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UTILIZATION MANAGEMENT: AN ASSESSMENT OF EFFECTIVENESS IN THE UNITED STATES ARMY GREAT PLAINS REGIONAL MEDICAL COMMAND

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MANAGED HEALTH CARE IS CHANGING THE FINANCING AND DELIVERY OF HEALTH CARE IN THE UNITED STATES. THE EFFECTS OF THOSE CHANGES ARE IMPACTING ON MILITARY HEALTH AND THE U.S. ARMY MEDICAL COMMAND. THE DEPARTMENT OF DEFENSE REQUIRES ALL MEDICAL TREATMENT FACILITIES TO IMPLEMENT AND CARRY OUT UTILIZATION MANAGEMENT POLICIES TO MONITOR APPROPRIATENESS OF CARE AS ONE MEANS TO REDUCE COSTS. THE DEPARTMENT OF DEFENSE MANDATED BUDGET CUTS FOR FY97 WHICH TOTALED $55 MILLION WITHIN THE REGIONAL MEDICAL COMMAND. ONE REASON FOR THE CUTS WAS UTILIZATION WAS GREATER THAN IT SHOULD BE, AND MANDATORY BUDGET DECREASES WOULD FORCE THE HOSPITALS TO DECREASE UTILIZATION. THE EFFECT WOULD BE TO REDUCE EXPENDITURES AND SAVE MONEY. THIS MANAGEMENT PROJECT PROVIDES A BASELINE ASSESSMENT OF UTILIZATION MANAGEMENT IN FIVE REGIONAL HOSPITALS. IT COMPARES DIFFERENCES IN UTILIZATION BETWEEN ACTIVE DUTY MILITARY AND CHAMPUS ELIGIBLE PATIENTS, AND BETWEEN FISCAL YEARS 1995 AND 1996. METRICS EVALUATED ARE AVERAGE LENGTH OF STAY, TOTAL DISCHARGES, AND TOTAL BED DAYS PER ONE THOUSAND ELIGIBLE BENEFICIARIES.

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ABSTRACT

Managed health care is changing the financing and delivery of health care in the United States. The effects of those changes are impacting on the Military Health Services System and the U.S. Army Medical Command. The pressures to reduce costs are enormous. The Department of Defense requires all medical treatment facilities to implement and carry out utilization management policies to monitor appropriateness of care as one means to reduce costs.

The Great Plains Regional Medical Command provides the command and control link for nine hospitals in six states and Panama. The Department of Defense mandated budget cuts for fiscal year 1997 which totaled approximately $55 million within the region. One reason for the cuts was that utilization was greater than it should be, and mandatory budget decreases would force the hospitals to decrease utilization. The effect would be to reduce expenditures and save money.

This management project provides a baseline assessment of utilization management in five regional hospitals. It compares differences in utilization between active duty military and CHAMPUS eligible patients, and between fiscal years 1995 and 1996. Metrics evaluated are (1) average length of stay, (2) total discharges, and (3) total bed days per one-thousand eligible beneficiaries.

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CHAPTER 1

INTRODUCTION

Conditions Which Prompted the Study

The Great Plains Regional Medical Command (GPRMC), located in San Antonio, Texas, is a major subordinate command of the U.S. Army Medical Command (MEDCOM). The GPRMC commander and staff carry out the command and control function for U.S. Army health care facilities located in a 14 state region and Panama. The primary mission of the Regional Medical Command is to support the readiness requirement of the total force (Task Force Aesculapius, 1995). Other functions include resource allocation, utilization analysis, and performance assessment across the region.

Nine hospitals in the GPRMC, each referred to as a military treatment facility (MTF), are located in six states and Panama (Great Plains Regional Medical Command, 1996). The GPRMC crosses the boundaries of TRICARE Regions Six and Eight. The TRICARE Program, established by the Department of Defense (DoD), is a comprehensive managed health care delivery system implemented as a major reform of the Military Health Services System (MHSS) (Federal Register, 1995).

TRICARE Lead Agent offices are located in each region. Each is responsible for health care delivery provided to military family members, retirees, and their family members under managed care contracts within its respective region. Medical care may be provided by contracted civilian health networks or the direct care system (at military MTFs) (Johnson, 1996). According to the Inspector General (IG) of the Department of Defense, "Lead Agents and MTF commanders will be accountable for the health care costs, quality and access in their delivery areas for all beneficiaries, in both the civilian networks and the direct care system" (IG, DoD, 1995). This blending of responsibility results in the TRICARE Lead Agents sharing management responsibility with MTFs in their regions, but having no authority to manage personnel and financial resources. MTF commanders and their staff work closely with Lead Agents to insure quality and cost effectiveness of care. However, MTF commanders have sole authority on personnel mix and funding priorities within their hospitals and clinics to meet patient care needs.

The Department of Defense established utilization management (UM) policy for the military direct care system. The policy mandates a uniform system of UM for military health care regardless of setting (Assistant Secretary of Defense for Health Affairs, 1994a). Tischler described utilization management as "..a mechanism for managing health care costs by assessing the appropriateness of care and influencing decisions about its

provision to ensure the least costly but most effective treatment" (Tischler, 1990). The DoD policy mandates MTF compliance in four distinct areas of UM. Those areas are (1) prospective review, (2) concurrent review, (3) retrospective review, and (4) case management. The policy also establishes review criteria and an appeals system for beneficiaries. Review of the literature later in this paper will more fully define and describe the individual components of UM. The TRICARE Program includes all DoD health care eligible beneficiaries and all branches of military service. Hospitals belonging to all three services, the Army, Air Force, and Navy, are located in Region Six. Brooke Army Medical Center (BAMC) and Wilford Hall Air Force Medical Center (WHMC) are located in San Antonio, and both follow the same TRICARE Region Six policy and guidelines. Not all of the MTFs in the GPRMC are located in TRICARE Region Six. Some fall within the boundaries of TRICARE Region Eight.

DoD funding provides fiscal year budgeting for the Defense Health Program (DHP). The Assistant Secretary of Defense for Health Affairs provides budget guidance to the Army, Navy, and Air Force, who, in turn, establish their own operating budgets for the year. For Fiscal Year (FY) 1997, DoD reduced the DHP budget by approximately $147.2 million (Yoshihashi, 1996a). The reason for the budget cut was failure of the MHSS to fully pursue savings obtainable through robust implementation of UM procedures (IG, DoD, 1995). In other words, UM policy issued by the

Assistant Secretary of Defense for Health Affairs in 1994 had not been implemented, and the total MHSS budget was reduced in order to force savings in FY97. The total $147.2 million budget decrease was parcelled to the services as follows: $66.5 million for the Army, $47.1 million for the Air Force, and $33.6 million for the Navy (Yoshihashi, 1996b). The Assistant Secretary of Defense for Health Affairs further ordered a notional adjustment (decrease) based on average health care costs per user within each individual service. The notional adjustment for the Army was $34.7 million, and for the Navy was $27.1 million. The Air Force received no notional adjustment (Yoshihashi, 1996b). The total decrease (UM plus notional) by service was: Army, $101.2 million, Navy, $60.1 million, and Air Force, $47.2 million. It is apparent the Army Health Care System experienced a budget cut approximately twice that of the other two services.

A comparison of FY96 and FY97 budgets for each MTF within the GPRMC is shown in Table 1.

GPRMC FY97 PROPOSED BUDGET ($000)

HOSPITAL	FY96 BUDGET	FY97 BUDGET	DIFFERENCE
BAMC	96,758	84,882	(11,876)
FT. CARSON	51,815	44,712	(7,103)
FT. HOOD	69,852	59,882	(9,970)
FT. LEAVENWORTH	14,167	12,389	(1,778)
PANAMA	21,231	15,721	(5,510)
FT. POLK	28,629	24,273	(4,356)
FT. RILEY	20.455	14,852	(5,603)
FT. SILL	34,239	28,635	(5,604)
FT. LEONARD WOOD	33,716	30,370	(3,346)
TOTAL	370,862	315,716	(55,146)

Table 1

The total GPRMC budget cut for FY97, shown in Table 1, is $55.146 million, a decrease of 14.9%. The MTF at Fort Riley faces a total cut of $5.603 million, a decrease of 27.0%. Even though the Army Surgeon General assured the GPRMC staff other funds would be provided to mitigate the severity of the cuts (Blanck, 1996), utilization management savings are imperative in the future if health care delivery in the GPRMC is to continue to be as robust as it has been in the past.

The November 1994 memorandum, "Utilization Management Activities in the Direct Care System under TRICARE" (Assistant Secretary of Defense for Health Affairs, 1994b) delineated MTF responsibilities in implementing and carrying out UM. Application of UM measures was intended to result in more efficient use of MTFs, along with the resultant cost savings realized by those efficiencies. Required components of the utilization management program include those most often used by industry, namely prospective, concurrent, and retrospective review, discharge planning, and case management. The policy applies to both CHAMPUS eligible and active duty military beneficiaries. Prior to this the only requirement was for MTF commanders to implement a UM plan based on individual need, and evaluate its effectiveness yearly (Army Regulation 40-68, 1989).

Subsequent to the 1994 Memorandum requiring specific UM measures at military MTFs, the Inspector General, Department of Defense, issued a review of UM procedures in place at selected military MTFs (DoD IG, 1995). Common practices found in the private sector were compared with those required by the Assistant Secretary of Defense for Health Affairs, and with plans formalized by regional Lead Agents. Results of the review focused on personnel issues, UM plans, organizational issues, and inappropriate admissions in same-day surgery and aeromedical evacuation. Findings specifically indicated some MTFs did not have adequate staff to implement and carry out UM measures. Plans generally did not identify if the contractors, in-house staff, or a combination of both would perform the UM function. Lead Agents had the responsibility for managing delivery of health care within their regions, but no financial or personnel management authority. Last, inappropriate admissions were recorded for same-day surgery and aeromedical evacuation at some MTFs. The Inspector General found that in the case of military members some admissions would not be appropriate under civilian guidelines, but were indicated to reduce spread of infectious disease or provide low intensity nursing care.

