

**Audit**



**Report**

OFFICE OF THE INSPECTOR GENERAL

**USE OF DIAGNOSIS-RELATED GROUP LENGTH OF STAY  
STANDARDS AT MILITARY TREATMENT FACILITIES**

Report Number 93-045

January 26, 1993

**Department of Defense**



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202

January 26, 1993

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)  
COMPTROLLER OF THE DEPARTMENT OF DEFENSE  
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL  
MANAGEMENT)  
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL  
MANAGEMENT AND COMPTROLLER)  
INSPECTOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Use of Diagnosis-Related Group Length  
of Stay Standards at Military Treatment Facilities  
(Report No. 93-045)

We are providing this final report for your information and use. It addresses the use of diagnosis-related groups within the military treatment facilities to control inpatient lengths of stay and allocate resources. Comments on a draft of this report were considered in preparing the final report.

Because the report contains no recommendations, comments to the final report are not required. However, if you desire to comment, your comments should be provided by March 29, 1993.

The courtesies extended to the audit staff are appreciated. If you have any questions about this audit, please contact Mr. Michael A. Joseph, Program Director, or Mr. Michael F. Yourey, Project Manager, at (804) 766-2703. The distribution of this report is listed in Appendix D.

A handwritten signature in cursive script, appearing to read "E. Jones".

Edward R. Jones  
Deputy Assistant Inspector General  
for Auditing

Enclosure

cc:  
Secretary of the Army  
Secretary of the Navy  
Secretary of the Air Force

The following acronyms are used in this report.

ASD(HA).....Assistant Secretary of Defense (Health Affairs)  
CHAMPUS.....Civilian Health and Medical Program of the  
.....Uniformed Services  
CONUS.....continental United States  
DMIS.....Defense Medical Information System  
DRG.....diagnosis-related group  
GAO.....General Accounting Office  
MEPRS.....Medical Expense Performance and Reporting System  
MTF.....military treatment facility  
OCHAMPUS.....Office of Civilian Health and Medical Program of  
.....the Uniformed Services  
RCMAS.....Retrospective Case Mix Analysis System

Office of the Inspector General, DoD

AUDIT REPORT NO 93-045  
(Project No. 2LF-0001)

January 26, 1993

USE OF DIAGNOSIS-RELATED GROUP LENGTH OF STAY STANDARDS  
AT MILITARY TREATMENT FACILITIES

EXECUTIVE SUMMARY

**Introduction.** DoD authorized the use of 472 diagnosis-related groups (DRGs) to classify inpatient services. The DoD DRGs are similar or identical to those in the Medicare system. DRGs classify hospital patients based on their principal diagnosis, procedures performed, age, sex, and discharge status. DRGs identify the amounts of hospital resources that should be provided to patients based on the complexity of care required. The DRG rate is an average rate for the average length of stay for procedures forming a specific DRG.

**Objectives.** The objectives of the audit were to determine whether the cost for inpatient care at military treatment facilities could be reduced by implementing diagnosis-related group length of stay standards used by civilian hospitals as the criteria for controlling or limiting inpatient admissions. The audit was also performed to determine whether medical data were processed promptly and accurately into the Retrospective Case Mix Analysis System (RCMAS). Other objectives were to assess the collection and adequacy of cost data associated with inpatient stays in military treatment facilities and to evaluate internal controls pertaining to inpatient lengths of stay in military treatment facilities and accounting for hospital costs.

**Audit Results.** Military treatment facility commanders did not manage inpatient lengths of stay by DRGs. Costs of about \$23.7 million and 43,000 patient bed days could have been avoided at 23 military treatment facilities in FY 1990 had DRG length of stay norms been used to control inpatient admissions. Cost were estimated by applying the standard DoD hospital reimbursement per diem rate of \$554 to the excess bed days.

Inpatient medical data were processed promptly and accurately into RCMAS. Because of medical information system limitations, the data could not be used for real-time management of inpatient lengths of stay by DRGs. The new RCMAS Open System Environment will allow military treatment facilities to access data on patients currently and previously hospitalized.

We could not assess the collection and adequacy of cost data associated with inpatient stays because DoD had no cost accounting system to identify costs on a patient level basis.

**Internal Controls.** Controls were not effective to limit inpatient lengths of stay by DRG. However, during our audit, the Assistant Secretary of Defense (Health Affairs) issued guidance that established DRGs as a control for managing inpatient lengths of stay. This policy, when fully implemented, should enhance controls over lengths of stay. The controls assessed are discussed in Part I.

