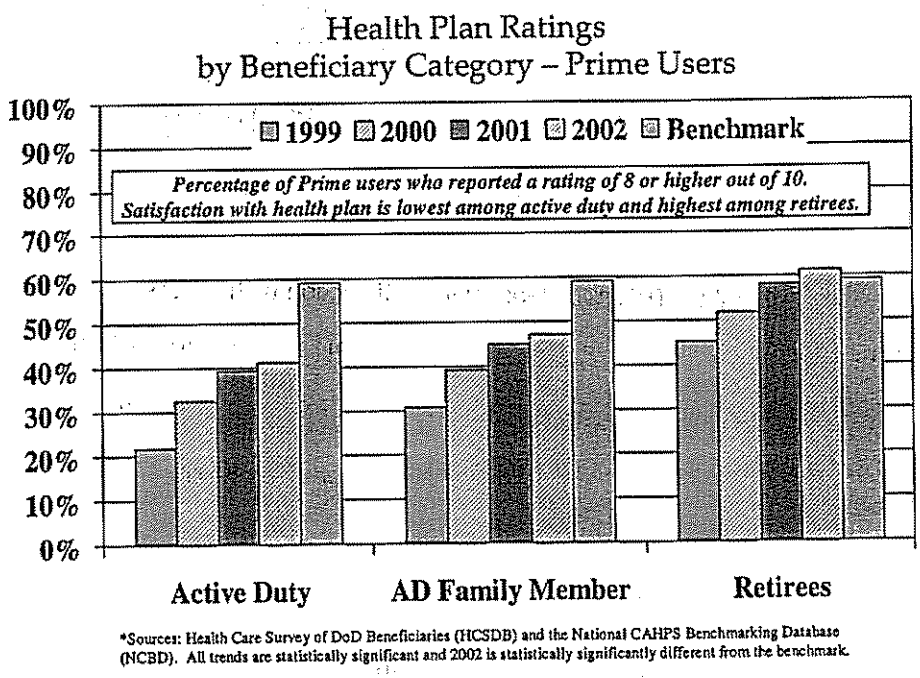


FIGURE 21 – Satisfaction among TRICARE Prime Enrollees

In general, TRICARE Prime retirees are more satisfied with the TRICARE health plan, actually exceeding the CAHPS Database benchmark for the first time in FY 2002. Active duty service members (ADSMs) remain the least satisfied group; reasons for this are not clear and are the basis of ongoing analysis. Likely confounders include perceptions related to garrison versus MTF-based care, shifting of MTF services from a "sick-call" culture to a scheduled appointment culture and other issues. Again notable

is the consistent improvement over time in all beneficiary categories. Figure 22 portrays data related to satisfaction with access and with getting needed care.

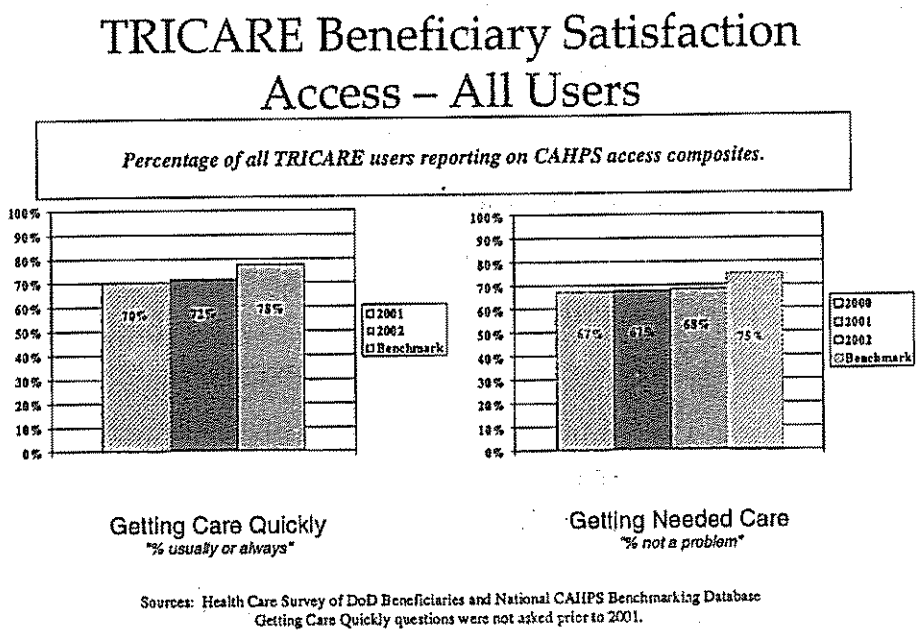


FIGURE 22 – TRICARE Beneficiary Satisfaction with Access

Beneficiary perceptions on access to care and appropriateness of care are good, and though the proportion of TRICARE beneficiaries reporting satisfaction with these aspects of care remains just below the CAHPS benchmarks, our trends over time remain positive.

Customer Satisfaction Survey (CSS)

The CSS is a monthly survey of a random sample of approximately 50,000 beneficiaries who have recently received care from outpatient clinics operated by MTFs. Thus, this tool looks at event-based perceptions. The key determinants of satisfaction are in the areas of access, quality and interpersonal relationships. Figure 23 portrays satisfaction with health care received in military hospitals and clinics over the past 4 years.

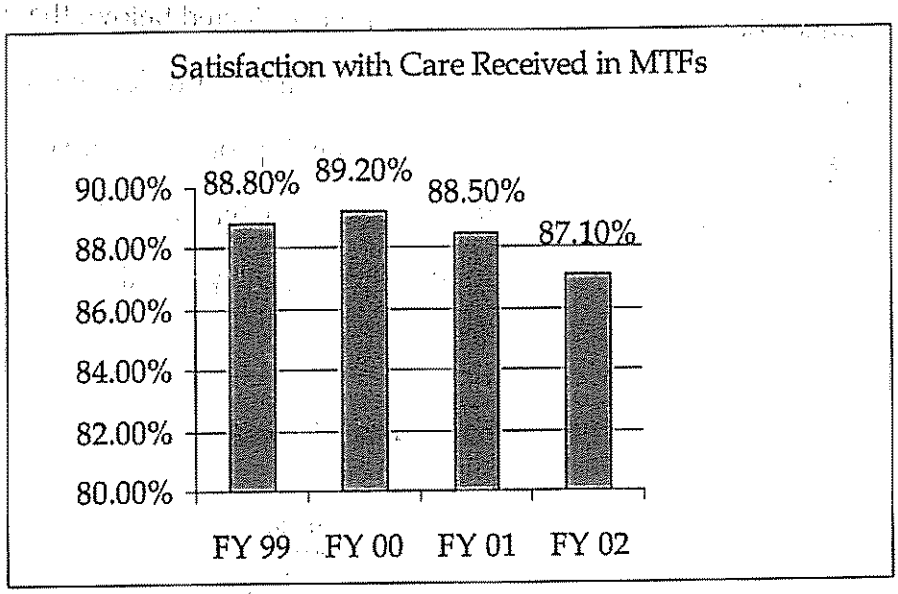


FIGURE 23 – Satisfaction with Health Care Received in MTFs over Time

Satisfaction with health care provided within MTFs remains very good to excellent with little variation over time. Figure 24 below demonstrates satisfaction by beneficiary category. Satisfaction with health care remains very good to excellent across beneficiary categories, though the ADSMs and their family members are marginally less satisfied than retirees and especially elder retirees.

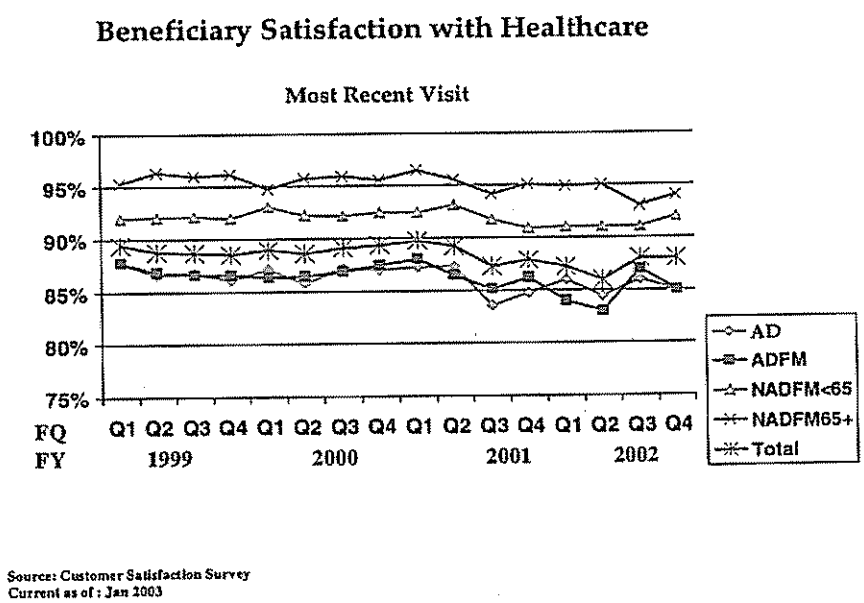


Figure 24 – Beneficiary Satisfaction with Health Care Over Time

Another view of satisfaction related to MTF-based care is reflected below, that being TRICARE Prime enrollment. The vast majority of beneficiaries enrolled in the TRICARE Prime option are enrolled to MTFs. Only a small proportion are enrolled to contractor network primary care mangers. Figure 25 reveals that TRICARE Prime enrollment continues to increase whereas capacity has generally remained stable.

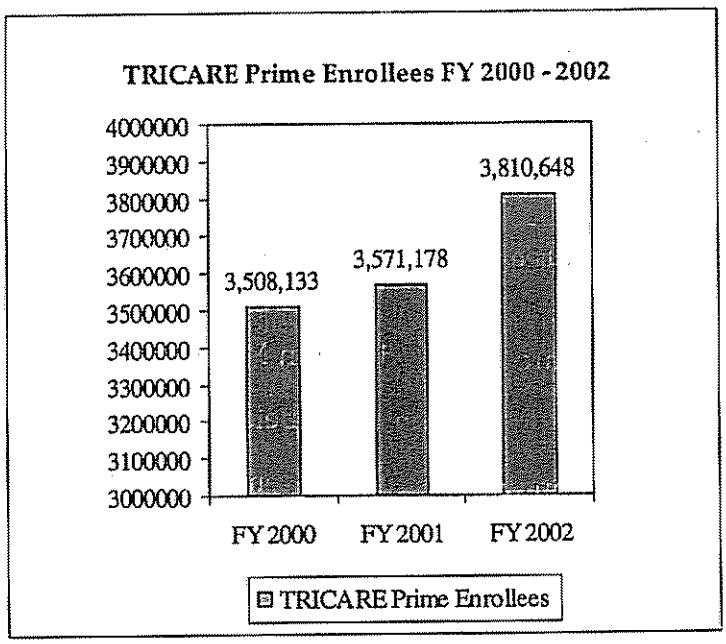


FIGURE 25 – TRICARE Prime Enrollment over Time

Dental Care Satisfaction

Dental services are offered nearly exclusively in the direct care system of military hospitals and clinics primarily for active duty service members. Table 17 portrays high satisfaction with dental services by active duty service members based upon surveys administered in MTF dental clinics. The somewhat lower satisfaction rates for access and waiting time for appointments most likely reflect the shortages in dentists reported by some of the Services.

TABLE 17 – Beneficiary Satisfaction with Dental Care at DTFs

Direct Care Beneficiary Satisfaction FY 2002 (148,703 Surveys)	
Satisfaction Measure	Results
Quality of Oral Health Care at the DTF	99 %
Interpersonal Relations at the DTF	99 %
Waiting Times at the DTF Appointment	98 %
Waiting Time for a DTF Appointment	90 %
Access to DTF Providers	89 %
Propensity to Return to DTF for Care	97 %
Overall Satisfaction with DTF	97 %
Overall Satisfaction with Dental Care Received at DTF	97 %

Dental Care for other beneficiary categories is provided in the purchased care sector via two dental insurance programs: the TRICARE Dental Program (TDP) for dependents of active duty service members (administered by United Concordia) and the TRICARE Retiree Dental Program (TRDP) for retirees and their family members (administered by Delta Dental). Both programs require subscription enrollment, and the TRDP is substantially more expensive than the TDP. Satisfaction is gauged by contractor administered surveys of proprietary design. Table 18 portrays both utilization and satisfaction with the TDP. Noteworthy is the fact that even though this program requires subscription with monthly beneficiary contribution, and provides a very comprehensive preventive dental health benefit, utilization remains modest at best, though comparable to the national commercial dental plan experience. Satisfaction remains excellent and the data portrayed below are virtually identical to previous years' data.

TABLE 18 – TRICARE Dental Program – Purchased Care

Covered Lives				Utilization	
1,879,703				57.5 %	
Beneficiary Satisfaction					
	Network Access	Provider Network	Claims Processing	Enrollment Process	Written & Telephonic Queries
Average Satisfaction	92 %	90 %	98 %	94 %	96 %

Table 19 portrays utilization and satisfaction data related to the TRDP. As the dental surveys are proprietary to the contractors, the specific elements reflected in the survey are not consistent across contracts. Hence we have formatted this table differently to reflect the difference in data elements measured. Utilization by retirees and their families approaches 70 percent, but satisfaction scores are uniformly lower than with the TDP. Reasons for this are not clear as the program offers a comprehensive range of services. The increased cost of this program, as compared to the TDP, may account for some dissatisfaction across the board. The data portrayed are similar to that reported in previous years without significant trends. The new TRICARE retiree dental contract which begins in 2003 provides an even more robust benefit structure.

TABLE 19 – TRICARE Retiree Dental Program – Purchased Care

Covered Lives	Utilization
662,713	69.4 %
Beneficiary Satisfaction	
Satisfaction Measures	Percent Satisfied
Overall Program	55 %
Program Benefits	52 %
Availability of Dentists	68 %
Program Materials/Communication	69 %
Customer Service	77 %

CONCLUSION

In summary, beneficiary satisfaction surveys assessing the TRICARE health plan, healthcare provided within the MTFs, access to care and the TRICARE dental programs reveal favorable trends over time but also identify opportunities for continued improvement.

APPENDICES

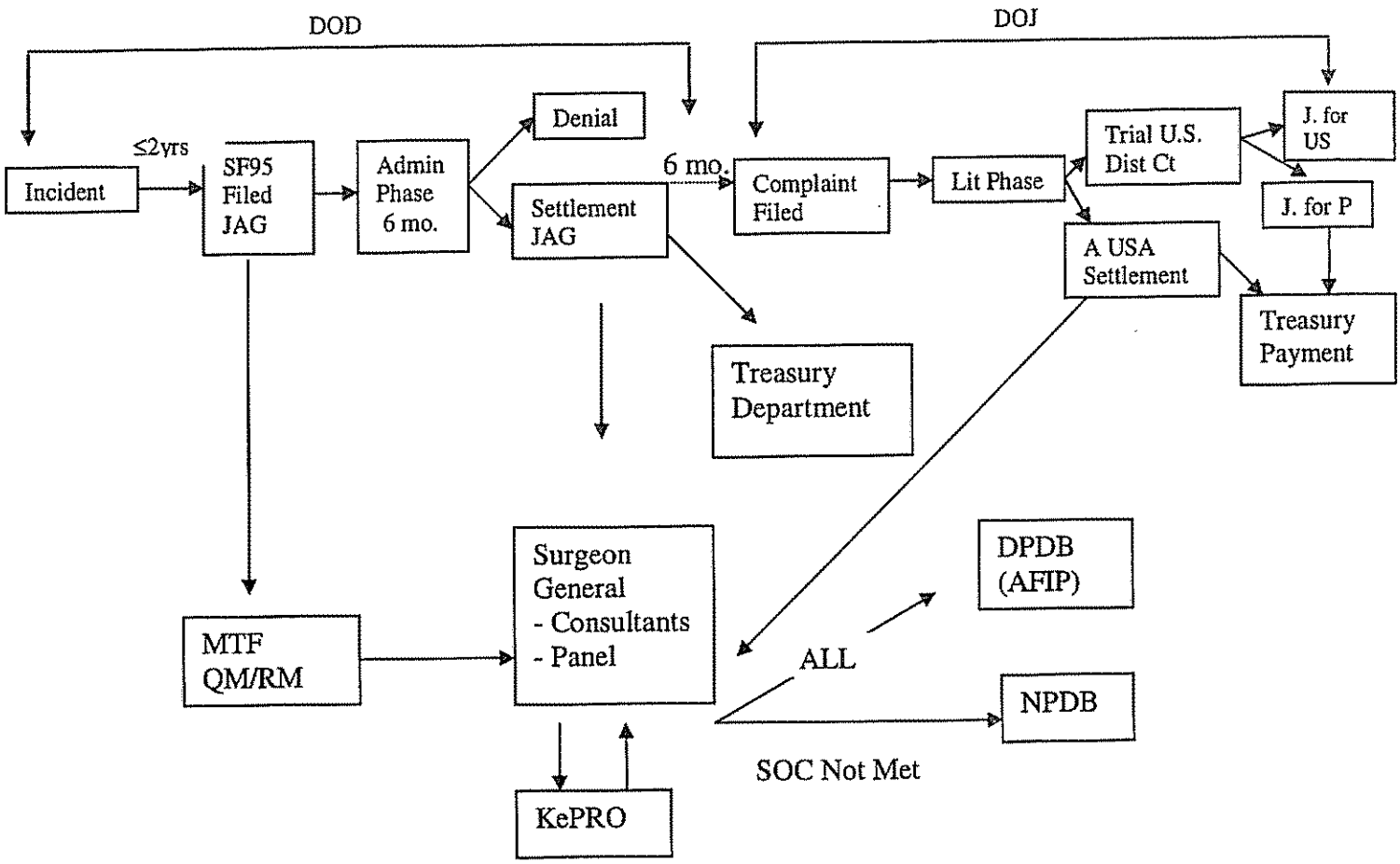
Acronyms Used in this Report

AD	Active Duty
ADSM	Active Duty Service Member
AFIP	Armed Forces Institute of Pathology
ARHC	Agency for Research and Healthcare Quality
AUSA	Assistant United States Attorney
Bact Pneum	Bacterial Pneumonia
CAHPS	Consumer Assessment of Health Plans
CAP	Corrective Action Plan
CBRNE	Chemical, Biological, Radiation, Nuclear, high-yield Explosives
CCQAS	Comprehensive Clinical Quality Assurance Program
CERPS	Center for Education and Research in Patient Safety
CHCS	Composite Health Care System
CHF	Congestive Heart Failure
CICSP	Continuous Improvement in Cardiac Surgery Program
COE	Center of Excellence
COPD	Chronic Obstructive Pulmonary Disease
COT	Chronic Opiod Therapy
CPG	Clinical Practice Guideline
CQMP	Clinical Quality Management Program
CSS	Customer Satisfaction Survey
CY	Calendar Year
DCIS	Defense Criminal Investigation Service
DIGMA	Drop-in Group Medical Appointment
DM	Diabetes Mellitus
DoD	Department of Defense
DOJ	Department of Justice
DP	Designated Provider
DRG	Diagnosis Related Group
DTF	Dental Treatment Facilities
ED	Emergency Department
EI/DS	Executive Information/Decision Support
FY	Fiscal Year
GDE	Graduate Dental Education
GE	Gastroenteritis