The TRICARE Region Six contract became effective on November 1, 1995. Foundation Health Federal Services, Inc. (FHFS) is the managed care contractor for the region, which includes MTFs in Texas, Oklahoma, and Louisiana. According to the contract, FHFS is obligated to perform UM

functions for the MTFs in Region Six for CHAMPUS-eligible beneficiaries (FHFS UM Plan, 1995). The contract does not require FHFS to provide the same service for active duty personnel. Since implementation of the contract, UM procedures have not been provided for active duty members at BAMC, even though the 1994 DoD Memorandum specifies UM for all patients. WHMC began precertification, concurrent review, and retrospective review for all active duty inpatients in January, 1996 (Easterling, 1996). However, the process was terminated in October, 1996 as cost ineffective, because fewer than 1% of admissions were determined to be inappropriate.

Statement of the Problem

The commander, Brooke Army Medical Center, is currently assigning staff and putting in place procedures to accomplish UM for active duty admissions (Van Loewe, 1996). Those procedures are currently being done for CHAMPUS eligible patients, which include retirees and all family members. Data currently do not exist in the GPRMC which compare hospital utilization by CHAMPUS eligible patients covered by UM, with active duty patients not covered by UM. This study attempts to answer the following questions: What, if any, difference is there between active duty (non-UM) and CHAMPUS eligible (with UM) hospital utilization within the GPRMC? Second, is there a difference in utilization between FY95 and FY96?

Literature Review

Utilization management may be recognized as:

> "....a proactive, joint medical staff/management process in which a hospital can continually work towards maintaining and improving the quality of care through the effective use of resources. It is a commitment not only to review the hospital utilization patterns, but also to take action in any areas of inappropriate utilization" (Tan, McCormick, and Sheps, 1993).

According to the authors above, much of the increase in hospital costs may be attributable to inappropriate use of resources in the delivery of health care. Some of the increase may be due to unnecessary resource use. UM is a management process employed solely to recognize and reduce unnecessary utilization. According to Bailit and Sennett (1991), hospital review, also known as utilization review (UR), is directed at reducing patient bed days and the associated high rate of cost increases. UR is one component of the larger process of UM. It is records focused rather than patient focused, in that the process is performed by third parties who may or may not come into contact with patients. Records are reviewed either prospectively (before elective admission), concurrently, or retrospectively. Prospective review has resulted in a reduction of community hospital bed use by up to 18% (Schwartz and Mendelson, 1991). Not all of that reduction has been realized as cost savings. Providers tend to order more tests and outpatient procedures, and raise their fees to compensate for decreased hospital utilization (Schwartz and Mendelson, 1991).

Restuccia (1995) describes (1) concurrent review, and (2) assessment of appropriateness of admissions (also called preadmission or prospective review) as the most common types of UR in the United States. UM includes the two components listed above, plus retrospective review, patient discharge planning, provider profiling, and case management (Croegaert, Azcueta, and Witkin, 1995). Case management is employed to oversee treatment for patients who have catastrophic or chronic illnesses or diseases, in order to provide quality care at the most appropriate and cost effective level. The intent is to treat below the level of a tertiary care facility, such as in a skilled nursing facility, rehabilitation center, or outpatient setting. Bailit and Sennett (1991) point out that UM is primarily effective in changing providers' behavior, but do not see it as the main process to decrease health care costs to acceptable levels. They foresee the market effects of managed health care strategy as providing the real financial incentives for provider groups to leverage large decreases in the growth of health care costs.

The majority of employees enrolled in private health care plans and all Medicare and Medicaid participants are covered under plans utilizing UM as a cost containment tool (Bailit and Sennett, 1991). The growth of UM is remarkable. Very few plans contained a UM component until the middle 1980s. The rapid growth of health care expenditures from 1970 to 1985, the introduction of diagnosis related groups (DRGs) in the early 1980s, and the

rush to pre-paid, capitated health plans such as health maintenance organizations (HMOs) led to attempts by payers to control costs (Payne, 1987). UM therefore grew rapidly over the next five years, as DRGs and capitated health plans shifted monetary risk from payers (insurance companies and governments) to provider organizations (groups, hospitals, and independent practitioners) (Trentalance, 1995).

Some physicians believe UR measures result in lower quality of care. For them, it is difficult to discern a difference between what is medically necessary and what constitutes quality care. They also associate a reduction in hospital days in relation to past practices as a reduction in quality. No evidence exists to support a relationship between UR and a decrease in quality of care (Becker, 1990). Precertification and continued hospital stay monitoring is employed to assure the medical necessity of the stay, not to restrict needed treatment. Simply changing the patient treatment setting from acute care to subacute care results in significant savings. Lewis and Lamprey (1993) point out that 20 percent of all acute bed days may be shifted to subacute care, with savings to payers and beneficiaries of up to 40 percent of per-diem costs. That finding may be contrasted with another report also published in 1993. Estimated savings in national health expenditures in 1990, under all forms of managed care with effective UM, would have totaled approximately $6.6 billion, under the most favorable

scenario. That total equals 1.0 percent of national health care expenditures (Staines, 1993).

The DoD UM (1994) policy for the direct care system identified the following goal and objectives:

Goals:

- Maximize appropriate care and minimize/eliminate inappropriate care
- Limit annual medical inflation to less than the National Medical Consumer Price Index Rate

Objectives:

- Minimize/eliminate
  - Inappropriate level of care
  - Inappropriate admissions
  - Inappropriate stays (specialty or total)
  - Inappropriate procedures
  - Inappropriate discharges

Metrics, or standards, which DoD considers when evaluating effectiveness of UM policies within the MHSS include (1) discharges per 1000 beneficiaries, (2) bed days per 1000 beneficiaries, (3) average length of stay (ALOS), and (4) cost per beneficiary during a specified fiscal year (Kamin, 1996). U. S. Army Medical Command policy is directive in nature and follows DoD policy (United States Army Medical Command, 1997). ALOS is the dividend resulting from dividing total bed days by total discharges during the fiscal year. The effect on ALOS achieved by changing either or both of the other metrics is apparent. A reduction in bed days,

discharges, and ALOS has a direct positive impact on the stated goals and objectives, and assumes cost savings.

Feldstein, Wickizer, and Wheeler (1988) evaluated admissions and patient days per 1000 insured persons, and expenditures per insured person covered by a large private insurance carrier. They found a negative correlation between initiation of UM measures, and both admissions and total hospital expenditures. In other words, total costs and admissions decreased as a function of implementing UM. Smith and Gotowka (1991) analyzed the effect of onsite concurrent review (OSCR) on Aetna's inpatient expenses and utilization rate for a large corporate policyholder. Average lengths of stay were reduced, bed days were significantly reduced, and expense rates were lower with OSCR, over and above preadmission authorization. Average net savings per employee were calculated at $233 per year with the cost of the UR program factored in.

Data published by Khandker and Manning (1992) suggest UR results in a reduction of average length of stay, decreased inpatient expenses of 8.1 percent, and an overall decrease in medical costs of 4.4 percent. Utilization measures employed were total admissions, length of stay, and hospital days per 1000 covered employees for surgical and medical admissions. The authors found that total admissions are affected only slightly by UR. Most of the savings are realized by reduced average length of stay, as shown by

total bed days per 1000 employees. In their opinion, UR is one element in a comprehensive health care cost-control strategy.

Purpose

This study was initiated to establish baseline hospital inpatient utilization management data for selected medical treatment facilities within the GPRMC. It will quantitatively analyze the effect of DoD mandated UM performed for CHAMPUS eligible beneficiaries by comparing data collected prior to and after implementation of the TRICARE contract (FY95 and FY96). The study will compare utilization rates of CHAMPUS eligible beneficiaries (with UM) against active duty beneficiaries (without UM) for FY96. Results will provide baseline data to evaluate the effectiveness of current UM procedures and to provide an assessment tool for future UM decisions.

Quantitative analysis includes (1) total bed days per quarter of each fiscal year for the two categories of patients and (2) total discharges for each time period. ALOS will be calculated and the resulting means will be compared to assess significance of difference, if any. The literature suggests there is a strong correlation between inpatient UM and cost savings, so neither cost-effectiveness nor cost-benefit analyses will be performed(Khandker and Manning, 1992; Smith and Gotowka,1991). Any decrease in utilization will imply savings in health care expenditures.

CHAPTER 2

METHODS AND PROCEDURES

Data Collection

Data collection for this project involves accumulation of a data base which is primarily descriptive. The intent is to collect utilization data for the defined population, report the results, and compare the results among groups identified as MTF beneficiaries. The study follows the descriptive research approach as defined by Isaac and Michael (1981), the purpose of which is to..."describe systematically the facts and characteristics of a given population or area of interest, factually and accurately." Arithmetic mean will be used to measure central tendency of the populations studied, due to its greater degree of reliability among the three measures of central tendency normally employed (Isaac and Michael, 1981).

Quantitative data gathering will follow the data reporting flow established by the U.S. Army Medical Command. Information pertaining to inpatient length of stay, patient category (active duty or CHAMPUS) and MTF is drawn from the clinical record for input into the Composite Health Care System (CHCS) (Hendricks, 1996). Dispositions from CHCS are electronically entered into the Standard Inpatient Data Record (SIDR) and the Retrospective Case Mix Analysis System (RCMAS), for access by the

Corporate Executive Information System (CEIS). Patient disposition data by specific MTF, category of patient, total admissions, and length of stay will be provided by CEIS for analysis.