**Potential Benefits of Audit.** Using DRGs to manage inpatient admissions in military treatment facilities could reduce patient bed days and DoD medical costs. We did not make any recommendations or claim monetary benefits because during our audit, the Assistant Secretary of Defense (Health Affairs) established guidance to correct the deficiency.

**Management Comments.** Comments received from the Office of the Assistant Secretary of Defense (Health Affairs) on December 16, 1992, stated that the methodology used in the analysis is different from what it would have used in estimating the number of excess bed days. The comments indicated that the audit could have produced more accurate results if it had been expanded to cover elements such as appropriateness of admissions, practice pattern variations, patient's point of origin, and beneficiary category. Management commented on the background and development of DRGs, upgrade of the RCMAS, and clarification of methodology in the scope section of the report. Management comments are discussed in Part II, and the complete text of the comments is in Part IV.

**Audit Response.** Management's comments generally supported our audit conclusion that excess bed days resulted because inpatient lengths of stay were not managed by DRG. Based on management's comments, we clarified the scope section of the report and revised introductory information related to the number of DRGs and the upgrade of the RCMAS. We also clarified the report to show that our conclusions apply only to the DRGs reviewed and that outliers were excluded from the review. We recognize that there are different approaches in identifying the number of excess bed days. We will consider the analytical techniques addressed in management's comments when we review implementation of the recent DoD guidance on DRGs. Since this report contains no recommendations, written comments are not required. If you choose to provide additional comments, please do so by March 29, 1993.

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This report was prepared by the Logistics Support Directorate, Office of the Assistant Inspector General for Auditing, DoD. Copies of the report can be obtained from the Secondary Reports Distribution Unit, Audit Planning and Technical Support Directorate, (703) 614-6303 (DSN 224-6303).

## PART I - INTRODUCTION

### Background

Grouping DoD health care. In October 1987, DoD implemented the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) prospective payment system to reimburse civilian hospitals for inpatient care. This system was based on diagnosis-related groups developed for Medicare. DRGs classify hospital patients based on their principal diagnosis, procedures performed, age, sex, and discharge status. DRGs identify the amounts of hospital resources that should be provided to patients based on the complexity of care required.

DRGs are intended to align patients of similar clinical demands and resource requirements. The DRG rate is an average rate, by geographic area, for the average length of stay for procedures and diagnoses forming a specific DRG. The more acute the medical procedures, the higher the rate. Knowing the DRG and applicable rate, health care managers can manage lengths of stay and monitor resources based on the cost of care that should be and was provided rather than the number of patient admissions and bed days used.

Program management. The Retrospective Case Mix Analysis System (RCMAS) is a DoD management tool that provides historical DRG data to health care managers. In 1989, it was made available to more than 200 Military Department users worldwide. It allows the health care manager to compare military treatment facility (MTF) inpatient utilization and length of stay data by DRGs with CHAMPUS and civilian normative data. A new DoD encoder-grouper system, which the Surgeons General implemented in June 1992, and the upgraded RCMAS Open System Environment should assist the MTF commander in monitoring and controlling inpatient stays as they occur. This upgraded system is scheduled for deployment in FY 1993. The encoder-grouper system is used to determine the proper DRG through codes assigned to specific diagnoses and medical procedures. The encoder-grouper system used with RCMAS will facilitate the comparison of patterns of health care among hospitals.

### Objectives

The objectives of the audit were to:

- o determine whether the cost for inpatient care at MTFs could be reduced by implementing DRG length of stay standards used by civilian hospitals as the criteria for controlling or limiting inpatient admissions,

- o determine whether medical data were processed promptly and accurately into the RCMAS,

o assess the collection and adequacy of cost data associated with inpatient stays in MTFs, and

o evaluate internal controls pertaining to inpatient lengths of stay in MTFs and accounting for hospital costs.

### **Scope**

**Audit coverage.** Using the Defense Medical Information System (DMIS), we judgmentally selected 23 MTFs (see Appendix A) that accounted for 340,000 (46 percent) of the 745,000 patient discharges during FY 1990 from the 127 MTFs located in the continental United States (CONUS), Alaska, and Hawaii. MTFs selected included those with the most discharges in FY 1990 as listed in the January 1992 DMIS reports. Additional sites were chosen to provide adequate coverage to all Military Departments.