GERD	Gastroesophageal Reflux Disease
GME	Graduate Medical Education
GMO	General Medical Officer
HA	Health Affairs
HbA1c	Glycosolated hemoglobin
HCSDB	Healthcare Survey of DoD Beneficiaries
HCSR	Health Care Service Record
HEDIS®	Health Employer Data and Information Service
HIP	Healthcare Innovations Program
HRBS	Health Related Behaviors Survey
HSSC	Health Services Support Contractor
ICS	Inpatient Care Survey
IG	Inspector General
IHD	Ischemic Heart Disease
IOM	Institute of Medicine
J	Judgment
JAG	Judge Advocate General
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
KePRO	Keystone Peer Review Organization
LBP	Low Back Pain
MCSC	Managed Care Support Contractor
MDD	Major Depressive Disorder
MDR	MHS Data Repository
MHS	Military Health System
MOU	Memorandum of Understanding
MTF	Military Treatment Facility
MUS	Medically Unexplained Symptoms
N	Number
NCQA	National Committee for Quality Assurance
NHSD	National Hospital Discharge Survey
NPDB	National Practitioner Data Bank
NQMC	National Quality Monitoring Contract Program
NQMP	National Quality Management Program
NSQIP	National Surgical Quality Improvement Program
OB/GYN	Obstetrics and Gynecology
OCMO	Office of the Chief Medical Officer

PCS	Purchased Care Survey
PDH	Post-Deployment Health
PDTS	Pharmacy Data Transaction Service
PGY	Post-Graduate Year
PHOTO	Population Health Operational Tracking and Optimization
PI	Program Integrity
PPN	Preferred Provider Network
PPO	Preferred Provider Organization
PQI	Potential Quality Incident
PSC	Patient Safety Center
PSC	Purchased Care Survey
PSEC	Patient Safety Executive Council
PSP	Patient Safety Program
PSPCC	Patient Safety Planning and Coordination Committee
PTSD	Post-Traumatic Stress Disorder
QI	Quality Incident
QM	Quality Management
RC	Reserve Component
RM	Risk Management
SAC	Severity Assessment Code
SADR	Standard Ambulatory Data Record
SIDR	Standard Inpatient Data Record
SOC	Standard of Care
SUD	Substance Use Disorder
TDP	TRICARE Dental Program
TEO	TRICARE Europe Office
TMA	TRICARE Management Activity
TMOP	TRICARE Mail Order Pharmacy
TOL	TRICARE On Line
TCQF	TRICARE Clinical Quality Forum
TRDP	TRICARE Retiree Dental Program
TUC	Tobacco Use Cessation
UCP	Uncomplicated Pregnancy
USUHS	Uniformed University of the Health Sciences
UTI	Urinary Tract Infection
VA	Veterans Administration

Medical Malpractice – Process through Federal Agencies



Malpractice Process in DoD

Clinical Practice Guidelines and Toolkits

Condition	Date CPG Released	Date CPG Toolkit Available
Tobacco Use Cessation (TUC)	November 1999 (Being updated)	September 2001
Hypertension	November 1999 (Being updated)	Under development
Low Back Pain (LBP)	November 1999	February 2000
Asthma	February 2000	September 2000
Diabetes Mellitus (DM)	May, 2000 (Being updated)	January 2001
Chronic Obstructive Pulmonary Disease (COPD)	April 2000	
Dysuria in Women	May 2000	
Major Depressive Disorder (MDD)	May 2000	September 2002
Substance Use Disorders (SUD)	April 2001	September 2002
Dyslipidemia	September 2001 (Being updated)	Under development
Ischemic Heart Disease (IHD)	September 2001 (Being updated)	Under development
Post-Operative Pain	October 2001	May 2002
Post-Deployment Health (PDH) • Screening Health Exam • Medically Unexplained Symptoms (MUS)	September 2001 (Being updated) August 2001	January 2002
Health Promotion and Disease Prevention • Breast Cancer • Cervical Cancer • Chlamydial Infection • Colorectal Cancer • Lipid Abnormalities • Problem Drinking • Tobacco Use • Immunizations (Influenza, Pneumococcal)	November 2001	

Uncomplicated Pregnancy (UCP)	November 2002	December 2002
Gastroesophageal Reflux Disease (GERD)	Under development	
Stroke	Under development	
Psychosis	Under development	
Chronic Opioid Therapy (COT)	Under development	
Post-Traumatic Stress Syndrome (PTSD)	Under development	

National Quality Management Contract

Special Studies

Fact Sheets

Asthma Care

Breast Cancer Screening

Cervical Cancer Screening

Childhood Immunizations

Chlymadia Testing

Depressive Disorder Treatment

Diabetes Care

Management of Dyslipedemia

Post-deployment Health Assessment

Tobacco Use Cessation

Asthma Care—Appropriate Use Of Medication In The Military Health System (MHS)

A National Quality Management Program Special Study

"Military Treatment Facility (MTF) enrollees who have persistent asthma are appropriately medicated for this condition at a lower rate than the National Committee for Quality Assurance (NCQA), Health Plan Employer Data and Information Set (HEDIS) participating health plans that report this measure. Despite low medication rates, MTF enrollees appear to compare favorably with national baselines and goals for utilization of hospitals and emergency departments for asthma care."

Why study Asthma Care?

Prevalence rates for asthma are increasing worldwide. Effective asthma management includes using appropriate pharmaceuticals for long-term control of the condition. Based on clinical evidence, the Department of Defense (DoD)/Veterans Health Administration (VHA) developed the Clinical Practice Guideline (CPG) for asthma. The guideline addresses management and treatment of persistent asthma.

This study was conducted primarily to measure the use of long-term controller medications in the management of persistent asthma. Secondarily, the study examined utilization of emergency department (ED) services and inpatient hospital services for beneficiaries with an asthma diagnosis.

What was the methodology?

Both the HEDIS appropriate medication metric and the Healthy People 2010 (HP2010) utilization measures were examined. The utilization study population included all beneficiaries, ages 5 through 64 years on December 31, 2001. Beneficiaries were included in the population regardless of the length of time enrolled to TRICARE. The study population for the HEDIS measure "Use of Appropriate Medications for People With Asthma" included MTF continuously enrolled beneficiaries, ages 5 to 56 years with persistent asthma identified by meeting one or more of the following conditions:

- One or more hospital admission or emergency department visit for a diagnosis of asthma
- Four or more outpatient visits for asthma in conjunction with two prescriptions for asthma medications
- Four or more prescriptions for asthma medications

The study population was identified using year 2000 data. For those in the study population, prescriptions for long-term controller medications for asthma, written in 2001, were identified. Long-term controller medications were defined as inhaled corticosteroids, nedocromil and cromolyn sodium, leukotriene modifiers, and methylxanthines. This measure was created using HEDIS 2002 Technical Specifications. The specifications were implemented as written and no modifications were made. A supplemental analysis was conducted to examine the relationship between asthma medications and the health service utilization outcomes of hospitalization and ED visits among the persistent asthma study population.

What were the results?

The HEDIS persistent asthma population contained 46,769 enrollees. The population included more females (56 percent) than males (44 percent). The population was predominantly adult, ages 18 to 56 years (54 percent). Children ages 5 through 9 years represented 17 percent of the group.

The number of Active Duty (AD) members with persistent asthma was small (n=2,023) in comparison to the number of Non-Active Duty (NAD) persistent asthmatics (n=44,746).

The utilization cohort included all enrolled beneficiaries 5 through 64 years of age. There were approxi-

benchmark.

- Perform further studies on the differences in medication rates by duty status.

Study Limitation

This study was conducted in accordance with the HEDIS 2002 methodology. Therefore, results of this study are not comparable to the asthma care study conducted in FY01, which used a modified HEDIS methodology.

Where to go for more information?

Army: **COL Stacey Young-McCaughan**
stacey.young-mccaughan@cen.amedd.army.mil

Navy: **CDR Ken Yew**
ksyew@us.med.navy.mil

Air Force: **Lt Col Kimberly P. May**
kimberly.may@pentagon.af.mil

Revised 22 May 2003

Breast Cancer Screening In The Military Health System (MHS)

A National Quality Management Program Special Study

"Breast cancer screening rates varied significantly by Military Service, ranging from 77 percent for women enrolled to Army Military Treatment Facilities (MTFs) to 81 percent for women enrolled to Navy MTFs, and 83 percent for women enrolled to Air Force MTFs."

Why study Breast Cancer Screening?

An estimated 192,200 new cases of breast cancer will be diagnosed among women in 2001, and 40,200 women will die of this disease (CDC, 2001). Numerous studies have reported a reduction in breast cancer mortality associated with mammography (CDC, 2001; Tabor et al 2001; Banks et al 2001).

As a result of the effectiveness of mammography , the United States Preventive Services Task Force (USPSTF) recommends mammography every one to two years for women aged 40 and older and annually for women over age 50 (AHRQ, 2000). Access to this testing is provided to female MHS beneficiaries as a TRICARE Standard and Prime Clinical Preventive Services benefit (TRICARE Management Activity (TMA), 2002). In November 2001, the Department of Defense (DoD) and Veterans Health Administration (VHA) developed a guideline for Health Promotion and Disease Prevention Indicators that included mammography for breast cancer screening.

Efforts to examine breast cancer screening rates are ongoing at the DoD. For example, a Fiscal Year (FY) 2001 National Quality Management Program (NQMP) study examined mammography rates for the population of women ages 52 through 69 enrolled to an MTF as of March 2001 (Birch & Davis, 2001). The study noted mammography rates of 70 percent for women enrolled to an MTF, 70 percent for Non-Active Duty (NAD) enrollees, and 74 percent for Active Duty (AD) enrollees.

This NQMP study refines estimates of breast cancer screening and answers the following questions:

1. What is the breast cancer screening rate for women continuously enrolled to an MTF? Does the breast cancer screening rate vary by enrollment site: All MTFs, TRICARE Region, Military Service, and Service Intermediate Command?

2. What is the breast cancer screening rate for TRICARE beneficiaries continuously enrolled to Network providers?

3. What is the breast cancer screening rate for all beneficiaries eligible for care in the MHS?

What was the Methodology?

The study population consisted of women ages 52 through 69 between April 1, 2001, and March 31, 2002. Mammography data were examined for the period April 1, 2000 through March 31, 2002.

The metrics developed and examined in this study include:

- MTF enrollees continuously enrolled—This measure used the Health Plan Employer and Information Set (HEDIS) 2002 Technical Specifications for Breast Cancer Screening. The specifications were implemented as written and no modifications were made. This measure evaluated the percentage of women ages 52 through 69 continuously enrolled in TRICARE Prime to an MTF who had a mammogram during the two-year observation period.

- Network enrollees continuously enrolled—This measure used a modified HEDIS methodology. The numerator included administrative radiology test data for mammography as an indicator

for breast cancer screening. This measure evaluated the percentage of women ages 52 through 69 continuously enrolled in TRICARE Prime to the Network who had a mammogram during the two-year observation period.

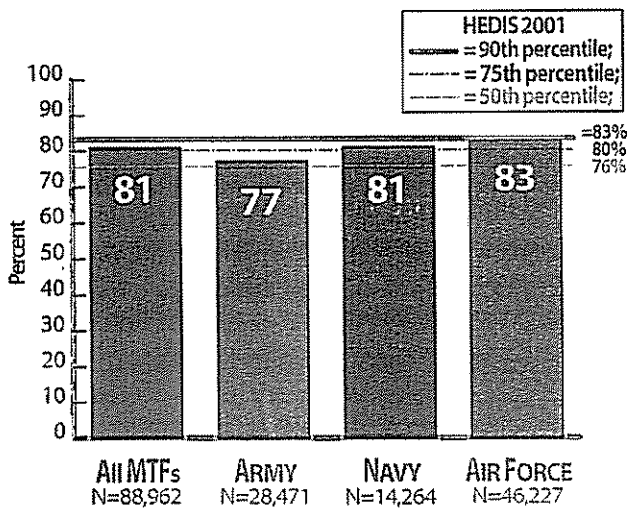
- All TRICARE eligible—This measure evaluated the percentage of women ages 52 through 69 who were eligible for care in the MHS and who had one or more mammograms during the two-year observation period.

Testing rates were benchmarked against HEDIS 2001 mammography rates and, when appropriate, the Healthy People (HP) 2010 goal.

What were the Results

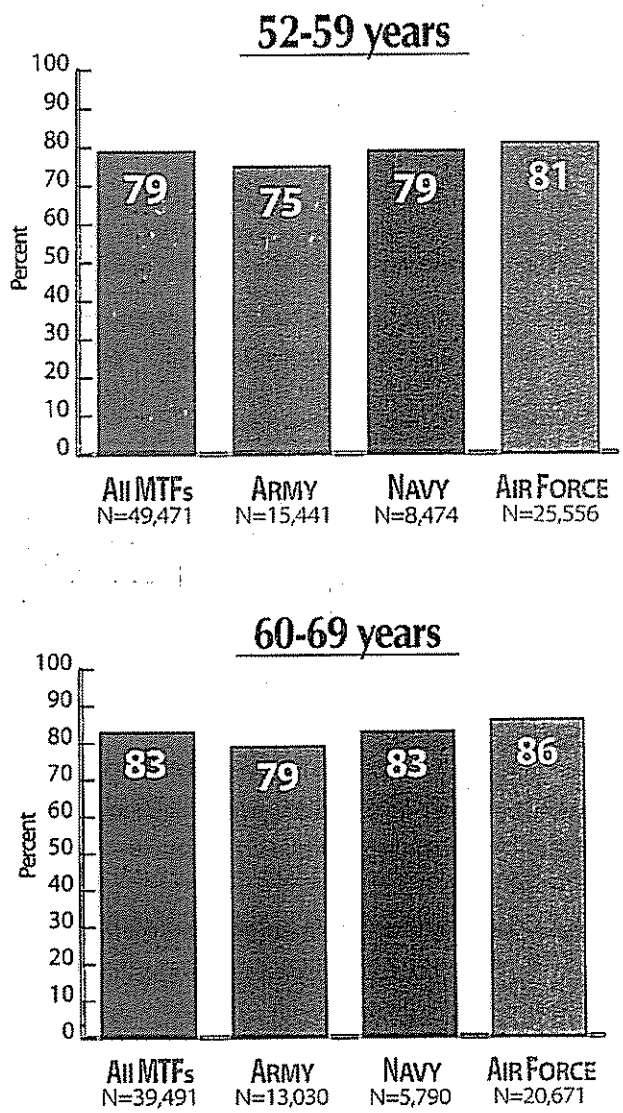
Mammography rates varied significantly by Military Service, ranging from 77 percent for women enrolled to Army MTFs to 81 percent for women enrolled to Navy MTFs, and 83 percent for women enrolled to Air Force MTFs (Figure 1). All rates exceeded the HEDIS 2001 50th percentile rate of 76 percent for mammograms. The Air Force mammography rate met the HEDIS 2001 90th percentile rate of 83 percent for mammograms.

Figure 1: Mammography Rates, by Military Service Enrollment



Military Service mammogram rates were also examined by age (Figure 2). Across Services, mammography rates were higher among cohort members ages 60 through 69 than they were among cohort members ages 52 through 59.

Figure 2: Mammography Rates, by Military Service Enrollment and Age Group



Mammography rates for women continuously enrolled to an MTF were compared with mammography rates for women continuously enrolled in the Network. Table 1 provides the results of this examination. The following results were noted for continuously enrolled women:

- Mammography rates for women continuously enrolled to an MTF (81 percent) were higher in comparison to women continuously enrolled to Network providers (74 percent).

- The overall rates for continuously enrolled women (both enrolled to an MTF and enrolled to the Network) were comparable to rates reported by managed care organizations in HEDIS. Neither rate met or exceeded the HEDIS 2001 90th percentile rate of 83 percent.

Mammography rates for all women eligible for care in the MHS were also examined.

- In comparison to women with continuous enrollment, the mammography rate of all women eligible for MHS care was low at 31 percent. This rate was lower than the HP 2010 goal of 70 percent.

Table1: Mammography Rates for all Cohorts at Mhs Level

Enrollment Status	Overall Ages 52-69 years		Ages 52-69 years		Ages 60-69	
	N	%	N	%	\	%
MTF enrollees Continuously Enrolled	88,962	81	49,471	79	39,491	83
Network Enrollees Continuosly Enrolled	35,087	74	19,900	72	15,187	76
All TRICARE Eligible	931,912	31	403,361	34	528,551	33

Conclusions and Recommendations

This FY 2002 study provided a second, more precise examination of breast cancer screening rate for the entire MHS. Based on study data, several recommendations should be considered:

- Continuing to monitor mammography rates at all levels within the MHS.
- Encouraging enrollment of the eligible population to an MTF to improve mammography rates overall.
- Setting goals for the MHS that include attaining similar mammography rates for all women ages 52 through 69.

Study Limitation

- The NQMP 2001 study was conducted using modified HEDIS Technical Specifications. Therefore, results from the 2001 study are not comparable to 2002 MTF enrollee rates.

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Revised 22 May 2003

Cervical Cancer Screening In The Military Health System (MHS) 2001-2002

A National Quality Management Program Special Study

"Pap testing rates varied significantly by Military Service, ranging from 70 percent for cohort members enrolled to an Air Force Military Treatment Facility (MTF) to 64 percent for cohort members enrolled to Navy and Army MTFs."

Why study Cervical Cancer?

Cervical cancer is the 10th most common cancer among women in the United States and is anticipated to result in more than 4,000 deaths in 2002 (U.S. Department of Health and Human Services, 2001). Studies show that the majority of these deaths are preventable when the cancer is detected early through Papanicolaou (Pap) smear testing, and the patient receives appropriate treatment (Gottlieb et al., 2001).

The U. S. Preventive Services Task Force (USPSTF) recommends routine Pap testing for cervical cancer for all women who are or have been sexually active and who have a cervix. Pap smears should be repeated at least every three years. Annual access to this testing is provided to female MHS beneficiaries as a TRICARE Standard and Prime Clinical Preventive Services benefit (TRICARE Management Activity (TMA), 2002).