Data Analysis

The two groups will be compared using Analysis of Variance (ANOVA) and the F-test (significance at 0.05) to ascertain the significance of differences between means. Excel (Microsoft Corporation) was the software selected for statistical analysis.

Inpatient days per thousand beneficiaries, by category, will be computed for FY95 and FY96 for each of five selected MTFs. Data are supplied by quarterly compilation by CEIS Customer Service Division (CSD), Fort Sam Houston, Texas. The MTFs selected are (1) Brooke Army Medical Center (BAMC), (2) Bayne-Jones (BJACH), Fort Polk, LA, (3) Darnall (DACH), Fort Hood, TX, (4) Reynolds (RACH), Fort Sill, OK, and (5) Evans (EACH), Fort Carson, CO. EACH is not located in TRICARE Region Six, but is included for comparison with the other MTFs. Inpatient utilization rates will be calculated for active duty members and for CHAMPUS eligible patients between the ages of 17 and 50 in order to compare like age groups. Average utilization rates per quarter for each category will then be compared with a standard (National Hospital Discharge Survey, 1996) to ascertain what, if any, difference exists. The resulting data base will provide data on

current inpatient utilization within the GPRMC and a baseline for future comparisons.

Limitations of the Study

Data for this study come from five different MTFs, and are subject to differences associated with non-standardized methods of data collection and submission. Admission diagnoses differ among MTFs, between quarters for individual MTFs, and between the two data groups studied. Data are limited to MTF utilization during FY95 and FY96, although previous years' utilization may be referred to in order to determine trends. The age group studied (17-50) limits the possibility of specific observations obtainable through smaller age groupings. However, the intent of this project is to gain an understanding of the "global" picture of utilization within the GPRMC. Future studies may consider smaller age groups, or gender specific and diagnosis related admissions.

Psychometrics

Each MTF has systems variations in data collection, provider profiles, staffing, and funding. The relatively large samples studied support reliability of the findings as applied to the entire population. Review of the literature confirmed both the validity of the direct relationship between UM and cost savings, and that implementation of UM measures produces no measurable negative effect on health outcomes.

RCMAS reported dispositions are reliable indicators of UM outcomes. The Medical Expense and Performance Reporting System (MEPRS) and data from SIDR generally match. However, RCMAS data is based on completed records, which results in "lag-time" until all dispositions have been entered into the database. When the data for this study were compiled, 95.47 percent of total FY96 RCMAS dispositions were accounted for in MEPRS (Hendricks, 1996). The percentage accounted for will increase over time as more records are completed at MTFs and entered into the database. Data accountability of 95.47 percent is a reliable sample from which to draw conclusions for this project.

CHAPTER 3

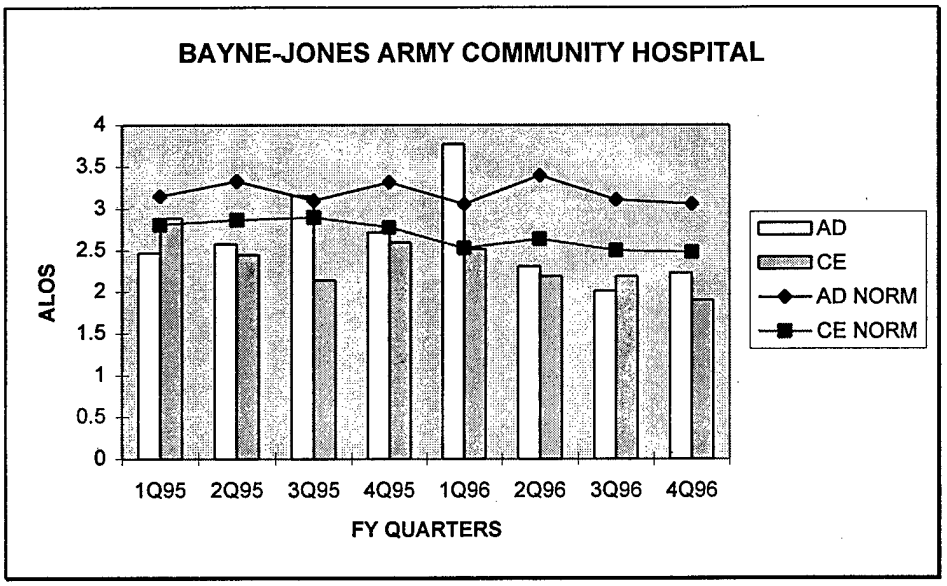
RESULTS AND MAJOR FINDINGS

The four GPRMC hospitals located within TRICARE Region Six which were considered in this study share the same general UM policies and characteristics. Few, if any, UR procedures were performed for active duty admissions during fiscal years 1995 and 1996. Concurrent review was more frequently done than preauthorization, partly due to the fact strong physician compliance is lacking in requesting authorization for elective admissions. This is not to be construed as a criticism of physicians in general. Physicians require expert ancillary support to perform required components of UM, and that support has been lacking within the region (Criddle, 1996). Implementation of DoD(HA) and MEDCOM policy will result in UM measures covering all active duty admissions. UM procedures are generally being accomplished for CHAMPUS eligible patients admitted to each of the four hospitals. Foundation Health Federal Services performs those functions, as mandated by the TRICARE Region Six Managed Care Support Contract (Foundation Health Federal Services, 1995).

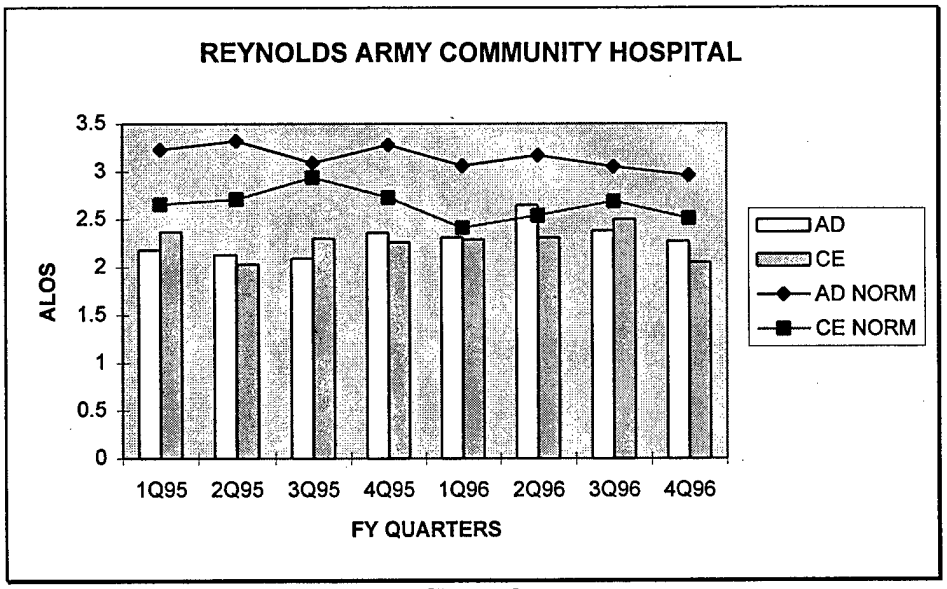
Length of Stay Comparison Among Hospitals

Charts 1 through 5 graphically depict quarterly data representing

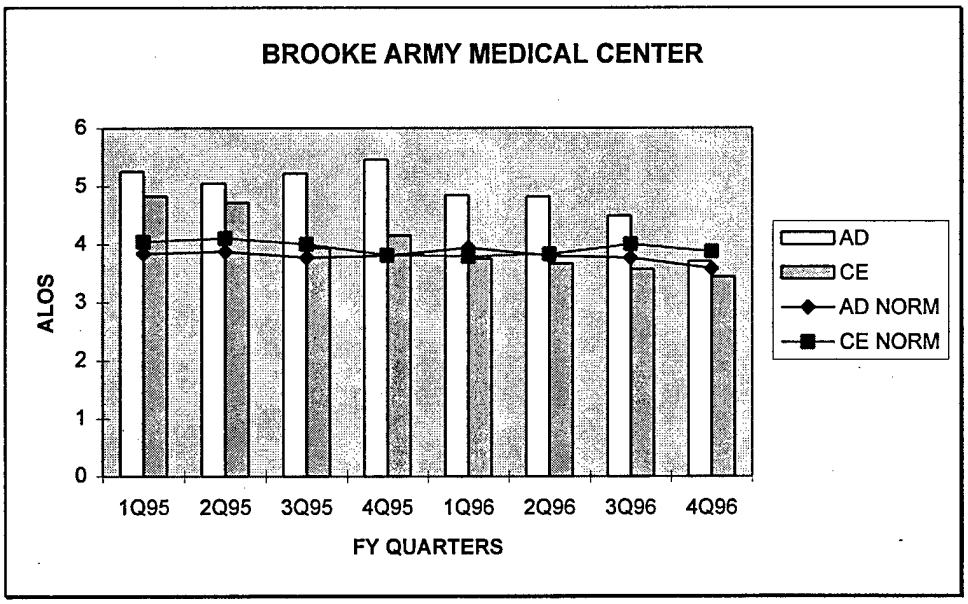
number of patient records reported from the respective hospitals. Average length of stay is shown in relation to 1996 California normative data for the same age group and admitting diagnoses for active duty (AD) and CHAMPUS eligible (CE) patients. Raw data are displayed in Appendix 1.