We obtained the lengths of stay for the 340,000 discharges from RCMAS. We matched the DRGs for the 340,000 discharges against CHAMPUS inpatient data to find similar civilian procedures. Comparable CHAMPUS length of stay data were available for the procedures involving 209,000 of the 340,000 discharges. We excluded outliers in our comparison. Outliers, as defined in the RCMAS manual, are those cases where the length of stay is more than 1.96 standard deviations above or below the geometric average for each DRG. For the 209,000 discharges for which matches occurred, we determined excess bed days by comparing the actual lengths of stay at the MTF with DoD norms which represent the average experience of all eligible beneficiaries who received treatment at CHAMPUS facilities (see Appendix B). Our calculation of excess bed days applies only to the 209,000 discharges for which comparable CHAMPUS data were available. This calculation cannot be generalized to all RCMAS listed discharges.

At eight judgmentally selected MTFs (4 Army, 2 Navy, and 2 Air Force), we also reviewed policies and procedures for controlling or limiting inpatient lengths of stay. To determine the timeliness and accuracy of RCMAS data input, we judgmentally selected 67 FY 1990 inpatient treatment records for 10 DRGs at two medical centers (Walter Reed Army Medical Center, Washington, D.C., and National Naval Medical Center, Bethesda, Maryland). We visited two of three hospital medical centers that were test sites for the new DoD encoder-grouper system and verified its operational status.

**Limitation on scope.** We were unable to assess the internal controls pertaining to accounting for hospital costs, specifically the collection and adequacy of cost data associated with inpatient stays in MTFs because DoD has not implemented a patient-level cost accounting system. MTF costs are accounted for through the DoD Medical Expense Performance and Reporting System (MEPRS), which identifies costs by medical work center (for example, direct patient care, ancillary services, and

support services). Additionally, we did not evaluate the accuracy of DMIS data because DMIS data were used only to identify summary MTF discharge data. This summary data were not used for statistical projections.

**Audit period, locations, and standards.** This performance audit was made from September 1991 through April 1992. The audit was made in accordance with auditing standards issued by the Comptroller General of the United States as implemented by the IG, DoD, and accordingly included such tests of internal controls as were considered necessary. Activities visited or contacted during this audit are listed in Appendix C.

### **Internal Controls**

**Controls assessed.** The audit evaluated internal controls relating to inpatient lengths of stay at the MTFs visited. Specifically, we reviewed the peer group and quality assurance functions used to control inpatient lengths of stay.

**Internal control weaknesses.** The audit identified material internal control weaknesses as defined by Public Law 97-255, Office of Management and Budget Circular A-123, and DoD Directive 5010.38. Controls were not effective to limit inpatient lengths of stay.

In January 1992, the Assistant Secretary of Defense (Health Affairs) [ASD(HA)] issued guidance establishing DRGs as a control mechanism to manage inpatient lengths of stay. This policy, when fully implemented, should enhance controls over lengths of stay because it provides more objective criteria for managing health care. Details of the internal control deficiencies are discussed in Part II of the report.

### **Prior Audits and Other Reviews**

The General Accounting Office (GAO) has issued two recent reports directly related to the control of inpatient lengths of stay. GAO fact sheet HRD-90-136FS (Office of the Secretary of Defense [OSD] Case No. 8417), "Savings to CHAMPUS from Using a Prospective Payment System," July 13, 1990, stated that DRGs have reduced costs per admission at civilian hospitals. The report contained no findings or recommendations. GAO briefing report HRD-86-44BR (OSD Case No. 6922), "DoD Health Care Lengths of Stay in Defense Hospitals Compared to Civilian Hospitals," March 26, 1986, concluded that lengths of stay may have declined more rapidly in civilian hospitals than in MTFs. DoD attributed the decline to the Medicare prospective pay system, which bases payment for hospital stays on a discharge status using DRGs. The report contained no findings or recommendations.

## Other Matters of Interest

**Statutory requirements.** Public Law 99-661, November 1986, United States Code, title 10, section 1101, stipulated that the Secretary of Defense should have established, by regulation, the use of DRGs as the primary criteria for allocation of resources to MTFs for inpatient care. That directive was to become effective on October 1, 1987 (except for mobilization missions). Public Law 100-180, December 1987, extended that deadline to October 1, 1988.

**Congressional intent.** Congress viewed DRGs as a promising way to manage resources and to achieve efficiency and effectiveness in the military health care system. Under the DRG allocation method, Congress intended that MTFs with the most complex work load receive the most resources. Previously, funds were allocated based on the number of admissions and bed days, without regard to complexity of care provided. DRGs were also intended to shorten the average length of stay in MTFs and to provide a basis for comparing patterns of health care delivery among the MTFs. In summary, Congress intended to give MTF commanders incentives to provide cost-effective health care by allocating resources based on efficiency and effectiveness considerations.