This study characterizes Pap testing practices for women continuously enrolled to MTFs and provides comparisons of these baseline MTF Department of Defense (DoD) rates to national benchmarks. Specifically, the following questions were examined:

- What is the Pap testing rate for women ages 21 through 64 continuously enrolled to an MTF?
- How do testing rates of the eligible population compare to rates noted for health plans reported in the Health Plan Employer Data and Information Set (HEDIS)?

The present study is a follow-up to the 2001 National Quality Management Program (NQMP) Scientific Advisory Panel approved study. The 2001 study measured cervical cancer screening rates for all women enrolled to an MTF using available electronic health data and standardized definitions across the MHS. The major changes in the 2002 study are the rigorous adherence to the HEDIS continuous enrollment requirement for study cohort members and the use of Pap test laboratory data as a proxy for cervical cancer screening.

What was the methodology?

The study was conducted using a modified HEDIS methodology. The numerator was based on HEDIS hybrid specifications and included administrative laboratory data for Pap tests as the indicator for cervical cancer testing. The study population consisted of women continuously enrolled to an MTF between April 1, 2001 through March 31, 2002. Pap testing data were collected for the period April 1, 1999 through March 31, 2002.

Pap testing rates were recalculated for the study population using the ICD-9-CM procedure code, V72.3, which includes a Pap test when a gynecological exam is performed.

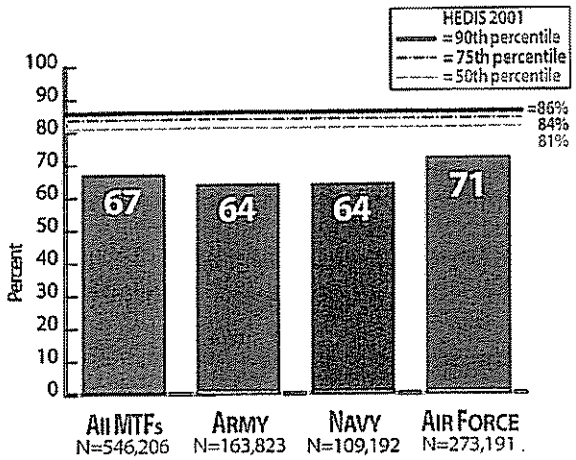
What were the results?

Overall, 546,206 MTF-enrolled women were identified from Direct Care and Purchased Care visits data for inclusion in the study. The cohort was predominantly Non-Active Duty (NAD) enrollees (87 percent). The majority were enrolled to Air Force MTF sites (50 percent), followed by Army (30 percent) and Navy (20 percent) MTF sites.

Pap testing rates varied by Military Services, ranging from 71 percent for cohort members enrolled to an Air Force MTF to 64 percent for cohort members enrolled to Navy and Army MTFs (Figure 1). None of

the rates at the Military Service level met or exceeded the HEDIS 2001 50th percentile rate of 81 percent for Pap testing.

Figure 1: Papanicolaou Testing Rates by Military Service Enrollment

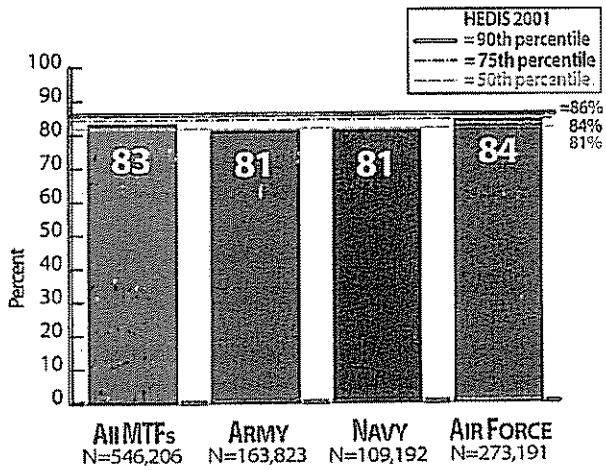


Military Service testing rates were also examined by duty status. Across Services, Pap testing rates were higher among Active Duty (AD) women than among NAD women. Rates for AD women ranged from 81 percent for women enrolled to an Air Force MTF to 75 percent for women enrolled to a Navy MTF and 73 percent for women enrolled to an Army MTF. Rates for NAD women were highest for women enrolled to an Air Force MTF (69 percent).

Pap testing rates were recalculated for the study population using the ICD-9-CM procedure code, V72.3 (Figure 2). In summary:

- The revised rates were significantly higher than the Pap rate calculated without the inclusion of this code.
- The revised Pap testing rates ranged from 84 percent for women enrolled to Air Force MTFs to 81 percent for women enrolled to Army and Navy MTFs.
- As with the HEDIS rates, women enrolled to Army and Navy MTFs have similar revised rates.
- The rates across all Services met or exceeded the HEDIS 2001 50th percentile rate of 81 percent for Pap testing.

Figure 2: Papanicolaou Testing Rates, Gynecological (V72.3) Exam Included by Military Service Enrollment



Conclusions and Recommendations

In conclusion, Pap testing rates, using either of the definitions, seldom met or exceeded the HEDIS 2001 90th percentile of 86 percent. However, rates based on inclusion of the Gynecological V72.3 code exceeded the HEDIS 2001 50th percentile.

Based on the study data, the following recommendations should be considered:

- The MHS should monitor cervical cancer screening on a continual periodic basis and report changes (positive and negative) at all levels within the organization.
- Since the ICD-9-CM procedure code V72.3 includes a Pap test, a study should be conducted to verify that the procedure is being coded correctly and to include these codes in future studies to create more accurate and complete DoD rates.
- Include enrollees to managed care contractors in follow-up studies.

Study Limitation

The NQMP 2001 study was conducted using modified HEDIS specifications that included continuous enrollment to an MTF. Therefore, results between the 2001 and 2002 studies are not comparable.

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Revised 13 May 2003

Childhood Immunization In The Military Health System (MHS)

A National Quality Management Program Special Study

"Enrollment sites throughout the MHS, regardless of Service affiliation, are performing very well. At the All Military Treatment Facility (MTF) level, immunization rates were highest for the following vaccines: Measles-Mumps-Rubella (MMR) (93 percent), Poliovirus (86 percent), and Diphtheria-Tetanus-Pertussis (DTP) (81 percent)."

Why study Childhood Immunization Rates?

Immunization is one of the most cost-effective health interventions available for preventing disease, disability, and death; since the early 1970s, the overall number of children who contract preventable diseases has decreased by 99 percent (American Academy of Pediatrics, 2001). The Department of Defense (DoD), in recognition of the efficacy of this intervention, adopted the Centers for Disease Control and Prevention (CDC) immunization practice standards as its own. In accordance with CDC recommendations, the DoD currently includes immunizations for tetanus, diphtheria, pertussis, poliomyelitis, mumps, measles, rubella, influenza, pneumococcal disease, Haemophilus Influenza type b, hepatitis A, hepatitis B, and varicella, as part of the TRICARE Standard Clinical Preventive Services (CPS) benefit package (TRICARE Management Activity, 2002).

What was the Methodology?

To establish DoD baseline immunization rates for the active duty dependents 19 through 35 months of age who are enrolled to an MTF, a mailed survey was developed for the study and sent to the parent or guardian who resided at the same address as the child in the study cohort. The survey was developed using the National Immunization Survey, a telephone survey with demonstrated reliability, as a model. Completed surveys were scanned into a database and analyzed to calculate immunization rates for individual and combined immunizations for several subgroups within the cohort.

What were the Results?

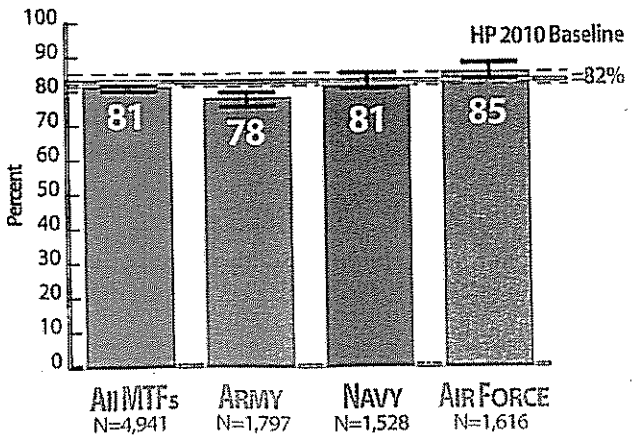
Based on sample calculations, a sample of 21,716 was drawn from the population of 90,166 children who were active duty dependents and between the ages 19 months and 35 months as of September 1, 2001. The population was 49 percent female, 40 percent of which were enrolled to Army facilities, 30 percent to Navy facilities and 30 percent to Air Force facilities.

Of the 21,716 surveys mailed, 4,489 were returned with addresses that were not deliverable. Of the remaining 17,227 potential respondents, 12,240 did not return a survey. The final sample contained 4,941 responses for a return rate of 28 percent.

The final sample of respondents was similar to the overall population in terms demographic and enrollment characterization. Non-respondents were similar to respondents in terms of the same characteristics.

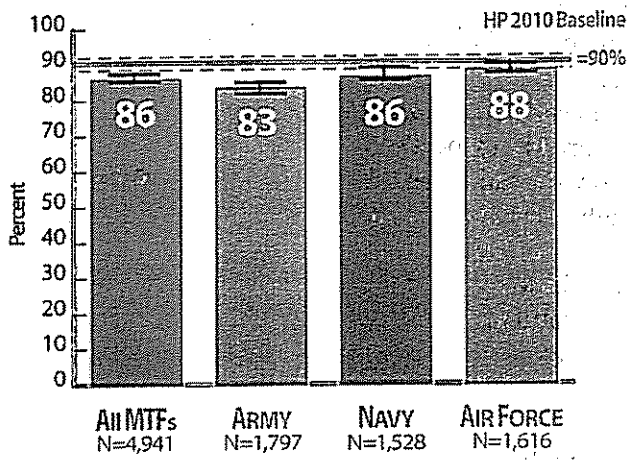
The All MTF rate of Diphtheria-Tetanus-Pertussis (DTP) vaccination of a full series of the DTP vaccine (four vaccinations) was 81 percent for an estimated 73,215 children out of 90,166 children receiving the full series (Figure 1). This vaccination rate was comparable to the Healthy People (HP) 2010 baseline rate of 82 percent but was below the HP 2010 goal of 90 percent.

Figure 1: Immunization Rates, Diphtheria-Tetanus-Pertussis by Military Service Enrollment



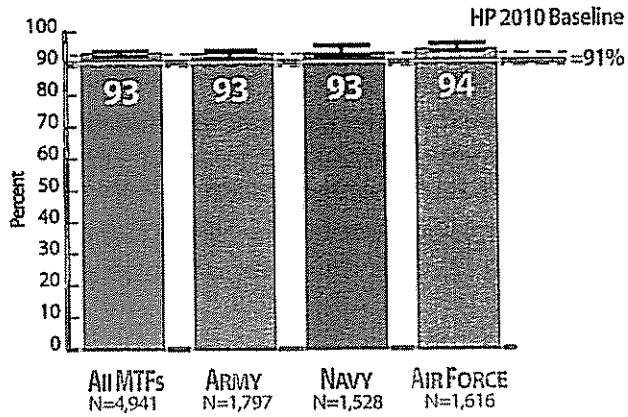
The All MTF rate of Poliovirus (OPV/IPV) vaccination of a full series of the polio vaccine (three vaccinations) was 86 percent for an estimated 77,453 children out of 90,166 children receiving the full series (Figure 2). This rate was below the HP 2010 baseline rate of 90 percent and the HP 2010 goal of 90 percent.

Figure 2: Immunization Rates, Poliovirus by Military Service Enrollment



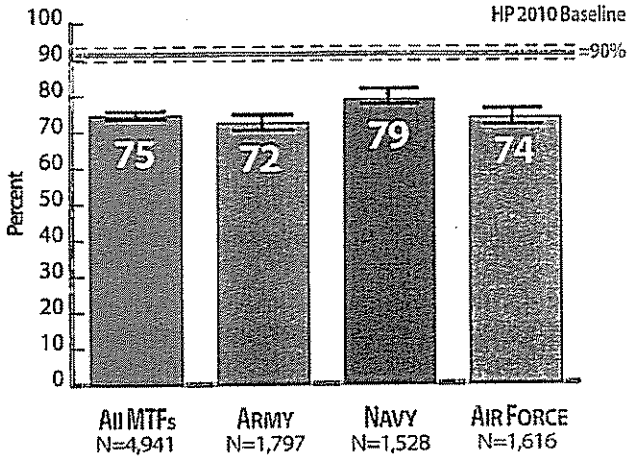
The All MTF rate of Measles, Mumps, Rubella (MMR) vaccination for a full series of the MMR vaccine (one vaccination) was 93 percent for an estimated 83,945 children out of 90,166 children receiving the full series (Figure 3). This rate was higher than the HP 2010 baseline rate of 91 percent and the HP 2010 goal of 90 percent.

Figure 3: Immunization Rates, Measles, Mumps, Rubella by Military Service Enrollment



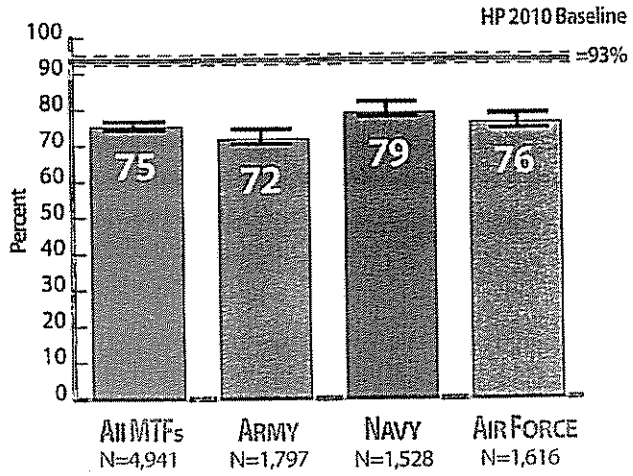
The All MTF rate of Hepatitis B (Hep B) vaccination of a full series of the Hep B vaccine (three vaccinations) was 75 percent for an estimated 67,444 children out of 90,166 children receiving the full series (Figure 4). This rate was significantly lower than the HP 2010 baseline rate of 90 percent and the HP 2010 goal of 90 percent.

Figure 4: Immunization Rates, Hepatitis B by Military Service Enrollment



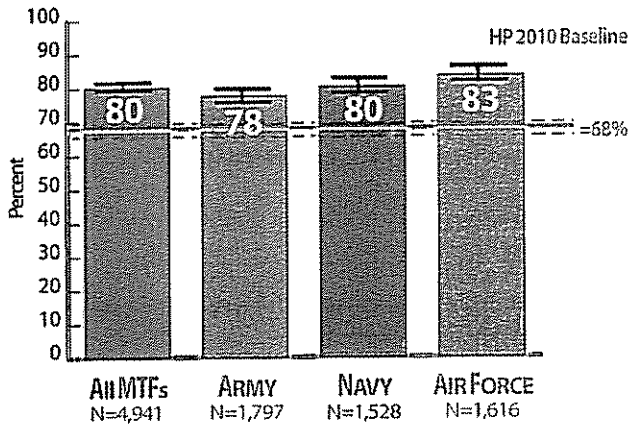
The All MTF rate of Haemophilus Influenza Type B (Hib) vaccination of a full series of the Haemophilus Influenza vaccine (three vaccinations) was 75 percent for an estimated 67,895 children out of 90,166 children receiving the full series (Figure 5). This rate was significantly lower than both the HP 2010 baseline rate of 93 percent and the HP 2010 goal of 90 percent.

Figure 5: Immunization Rates, Haemophilus Influenza Type B by Military Service Enrollment



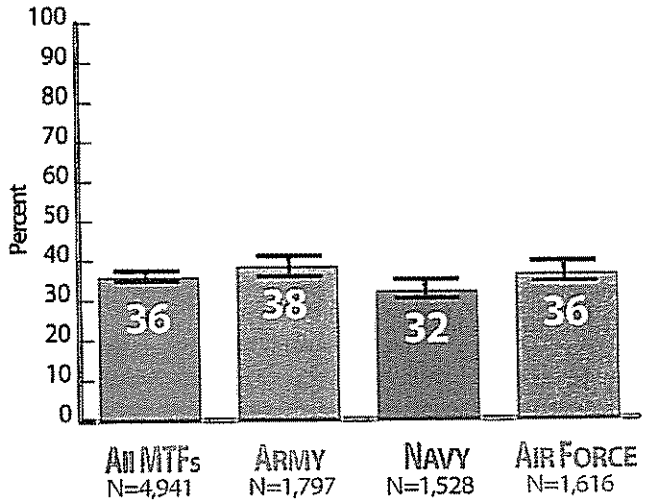
The All MTF rate of Varicella (VZV) vaccination of a full series of the varicella vaccine (one vaccination) was 80 percent for an estimated 72,493 children out of 90,188 children received the vaccine (Figure 6). This rate was significantly higher than the HP 2010 baseline rate of 68 percent but was below the HP 2010 goal of 90 percent.

Figure 6: Immunization Rates, Varicella by Military Service Enrollment



The All MTF rate of pneumococcal vaccination of a full series of the pneumococcal vaccine (one vaccination) was 36 percent for an estimated 32,189 children out of 90,166 children receiving the vaccine (Figure 7). This rate was significantly lower than the HP 2010 goal of 90 percent. There is no HP 2010 baseline pneumococcal vaccination rate to use as a comparison.

Figure 7: Immunization Rates, Pneumococcal by Military Service Enrollment



Footnote: No HP 2010 Baseline Available

Conclusions and Recommendations

Immunization rates among MTF enrolled children are generally similar regardless of enrollment site. When compared to the CDC reported rates, however, the rates appear mixed, with some rates higher than the CDC rates and others markedly lower. While the high immunization rates for the MMR and the VZV are commendable, the low rates for the Hib and Hep B are puzzling. The Hib and Hep B vaccines are important immunizations that provide protection against infections and their sequelae. Without these immunizations, children may be at risk for morbidity and mortality associated with an infection. Pneumococcal vaccination has not been implemented for long enough to evaluate its immunization rate.

As a follow-up to this baseline study of childhood immunization rates, we recommend the pursuit of the following:

- Continue an aggressive program of childhood immunization
- Examine immunization practices for Hib and Hep B vaccines to identify ways to increase the immunization rates to achieve an immunization rate comparable to the CDC NIS rates
- Perform a follow-up study on pneumococcal vaccination rates
- Conduct an expanded survey to include all categories of 19-through 35-month-old children
- Conduct a survey, expanding the study cohort to include all children less than 18 years old, to be in concert with the national immunization agenda (NIA)

Study Limitations

- The findings are comparable to CDC Baseline NIS data only, and not to HEDIS.
- Study results cannot be generalized to children who do not have an active duty sponsor.