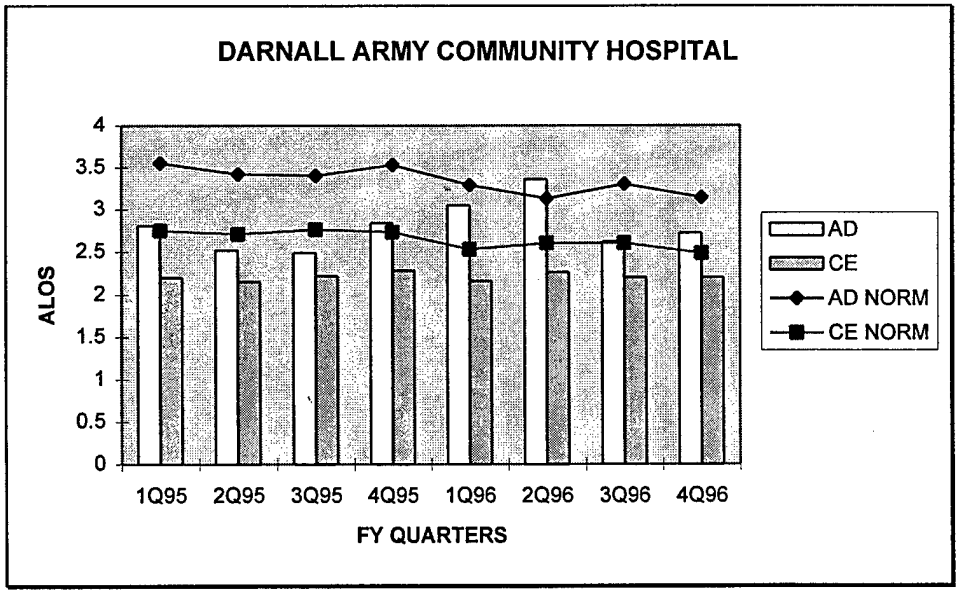
Source: CEIS; RCMAS **Chart 1**



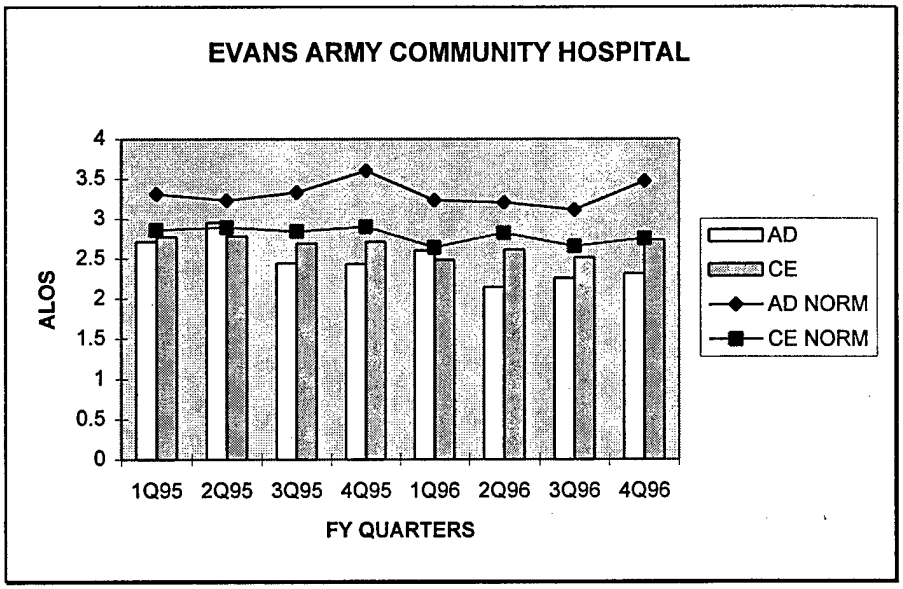
SOURCE: CEIS; RCMAS **Chart 2**



Source: CEIS; RCMAS **Chart 3**



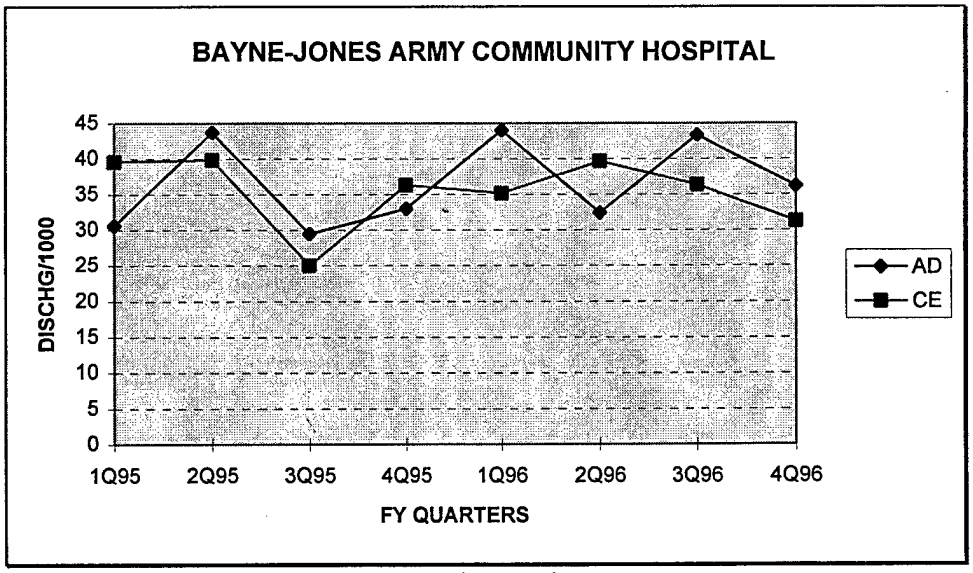
Source: CEIS; RCMAS **Chart 4**



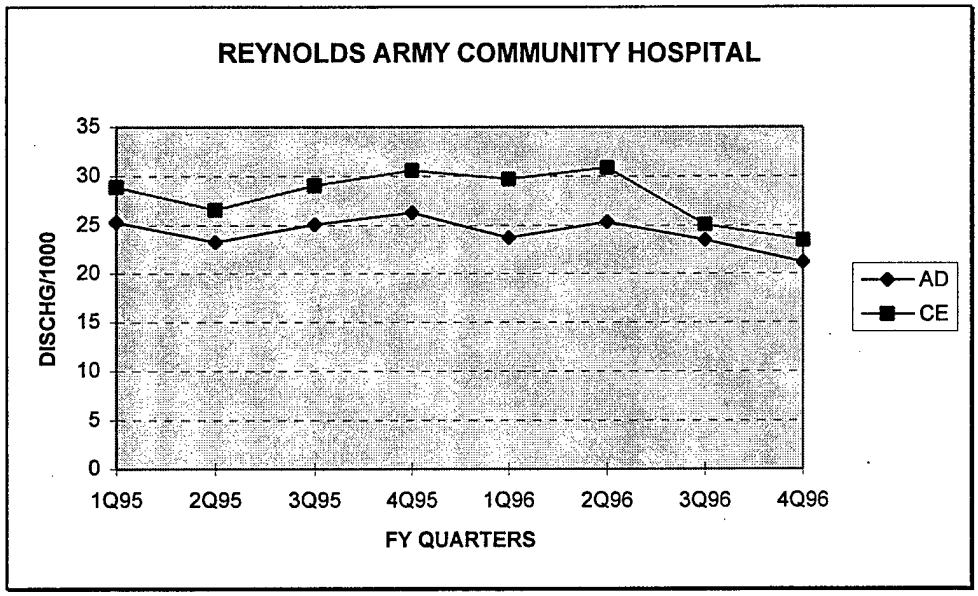
Source: CEIS; RCMAS **Chart 5**

Comparison of Discharges Among the Hospitals

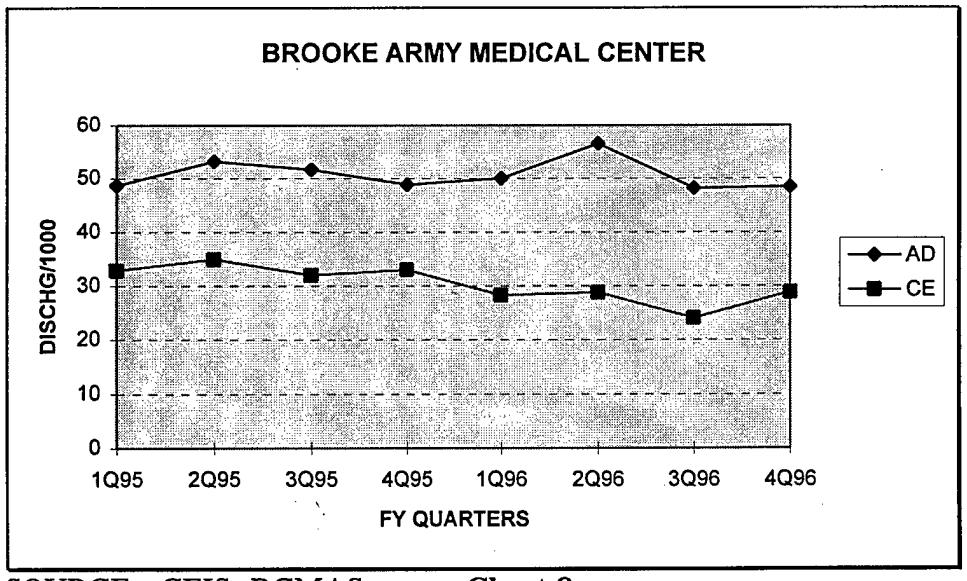
Charts 6 through 10 graphically depict quarterly discharges for active duty and CHAMPUS eligible patients in each MTF. Raw data are displayed in Appendix 2.