**DoD implementation plan and status.** In June 1987, the ASD(HA) reported to Congress his plan for a phased approach to allocating resources by DRGs to cover activities from FY 1988 and beyond.

DoD has not allocated resources by DRG. As a result, incentives for cost-effective health care are not yet in place. Without financial incentives to use DRGs to limit lengths of stay, it is unlikely that cost-effectiveness can be expected. DoD has been working toward its goal of allocating resources for and managing by DRG. Significant change is ongoing. For example, on October 1, 1991, the Deputy Secretary of Defense issued a memorandum consolidating the military medical program and budget function at the ASD(HA). The memorandum also approved a Coordinated Care Program that required the use of DRGs as a management tool.

**Potential problems in implementing DRGs.** GAO reported to the House Committee on Appropriations (Report No. HRD 92-10, "Implementing Coordinated Care -- A Status Report," October 31, 1991) that budget systems and performance criteria still need to be developed to support managed health care in DoD. We agree with GAO and further believe it is critical to develop a patient-level cost accounting system to successfully support a budgeting and resource allocation system for the Coordinated Care Program. GAO Testimony Report No. HRD-92-24, "Obstacles in Implementing Coordinated Care," April 7, 1992, showed that DoD is unprepared to perform some required administrative functions for the Coordinated Care Program, such as measuring medical

performance of MTF commanders, and accurate and equitable budgeting among MTFs. In addition, DoD needs to reconsider fundamental issues, such as cost sharing and verification of beneficiary enrollment, in its implementation of the Coordinated Care Program.

## PART II - FINDING

### MANAGEMENT OF INPATIENT LENGTHS OF STAY BY DIAGNOSIS-RELATED GROUPS

MTF commanders did not manage inpatient lengths of stay by DRGs. This occurred because there was no DoD requirement or other incentive for them to do so, and the DoD management analysis system, which provides inpatient length of stay data by DRG was not effectively used. As a result, 43,000 bed days with a pro rata cost of \$23.7 million could have been avoided had DRG length of stay norms been used to control inpatient admissions at 23 MTFs for FY 1990.

### DISCUSSION OF DETAILS

#### Background

DoD program management. DoD authorized the use of 472 DRGs to classify inpatients using the direct health care system. The DoD DRGs are similar or identical to those in the Medicare system but concentrate on the younger military population. Some services, notably obstetric and pediatric, are virtually excluded from Medicare, but are a large part of the military direct health care system.

In 1989, DoD procured the RCMAS to satisfy the congressional requirement to allocate resources by DRG. This system provided a means for 200 Military Department users to access the patient level data base, to analyze inpatient admissions by DRG for resource allocation, to monitor inpatient admissions, and to identify potentially excessive lengths of stay. RCMAS provided historical data by case mix, which measures the complexity of care provided to patients. Users had the capability to compare MTF actual utilization and length of stay data to DoD and civilian normative data. A new DoD encoder-grouper system distributed by the Surgeons General in June 1992 should enable the MTF commander to monitor and control inpatient stays, resource utilization, and compare patterns of health care among MTFs by using RCMAS. The RCMAS Open System Environment, an upgraded system to be deployed in FY 1993 will enable MTF users to access data on patients currently hospitalized as well as those previously dispositioned.

#### Results of Review

Overall management. MTF commanders were not required to manage inpatient lengths of stay by DRGs. Inpatient lengths of stay at MTFs were monitored through peer group and internal quality assurance program reviews. However, those reviews were based on the judgment of health care professionals and generally considered lengths of stay longer than DRG averages as acceptable. For the 209,000 discharges matched at 23 MTFs, our

review showed that about 43,000 inpatient bed days could have been avoided had a DRG system been used to control inpatient lengths of stay (see Appendix B and summary table below).

**Excess Bed Days by Military Department**

<u>Military Department</u>	<u>Number of Hospitals</u>	<u>Discharges Matched</u>	<u>Lengths of Stay (Bed Days)</u>		
			<u>MTF Actual</u>	<u>DoD Norm</u>	<u>Excess</u>
Army	13	117,359	430,717	409,458	21,259
Navy	5	63,260	226,469	226,744	(275)
Air Force	<u>5</u>	<u>28,464</u>	<u>122,929</u>	<u>101,191</u>	<u>21,738</u>
TOTAL	<u>23</u>	<u>209,083</u>	<u>780,115</u>	<u>737,393</u>	<u>42,722</u>

Applying the FY 1990 standard DoD hospital reimbursement per diem rate of \$554 to the 42,722 excess bed days, we estimate that about \$23.7 million could have been avoided had DoD DRG norms been used to control or limit inpatient admissions and reduce expenditures appropriately. We used this per diem rate because actual costs per DRG inpatient admission were not available and it was the standard rate established by DoD for reimbursement of costs in FY 1990.