References

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Revised 22 May 2003

Chlamydia Testing for Females In The Military Health System (MHS)

A National Quality Management Program Special Study

"The chlamydia testing rate among women 16 to 20 years of age enrolled to a Military Treatment Facility (MTF) was 34 percent overall, with a 41 percent Active Duty (AD) test rate and a 31 percent Non-Active Duty (NAD) test rate. The chlamydia testing rate among women 21 to 26 years of age was 28 percent overall, with a 36 percent AD testing rate and a 24 percent NAD testing rate."

Why Study Chlamydia testing?

Chlamydia infections are widespread among sexually active adolescents and young adults. These infections usually do not produce early symptoms, and if untreated can lead to serious health problems such as pelvic inflammatory disease, ectopic pregnancy, and infertility. The Department of Defense (DoD) Military Health System (MHS) adopted a chlamydia testing policy, incorporating elements of the Centers For Disease Control and Prevention (CDC) and the U.S. Preventive Services Task Force (USPSTF) recommendations. In anticipation of the DoD and the Department of Veterans Affairs (VA) releasing Health Promotion and Disease Prevention Indicator guidelines that include chlamydia screening, the National Quality Management Program (NQMP) Scientific Advisory Panel (SAP) approved a study of chlamydia testing in the MHS.

What was methodology?

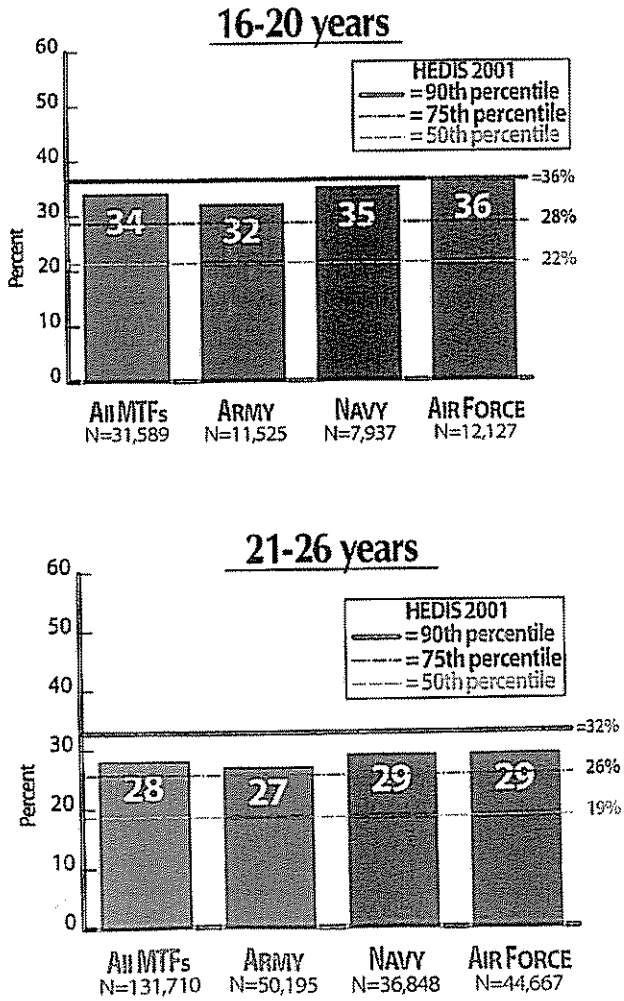
The study was conducted using a modified Health Plan Employer Data and Information Set (HEDIS) methodology. An eligible cohort of sexually active MTF-enrolled women 16 to 26 years of age was defined for a one-year period ending March 31, 2001. Sexual activity for women 16 to 20 was based on pharmacy and/or claims data for dispensed prescription contraceptives between April 1, 2000 and March 31, 2001. All women 21 to 26 were included in the study, regardless of contraceptive history. MTF laboratory tests and visit data, reference laboratory data, and network claims were examined to capture all available chlamydia tests. Rates were reported by demographics, duty status, and organizational level.

What were the results?

The eligible study cohort contained 163,299 MTF continuously enrolled women. Nineteen percent of the women were in the 16 to 20 year age group. One-third of the group were active duty.

The overall testing rate for the 16 to 20 age group was 34 percent, while for women 21 to 26 the rate was 28 percent (Figure 1). These testing rates exceeded the HEDIS 75th percentile benchmarks for both groups.

Figure 1: Chlamydia Testing Rates Among MTF Enrollees



Testing rates for AD women were higher than testing rates for NAD for both age groups (Figures 2 and 3). The AD rates exceeded the HEDIS 90th percentile benchmark for both age groups. NAD rates exceeded the HEDIS 50th percentile benchmark for both age groups.

Figure 2: Chlamydia Testing Rates Among Active Duty MTF Enrollees

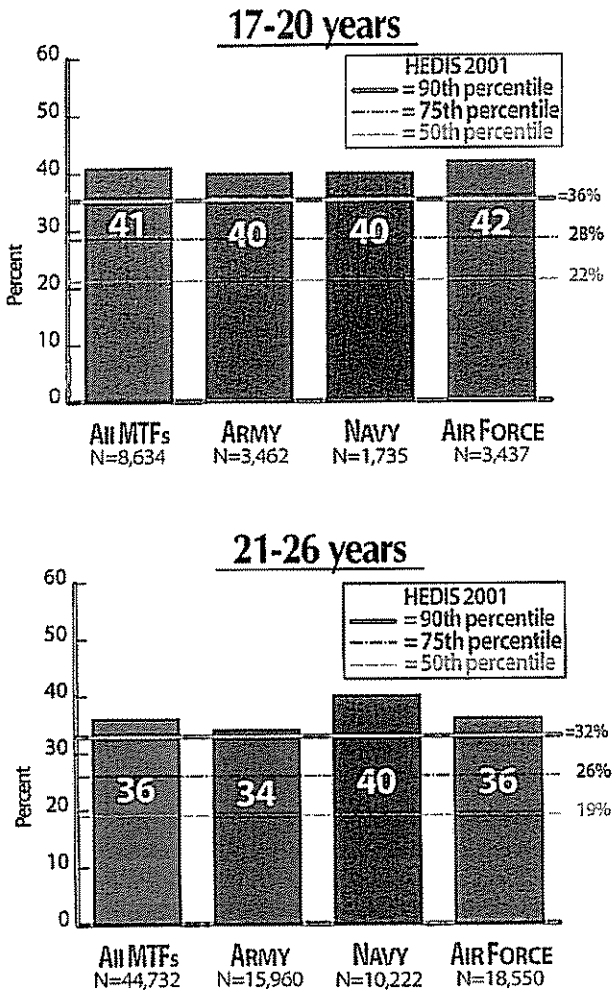
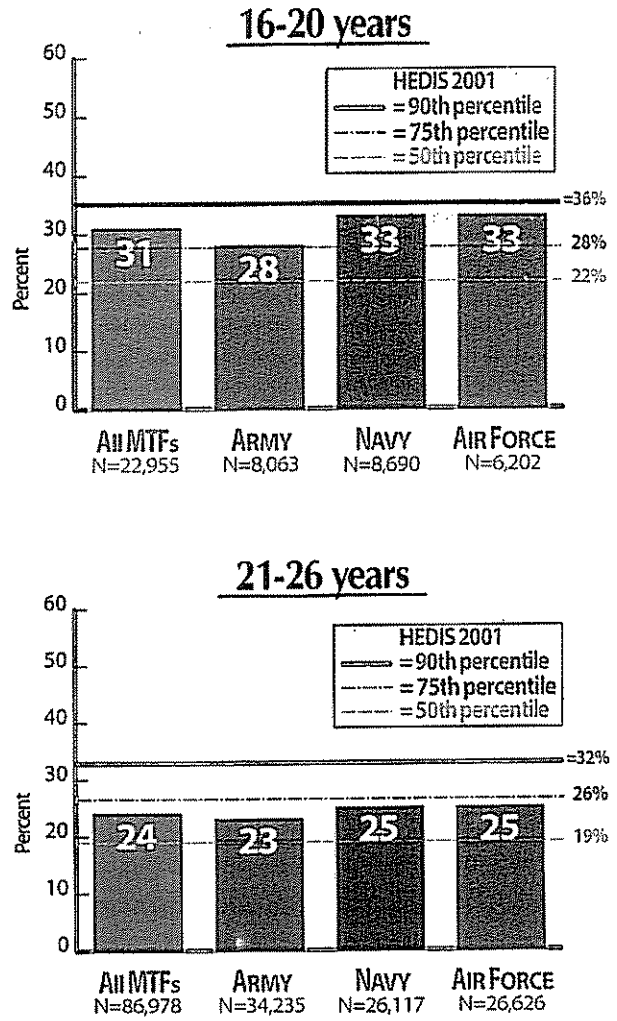


Figure 3: Chlamydia Testing Rates Among Non-Active Duty MTF Enrollees



Conclusions

- Younger women had a higher testing rate than the older women.
- Testing rates among AD women were generally higher than the rates among NAD women.
- The majority of the testing rates among AD women, regardless of age group, exceeded the HEDIS 90th percentile chlamydia testing rate.
- The majority of the testing rates among NAD women were greater than HEDIS 50th percentile chlamydia testing rate.

Study Limitation

This study was conducted using modified HEDIS specifications. Therefore, the results may not be comparable to rates based on other methodologies.

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Revised 13 May 2003

Cervical Cancer Screening In The Military Health System (MHS) 2001-2002

A National Quality Management Program Special Study

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Why study Cervical Cancer?

Cervical cancer is the 10th most common cancer among women in the United States and is anticipated to result in more than 4,000 deaths in 2002 (U.S. Department of Health and Human Services, 2001). Studies show that the majority of these deaths are preventable when the cancer is detected early through Papanicolaou (Pap) smear testing, and the patient receives appropriate treatment (Gottlieb et al., 2001).

The U. S. Preventive Services Task Force (USPSTF) recommends routine Pap testing for cervical cancer for all women who are or have been sexually active and who have a cervix. Pap smears should be repeated at least every three years. Annual access to this testing is provided to female MHS beneficiaries as a TRICARE Standard and Prime Clinical Preventive Services benefit (TRICARE Management Activity (TMA), 2002).

This study characterizes Pap testing practices for women continuously enrolled to MTFs and provides comparisons of these baseline MTF Department of Defense (DoD) rates to national benchmarks. Specifically, the following questions were examined:

- What is the Pap testing rate for women ages 21 through 64 continuously enrolled to an MTF?
- How do testing rates of the eligible population compare to rates noted for health plans reported in the Health Plan Employer Data and Information Set (HEDIS)?

The present study is a follow-up to the 2001 National Quality Management Program (NQMP) Scientific Advisory Panel approved study. The 2001 study measured cervical cancer screening rates for all women enrolled to an MTF using available electronic health data and standardized definitions across the MHS. The major changes in the 2002 study are the rigorous adherence to the HEDIS continuous enrollment requirement for study cohort members and the use of Pap test laboratory data as a proxy for cervical cancer screening.

What was the methodology?

The study was conducted using a modified HEDIS methodology. The numerator was based on HEDIS hybrid specifications and included administrative laboratory data for Pap tests as the indicator for cervical cancer testing. The study population consisted of women continuously enrolled to an MTF between April 1, 2001 through March 31, 2002. Pap testing data were collected for the period April 1, 1999 through March 31, 2002.

Pap testing rates were recalculated for the study population using the ICD-9-CM procedure code, V72.3, which includes a Pap test when a gynecological exam is performed.

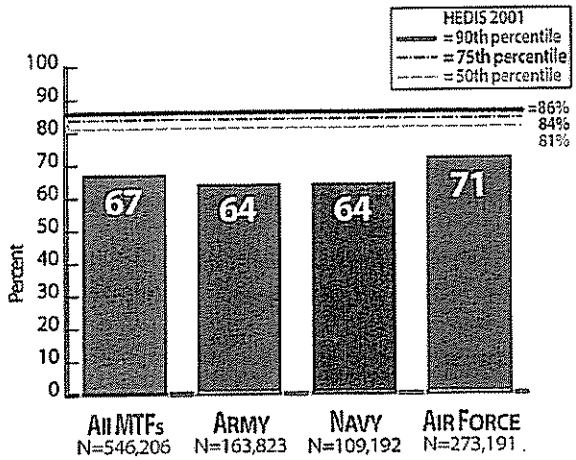
What were the results?

Overall, 546,206 MTF-enrolled women were identified from Direct Care and Purchased Care visits data for inclusion in the study. The cohort was predominantly Non-Active Duty (NAD) enrollees (87 percent). The majority were enrolled to Air Force MTF sites (50 percent), followed by Army (30 percent) and Navy (20 percent) MTF sites.

Pap testing rates varied by Military Services, ranging from 71 percent for cohort members enrolled to an Air Force MTF to 64 percent for cohort members enrolled to Navy and Army MTFs (Figure 1). None of

the rates at the Military Service level met or exceeded the HEDIS 2001 50th percentile rate of 81 percent for Pap testing.

Figure 1: Papanicolaou Testing Rates by Military Service Enrollment

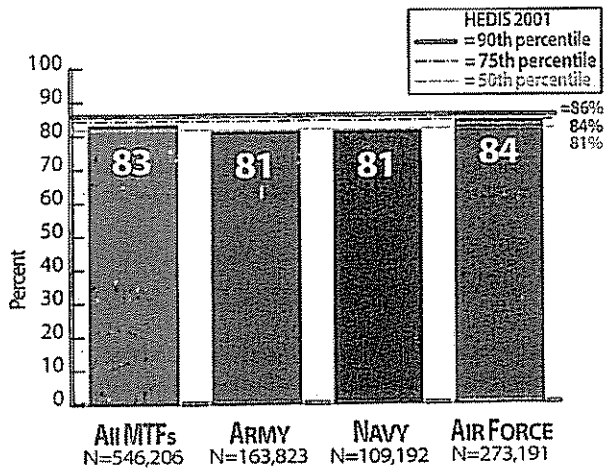


Military Service testing rates were also examined by duty status. Across Services, Pap testing rates were higher among Active Duty (AD) women than among NAD women. Rates for AD women ranged from 81 percent for women enrolled to an Air Force MTF to 75 percent for women enrolled to a Navy MTF and 73 percent for women enrolled to an Army MTF. Rates for NAD women were highest for women enrolled to an Air Force MTF (69 percent).

Pap testing rates were recalculated for the study population using the ICD-9-CM procedure code, V72.3 (Figure 2). In summary:

- The revised rates were significantly higher than the Pap rate calculated without the inclusion of this code.
- The revised Pap testing rates ranged from 84 percent for women enrolled to Air Force MTFs to 81 percent for women enrolled to Army and Navy MTFs.
- As with the HEDIS rates, women enrolled to Army and Navy MTFs have similar revised rates.
- The rates across all Services met or exceeded the HEDIS 2001 50th percentile rate of 81 percent for Pap testing.

Figure 2: Papanicolaou Testing Rates, Gynecological (V72.3) Exam Included by Military Service Enrollment



Conclusions and Recommendations

In conclusion, Pap testing rates, using either of the definitions, seldom met or exceeded the HEDIS 2001 90th percentile of 86 percent. However, rates based on inclusion of the Gynecological V72.3 code exceeded the HEDIS 2001 50th percentile.

Based on the study data, the following recommendations should be considered:

- The MHS should monitor cervical cancer screening on a continual periodic basis and report changes (positive and negative) at all levels within the organization.
- Since the ICD-9-CM procedure code V72.3 includes a Pap test, a study should be conducted to verify that the procedure is being coded correctly and to include these codes in future studies to create more accurate and complete DoD rates.
- Include enrollees to managed care contractors in follow-up studies.

Study Limitation

The NQMP 2001 study was conducted using modified HEDIS specifications that included continuous enrollment to an MTF. Therefore, results between the 2001 and 2002 studies are not comparable.

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Revised 13 May 2003

Childhood Immunization In The Military Health System (MHS)

A National Quality Management Program Special Study

"Enrollment sites throughout the MHS, regardless of Service affiliation, are performing very well. At the All Military Treatment Facility (MTF) level, immunization rates were highest for the following vaccines: Measles-Mumps-Rubella (MMR) (93 percent), Poliovirus (86 percent), and Diphtheria-Tetanus-Pertussis (DTP) (81 percent)."

Why study Childhood Immunization Rates?

Immunization is one of the most cost-effective health interventions available for preventing disease, disability, and death; since the early 1970s, the overall number of children who contract preventable diseases has decreased by 99 percent (American Academy of Pediatrics, 2001). The Department of Defense (DoD), in recognition of the efficacy of this intervention, adopted the Centers for Disease Control and Prevention (CDC) immunization practice standards as its own. In accordance with CDC recommendations, the DoD currently includes immunizations for tetanus, diphtheria, pertussis, poliomyelitis, mumps, measles, rubella, influenza, pneumococcal disease, Haemophilus Influenza type b, hepatitis A, hepatitis B, and varicella, as part of the TRICARE Standard Clinical Preventive Services (CPS) benefit package (TRICARE Management Activity, 2002).

What was the Methodology?

To establish DoD baseline immunization rates for the active duty dependents 19 through 35 months of age who are enrolled to an MTF, a mailed survey was developed for the study and sent to the parent or guardian who resided at the same address as the child in the study cohort. The survey was developed using the National Immunization Survey, a telephone survey with demonstrated reliability, as a model. Completed surveys were scanned into a database and analyzed to calculate immunization rates for individual and combined immunizations for several subgroups within the cohort.

What were the Results?

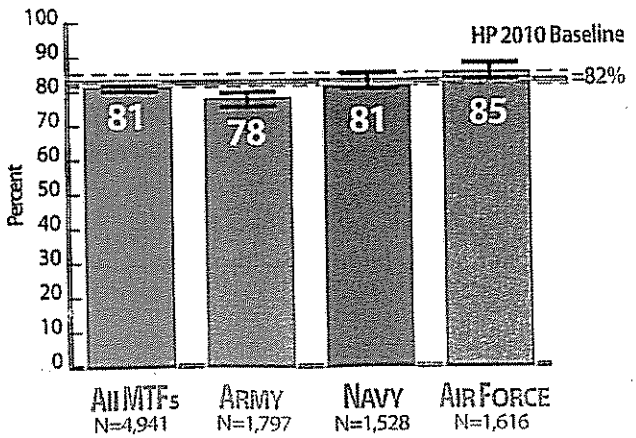
Based on sample calculations, a sample of 21,716 was drawn from the population of 90,166 children who were active duty dependents and between the ages 19 months and 35 months as of September 1, 2001. The population was 49 percent female, 40 percent of which were enrolled to Army facilities, 30 percent to Navy facilities and 30 percent to Air Force facilities.

Of the 21,716 surveys mailed, 4,489 were returned with addresses that were not deliverable. Of the remaining 17,227 potential respondents, 12,240 did not return a survey. The final sample contained 4,941 responses for a return rate of 28 percent.