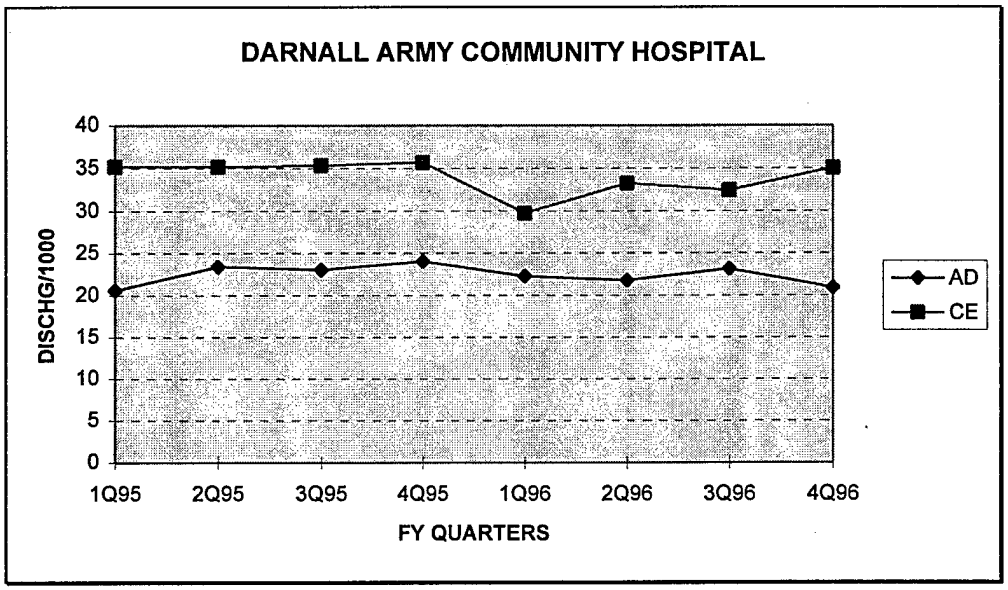
SOURCE: CEIS; RCMAS **Chart 6**



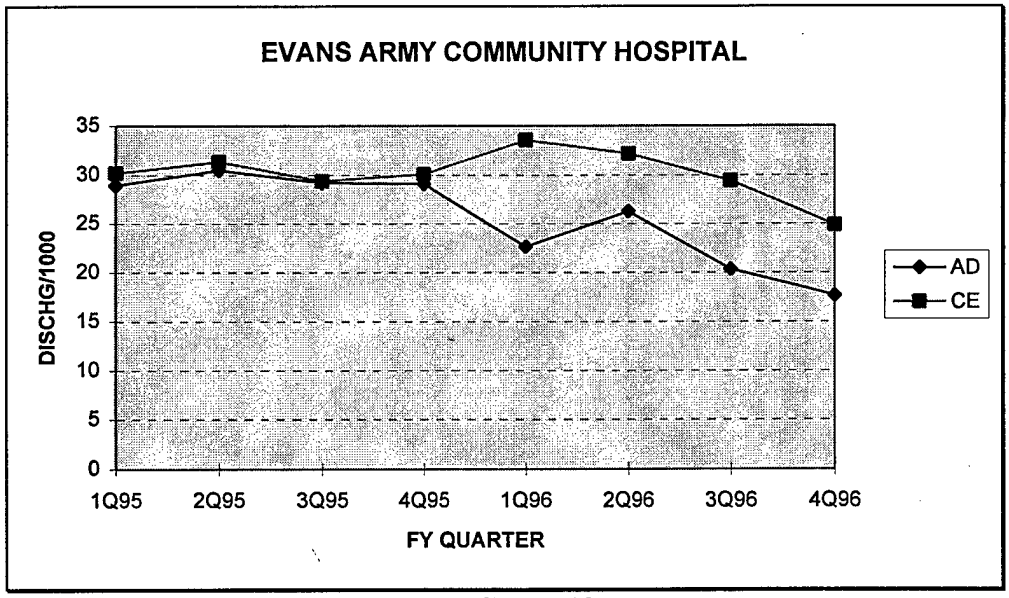
SOURCE: CEIS; RCMAS **Chart 7**



SOURCE: CEIS; RCMAS **Chart 8**



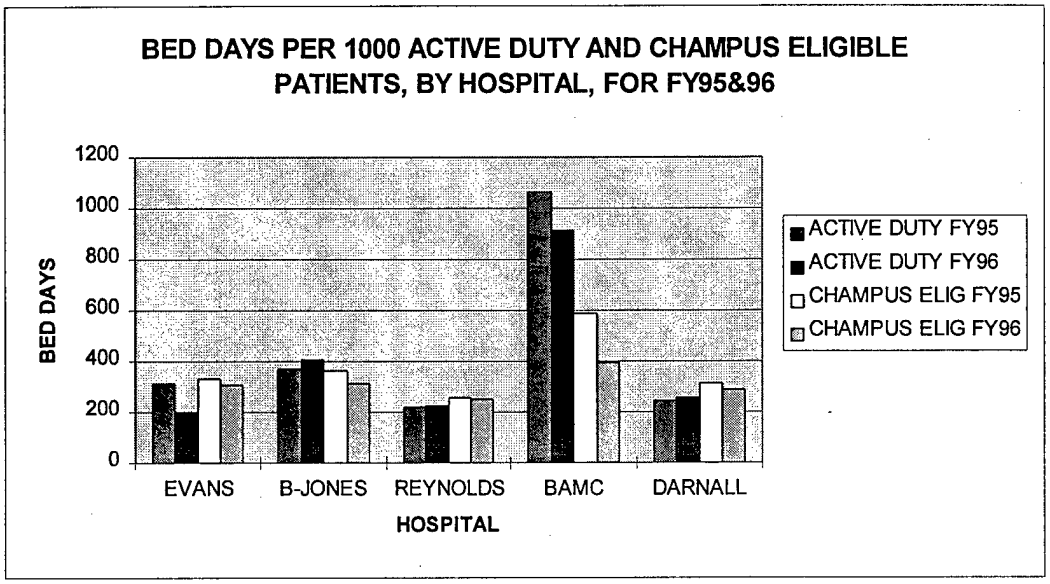
SOURCE: CEIS; RCMAS **Chart 9**



SOURCE: CEIS; RCMAS **Chart 10**

Comparison of Bed Days Among Hospitals

The following chart graphically compares bed day utilization per 1000 beneficiaries among the hospitals. Raw data depicting total bed day utilization per 1000 beneficiaries for each hospital are found in Appendix 3.



Source: CEIS; From RCMAS **Chart 11**

Data Analysis

One-way analysis of variance (ANOVA) was conducted to test the null hypothesis that there was no statistically significant difference between the two groups at each hospital, based on their mean totals. It was also used to test for significant differences in means between FY95 and FY96 in the same groups. The results of that analysis are reported here for each hospital for active duty (AD) and CHAMPUS eligible (CE) patients. The term "expected" refers to California normative data.

Bayne-Jones

- No statistically significant difference in LOS was found between AD and CE (p=0.22).
- For AD, actual LOS was significantly less than expected, [F(1,15)=6.71, F(Crit.)=4.60, p=0.02].
- For CE, actual LOS was significantly less than expected, [F(1,15)=6.75, F(Crit.)=4.60, p=0.02].
- For AD, no statistically significant difference between FY95 and FY96 was found for LOS (p=0.73) and discharges (p=0.31).
- For CE, no statistically significant difference between FY95 and FY96 was found for LOS (p=0.16) and discharges (p=0.92).

Reynolds

- No statistically significant difference in LOS was found between AD and CE (p=0.70).
- For AD, actual LOS was significantly less than expected, [F(1,15)=121.88, F(Crit.)=4.60, p<0.001].
- For CE, actual LOS was significantly less than expected, [F(1,15)=23.27, F(Crit.)=4.60, p<0.001].
- For AD, no statistically significant difference between FY95 and FY96 was found for LOS (p=0.09) and discharges (p=0.20).
- For CE, no statistically significant difference between FY95 and FY96 was found for LOS (p=0.70) and discharges (p=0.47).

BAMC

- AD LOS was statistically significantly greater than CE LOS [F(1,15)=9.96, F(Crit.)=4.60, p=0.007].
- For AD, actual LOS was significantly greater than expected, [F(1,15)=28.43, F(Crit.)=4.60, p<0.001].
- For CE no statistically significant difference between actual and expected LOS was found (p=0.68).
- AD LOS was significantly less in FY96 than in FY95, [F(1,7)=7.85, F(Crit.)=5.99, p=0.03]
- CE LOS was significantly less in FY 96 than in FY95, [F(1,7)=12.57, F(Crit.)=5.99, p=0.01].
- There was no significant difference between AD discharges for FY95 and FY96 (p=0.93).
- CE discharges were significantly less in FY96 than in FY95, [F(1,7)=18.81, F(Crit.)=5.99, p=0.005].

Darnall

- AD LOS was statistically significantly greater than CE LOS, [F(1,15)=34.19, F(Crit.)=4.60, p<0.001].

- AD actual LOS was significantly less than expected, [F(1,15)=21.52, F(Crit.)=4.60, p<0.001].
- CE actual LOS was significantly less than expected, [F(1,15)=127.30, F(Crit.)=4.60, p<0.001].
- For AD, there was no significant difference in LOS (p=0.21), and discharges (p=0.43) between FY95 and FY96.
- There was no significant difference in CE LOS (p=0.52) between FY95 and FY96.
- There was a statistically significant decrease in CE discharges between FY95 and FY96, [F(1,7)=6.19, F(Crit.)=5.99, p=0.047].