Discussions with cognizant personnel within the Office of the ASD(HA) and Offices of the Surgeons General, and meetings at eight MTFs disclosed that MTF commanders did not manage by DRGs and there had been no incentives to do so. From the hospital perspective, resources were allocated by the traditional method of admissions and number of bed days used, and there were no apparent correlations between the use of DRGs and resources allocated to provide medical care. As a result, economies and efficiencies that could have resulted by managing inpatient lengths of stay by DRGs were not realized.

**Management analysis systems.** RCMAS inpatient length of stay data were not used effectively by MTF commanders to monitor lengths of stay. RCMAS was made available to MTFs so commanders could familiarize themselves with the benefits of the system; but use of RCMAS was solely at the commanders' discretion. MTF staff perceived RCMAS as additional work, and believed that the system had little relevance to hospital operations and reporting requirements.

At the time of audit, RCMAS contained inpatient medical data that were about 6 months old and appeared adequate for trend projections or analysis of the prior years' data, but was of little use for day-to-day inpatient length of stay management. The new encoder-grouper system will permit the commander to obtain prompt DRG information on inpatient admissions. This will

facilitate day-to-day management of lengths of stay because the commander will be able to compare the latest diagnoses with applicable expected lengths of stay.

On January 8, 1992, ASD(HA) issued a memorandum, "Implementation of the Coordinated Care Program." The memorandum established requirements for management of inpatient lengths of stay by DRG. Furthermore, all MTFs were provided access to the encoder-grouper system in June 1992 to identify DRGs for patient admissions based on the diagnosis and procedures performed at the hospital.

**Conclusion.** As a result of the ASD's policy action, we are not making a recommendation regarding the reported condition. We will follow up on progress made toward managing lengths of stay by DRGs during our audit of the Coordination of DoD Health Care Within Tidewater, Virginia, scheduled for FY 1993.

#### MANAGEMENT COMMENTS AND AUDIT RESPONSE

**Management Comments.** The Principal Deputy ASD(HA) agreed that more emphasis on inpatient lengths of stay could save DoD money. However, the Principal Deputy stated that the methodology used in the analysis is different from what OASD(HA) would have used in estimating the number of excess bed days. The Principal Deputy indicated that our audit would have achieved more results if basic length of stay elements, such as appropriateness of admissions; practice pattern variations; patient's point of origin; and beneficiary category were considered. The Principal Deputy concluded that excluding outliers in our analysis resulted in a higher estimate of excess bed days. The Principal Deputy also concluded that by selecting only those MTF discharges with comparable civilian cases, we may have understated the excess bed days. Management comments also covered background and development of DRGs, upgrade of the RCMAS, and clarification of methodology in the scope section of the report. The complete text of management's comments is in Part IV.

**Audit Response.** Management's comments generally supported our audit conclusion that excess bed days resulted because inpatient lengths of stay were not managed by DRG. Based on OASD(HA) comments, we clarified the scope section of the report and revised introductory information related to the number of DRGs and the upgrade of the RCMAS. We also clarified the report to show that our conclusions apply only to the DRGs reviewed and that outliers were excluded from the review.

We recognize that there are different approaches to identifying the number of excess bed days. Additionally, we agree that expanding our scope to consider outliers and MTF discharges for which comparable civilian cases were not available would provide a more exact estimate of excess bed days. Although no trimming of the universe (including all outliers) would not be realistic,

a process called Winsorizing\* could be used to remove those cases above either 2 or 3 standard deviations from the mean with proper analysis of outliers to explain why they can be trimmed. This would require a major study, not within the scope of this audit. It should be noted that the purpose of the survey is to provide indications of areas requiring further review. This audit was terminated shortly after survey because of the Coordinated Care Program guidance issued by ASD(HA) requiring use of DRGs. We believe our techniques were appropriate to provide initial indications that the use of DRGs would save DoD money. When we perform future audit work on the implementation of the recent DRG guidance, we will consider the various expanded analytical techniques proposed by the Principal Deputy.