The final sample of respondents was similar to the overall population in terms demographic and enrollment characterization. Non-respondents were similar to respondents in terms of the same characteristics.

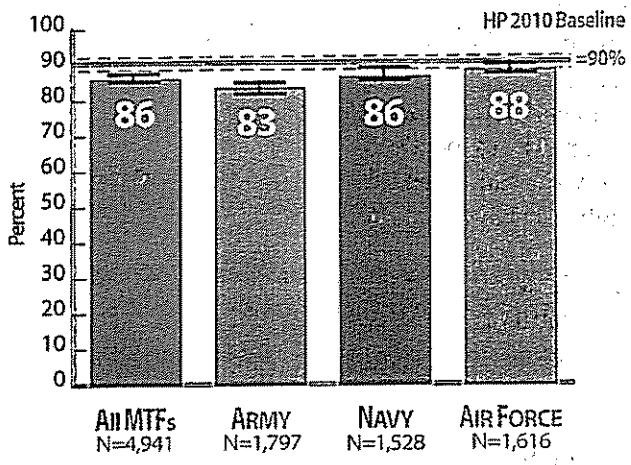
The All MTF rate of Diphtheria-Tetanus-Pertussis (DTP) vaccination of a full series of the DTP vaccine (four vaccinations) was 81 percent for an estimated 73,215 children out of 90,166 children receiving the full series (Figure 1). This vaccination rate was comparable to the Healthy People (HP) 2010 baseline rate of 82 percent but was below the HP 2010 goal of 90 percent.

Figure 1: Immunization Rates, Diphtheria-Tetanus-Pertussis by Military Service Enrollment



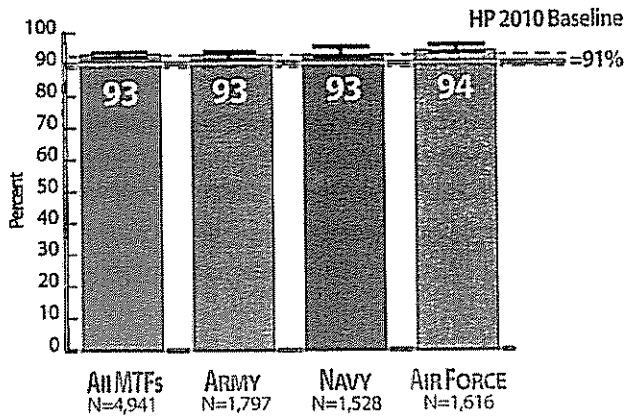
The All MTF rate of Poliovirus (OPV/IPV) vaccination of a full series of the polio vaccine (three vaccinations) was 86 percent for an estimated 77,453 children out of 90,166 children receiving the full series (Figure 2). This rate was below the HP 2010 baseline rate of 90 percent and the HP 2010 goal of 90 percent.

Figure 2: Immunization Rates, Poliovirus by Military Service Enrollment



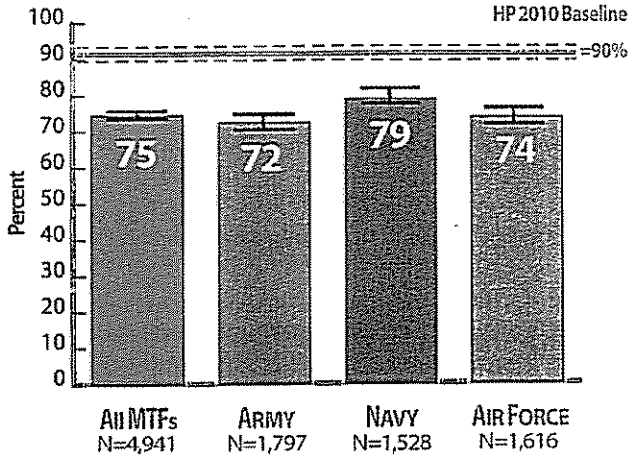
The All MTF rate of Measles, Mumps, Rubella (MMR) vaccination for a full series of the MMR vaccine (one vaccination) was 93 percent for an estimated 83,945 children out of 90,166 children receiving the full series (Figure 3). This rate was higher than the HP 2010 baseline rate of 91 percent and the HP 2010 goal of 90 percent.

Figure 3: Immunization Rates, Measles, Mumps, Rubella by Military Service Enrollment



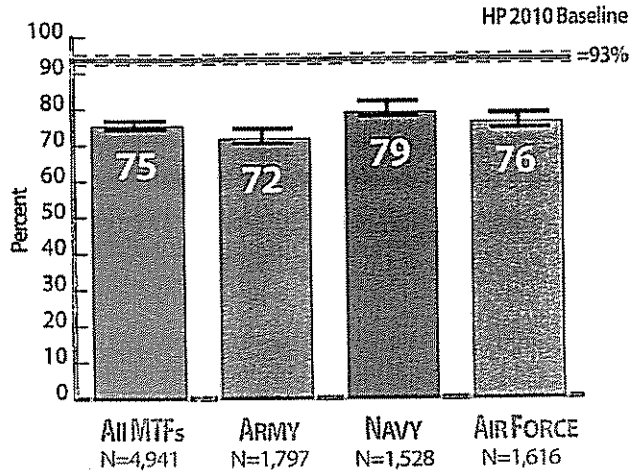
The All MTF rate of Hepatitis B (Hep B) vaccination of a full series of the Hep B vaccine (three vaccinations) was 75 percent for an estimated 67,444 children out of 90,166 children receiving the full series (Figure 4). This rate was significantly lower than the HP 2010 baseline rate of 90 percent and the HP 2010 goal of 90 percent.

Figure 4: Immunization Rates, Hepatitis B by Military Service Enrollment



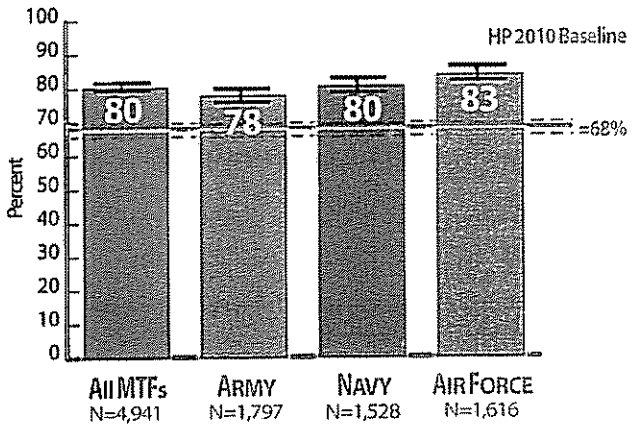
The All MTF rate of Haemophilus Influenza Type B (Hib) vaccination of a full series of the Haemophilus Influenza vaccine (three vaccinations) was 75 percent for an estimated 67,895 children out of 90,166 children receiving the full series (Figure 5). This rate was significantly lower than both the HP 2010 baseline rate of 93 percent and the HP 2010 goal of 90 percent.

Figure 5: Immunization Rates, Haemophilus Influenza Type B by Military Service Enrollment



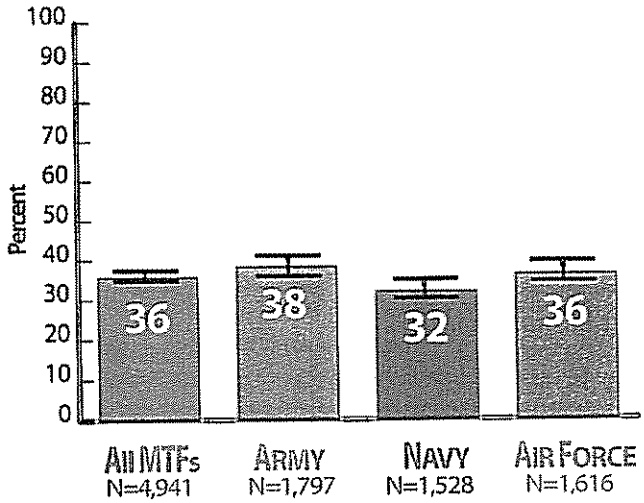
The All MTF rate of Varicella (VZV) vaccination of a full series of the varicella vaccine (one vaccination) was 80 percent for an estimated 72,493 children out of 90,188 children received the vaccine (Figure 6). This rate was significantly higher than the HP 2010 baseline rate of 68 percent but was below the HP 2010 goal of 90 percent.

Figure 6: Immunization Rates, Varicella by Military Service Enrollment



The All MTF rate of pneumococcal vaccination of a full series of the pneumococcal vaccine (one vaccination) was 36 percent for an estimated 32,189 children out of 90,166 children receiving the vaccine (Figure 7). This rate was significantly lower than the HP 2010 goal of 90 percent. There is no HP 2010 baseline pneumococcal vaccination rate to use as a comparison.

Figure 7: Immunization Rates, Pneumococcal by Military Service Enrollment



Footnote: No HP 2010 Baseline Available

Conclusions and Recommendations

Immunization rates among MTF enrolled children are generally similar regardless of enrollment site. When compared to the CDC reported rates, however, the rates appear mixed, with some rates higher than the CDC rates and others markedly lower. While the high immunization rates for the MMR and the VZV are commendable, the low rates for the Hib and Hep B are puzzling. The Hib and Hep B vaccines are important immunizations that provide protection against infections and their sequelae. Without these immunizations, children may be at risk for morbidity and mortality associated with an infection. Pneumococcal vaccination has not been implemented for long enough to evaluate its immunization rate.

As a follow-up to this baseline study of childhood immunization rates, we recommend the pursuit of the following:

- Continue an aggressive program of childhood immunization
- Examine immunization practices for Hib and Hep B vaccines to identify ways to increase the immunization rates to achieve an immunization rate comparable to the CDC NIS rates
- Perform a follow-up study on pneumococcal vaccination rates
- Conduct an expanded survey to include all categories of 19-through 35-month-old children
- Conduct a survey, expanding the study cohort to include all children less than 18 years old, to be in concert with the national immunization agenda (NIA)

Study Limitations

- The findings are comparable to CDC Baseline NIS data only, and not to HEDIS.
- Study results cannot be generalized to children who do not have an active duty sponsor.

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Revised 22 May 2003

Chlamydia Testing for Females In The Military Health System (MHS)

A National Quality Management Program Special Study

"The chlamydia testing rate among women 16 to 20 years of age enrolled to a Military Treatment Facility (MTF) was 34 percent overall, with a 41 percent Active Duty (AD) test rate and a 31 percent Non-Active Duty (NAD) test rate. The chlamydia testing rate among women 21 to 26 years of age was 28 percent overall, with a 36 percent AD testing rate and a 24 percent NAD testing rate."

Why Study Chlamydia testing?

Chlamydia infections are widespread among sexually active adolescents and young adults. These infections usually do not produce early symptoms, and if untreated can lead to serious health problems such as pelvic inflammatory disease, ectopic pregnancy, and infertility. The Department of Defense (DoD) Military Health System (MHS) adopted a chlamydia testing policy, incorporating elements of the Centers For Disease Control and Prevention (CDC) and the U.S. Preventive Services Task Force (USPSTF) recommendations. In anticipation of the DoD and the Department of Veterans Affairs (VA) releasing Health Promotion and Disease Prevention Indicator guidelines that include chlamydia screening, the National Quality Management Program (NQMP) Scientific Advisory Panel (SAP) approved a study of chlamydia testing in the MHS.

What was methodology?

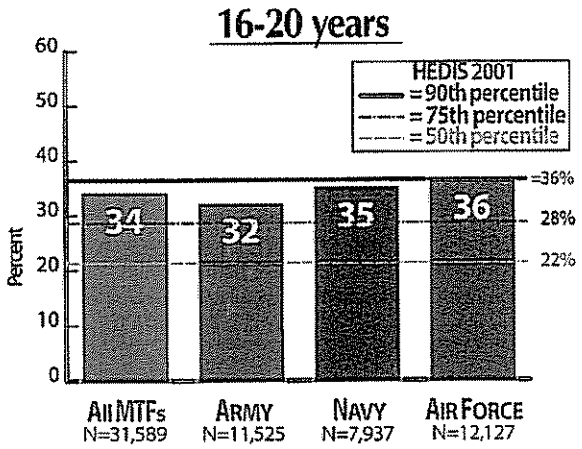
The study was conducted using a modified Health Plan Employer Data and Information Set (HEDIS) methodology. An eligible cohort of sexually active MTF-enrolled women 16 to 26 years of age was defined for a one-year period ending March 31, 2001. Sexual activity for women 16 to 20 was based on pharmacy and/or claims data for dispensed prescription contraceptives between April 1, 2000 and March 31, 2001. All women 21 to 26 were included in the study, regardless of contraceptive history. MTF laboratory tests and visit data, reference laboratory data, and network claims were examined to capture all available chlamydia tests. Rates were reported by demographics, duty status, and organizational level.

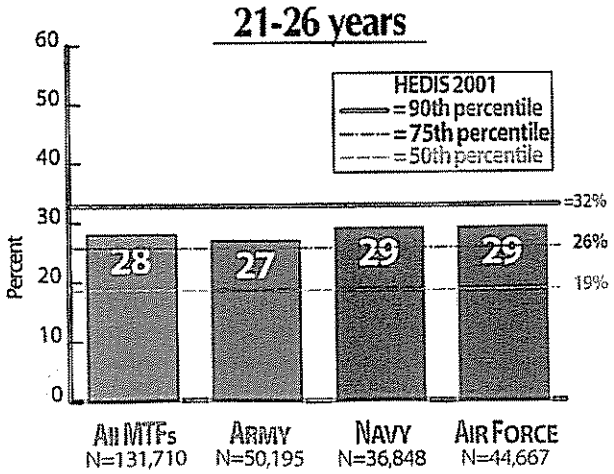
What were the results?

The eligible study cohort contained 163,299 MTF continuously enrolled women. Nineteen percent of the women were in the 16 to 20 year age group. One-third of the group were active duty.

The overall testing rate for the 16 to 20 age group was 34 percent, while for women 21 to 26 the rate was 28 percent (Figure 1). These testing rates exceeded the HEDIS 75th percentile benchmarks for both groups.

Figure 1: Chlamydia Testing Rates Among MTF Enrollees





Testing rates for AD women were higher than testing rates for NAD for both age groups (Figures 2 and 3). The AD rates exceeded the HEDIS 90th percentile benchmark for both age groups. NAD rates exceeded the HEDIS 50th percentile benchmark for both age groups.

Figure 2: Chlamydia Testing Rates Among Active Duty MTF Enrollees

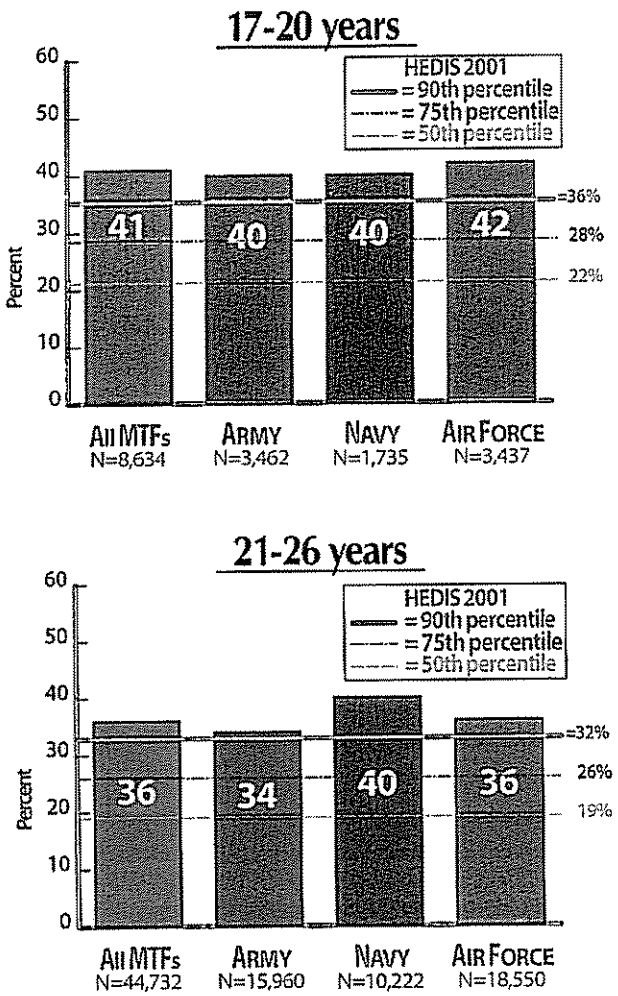
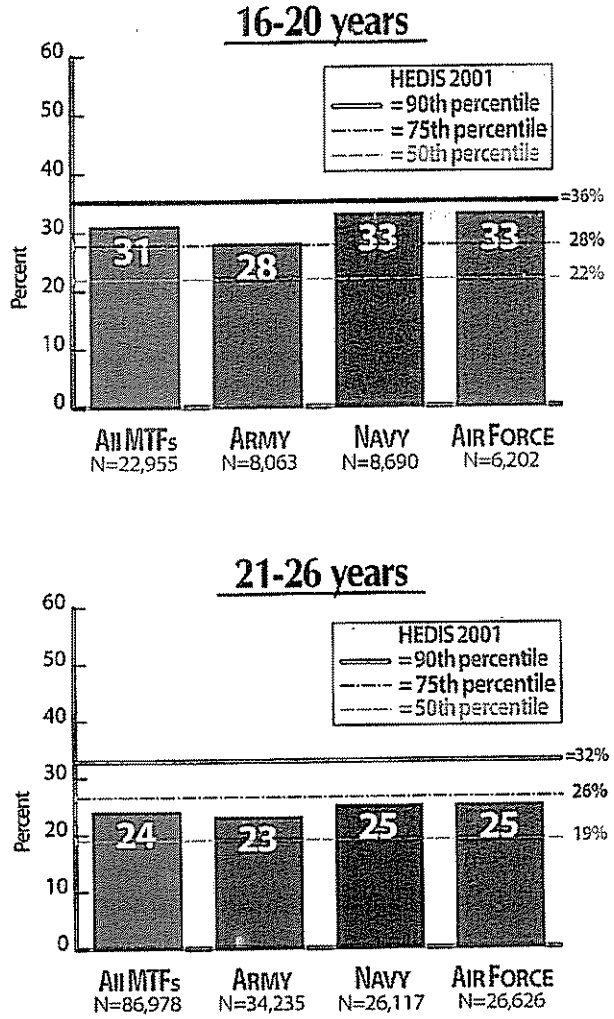


Figure 3: Chlamydia Testing Rates Among Non-Active Duty MTF Enrollees



Conclusions

- Younger women had a higher testing rate than the older women.
- Testing rates among AD women were generally higher than the rates among NAD women.
- The majority of the testing rates among AD women, regardless of age group, exceeded the HEDIS 90th percentile chlamydia testing rate.
- The majority of the testing rates among NAD women were greater than HEDIS 50th percentile chlamydia testing rate.