Evans

- There was no statistically significant difference in LOS between AD and CE, (p=0.10).
- For AD, actual LOS was significantly less than expected, [F(1,15)=58.21, F(Crit.)=4.60, p<0.001].
- For CE, actual LOS was significantly less than expected, [F(1,15)=6.50, F(Crit.)=4.60, p=0.02].
- For AD, there was no significant difference in LOS between FY95 and FY96, (p=0.10).
- For CE, there was a statistically significant decrease in LOS between FY95 and FY96, [F(1,7)=6.53, F(Crit.)=5.99, p=0.04].
- There was a significant decrease in AD discharges between FY 95 and FY96, [F(1,7)=17.16, F(Crit.)=5.99, P=0.006].
- There was no significant decrease in CE discharges between FY95 and FY96, (p=0.91).

Inpatient utilization outcomes vary for each hospital. Examination of Charts 1 through 11 and the data analysis above suggest varying patterns of utilization, but one hospital, BAMC, is consistently well above the others in LOS, discharges, and bed days per 1000 beneficiaries. Data compiled from the Standard Inpatient Data Record (SIDR), may help explain why BAMC appears to be an "outlier" (Appendix 4). Table 1 lists patients, by their catchment areas, who were admitted to BAMC during FY96. Table 2 lists all hospitals where patients living in BAMC's catchment area were admitted

during FY96. Included are all active duty and retired Army, Air Force, and Navy personnel and all eligible dependents. Other civilians, non-eligible trauma admissions, and foreign nationals are excluded. Thirty seven percent of patients admitted to BAMC came from outside the BAMC catchment area, while only eighteen percent of beneficiaries located within the BAMC catchment area were admitted to hospitals other than BAMC.

Statistical analysis of variance of all combined MTF data produced the following results:

- Region-wide for both fiscal years there was no statistically significant difference between AD and CE LOS, (p=0.11).
- Excluding BAMC data from the total, CE LOS was significantly less than AD LOS over both fiscal years, [F(1,62)=5.26, F(Crit.)=4.00, p=0.025].
- There was no statistically significant difference in LOS for AD between FY95 and FY96 with BAMC (p=0.65) and without BAMC (p=0.96). Similarly, there was no difference in LOS for CE between FY95 and FY96 with BAMC (p=0.30) and without BAMC (p=0.26).
- With BAMC included, there was no significant difference in discharges between AD and CE in FY95, (p=0.95).
- Excluding BAMC, AD discharges were significantly less than CE discharges in FY95, [F(1,30)=6.75, F(Crit.)=4.17, p=0.01].
- Including BAMC, there was no significant difference in discharges between AD and CE for FY96, (p=0.79).
- Excluding BAMC, AD discharges were significantly less than CE discharges in FY96, [F(1,30)=4.44, F(Crit.)=4.17, =0.04].
- There was no significant difference in AD LOS between FY95 and FY96 with (p=0.65) and without (p=0.96) BAMC.
- There was no significant difference in CE LOS between FY95 and FY96 with (p=0.30) and without (p=0.26) BAMC.
- There was no significant difference in AD discharges between FY95 and FY96 with (p=0.79) and without (p=0.60) BAMC.
- There was no significant difference in CE discharges between FY95 and FY96 with (p=0.14) and without (p=0.52) BAMC.

CHAPTER 4

DISCUSSION

The Assistant Secretary of Defense for Health Affairs issued clear policy guidance to the MHSS which mandates implementation and ongoing development of UM measures. U.S. Army Medical Command policy requires UM efforts to increase the efficiency of health care delivery, and guarantee appropriateness of care. The ultimate goal is to preserve quality of care and save health care costs. UM efforts are just beginning to take shape at Army MTFs. In four GPRMC MTFs, ongoing utilization oversight falls under a different purview, depending on whether the inpatient is active duty or CHAMPUS eligible. This project provides a baseline assessment for MTFs to use to evaluate where they currently stand on utilization. It may give focus to where efforts should be concentrated to provide the greatest leverage. The findings show where the differences lie in ALOS, discharges, and bed days between active duty and CHAMPUS eligible inpatients, and also between the two fiscal years analyzed.

Another approach would have been to analyze those diagnosis related groups (DRGs) which are either of high cost or high frequency, such as hysterectomies or orthopedic knee procedures. The attempt is to decrease the number of, or ALOS for, those DRGs which exceed a

benchmark threshold. By comparing beneficiary groups, as in this project, and comparing those groups with normative data, it is possible for the individual MTF leadership to ascertain where they stand overall against benchmark data. This project was by no means developed as a vehicle meant to compare one MTF against others.

Bed days per 1000 beneficiaries for four of the MTFs (BAMC excluded) ranged from 200 to 400 over the two fiscal years studied. BAMC's bed utilization ranged from a high of over 1000 for AD in FY95, to a low of approximately 400 for CE in FY96. Both groups experienced considerable reduction in total bed days from FY95 to FY96. Milliman and Robertson (M&R) (1995) described optimal utilization levels for acute care, excluding patients over age 65, as 180 bed days per 1000 eligible beneficiaries per year. All five GPRMC hospitals exceeded those utilization levels. M&R described optimal discharges per 1000 eligible beneficiaries as 57 per year. DACH and EACH were closest to that number in FY96, with 87 discharges per 1000 AD soldiers. Findings in Chapter 3 confirm that several MTFs had average lengths of stay for one or both groups which were shorter than the California normative data. However, utilization was still greater than optimal (as defined by M&R), due to the higher rate of discharges (admissions).

One report forecast a 34% decrease in inpatient hospital days by 1999 (Sachs Group, 1995). The total decrease comes from a projected 26% decline in discharges, coupled with an 11% decrease in ALOS, from 6.1 to

5.5 days. The impetus for the overall decline is the inherent forces of managed care. These include a shift of services to outpatient and subacute care, and prevention, which tends to eliminate some services altogether. The Sachs Group foresees discharges per 1000 in mature managed care markets such as Los Angeles, San Francisco, and San Diego reaching 80 per 1000 by 1999, including Medicare eligible patients. The challenge for the GPRMC to attain a decrease in inpatient hospital days of greater than 34% is apparent.

There was no general pattern of differences in ALOS, discharges, or bed days per 1000 between active duty and CHAMPUS eligible within the GPRMC, including Evans, which is in TRICARE Region 8. Likewise, a discernable trend was not evident between the two fiscal years. Bayne-Jones, Reynolds, and Evans exhibited no significant difference between the two beneficiary groups. At BAMC and Darnall, active duty ALOS was significantly greater than that of CHAMPUS eligible. Active duty and CHAMPUS eligible ALOS were significantly less than expected in four of the hospitals. Only BAMC differed. Its ALOS was greater than expected for active duty patients, while CHAMPUS eligible ALOS was not significantly different than expected. Bayne-Jones and Reynolds had no significant changes in utilization from FY95 to FY96. BAMC active duty ALOS was significantly reduced in FY96, and both CHAMPUS eligible ALOS and discharges saw significant reductions from FY95 to FY96. The only

significant decrease from FY95 to FY96 at Darnall was in discharges for CHAMPUS eligible, while at Evans a decrease was seen in active duty discharges.

Discussion of the preceding paragraph indicates that a simple comparison of ALOS or discharges between beneficiary groups at one hospital is not sufficient in itself. Expected differences in gender, average age, and admission DRGs undoubtedly result in dissimilar mean stay values from each of the two samples. A more meaningful comparison of beneficiary groups would include how those individual groups differ from the benchmark normative data. ALOS for one group may be significantly higher than another, but the comparison normative data may reflect the same trend. Both aspects must be considered prior to any final assessment of what the data reflects.

What, if any, decrease in utilization has taken place in the GPRMC since the 1994 DoD UM Memorandum was put in place? Based on the usage parameters evaluated in this project, Bayne-Jones and Reynolds had no change in utilization. BAMC attained significantly lower LOS for both groups, and lower discharges for CE from FY95 to FY96. Darnall attained significantly fewer CE discharges in FY96. Evans had significantly lower LOS for CE, and a significant decrease in AD discharges in FY96. Even though Evans is in TRICARE Region Eight, it shows no difference in utilization patterns from other GPRMC hospitals in FY95 and FY96.

Evidence does exist that inpatient hospital utilization may be decreasing within the GPRMC, especially when BAMC is excluded from the data base. MEDCOM FY97 budget cuts, put into place to force an increase in efficiency and decrease utilization at MTFs, went into effect at the end of data collection for this project. A follow-up study should be considered to assess trends in utilization and effects of UM within the GPRMC at the end of FY97.

Chart 11 in Chapter 3, and Tables 1 and 2, Appendix 4 point to (1) the difficulty in applying normal utilization standards to BAMC, and (2) the extent of mobility eligible patients have within the MHSS. Display of bed days per 1000 patients in Chart 11 shows BAMC is two to three times higher than the mean of the other four hospitals. Bed days per 1000 is a metric based on "eligible" patients. In RCMAS, "eligible" refers to those active duty and CHAMPUS patients located within a specific MTF's catchment area. Table 1, Appendix 4 indicates that 37% of 16,662 patients admitted to BAMC in FY96 came from outside the BAMC catchment area. Only 18% of patients in the BAMC catchment area were admitted to other hospitals, most of whom were admitted to WHMC. BAMC is not the outlier it may appear to be. The ratio is based on and reported according to a fixed number of catchment area eligible patients (the denominator), when, in fact, almost 40% of patients treated (the numerator) come from outside that area.