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\* W.J. Dixon and John W. Tukey, Approximate Behavior of the Distribution of Winsorized t, Technometrics, Vol. 10, pp. 83-98 (1968)

**PART III - ADDITIONAL INFORMATION**

APPENDIX A - Inpatient Discharges for 23 MTFs Selected for Review

APPENDIX B - Summary of Lengths of Stay - MTFs (FY 1990)

APPENDIX C - Activities Visited or Contacted

APPENDIX D - Report Distribution

**APPENDIX A: INPATIENT DISCHARGES FOR 23 MTFs SELECTED FOR REVIEW**

<u>Facility Name</u>	<u>Location</u>	<u>Discharges</u>
<u>Army</u>		
Walter Reed Army Medical Center	Washington, DC	26,276
Madigan Army Medical Center	Fort Lewis, WA	23,615
Brooke Army Medical Center	Fort Sam Houston, TX	19,427
Darnall Army Hospital	Fort Hood, TX	18,480
Womack Army Hospital	Fort Bragg, NC	17,973
Fitzsimons Army Medical Center	Aurora, CO	17,129
Eisenhower Army Medical Center	Fort Gordon, GA	15,718
Martin Army Hospital	Fort Benning, GA	12,321
Evans Army Hospital	Fort Carson, CO	11,205
Moncrief Army Hospital	Fort Jackson, SC	8,245
Dewitt Army Hospital	Fort Belvoir, VA	7,770
Irwin Army Hospital	Fort Riley, KS	7,288
Bayne-Jones Army Hospital	Fort Polk, LA	<u>7,234</u>
Total		192,681
<u>Navy</u>		
Naval Hospital San Diego	San Diego, CA	29,104
Naval Hospital Portsmouth	Portsmouth, VA	27,614
Naval Hospital Bethesda	Bethesda, MD	16,032
Naval Hospital Camp Pendleton	Oceanside, CA	8,943
Naval Hospital Bremerton	Bremerton, WA	<u>4,814</u>
Total		86,507
<u>Air Force</u>		
Wilford Hall U.S. Air Force Medical Center	Lackland Air Force Base, TX	27,420
David Grant U.S. Air Force Medical Center	Travis Air Force Base, CA	11,864
U.S. Air Force Medical Center Wright-Patterson	Wright-Patterson Air Force Base, OH	10,319
Ehrling Berquist Regional Hospital	Offutt Air Force Base, NE	5,675
U.S. Air Force Hospital Elmendorf	Elmendorf Air Force Base, AK	<u>5,513</u>
Total		60,791
Total Discharges - 23 MTFs summarized		339,979
Total Discharges - All MTFs		744,520
Percent of Discharges at 23 MTFs		45.66

APPENDIX B. SUMMARY OF LENGTHS OF STAY - MTFs (FY 1990)

Facility Name	Location	Discharges Matched	No. of DRGs	Lengths of Stay (Bed Days)		
				MTF Actual	DoD Norm	Excess
<u>Army</u>						
Fitzsimons Army Medical Center	Aurora, CO	7,663	146	39,089	26,191	12,898
Brooke Army Medical Center	Ft. Sam Houston, TX	6,786	114	26,117	23,095	3,022
Walter Reed Army Medical Center	Washington, DC	21,180	446	100,338	90,127	10,211
Madigan Army Medical Center	Ft. Lewis, WA	14,429	207	54,610	50,230	4,380
Womack Army Hospital	Ft. Bragg, NC	13,419	262	44,527	42,447	2,080
Martin Army Hospital	Ft. Benning, GA	8,972	201	28,044	27,276	768
Irwin Army Hospital	Ft. Riley, KS	3,523	65	11,375	11,087	288
Moncrief Army Hospital	Ft. Jackson, SC	4,992	164	18,171	18,182	(11)
Bayne-Jones Army Hospital	Ft. Polk, LA	4,538	118	13,860	14,217	(357)
Evans Army Hospital	Ft. Carson, CO	7,744	191	21,748	22,700	(952)
Dewitt Army Hospital	Ft. Belvoir, VA	6,070	213	17,128	19,493	(2,365)
Darnall Army Hospital	Ft. Hood, TX	14,272	222	37,828	43,174	(5,346)
Eisenhower Army Medical Center	Ft. Gordon, GA	<u>3,771</u>	<u>69</u>	<u>17,882</u>	<u>21,239</u>	<u>(3,357)</u>
Total		<u>117,359</u>	<u>2,418</u>	<u>430,717</u>	<u>409,458</u>	<u>21,259</u>
<u>Navy</u>						
Naval Hospital Bethesda	Bethesda, MD	8,965	190	37,924	35,082	2,842
Naval Hospital Bremerton	Bremerton, WA	2,440	121	10,911	9,590	1,321
Naval Hospital Camp Pendleton	Oceanside, CA	6,512	186	21,222	21,250	(28)
Naval Hospital San Diego	San Diego, CA	22,401	321	83,587	83,648	(61)
Naval Hospital Portsmouth	Portsmouth, VA	<u>22,942</u>	<u>335</u>	<u>72,825</u>	<u>77,174</u>	<u>(4,349)</u>
Total		<u>63,260</u>	<u>1,153</u>	<u>226,469</u>	<u>226,744</u>	<u>(275)</u>