Study Limitation

This study was conducted using modified HEDIS specifications. Therefore, the results may not be comparable to rates based on other methodologies.

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Revised 13 May 2003

Table 1: Percent of Beneficiaries Seen in Primary Care Clinics Diagnosed with Depression

	Beneficiaries Seen in Direct Care Primary Care Clinics	Percent Diagnosed with Depression
All Cohort	2,382,203	4.0
Gender		
Women	1,032,444	6.7
Men	1,349,618	1.9
Unknown	129	0.78
Missing	12	--
Age Group		
17-24	711,537	2.5
25-34	618,372	3.9
35-44	477,649	4.5
45-64	443,060	5.5
65 and Over	131,561	4.9
Missing	24	--
Duty Status		
Active Duty	1,160,140	2.2
Non Active Duty	1,222,063	5.7

Measure 2 – CPG Treatment Measure

The CPG Treatment measure population included beneficiaries:

- Age 18 or older, or AD
- With a first time primary diagnosis of depression (index visit, no diagnosis of depression in the prior 12 months)

And either

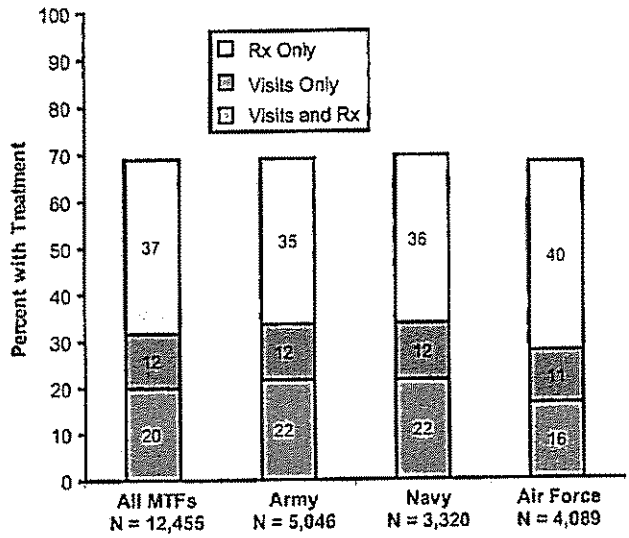
- Two or more visits to a direct care clinic with a diagnosis of depression (index visit included)

  or
- At least one prescription for a 30-day supply of antidepressant medication within 30 days of the index visit

The CPG treatment measure was defined as the percent of the study population with at least 90 days supply of antidepressants or eight visits for depression in either a primary care or behavioral health clinic.

Results. All three Services provided comparable treatment rates using the 90 days supply of antidepressant medication or eight visits criteria. However, the visit-only rate varied greatly. The Air Force visit-only rate was 11 percent, compared to 12 percent for both the Army and the Navy. The medication-only rate also varied, ranging from 40 percent for the Air Force, 35 percent for the Army, and 36 percent for the Navy (Figure 1).

Figure 1: Depression Patients Treated with Follow-up Visits or Antidepressant Medication



Measure 3 – HEDIS Antidepressant Medication Management

This measure was based on HEDIS 2002 Technical Specifications. The specifications were implemented as written and no modifications were made.

The population intake period was May 1, 2000, to April 30, 2001. It was defined for all three HEDIS metrics by:

- Age 18 or older, or AD
- Continuously enrolled to an MTF for 11 of 12 months starting 120 days prior to the diagnosis to 245 days after diagnosis
- No diagnosis of depression 120 days prior to the index visit
- A prescription for antidepressant medication from 30 days prior to the index visit to 14 days after diagnosis.

And either

- A primary diagnosis of major depression in any setting

  or
- Two secondary diagnoses of major depression on separate occasions in an emergency room

Depressive Disorder Treatment In The Military Health System (MHS)

A National Quality Management Program Special Study

"The MHS exceeds the National Committee for Quality Assurance (NCQA), Health Plan Employer Data and Information Set (HEDIS) 90th percentile on all antidepressant medication management metrics."

Why study Depression?

Depression is expected to be the second leading cause of disability worldwide in the 21st century (Wells et al., 2000). Depression affects one in ten Americans every year (Rubenstein et al., 1999). Due to the prevalence of depression in the United States population, this disorder will likely be encountered at all levels of the health care system, in both military and civilian facilities.

In September 2002, the Department of Defense (DoD) implemented Version 2.0 of the Major Depressive Disorder Clinical Practice Guideline (CPG) in the Military Health System (MHS) (VHA/DoD, 2002).

The purpose of this study was twofold. First, the study obtained baseline measurement rates for metrics developed with the Major Depressive Disorder CPG (the diagnosis codes for depression included non major depression diagnoses). Because electronic administrative data were used, only two of the four VHA/DoD Performance Measures for the Management of Major Depressive Disorder in Adults were examined. The Detection (screening metric) and the Effectiveness/Outcome metrics would have required data available through chart abstraction. The Assessment/Diagnosis metric and the Treatment metric provided an evaluation of the performance of the Direct Care System (DCS) prior to implementing Version 2.0 of the CPG. Second, the study measured Antidepressant Medication Management using Health Plan Employers Data and Information Set (HEDIS) 2002 Technical Specifications. MHS performance rates were compared to rates from HEDIS civilian managed care plans.

What was the methodology?

This study uses two measures from the VHA/DoD Performance Measures for the Management of Major Depressive Disorder CPG and a measure from the HEDIS 2002 Technical Specifications. The measures were:

1. CPG Assessment/Diagnosis Measure
2. CPG Treatment Measure
3. HEDIS Antidepressant Medication Management
   a. Optimal Practitioner Contacts
   b. Effective Acute Phase Treatment
   c. Effective Continuation Phase Treatment

An overview of the methodology and the results are described below.

Measure 1 – CPG Assessment/Diagnosis Measure

The CPG Assessment/Diagnosis Measure included beneficiaries:

- Age 18 or older, or Active Duty (AD)
- With one or more visits to a Military Treatment Facility (MTF) primary care clinic during 2001. The Scientific Advisory Panel (SAP) modified the three visit requirement in the Performance Measure to one visit.

The Assessment/Diagnosis measure was defined as the percentage of beneficiaries in the study population with a principle or secondary diagnosis of depression in a primary care or behavioral health clinic.

Results. Depression was diagnosed in 4.0 percent of the beneficiaries seen in an MTF primary care clinic. Among these beneficiaries, women were diagnosed at a rate of 6.7 percent while men were diagnosed at a rate of 1.9 percent. Non-Active Duty (NAD) beneficiaries had a rate of 5.7 percent, while AD beneficiaries had a rate of 2.2 percent. The highest rate by age group was for the 45 to 64 group at 5.5 percent, while the youngest age group, 17 to 24 years, had the lowest rate at 2.5 percent (Table 1).

setting or other outpatient setting

or

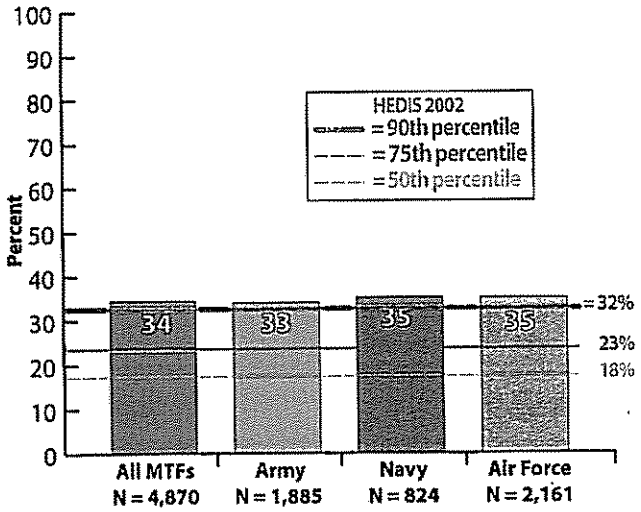
- One secondary diagnosis of major depression in an inpatient setting

3.a Optimal Practitioner Contacts

Optimal Practitioner Contacts was defined as the percentage of the HEDIS defined population with at least three follow-up visits, at least one of which was with a prescribing practitioner. The results were compared to HEDIS reporting plans using percentiles.

Results. The percentages for Optimal Practitioner Contacts ranged from 33 percent for the Army to 35 percent for the Navy and Air Force. The MHS rate was 34 percent. All rates exceeded the HEDIS 90th percentile for HEDIS reporting plans. The MHS performance was comparable to the top 10 percent of plans (Figure 2).

Figure 2. Optimal Practitioner Contacts for Antidepressant Medication Management

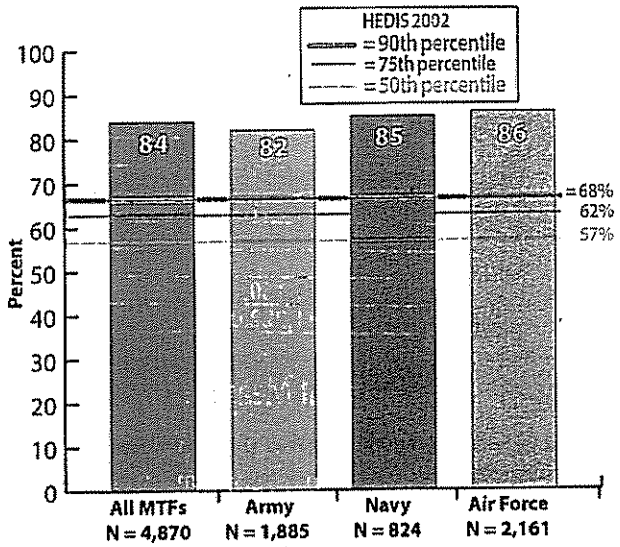


3.b Effective Acute Phase Treatment

Effective Acute Phase Treatment was defined as the percentage of the HEDIS defined population with at least 84 days supply of antidepressant medication in the 114 days following diagnosis. The results were compared to HEDIS reporting plans using percentiles.

Results. The percentages of Effective Acute Phase Treatment ranged from 82 percent for the Army to 86 percent for the Air Force. All rates exceeded the HEDIS 90th percentile for reporting plans. The MHS performance was comparable to the top 10 percent of plans (Figure 3).

Figure 3. Effective Acute Phase Antidepressant Medication: 84 Days Supply Filled

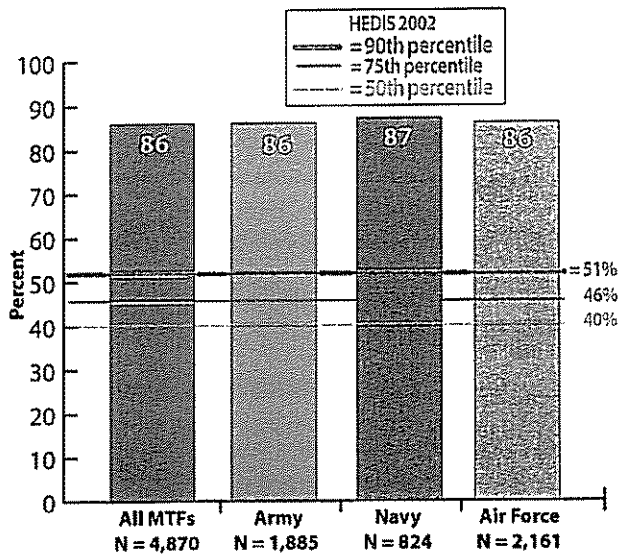


3.c Effective Continuation Phase Treatment

Effective Acute Phase Treatment was defined as the percentage of the HEDIS defined population with at least 180 days supply of antidepressant medication in the 231 days following diagnosis. The results were compared to HEDIS reporting plans using percentiles.

Results. The percentages of Effective Continuation Phase Treatment ranged from 86 percent for the Army and Air Force to 87 percent for the Navy. All rates exceeded the HEDIS 90th percentile for reporting plans. The MHS performance was comparable to the top 10 percent of plans (Figure 4).

Figure 4. Effective Continuation Phase Antidepressant Medication: 180 Days Supply Filled



Conclusions and Recommendations

- CPG defined depression treatment is largely met through the use of medication
- MTF enrollees' Antidepressant Medication Management compares favorably to the top 10 percent of managed care HEDIS reporting plans, but in the case of Optimal Practitioner Contacts still seems too low at an MHS rate of 34 percent.
- There were significant differences in depression diagnosis and treatment based on duty status and gender.

Based on the results of the 2002 study, the following actions should be considered:

- Conduct a follow-up study on guideline adherence one year after implementing the CPG
- Conduct a follow-up study that includes the CPG Detection and the CPG Effectiveness/Outcome measures
- Study the reasons for the low rate of Optimal Practitioner Contacts

Study Limitations

- This study did not explore depression screening in the MHS primary care system.
- The rate for depression may be higher than reported given that the denominator includes those not screened.
- The CPG Assessment/Diagnosis and the CPG Treatment measure were developed by the DoD and the VHA and are not comparable to any other organization.
- The HEDIS Antidepressant Medication Management Measure was based on HEDIS 2002 Technical Specifications. Therefore, results of this measure are not comparable to other studies using a modified HEDIS methodology.

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Diabetes Mellitus Care In The Military Health System (MHS)

A National Quality Management Program Special Study

"Seventy-two percent of the population was tested for HbA1c. Sixty-three percent of the population's HbA1c tests were in control (less than 9.5 percent)."

Why manage Diabetes?

In the United States, an estimated 16 million people have diabetes. Approximately 200,000 deaths a year are attributed to diabetes (Vincor, 2001). Sequelae of diabetes can include blindness, renal failure, coronary heart disease, and microcirculatory problems (Andreoli, et al., 1997).

In 1999, the Department of Defense (DoD), in collaboration with Veterans Health Administration (VHA), developed Clinical Practice Guidelines (CPG) for diabetes mellitus (The Management of Diabetes Mellitus Working Group, 1999). The CPG, containing guidelines similar to those recommended by the Diabetes Quality Improvement Program (DQIP), encompassed patient management such as glycemic control, evaluation of the eyes and feet, and early recognition and treatment of co-morbid conditions including hypertension, hyperlipidemia, and renal disease.

In June 2001, the guidelines were adopted by DoD. In that same year, the National Quality Management Program (NQMP) Scientific Advisory Panel (SAP) commissioned a study of diabetes in the MHS. The study adapted, where possible, the methodologies used by the National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS). Compliance levels for five of the ten DoD/VHA CPG metrics were measured and compared with the HEDIS percentiles for commercial health plans.

Across all Military Treatment Facilities (MTFs), study results indicate compliance to the diabetes CPG metrics was very similar to levels of compliance noted for DQIP measures both in content areas and recommended target values. Specifically, the MHS exceeded the HEDIS 90th percentile on all measures except LDL-C compliance.

The 2002 study reexamines 2001 measures and adds compliance with recommended microalbumin testing. The 2002 study also includes the additional criteria of continuous enrollment to an MTF and the inclusion of beneficiaries who had a prescription for insulin, oral hypoglycemic or antihyperglycemics.

What was the methodology?

The study was conducted using HEDIS 2002 Technical Specifications for the Comprehensive Diabetes Care measure. The specifications were implemented as written and no modifications were made. The measure consists of six separate rates for a defined population of people with diabetes. These rates can be used to estimate compliance with CPG recommendations for diabetes care. Electronic medical record data from January 1, 2001 through December 31, 2001 were used to calculate the rates.

MTF continuously enrolled beneficiaries, age 18 to 75, with a primary diagnosis of diabetes were identified as having one or more of the following:

- Received an insulin and/or oral hypoglycemics/antihyperglycemic prescription in 2000 or 2001
- Two outpatient visits with a primary diagnosis of diabetes identified in 2001
- One inpatient hospital or emergency room visit in 2001

What were the results?

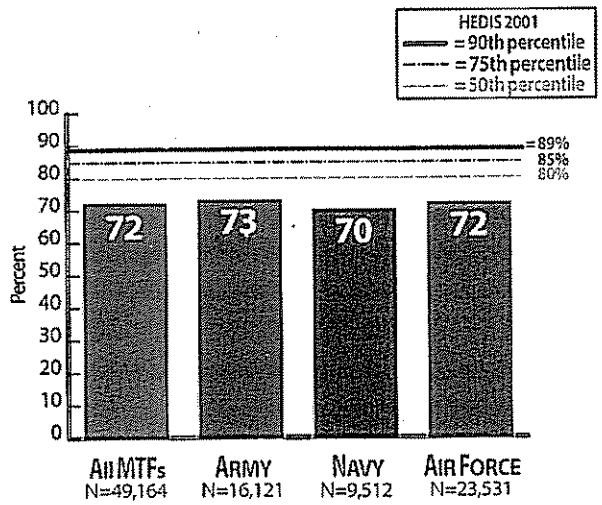
During the study period, 49,164 diabetics continuously enrolled to an MTF were identified from direct care and purchased care visits and prescription records using HEDIS methodology. Slightly more females (55 percent) than males (45 percent) were present in the cohort. Four in five cohort members were 45 years of

age and older. The cohort was predominantly Non-Active Duty (96 percent). The largest proportion was enrolled to Air Force MTF sites (48 percent), followed by Army MTF sites (33 percent), and Navy MTF sites (19 percent). Approximately one-third of the cohort was enrolled to an MTF in either Southeast Region 3 (14 percent) or Southwest Region 6 (19 percent). Regions 13 (Europe), 14 (Far East), 15 (Caribbean/Canada), and Alaska each contained small percentages (e.g., 1 percent or less) of the diabetics who met inclusion criteria.

Measure 1 — Hemoglobin A1c (HbA1c) Testing

This measure is the percentage of beneficiaries with diabetes whose HbA1c level was tested. Seventy-two percent of the population was tested for HbA1c. This rate was less than the HEDIS 2001 50th percentile rate of 80 percent for HbA1c (Figure 1).

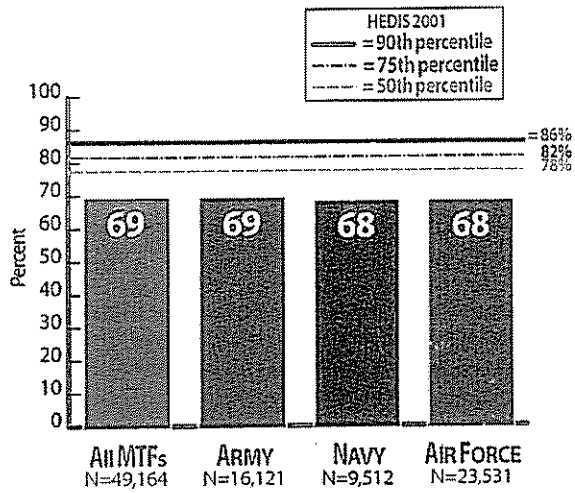
Figure 1: HbA1c Testing Rates For Enrolled Beneficiaries With Diabetes



Measure 2 — Low Density Lipoprotein-Cholesterol (LDL-C) Testing

This measure is the percentage of beneficiaries with diabetes whose LDL-C level was tested. Sixty-nine percent of the population was tested for LDL-C. This rate was less than the HEDIS 2001 50th percentile rate of 78 percent for LDL-C (Figure 2).