A mobile patient pool may require utilization data be assessed from a regional perspective. Looking at only one MTF provides a skewed

representation of actual utilization. For example, 1579 patients from the Darnall catchment area were admitted to BAMC. The effect is to drive up relative utilization at BAMC. Conversely, because Darnall does not admit those patients (or pay for civilian treatment), it looks relatively more efficient than may actually be the case. Table 1, Appendix 4 shows the same may be true for Bayne-Jones and Reynolds.

The concept of "hospitals without walls" is becoming more important as health care costs rise. Hospitals form partnerships to (1) increase quality, (2) reduce costs, and (3) provide better customer service (Adventist Health System, 1995). BAMC, DACH, and WHMC provide care for patients as a hospital without walls, by encouraging a seamless flow of information, patients, and providers along the San Antonio-Fort Hood corridor to accomplish patient treatment needs. As telemedicine expands treatment options for patients at other GPRMC MTFs, even more hospitals will be included in the concept. It is apparent, then, that in the future UM should be evaluated in a more global context, due to the fact efficiencies and utilization advances are not limited to the confines of an individual facility. The regional medical command concept provides for that capability.

Other factors which historically have raised the inpatient utilization rates at BAMC are "social admissions" of soldiers and admissions due to long distance referrals and aeromedical transport. Single soldiers, or soldiers on temporary duty living in barracks, were admitted for monitoring of

conditions which normally could be monitored in the home environment. Patients outside local commuting distance who arrived for tests or procedures which could have been done on an outpatient basis were frequently admitted to save on personal expenses. Patients flown to San Antonio on military aircraft were admitted on arrival. They were not discharged until their return flight departed, even though their tests and treatment may have ended days before. The BAMC Commander directed in 1996 that such admissions be curtailed as much as possible. Those patients are now discharged to less intensive care or alternative housing (Claypool, 1996). The results of that new policy may be apparent in future analysis of FY97 data.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study attempted to answer the following questions: What, if any, difference is there between active duty (non-UM) and CHAMPUS-eligible (with UM) hospital utilization within the GPRMC? Secondly, is there a difference in utilization between FY95 and FY96? Differences were found when evaluating single hospitals, but the lack of trends within and among MTFs provided this researcher no factual basis on which to attribute those differences. The results, however, may provide individual MTF commanders information concerning their inpatient utilization profiles, and give focus on where to concentrate efforts in order to approach benchmark utilization metrics.

Statistical analysis of the collective data listed on page 27 provides an overall view of the region-wide data. With data from BAMC included in the total there were no significant differences in any of the metrics between active duty and CHAMPUS eligible patients, nor were there differences between FY95 and FY96. In other words, there was no utilization decrease after implementation of UM measures in November, 1995. Excluding BAMC from the database shows the remaining MTFs as a whole had significantly

fewer active duty discharges than CHAMPUS eligible in both FY95 and FY96. The remaining finding is that, excluding BAMC, CHAMPUS eligible LOS was significantly less than active duty LOS for both fiscal years. This last finding may support the concept that "social admissions" of soldiers do indeed drive up LOS for that category of patient.

Recommendations

1. CEIS provides data similar to what was used in this project for Navy and Air Force MTFs. A comparison of utilization between GPRMC hospitals and similar sized hospitals of the other services may be useful to ascertain if a difference truly exists among their health delivery systems.

2. Utilization should be evaluated from a regional perspective. If hospitals of different services consolidate, or become sole providers of certain services, they should be jointly evaluated on utilization management. Health care regionalization increases efficiencies and effectiveness. However, the gains or losses in efficiency may not be apparent unless the region is evaluated as a whole.

3. A follow up study aimed at specific high volume, high cost DRGs may provide relevant information for the GPRMC and individual MTF commanders. As this study showed, reduction in LOS may produce a limited decrease in utilization. Reducing admissions is more effective in lowering utilization and effecting cost savings.

APPENDIX 1

Average Length of Stay (ALOS), By MTF

Average length of stay (actual) is shown in relation to 1996 California normative data (expected) for the same age group and admitting diagnosis or diagnoses. Percent difference between the two groups is reported as a negative number if actual ALOS is less than expected, and a positive number if actual ALOS is greater than expected.

BAYNE-JONES ARMY COMMUNITY HOSPITAL
AVERAGE LENGTH OF STAY BY QUARTER, FY95&96, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

QUARTER	PATIENTS	AD ACTUAL	AD EXPECTED	% DIFF	CE ACTUAL	CE EXPECTED	% DIFF
1 QTR 95	668	2.47	3.15	-21.59	2.89	2.81	2.74
2 QTR 95	797	2.58	3.33	-22.46	2.45	2.87	-14.59
3 QTR 95	520	3.16	3.10	2.05	2.14	2.90	-25.99
4 QTR 95	660	2.72	3.32	-18.21	2.60	2.78	-6.71
1 QTR 96	692	3.77	3.06	23.49	2.52	2.53	-0.36
2 QTR 96	624	2.31	3.40	-32.01	2.19	2.64	-16.78
3 QTR 96	694	2.01	3.11	-35.44	2.19	2.50	-12.17
4 QTR 96	587	2.23	3.06	-27.19	1.90	2.48	-23.48

SOURCE: CEIS; Retrospective Case Mix Analysis System
Expected ALOS: From 1996 California Normative Data

Table 1

REYNOLDS ARMY COMMUNITY HOSPITAL
AVERAGE LENGTH OF STAY BY QUARTER, FY95&96, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

QUARTER	PATIENTS	AD ACTUAL	AD EXPECTED	% DIFF	CE ACTUAL	CE EXPECTED	% DIFF
1 QTR 95	897	2.18	3.23	-32.32	2.37	2.66	-10.76
2 QTR 95	825	2.13	3.32	-35.78	2.03	2.71	-24.96
3 QTR 95	896	2.09	3.09	-32.34	2.30	2.94	-21.82
4 QTR 95	941	2.36	3.28	-28.18	2.26	2.73	-17.18
1 QTR 96	837	2.31	3.06	-24.46	2.29	2.41	-4.78
2 QTR 96	881	2.65	3.17	-16.65	2.31	2.54	-9.33
3 QTR 96	765	2.38	3.05	-21.86	2.50	2.69	-7.14
4 QTR 96	702	2.27	2.96	-23.44	2.05	2.51	-18.47

SOURCE: CEIS; Retrospective Case Mix Analysis System
Expected ALOS: From 1996 California Normative Data

Table 2

BROOKE ARMY MEDICAL CENTER
AVERAGE LENGTH OF STAY BY QUARTER, FY95&96, FOR ACTIVE DUTY
(AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

QUARTER	PATIENTS	AD ACTUAL	AD EXPECTED	% DIFF	CE ACTUAL	CE EXPECTED	% DIFF
1 QTR 95	1668	5.26	3.84	36.87	4.83	4.04	19.64
2 QTR 95	1796	5.05	3.87	30.41	4.72	4.10	15.08
3 QTR 95	1690	5.22	3.77	38.39	3.94	4.00	-1.49
4 QTR 95	1674	5.46	3.80	43.85	4.15	3.81	8.82
1 QTR 96	1532	4.85	3.94	23.31	3.75	3.79	-1.12
2 QTR 96	1643	4.82	3.80	26.78	3.67	3.83	-4.41
3 QTR 96	1385	4.49	3.76	19.36	3.57	4.00	-10.70
4 QTR 96	1526	3.71	3.58	3.62	3.44	3.87	-11.22

SOURCE: CEIS; Retrospective Case Mix Analysis System
Expected ALOS: From 1996 California Normative Data

Table 3

DARNALL ARMY COMMUNITY HOSPITAL
AVERAGE LENGTH OF STAY BY QUARTER, FY95&96, FOR ACTIVE DUTY
(AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

QUARTER	PATIENT	AD	AD EXPECTED	% DIFF	CE ACTUAL	CE EXPECTED	% DIFF
1 QTR 95	2250	2.81	3.55	-20.86	2.20	2.75	-19.93
2 QTR 95	2374	2.52	3.42	-26.29	2.15	2.71	-20.57
3 QTR 95	2363	2.49	3.40	-26.90	2.22	2.76	-19.51
4 QTR 95	2421	2.84	3.53	-19.66	2.18	2.73	-16.35
1 QTR 96	2167	3.05	3.29	-7.10	2.16	2.53	-14.46
2 QTR 96	2278	3.36	3.13	7.32	2.26	2.60	-0.13
3 QTR 96	2308	2.62	3.30	-20.51	2.20	2.60	-15.54
4 QTR 96	2408	2.72	3.14	-13.55	2.20	2.48	-11.46

SOURCE: CEIS; Retrospective Case Mix Analysis System
Expected ALOS: From 1996 California Normative Data

Table 4

EVANS ARMY COMMUNITY HOSPITAL
AVERAGE LENGTH OF STAY BY QUARTER, FY95&96, FOR ACTIVE DUTY
(AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

QUARTER	PATIENTS	AD ACTUAL	AD EXPECTED	% DIFF	CE ACTUAL	CE EXPECTED	% DIFF
1 QTR 95	1256	2.71	3.31	-18.13	2.77	2.86	-3.01
2 QTR 95	1313	2.95	3.23	-8.88	2.78	2.89	-3.82
3 QTR 95	1260	2.44	3.33	-26.67	2.69	2.94	-8.67
4 QTR 95	1257	2.43	3.60	-32.57	2.71	2.90	-6.61
1 QTR 96	1249	2.60	3.23	-19.32	2.48	2.64	-6.18
2 QTR 96	1296	2.14	3.20	-33.04	2.61	2.82	-7.38
3 QTR 96	1105	2.25	3.11	-27.57	2.51	2.65	-5.28
4 QTR 96	945	2.31	3.47	-33.56	2.73	2.75	-0.52