APPENDIX B. SUMMARY OF LENGTHS OF STAY - MTFs (FY 1990) (cont'd)

Facility Name	Location	Discharges Matched	No. of DRGs	Lengths of Stay (Bed Days)		
				MTF Actual	DoD Norm	Excess
<u>Air Force</u>						
USAF Medical Center Wright-Patterson Wilford Hall USAF Medical Center	Wright-Patterson AFB, OH Lackland AFB, TX	6,383 9,072	185 95	27,252 48,687	20,505 37,229	6,747 11,458
David Grant USAF Medical Center	Travis AFB, CA	5,643	130	23,644	20,679	2,965
USAF Hospital Elmendorf Ehrling Berquist Regional Hospital	Elmendorf AFB, AK Offutt AFB, NE	3,303 4,063	114 196	11,472 11,874	10,741 12,037	731 (163)
Total		28,464	720	122,929	101,191	21,738
Military Department Total		<u>209,083</u>	<u>4,291</u>	<u>780,115</u>	<u>737,393</u>	<u>42,722</u>

## APPENDIX C. ACTIVITIES VISITED OR CONTACTED

### Office of the Secretary of Defense

Office of the Assistant Secretary of Defense (Health Affairs), Washington, DC

### Department of the Army

Office of the Surgeon General of the Army, Falls Church, VA  
Headquarters, U.S. Army Health Services Command, Fort Sam Houston, TX

Brooke Army Medical Center, Fort Sam Houston, TX

Madigan Army Medical Center, Fort Lewis, WA

McDonald Army Hospital, Fort Eustis, VA

Walter Reed Army Medical Center, Washington, DC

### Department of the Navy

Office of the Chief, Bureau of Medicine and Surgery/Surgeon General, Washington, DC

National Naval Medical Center, Bethesda, MD

Naval Medical Data Services Center, Bethesda, MD

Naval Hospital, Patuxent River, MD

Naval Hospital, Portsmouth, VA

Naval Hospital, San Diego, CA

### Department of the Air Force

Office of the Surgeon General of the Air Force, Bolling Air Force Base, Washington, DC

Air Force Office of Medical Support, Brooks Air Force Base, TX

Tactical Air Command, Surgeon General, Langley Air Force Base, VA

1st Medical Group, Langley Air Force Base, VA

Air Force Space Command Hospital, Patrick Air Force Base, FL

### Non-DoD Federal Organizations

Congressional Budget Office, Washington, DC

Department of Veterans Affairs, Washington, DC

Veterans Affairs Medical Center, Hampton, VA

### Non-Government Activities

Vector Research, Inc., Arlington, VA

Corporate Cost Management, Rockville, MD

## APPENDIX D. REPORT DISTRIBUTION

### Office of the Secretary of Defense

Assistant Secretary of Defense (Health Affairs)  
Assistant Secretary of Defense (Public Affairs)  
Comptroller of the Department of Defense

### Department of the Army

Secretary of the Army  
Inspector General  
Auditor General, Army Audit Agency

### Department of the Navy

Secretary of the Navy  
Assistant Secretary of the Navy (Financial Management)  
Auditor General, Naval Audit Service

### Department of the Air Force

Secretary of the Air Force  
Assistant Secretary of the Air Force (Financial Management  
and Comptroller)  
Auditor General, Air Force Audit Agency

### Defense Agencies

Director, Defense Contract Audit Agency  
Inspector General, Defense Intelligence Agency  
Director, Defense Logistics Agency  
Director, Defense Logistics Studies Information Exchange  
Director, National Security Agency

### Other Defense Activities

Office of the Civilian Health and Medical Programs of the  
Uniformed Services

### Non-DoD Activities

Office of Management and Budget  
U.S. General Accounting Office  
National Security and International Affairs Division, Technical  
Information Center  
National Security and International Affairs Division, Director  
for Logistics Issues