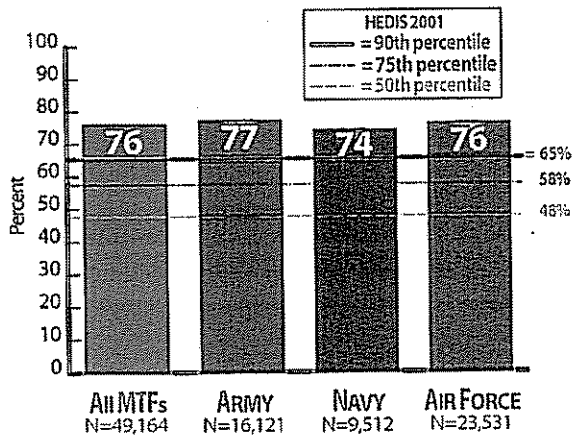
Figure 2: LDL-C Testing Rates For Enrolled Beneficiaries With Diabetes



Measure 3 — Eye Examinations

This measure is the percentage of beneficiaries with diabetes who received at least one eye examination. (See HEDIS 2001 Technical Specifications for inclusion criteria.) Seventy-six percent of the population received an eye examination. This rate exceeded the HEDIS 2001 90th percentile rate of 65 percent for eye examinations (Figure 3).

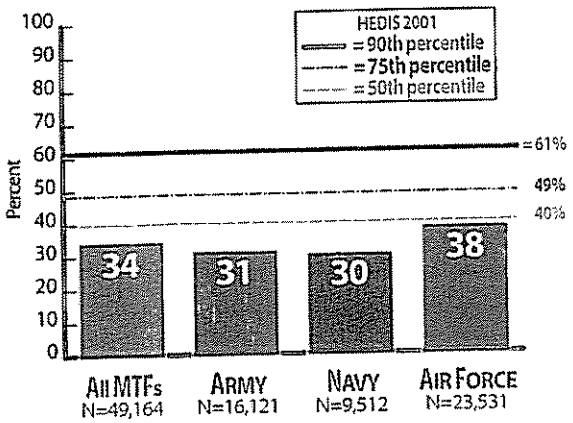
Figure 3: Eye Examination Rates For Enrolled Beneficiaries With Diabetes



Measure 4 — Microalbumin Testing

This measure is the percentage of beneficiaries with diabetes who were tested for microalbumin. Thirty-four percent of the population was tested for microalbumin. This rate was below the HEDIS 2001 50th percentile rate of 40 percent for microalbumin testing (Figure 4).

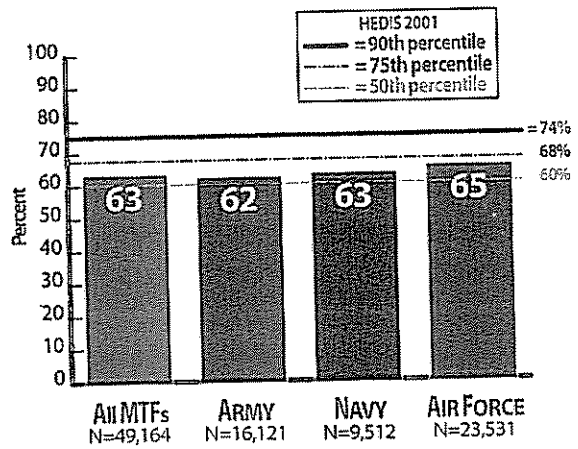
Figure 4: Microalbumin Testing Rates For Enrolled Beneficiaries With Diabetes



Measure 5 – HbA1c Control

This measure is the percentage of beneficiaries with diabetes whose HbA1c level was in control (less than 9.5 percent). Sixty-three percent of the population had HbA1c tests that were in control. This All MTF rate exceeded the HEDIS 2001 50th percentile rate of 60 percent (Figure 5).

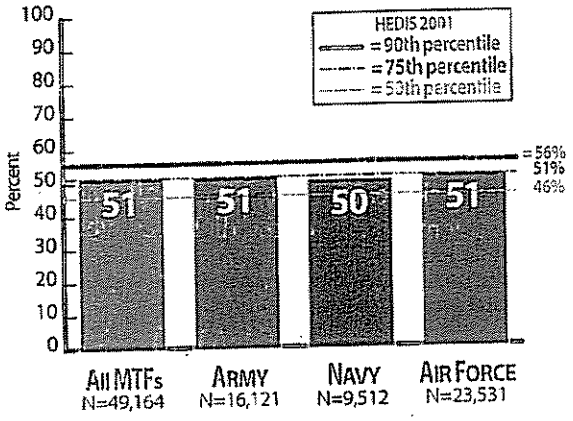
Figure 5: HbA1c Control Rates For Enrolled Beneficiaries With Diabetes



Measure 6 – LDL-C Control

This measure is the percentage of beneficiaries with diabetes whose LDL-C level was in control (less than 130mg/dl). Fifty-one percent of the population had LDL-C tests that were in control. This rate was below the HEDIS 90th percentile rate of 56 percent for control of LDL-C. However, this rate exceeded the HEDIS 2001 50th percentile rate of 46 percent (Figure 6).

Figure 6: LDL-C Control Rates For Enrolled Beneficiaries With Diabetes



Conclusions and Recommendations

In general, levels of compliance to recommendations of the six CPG metrics explored were less than anticipated, especially since the study population was continuously enrolled to an MTF and therefore had the opportunity for continuity of care management. Since this study provided documentation of baseline characteristics, further examinations of practice patterns and consideration of methods and processes for assuring documentation of care are warranted. Suggestions for further study include:

- Analyze gender and age differences in testing and control.
- Compare MTF and Network Care enrollee populations to understand total care for the DoD population with diabetes.

Study Limitations

- This study was conducted in accordance with the HEDIS 2002 Technical Specifications. Therefore, results of this study are not comparable to other studies using a modified HEDIS methodology.
- The NQMP 2001 study was conducted using modified HEDIS Technical Specifications. Therefore, results between the 2001 and 2002 studies are not comparable.

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Management Of Dyslipidemia In The Military Health System (MHS)

A National Quality Management Program Special Study

"The outcome measure for dyslipidemia management, the percentage of the population with in control of Low-Density Lipoprotein Cholesterol (LDL-C) levels, is the ultimate indicator of successful disease management. For the study population, 64 percent had a LDL-C level that was in control. This percentage was between the 50th and 75th percentile of performance for managed care plans reporting the National Committee for Quality Assurance (NCQA), Health Plan Employer and Information Set (HEDIS) measure."

Why manage Dyslipidemia?

High blood cholesterol levels, specifically high levels of Low-Density Lipoprotein Cholesterol (LDL-C), are an important and modifiable risk factor for developing Coronary Heart Disease (CHD) and for increased mortality among individuals with diagnosed CHD. CHD continues to be the leading cause of death in the United States. The Department of Defense (DoD), in collaboration with the Veterans Health Administration (VHA), has developed a clinical practice guideline (CPG) for the prevention and management of high blood cholesterol. The guideline was available for use in December 2001.

The purpose of this study was to measure baseline adherence to the VHA/DoD CPG For The Management of Dyslipidemia In Primary Care prior to implementation, answering the following questions:

1. What percentage of eligible Medical Treatment Facility (MTF) enrollees with an elevated LDL-C and a diagnosis of CHD received antihyperlipidemic medications?

2. What percentage of eligible MTF enrollees had at least one LDL-C level within standard levels of control between 60 and 365 days following an inpatient admission for an acute cardiovascular event?

These questions were examined for the defined population by enrollment MTF service affiliation, gender and duty status.

What was the methodology?

Measure 1 - Antihyperlipidemic Medication Treatment Rate

The first measure, medication treatment for beneficiaries with an elevated LDL-C, included beneficiaries:

- Age 18 to 75 years
- Continuously enrolled to an MTF
- One or more visits to a primary care or cardiology clinic for CHD during 2001
- LDL-C $\geq$ 120 mg/dl during 2001

Prescriptions for antihyperlipidemic medications written within 30 days after the date of the elevated LDL-C were identified for this population. Medication treatment rates were calculated for subgroups of this population.

Measure 2 - LDL-C Screening and Control Following an Acute Cardiovascular Event

The second measure, LDL-C screening and control following an acute cardiovascular event, included beneficiaries:

- Age 18 to 75 years
- Hospitalized in an MTF for an Acute Myocardial Infarction, Coronary Artery Bypass Graft or Percutanious Transluminal Coronary Angioplasty during 2000
- Continuously enrolled to an MTF for 12 months after discharge

LDL-C laboratory tests were examined to identify members of the study population who were screened for an LDL-C level and were in control. In control was defined as at least one LDL-C test value of < 120 mg/dl, not earlier than 60 days or more than 365 days following discharge. Screening and control rates were calculated for subgroups of this population.

Supplemental analysis

Using a modified Health Plan Employer Data and Information Set (HEDIS) methodology a supplemental analysis was conducted. Eighteen of 22 months of LDL-C laboratory testing data were available. Consistent with HEDIS specifications in control was defined as and LDL-C <130 mg/dl.

What were the results?

Measure 1 - Antihyperlipidemic Medication Treatment Rate

Study population

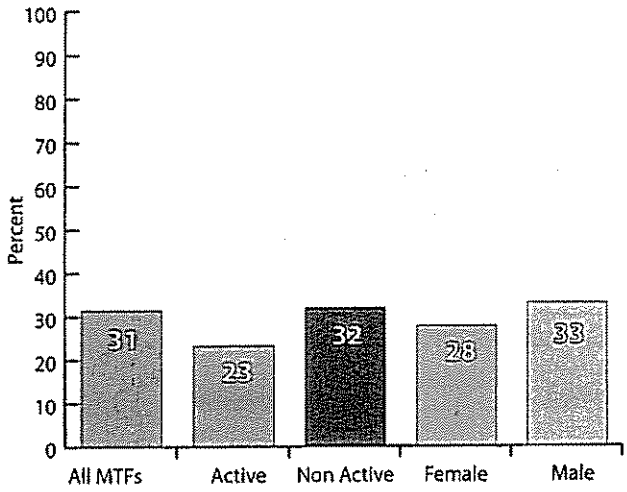
The study population contained 3,024 individuals with an LDL-C level ≥ 120 mg/dl. The study population represented 23 percent of all continuously enrolled beneficiaries with a diagnosis of CHD. The other 77 percent of beneficiaries had a documented LDL-C level of < 120 mg/dl. More than two-thirds of the study cohort was male and approximately 7 percent was Active Duty (AD). Nearly half of the cohort was enrolled to Air Force MTFs, while TRICARE Regions 3 (Southeast) and 6 (Southwest) contained nearly 40 percent of the cohort members.

Medication rates

The antihyperlipidemic medication rate for the Direct Care System (DCS) was 31 percent.

Medication rates among Non-Active Duty (NAD) were 32 percent and were higher than AD rates (23 percent). Medication rates among males were higher than among females. Figure 1 provides an overview of medication rates by duty status and gender.

Figure 1: Antihyperlipidemic Medication Rates by Duty Status, Gender



Measure 2 - LDL-C Screening and Control Following an Acute Cardiovascular Event

Study population

The final study population contained 907 beneficiaries who had an acute cardiovascular event during 2000 and were continuously enrolled to an MTF for 12 months following the event. The study population represented 29 percent of the beneficiaries who had an acute cardiovascular event in the DCS during the year 2000.

Almost 74 percent of the study cohort was male and approximately 10 percent were AD. About 41 percent of the cohort were enrolled to Air Force MTFs. Another 39 percent were enrolled to Army MTFs. TRICARE Regions 4 (Gulf South), 6 (Southwest), and 11 (Northwest) contained over 50 percent of the cohort members. Regions 1 (Northeast), 3 (Southeast), and 9 (Southern Cal.) contained almost 30 percent of the cohort.

LDL-C screening and control rates

The LDL-C screening and control rates for the study population were 72 percent and 61 percent respectively (Figure 2). Beneficiaries enrolled to Navy MTFs had the highest LDL-C screening rate (74) percent and Air Force MTF enrollees had the highest control rate (63 percent). Beneficiaries enrolled to Army MTFs had the lowest screening (70 percent) and control (59 percent) rates.

Figure 2: LDL-C Screening and Control Rates by Service

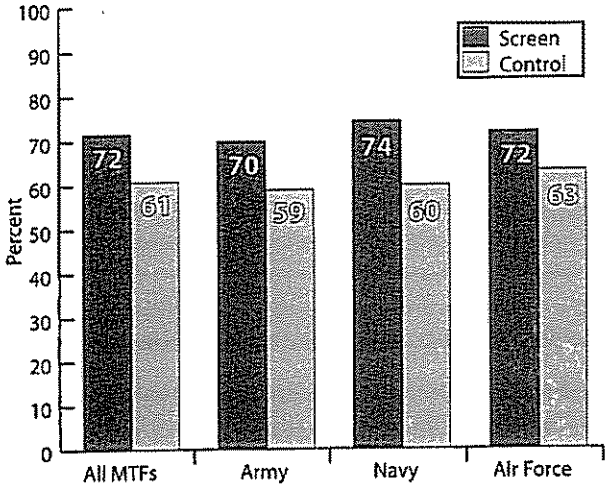
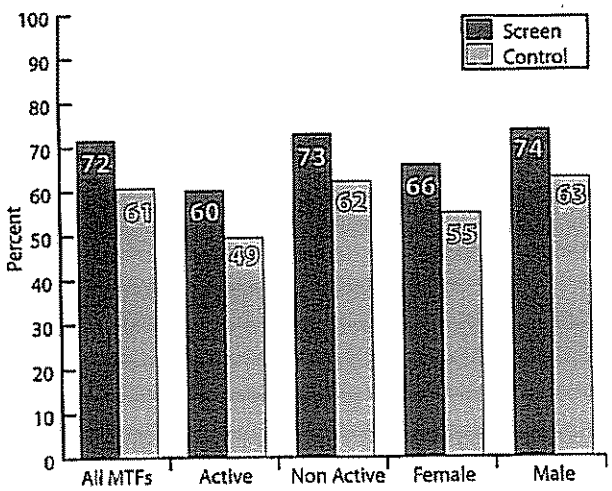


Figure 3 provides an overview of LDL-C screening and control rates by duty status and gender. NAD cohort members had LDL-C screening and control rates of 73 percent and 62 percent, respectively, while the AD rates were 60 percent for screening and 49 percent for control. Gender differences for LDL-C screening and control were less striking than duty status differences.

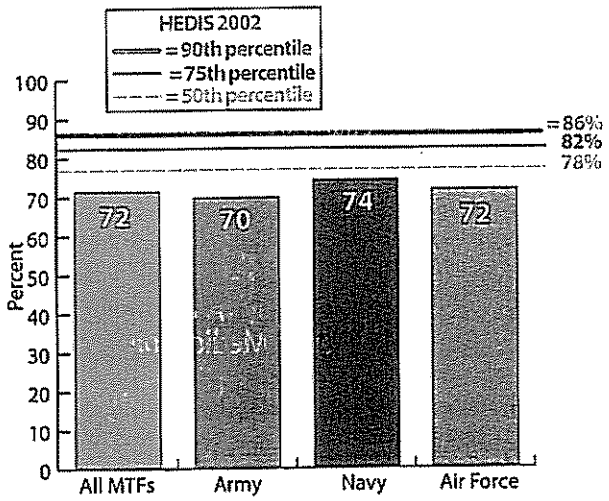
Figure 3: LDL-C Screening and Control Rates by Duty Status and Gender



Supplemental analysis: screening and control rates compared to HEDIS

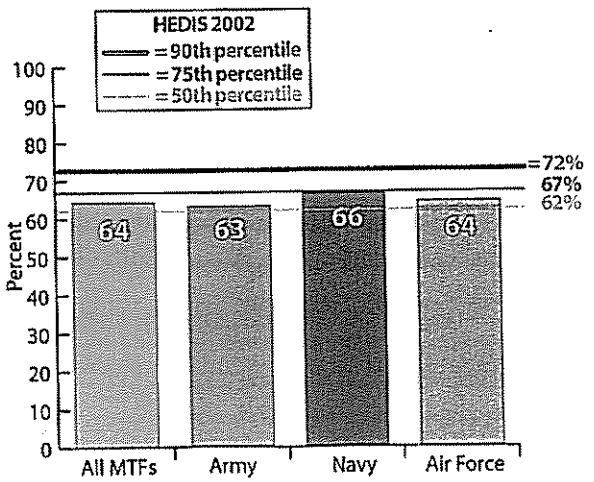
A supplemental analysis was conducted to compare the DCS performance to the HEDIS measure for "Cholesterol Management After Acute Cardiovascular Events". To make the comparison, control was defined as an LDL-C level < 130 mg/dl. The screening definition was not changed. The DCS screening rate of 72 percent was less than the HEDIS 50th percentile screening rate of 78 percent (Figure 4).

Figure 4: LDL-C Service Level Screening Rates Compared to HEDIS



The DCS rate of 64 percent was higher than the median performance rate reported in HEDIS, although it did not match the performance of the top 10 percent (90th percentile) of managed care plans (Figure 5). The three services reported similar control rates, with the Navy having the highest control rate.

Figure 5: LDL-C Service Level Control Rates Compared to HEDIS



Conclusions and Recommendations

- Care for beneficiaries in the DCS with dyslipidemia compares favorably with other health plans for LDL-C control.
- There were differences in the health care beneficiaries with dyslipidemia received based on duty status and gender.
- The DCS population with CHD represents a small portion, < 0.5 percent, of the MTF enrolled population.

Based on the results of the Fiscal Year 2002 study, the following actions should be considered:

- Implement the VHA/DoD Clinical Practice Guideline For The Management of Dyslipidemia In Primary Care throughout the DCS aggressively.
- Conduct a follow-up study on guideline adherence after at least one year of CPG implementation.
- Study the differences in health care based on duty status and gender in greater detail to explain factors that contribute to the differences reported in this study.
- Study provider and organizational (system) differences that affect patient care measurement and guideline adherence.

Study Limitation

This study was conducted using modiefies HEDIS methodology. Lab data were only available for July 2000 through September 2002. The results may not be comparable to studies based on exact HEDIS methodology

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Post-Deployment Health Care Evaluation And Management In The Military Health System (MHS)

A National Quality Management Program Special Study

"The Post-Deployment Health (PDH) Care Evaluation and Management Clinical Practice Guideline (CPG) was implemented in February 2002. Over 75 percent of surveyed Military Treatment Facilities (MTFs) have implemented the CPG."