SOURCE: CEIS; Retrospective Case Mix Analysis System
Expected ALOS: From 1996 California Normative Data

Table 5

APPENDIX 2

Discharges, by MTF

BAYNE-JONES ARMY COMMUNITY HOSPITAL
DISCHARGES PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	1Q96	2Q96	2Q96	4Q96
AD	30.57	43.72	29.45	32.97	44.01	32.39	43.34	36.19
CE	39.63	39.84	25.03	36.33	35.17	39.68	36.35	31/.25

SOURCE: CEIS; RCMAS **Table 1**

REYNOLDS ARMY COMMUNITY HOSPITAL
DISCHARGES PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	1Q96	2Q96	2Q96	4Q96
AD	25.32	23.26	25.09	26.29	23.74	25.34	23.5	21.19
CE	28.89	26.6	29.08	30.61	29.73	30.88	25.1	23.47

SOURCE: CEIS; RCMAS **Table 2**

BROOKE ARMY MEDICAL CENTER
DISCHARGES PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	1Q96	2Q96	2Q96	4Q96
AD	48.65	53.18	51.67	48.84	50	56.59	48.19	48.4
CE	32.88	34.97	32.03	32.99	28.289	28.84	24.06	28,87

SOURCE: CEIS; RCMAS **Table 3**

DARNALL ARMY COMMUNITY HOSPITAL
DISCHARGES PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	1Q96	2Q96	2Q96	4Q96
AD	20.62	23.42	23.02	24.02	22.29	21.78	23.14	20.9
CE	35.21	35.16	35.35	35.69	29.77	33.23	32.4	35.04

SOURCE: CEIS; RCMAS **Table 4**

EVANS ARMY COMMUNITY HOSPITAL
DISCHARGES PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	1Q96	2Q96	2Q96	4Q96
AD	28.93	30.47	29.18	29.09	22.66	26.26	20.35	17.67
CE	30.17	31.36	29.37	30.09	33.56	32.19	29.4	24.88

SOURCE: CEIS; RCMAS **Table 5**

APPENDIX 3

Bed Days per 1000 Beneficiaries, by MTF

BAYNE-JONES ARMY COMMUNITY HOSPITAL
BED DAYS PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	TOTAL	1Q96	2Q96	2Q96	4Q96	TOTAL
AD	75.55	112.75	93.22	89.60	371.12	166.09	74.95	86.90	80.53	408.47
CE	114.52	97.58	53.69	94.28	360.07	88.51	87.09	79.72	59.40	314.72

SOURCE: CEIS; RCMAS **Table 1**

REYNOLDS ARMY COMMUNITY HOSPITAL
BED DAYS PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	TOTAL	1Q96	2Q96	2Q96	4Q96	TOTAL
AD	55.27	49.61	52.41	61.96	219.25	54.90	67.07	55.97	48.07	226.01
CE	68.48	54.03	66.82	69.24	258.57	67.75	71.22	62.78	48.02	249.77

SOURCE: CEIS; RCMAS **Table 2**

BROOKE ARMY MEDICAL CENTER
BED DAYS PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	TOTAL	1Q96	2Q96	2Q96	4Q96	TOTAL
AD	255.78	268.32	269.56	266.81	1060.47	242.69	272.62	216.44	179.50	911.25
CE	158.98	165.18	126.27	136.91	587.34	105.91	105.70	86.02	99.19	396.82

SOURCE: CEIS; RCMAS **Table 3**

DARNALL ARMY COMMUNITY HOSPITAL
BED DAYS PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	TOTAL	1Q96	2Q96	2Q96	4Q96	TOTAL
AD	57.97	59.08	57.25	58.11	242.41	68.07	73.09	60.64	56.78	258.58
CE	77.48	75.62	78.46	81.45	313.01	64.34	75.14	71.13	77.00	289.61

SOURCE: CEIS; RCMAS **Table 4**

EVANS ARMY COMMUNITY HOSPITAL
BED DAYS PER 1000 ELIGIBLE , BY FY QUARTER, FOR ACTIVE DUTY (AD) AND CHAMPUS ELIGIBLE (CE) PATIENTS

	1Q95	2Q95	3Q95	4Q95	TOTAL	1Q96	2Q96	2Q96	4Q96	TOTAL
AD	78.50	87.29	71.66	70.72	311.22	59.02	56.21	45.78	40.79	201.80
CE	83.71	90.04	78.35	81.44	331.40	83.15	84.03	73.85	68.05	308.27

SOURCE: CEIS; RCMAS **Table 5**

APPENDIX 4

PATIENT CATCHMENT AREAS AND TREATMENT LOCATIONS

PATIENTS ADMITTED TO BAMC , LISTED BY PATIENTS' CATCHMENT AREAS

LOCATION	ADMIT	LOCATION	ADMIT	LOCATION	ADMIT
BAMC	10493	PATTERSON ACH	7	NH PENSACOLA	3
WHMC	1656	KELLER	7	NH SAN DIEGO	3
DARNALL	1579	TAMC	7	NH PENDLETON	3
EAST TEXAS	957	KEESLER AFB	7	IOWA	3
REYNOLDS ACH	371	MISSISSIPPI	7	NEBRASKA	3
BJACH	259	IRELAND ACH	6	NEVADA	3
CORP CHRISTI	208	WINN ACH	6	S.CAROLINA	3
UNKNOWN	106	502ND MED GRP	6	NOBLE ACH	2
IRWIN ACH	75	3RD MED GRP	6	650TH MED GRP	2
W. LOUISIANA	64	GRANT MED CEN	6	652ND MED GRP	2
WBAMC	55	27TH MED GRP	6	653RD MED GRP	2
L. WOOD ACH	48	97TH MED GRP	6	BERQUIST HOSP	2
47TH MED GRP	39	MASSACHUSETTS	6	363RD MED GRP	2
MISSOURI	28	OREGON	6	28TH MED GRP	2
EVANS ACH	25	WISCONSIN	6	90TH MED GRP	2
314TH MED GRP	25	PUERTO RICO	6	NH OAKLAND	2
FAMC	24	MAMC	5	BRH MGAGCC	2
MARTIN ACH	22	2ND MED GRP	5	ARIZONA	2
OKLAHOMA	22	NH PORTSMOUTH	5	CONNECTICUT	2
KANSAS	21	NH GREAT LAKES	5	MAINE	2
MUNSON ACH	20	NH MILLINGTON	5	MARYLAND	2
ARKANSAS	19	ALABAMA	5	NEW JERSEY	2
WAMC	18	MINNESOTA	5	W. VIRGINIA	2
OHIO	17	N. DAKOTA	5	MONCRIEF ACH	1
E. FLORIDA	17	BLANCHFLD ACH	4	AF ACA HOSP	1
E. LOUISIANA	15	56TH MED GRP	4	436TH MED GRP	1
96TH MED GRP	14	554TH MED GRP	4	347TH MED GRP	1
654TH MED GRP	13	542ND MED GRP	4	AF M. GROW	1
DDEAMC	12	64TH MED GRP	4	319TH MED GRP	1
396TH MED GRP	11	649TH MED GRP	4	USAF MED CEN	1
S. CALIFORNIA	10	COLORADO	4	1ST MED GRP	1
BLISS ACH	9	INDIANA	4	NH BEAUFORT	1
SCOTT AFB	9	KENTUCKY	4	NH CHERRY PT	1
49TH MED GRP	9	MONTANA	4	NH CHARLESTON	1
N. CAROLINA	9	NEW MEXICO	4	IDAHO	1
PENNSYLVANIA	9	WASHINGTON	4	NEW HAMPSHIRE	1
LYSTER ACH	8	N. CALIFORNIA	4	UTAH	1
464TH MED GRP	8	WRAMC	3	S. DAKOTA	1
JACKSONVILLE	8	KENNER ACH	3	S. VIRGINIA	1
GEORGIA	8	58TH MED GRP	3		
ILLINOIS	8	45TH MED GRP	3	**CATCHMENT AREAS**	**129**
TENNESSEE	8	325TH MED GRP	3	**TOTAL ADMISSIONS**	**16662**
WINN ACH	8	438TH MED GRP	3	BAMC CATCHMENT	10493
WAMC	7	92ND MED GRP	3	NON-BAMC CATCHMENT	6169
KIMBROUGH	7	BETHESDA	3	% FROM OUTSIDE BAMC	37%

SOURCE: CEIS, From SIDR **Table 1**

LOCATION OF ADMISSIONS FOR PATIENTS IN BAMC CATCHMENT AREA

LOCATION	ADMIT	LOCATION	ADMIT
BAMC	10479	SHEPPARD	1
WHMC	2253	TAMC	1
FT JACKSON	22	WUERZBURG	1
DACH	17	MEADE	1
FT POLK	11	MONMOUTH	1
WRAMC	11	LVNWORTH	1
CORPUS CHRISTI	9	L. WOOD	1
WBAMC	8	RILEY	1
PENDLETON	5	MAMC	1
BELVIOR	5	AF ACAD	1
WAMC	4	MCGUIRE	1
EGLIN	3	SHEPPARD	1
LARMC	3	BETHESDA	1
DDEAMC	3	PORTSMOUTH	1
KNOX	2		
GREAT LAKES	2	**TOTAL**	**12852**
PENSACOLA	1	**TOTAL OUTSIDE BAMC**	**2373**
KIRTLAND	1	**% OUTSIDE BAMC**	**18.46%**

SOURCE: CEIS, From SIDR **Table 2**

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