Why study Post-Deployment Health care?

The Post-Deployment Health guideline addressed the Department of Defense (DoD) need for a uniform approach to identifying health conditions among all beneficiaries with deployment-related concerns. The purpose of this study was to examine early implementation of this important CPG. The study focused on three areas of implementation:

1. Implementation at the MTF primary care clinic level
2. Implementation in the Outpatient Record
3. Implementation electronically in the Standard Ambulatory Data Record (SADR)

Measure 1 – Implementation in MTF Primary Care Clinics

What was the methodology?

The study population included all MTFs with a parent Defense Medical Information System (DMIS) Identification (ID) code. All MTF Post-Deployment Health CPG points of contact (POCs) were sent an e-mail request to participate in a web based implementation survey. Implementation was defined as answering yes to any of the six questions in the survey. The survey was conducted between October 1, 2002 and December 6, 2002.

What were the results?

The survey was sent to the Post-Deployment Health Care CPG POC at 139 MTFs of the 146 MTFs with a parent DMIS ID designation. Seven MTFs were excluded from the mailing because there were no identified POCs. Fifteen MTFs were excluded from the final analysis due to incorrect addresses that could not be resolved, leaving a final survey population of 124 MTFs.

One hundred and seven MTFs (86 percent) responded to the Survey. Over 90 percent (n=97) of the respondents reported implementing at least one component of the CPG process. Almost 40 percent of respondents (n=40) reported implementing all components of the CPG process.

Figure 1: PDH CPG MTF Implementation Survey Results by Number of Components Implemented (Six Total Implementation Components)

Implementation Results	Total
MTFs Surveyed	139
MTFs Responding To Survey	107
MTFs Implementing 1 or more CPG Components	97
MTFs Implementing 2 or more CPG Components	88
MTFs Implementing 3 or more CPG Components	83
MTFs Implementing 4 or more CPG Components	79
MTFs Implementing 5 or more CPG Components	67
MTFs Implementing all CPG Components	40

Measure 2 – Implementation in Outpatient Records

The study population included a convenience sample of outpatient records that were abstracted at selected

primary care clinics at MTFs. High volume primary care clinics were selected at 119 MTFs worldwide. Forty-eight records were abstracted at each site. Implementation was defined as the presence of written documentation in the record to the question "Is this visit related to a deployment?" The site visits were conducted between July 15, 2002 and September 15, 2002.

What were the results?

Of the 119 site visits scheduled worldwide, outpatient record abstraction was conducted at 78 MTFs. Forty-one sites were not scheduled site visits because the MTF POCs reported the CPG had not been implemented. Outpatient records of 3,729 visits were examined at the 78 study sites. Sponsors accounted for 46 percent of the visits, children 19 percent of visits, and spouses 35 percent of the visits. Visits by males accounted for 45 percent of the visits.

Among the 78 MTFs where site visits were conducted, 67 MTFs had documented CPG implementation in the Outpatient Record. Sixteen visits of the documented visits (0.43 percent) were identified as being deployment related.

Measure 3 – Implementation in the Electronic Record

What was the methodology?

The study population included all SADR visits from Fiscal Year 2002 (FY02) that had an ICD-9-CM code (V70.5_6) that indicated the visit was deployment related. These visits were examined to identify patterns of diagnoses that could be related to deployment concerns.

What were the results?

The V70.5_6 code was used in the coding of 2,215 of the approximately 31.5 million outpatient visits during FY02. Of the 2215 outpatient visits with the V code, the V code was used as a primary diagnosis for 73 percent of the visits and as secondary diagnosis for 27 percent of the visits. When coded as a primary diagnosis, almost 84 percent of the visits were for males and over 96 percent were for active duty. As a secondary diagnosis, almost 74 percent of the visits were for males and 85 percent were for active duty. Over 95 percent all visits were at Army and Air Force MTFs.

When the V code was the primary diagnosis, 324 visits (20.1 percent) had a secondary diagnosis recorded. Among the 324 visits with a secondary diagnosis coded, 607 secondary diagnoses were recorded. Many of the secondary diagnoses were not specific. Figure 2 displays all secondary diagnoses, which appeared 10 or more times out of the 607 secondary diagnoses.

Figure 2: Distribution of Secondary Diagnoses Associated with a Primary Diagnosis of V70.5_6

Diagnosis (ICD-9-CM Code)	Frequency*	Percentage
Unspecified prophylactic measure (V07.9)	71	11.70
Medication education (V65.49_1)	69	11.38
Unspecified administrative purpose (V68.9)	55	9.06
Other counseling, not elsewhere classified (V65.49)	50	8.24
Person with feared complaint in whom no diagnosis was made (V65.5)	19	3.13
Other ill-defined conditions (799.8)	12	1.98
Termination examination (V70.5_9)	12	1.98
Pain in joint of lower leg (719.46)	10	1.65
Other diagnoses	309	50.9

*Only diagnoses occurring 10 or more times are listed individually in this figure.

When the V code was the secondary diagnosis (607 visits), the distribution of primary diagnoses was consistent with previously reported deployment

related diagnoses, when aggregated into diagnostic groups. See Figure 3 for the frequency of diagnoses occurring in the four diagnosis groups with the highest frequency of diagnoses.

Figure 3: Distribution of Primary Diagnosis Groups Associated with a Secondary Diagnosis of V70.5_6

Diagnosis Group (ICD-9-CM Code)	Frequency	Percentage
Factors Influencing Health Status and Contact with Health Services (V01-V82)	145	24.0
Mental Disorders (290-319)	139	23.1
Diseases of the Musculoskeletal System and Connective Tissue (710-739)	91	15.1
Signs, Symptoms and Ill Defined Conditions (780-799)	80	13.3
Other Diagnosis Groups	148	24.5

Conclusions and Recommendations

Implementation of the CPG is well under way in the Direct Care System (DCS) as demonstrated by the results of the following performance indicators:

- Seventy-eight percent of surveyed MTFs (n=124) have reported implementing at least part of the PDH CPG.
- An eighty-six percent implementation rate was confirmed by record abstraction at the MTFs visited(n=78)
- Use of the V70.5_6 code for post-deployment concern visits has been implemented aggressively at selected MTFs since February 2002.

Based on the results of the FY02 study, the following actions for FY03 are recommended:

- Monitor MTF CPG implementation for a second year, focusing on sites that did not implement during FY02.
- Examine available electronic data to evaluate the prevalence, distribution, and timeliness of treatment for post-deployment concerns.
- Evaluate the differences in V code use as a primary and secondary diagnosis at high-volume MTFs.

Study Limitations

This study examined beginning implementation of the PDH CPG. The study did not measure the quality or completeness of the CPG implementation. Additionally, the MTF implementation survey was conducted after the records abstraction was completed; hence the apparent discrepancy between reported and documented implementation rates for the CPG.

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Tobacco Use Cessation In The Military Health System (MHS)

A National Quality Management Program Special Study

"Nineteen percent of study respondents were smokers. Fifty-two percent of smokers were advised to quit on one or more occasion."

Why study Tobacco Use Cessation?

Despite widespread knowledge of the hazards associated with tobacco use, smoking is common among the United States adult population. More than 25 percent of adults continue to smoke, while the Department of Defense (DoD) Survey of Health-Related Behaviors Among Military Personnel reported the prevalence of cigarette smoking among military personnel to be about 29 percent (DoD, 1998).

Tobacco use and its associated health and economic burdens are growing concerns worldwide. In the U.S., cigarette smoking is the single most preventable cause of disease, disability, and death. Smoking is responsible for 87 percent of lung cancer cases and for most cases of emphysema and chronic bronchitis. (CDC, 2002). In addition to the proven health risks to smokers, exposure to passive cigarette smoke is associated with elevated risks of cancer, coronary heart disease, and other diseases (EPA, 2002).

What was the methodology?

Using data from the 2001 fourth quarter Health Care Survey of DoD Beneficiaries (HCSDB), this study examined the self-reported rate of smoking and the rate of smokers being advised to quit smoking by a health care provider. Although the HCSDB used the Consumer Assessment of Health Plans (CAHPS®) 2.0H items for smoking cessation, the survey administration protocol was not the same as specified in the HEDIS 2002 Technical Specifications. Therefore, external benchmarks were not available for comparison.

What were the results?

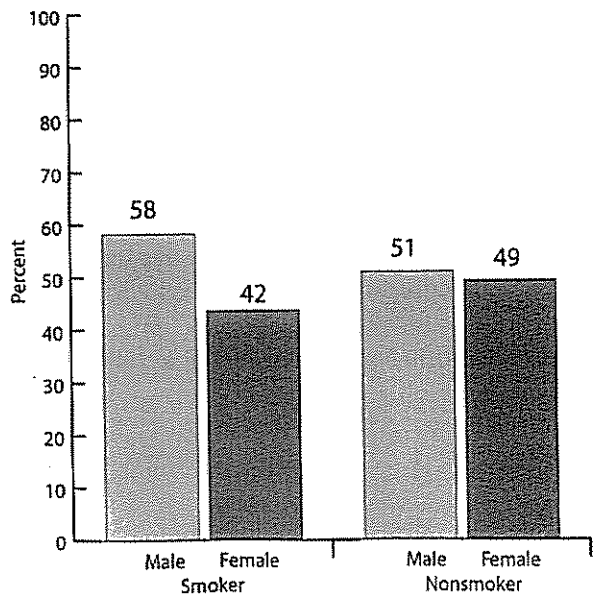
Nineteen percent of survey respondents reported to be current smokers with 14 percent reporting daily use of cigarettes. In comparison, similar studies suggest smoking rates of approximately 25 percent for the general population. Results were also compared for gender, age, and race differences.

Approximately 50 percent of the cohort reported smoking at some time in their lives. Only 30 percent had quit, most over a year ago. Additionally, 20 percent of smokers had not visited a clinic in the past year. Slightly more than half of the approximately one million smokers were estimated to have been advised to quit on at least one health care visit in the past 12 months. Additional details by gender, age and race are below.

Gender

- Fifty-eight percent of smokers were male, in comparison to 51 percent of the non-smoker group (Figure 1).
- Forty-four percent of beneficiaries advised to quit were women. In comparison, 40 percent of the group not advised to quit were women (Figure 2).

Figure 1: Smokers vs. Nonsmokers by Gender



- The MHS could consider contacting successful quitters and recruiting them as mentors for persons trying to give up tobacco products.
- Redesign HCSDB survey questions to better capture required information regarding all forms of tobacco use and efforts to help individuals to stop using this substance.
- Restudy tobacco use, prevention and cessation efforts within the DoD after the redesigned collection instrument is fielded. This study should measure the effectiveness of clinical practice guideline (CPG) implementation and progress toward the CDC goals listed above.

Study Limitations

- The survey dataset included only general questions about cigarette smoking and did not address use of other tobacco products.
- While the survey did ask respondents whether they were advised to quit smoking during the previous year, it did not ask respondents to specify in what context that advice was given.
- Study results are not comparable to NCQA HEDIS benchmarks. Although the study items were taken from the Consumer Assessment of Health Plans® 2.0H survey, the survey was not administered using HEDIS protocols. Secondly, this study examined all smokers regardless of enrollment status. Finally, HEDIS defined smokers included beneficiaries who were either self-reported current smokers or recent quitters (of less than 12 months duration); while in this study, the cohort included only self-identified current smokers.

References

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USPHS, Achievements in Tobacco Cessation: Case Studies: June 2000. Available at: www.surgeongeneral.gov/tobacco/smcasest.htm

Where to go for more information?

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Population Health Operational Tracking and Optimization

PHOTO Sample Reports

Asthma Management (Continuous Enrollment)

Breast Cancer Screening (Continuous Enrollment)

Cervical Cancer Screening (Continuous Enrollment)

Military Health System

Health Care Innovations

Innovations across the Military Health System during 2002 span a wide spectrum of opportunities to improve individual care experiences and the overall population health of all those for whom we offer health care. These innovations were exhibited in a poster session at the 2003 TRICARE Conference. In addition, the complete abstracts are posted on the TRICARE website of the Chief Medical Officer at http://www.tricare.osd.mil/OCMO at the Healthcare Innovations site. This site also contains the archives of previously submitted innovations.

The following nine categories capture the majority of the innovations developed by individuals, clinical departments, hospitals and clinics. Many of these innovations represent creative approaches to longstanding challenges in making the most of our resources and in truly meeting the needs of our patient population, active and retired members and their families.

Subject of Innovation	Command Sponsor
Improvement in Clinical Care	
Shared Medical Appointments for weight management for active duty members	Keesler Air Force Base
Shared Medical Appointments – Drop-in Group Medical Appointments (DIGMA)	Eglin Air Force Base Keesler Air Force Base
Open access clinic	Hill Air Force Base
Direct access in Family Practice Clinic	U. S. Air Force Academy, CO
Pharmacy Dispensing for After Hours Clinic or Emergency Department	Army Medical Center, Ft. Carson, CO
Over the Counter Medication	U. S. Naval Hospital Keflavik, Iceland
Protocol Driven Pharmacy Refill Clinic	U.S. Naval Hospital Keflavik, Iceland
Model Breast Cancer Care	Naval Hospital Lemoore, CA
Team Approach to Quality Breast Care – Gail Model Risk Assessment	Naval Hospital Bremerton, WA
Model Ambulatory Procedures Unit	U.S. Naval Hospital, Okinawa, Japan
Breast Cancer Risk Screening	Naval Hospital Bremerton, WA

User Friendly Clinical Intake Assessment Form (mental health screening form)	Seymour Johnson Air Force Base
Improvement in Access	
Dental bus	52nd Dental Squadron, Spagndahlem U.S. Air Force Base, Germany
Marketing Obstetrics	Naval Hospital Pensacola
Protocol Driven Pharmacy Refill Clinic	U.S. Naval Hospital Keflavik, Iceland
Reconfiguration of Physical Therapy Services	U.S. Naval Hospital Naples, Italy
Special Needs Access	TRICARE Southwest Lead Agent, San Antonio, TX
Teledermatology	TRICARE Southeast Region Lead Agent, Ft. Gordon, GA
International SOS for ADSMS traveling in remote Pacific countries	TRICARE Pacific Lead Agent
Brigade-Centered Care (US Naval Academy)	U. S. Naval Academy, Annapolis, MD Medical Director
Patient Safety	
Patient Safety Program Tool Kit	U.S. Army Medical Command, Ft. Sam Houston, TX
Online Patient Safety Climate Survey	U.S. Army Medical Command, Ft. Sam Houston, TX
Transcription services for providers	5th Medical Group, Minot AFB, ND
Dr. Armstrong Drills (preparation for therapeutic communication and application of physical restraints)	U.S. Naval Hospital Rota, Spain
Patient Safety Manager Database	U.S. Army Medical Command, Ft. Sam Houston, TX
Comprehensive Care Management through improved communication with patients and across the provider trajectory	
Case Management Beneficiary Outcome Study	TriWest Healthcare Alliance, Phoenix, AZ
Case Management Connection	TRICARE Management Activity Office of the Chief Medical Officer
Disease-based Management	TRICARE Southwest Lead Agent, TX
Optimization of Case Management	Eglin AFB, FL

New Use for an Old Tool – CHCS as an Application for Case Management	David Grant USAF Medical Center, Travis, AFB, CA
Patient Education &Self-Care Initiatives	
TRICARE On Line (TOL) Health Information and Communication Portal	TRICARE Central Region, AZ Naval Hospital Bremerton, WA
Health Promotion and Prevention Soldier Self-Care Program	U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD
Putting Medical Nutrition into Practice at the Commissary	Naval Hospital Pensacola, FL
Readiness Starts in the Galley	Naval Hospital Great Lakes, IL
Outreach/Case finding/Population Health	
Strategic Alcohol Education Outreach Program	U.S. Naval Hospital, Rota, Spain
Mental Health Outreach Program	U.S. Naval Hospital, Okinawa, Japan
Breast Cancer Outreach	Keesler AFB, MS
Building Command Teamwork into Command Fitness	Naval Medical Center San Diego, CA
Reproductive Health Outreach	Brooke Army Medical Center
Web-based Tobacco Cessation Support	Naval Medical Clinic Patuxent River, MD
Health Promotion Program Outcomes & Comprehensive Wellness Survey	Naval Hospital Lemoore, CA
Supporting Breastfeeding with Fulltime Lactation Consultants	Naval Medical Center, San Diego, CA
Operational Forces, Force Health Protection/Bioterrorism preparedness	
Line Collaboration in Force Health Protection	U.S. Army Graduate Program in Health Administration
Regional Population Health Profile	TRICARE Southwest Lead Agent Medical Director
Joint Services Installation Pilot Program – template for equipment and training to anticipate and respond to chemical, biological, nuclear, and high yield explosives	Center for Total Access, Ft. Gordon, GA
Enrollment and Healthcare Integration for Naval Operational Forces	Naval Surface Force Atlantic Fleet Force Medical Office Norfolk, VA
A Knowledge Coupler for the Deployed Environment	Center for Total Access, Ft. Gordon, GA

Deployment Stress Kits	Seymour Johnson AFB, NC
Army Plan for Wellbeing	Army Office of the Surgeon General
Staff Education	
Medical Simulation System Evaluation Combat Trauma Patient Simulator	Simulation and Training Command, Orlando, FL
e-Health	Navy Environmental Health Center, Portsmouth, VA
Basic Disaster Life Support and Advanced Disaster Life Support Training, and Combat Trauma Patient Simulator	Center for Total Access, Ft. Gordon, GA
Chemical, Biological, Radiation, Nuclear and high-yield Explosives (CBRNE) Readiness Training	Naval Hospital Bremerton, WA
Population Health Informatics Training	TRICARE Mid-Atlantic Lead Agent, Norfolk, VA
Dr. Armstrong drills to ensure safe therapeutic physical restraint	Naval Hospital, Rota, Spain
Automation to support documentation of care, to improve data quality for analysis, and improve retrieval for communication across providers	
Organizational transformation through modeling of population health status of a given region and determining appropriate healthcare staffing and other resources	U.S. Army Medical Command, Ft. Sam Houston, TX
Tracker for Patient Queries	Sierra Military Health Services, Baltimore, MD
Medical Record tracker	U. S. Air Force Base Aviano, Italy
Online Referral Request Form	Sierra Military Health Services, Baltimore, MD
Orders, Referral and Authorization electronic tracker	Sierra Military Health Services, Baltimore, MD TRICARE Southwest Lead Agent, San Antonio, TX
Managed Care Optimization and analysis tool for EUROPE and workload data	TRICARE Europe Lead Agent, Sembach AFB, Germany
Automated Medical Surveillance & Electronic Laboratory Surveillance	Navy Environmental Health Center, Norfolk, VA
Teledermatology	TRICARE Southeast Region Lead Agent, Fort Gordon, GA