**APPENDIX D. REPORT DISTRIBUTION** (cont'd)

Chairman and Ranking Minority Member of the following  
Congressional Committees and Subcommittees:

Senate Committee on Appropriations  
Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Governmental Operations  
House Subcommittee on Legislation and National Security,  
Committee on Government Operations

**PART IV: MANAGEMENT COMMENTS**

Assistant Secretary of Defense (Health Affairs)

MANAGEMENT COMMENTS: ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)



HEALTH AFFAIRS

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, DC 20301-1200

DEC 16 1992

Mr. Shelton R. Young  
Director, Logistics Support Directorate  
Inspector General  
Department of Defense  
400 Army Navy Drive  
Arlington, VA 22202-2884

Dear Mr. Young:

We have reviewed the draft proposed audit report of Project 2LF-0001. We agree that your study points out areas where more attention to length of inpatient stays could save the Department money. Many of the features of the Coordinated Care Program (CCP) are designed to maximize patient wellness and minimize acute care Lengths of Stay (LOS) and our clinical management strategies must focus on these utilization issues more systematically.

We appreciated the opportunity to work with your audit team on an interactive basis over the length of this project. The manner in which the study was conducted and your responsiveness to strategic developments within CCP enabled a change to occur in the focus of the audit which reflected flexibility and an increased awareness of programmatic developments which were unfolding monthly. Nevertheless, the project report would achieve more results if it systematically addressed basic LOS elements. Some of the points which should be addressed when studying excess bed days include the appropriateness of admissions, the practice pattern variations, the patient's point of origin, and the beneficiary category. Analysis using each of these factors would help sort out some of the confounding effects of LOS inherent in the Military Health Services System (MHSS), add meaning to this analysis, and clarify conclusions regarding LOS issues presented.

We have enclosed a discussion of some of the more relevant analytical issues. We hope this review is helpful as your team finalizes the project report.

Sincerely,

*Edward D. Maltin* /for  
Jack O. Lanier, Dr. P.H., FACHE  
Principal Deputy Assistant Secretary

Enclosure:  
As stated

MANAGEMENT COMMENTS: ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS) (cont'd)

VARIOUS ANALYTICAL ISSUES

The various analytical techniques applied to this report merit further deliberation. A combination of decisions used in this analysis produced some conflicting results in terms of estimating excess bed days. On one hand only cases considered as statistical inliers are used. The normative average LOS excluding outliers produces a lower estimate of the center of the distribution than a mean produced without trimming the data. As a result, the initial outlier exclusion decision produces a higher estimate of excess bed days than would have been estimated if the untrimmed norm were chosen. Then the study introduced a Diagnosis Related Group (DRG) selection bias by excluding cases where no matching DRG case type was treated at the Medical Treatment Facility (MTF). The case selection technique for finding common DRGs in the MTF and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) could mean that the conditions in DRGs not selected may present wide variation from national norms resulting in many excess bed days not evaluated or reported in this audit. The cases selected for review could reflect only small variation from national patterns. The use of national normative comparison has been determined to be plausible for planning and analysis. Thus, the application of the norms for review and audit purposes is useful whether care was actually rendered through CHAMPUS locally or not.

The following additional comments are provided to serve as the basis for corrections or additions to the various sections of the audit report:

- Introduction. The Health and Human Services (HHS), Health Care Financing Administration (HCFA) (Version 4.0) DRGs were developed by Dr. Robert Fetter and colleagues under a research grant from HHS, HCFA. Yale University, Health Systems Management Group developed and refined the ICD-9-CM DRGs for the Medicare Prospective Payment System in 1981 creating Version 1.0. The DRGs used in the analysis from the Retrospective Case-Mix Analysis System (RCMAS) for FY 1990 data are Version 4.0 which actually have 472 patient groups (DRGs) numbered 1-473 (DRG 438 - a mental health group was dropped after Version 2). CHAMPUS adopted DRGs for their form of Prospective Payment of selected patient cases in FY 1987. The Assistant Secretary of Defense, (Health Affairs) (ASD(HA)) in August 1988 DRG Guidance memo similarly adopted the HCFA/CHAMPUS Version 4 DRGs. It would be imprecise to reflect that the Department of Defense (DoD) established these DRGs.

- Grouping DoD Health Care - Paragraph #2. The taxonomy of DRGs includes both medical and surgical type DRGs. DRGs are intended to align patients of similar clinical demands and resource requirements. The relative case weights developed for OCHAMPUS adopted DRGs are intended to provide the appropriate

Enclosure

MANAGEMENT COMMENTS: ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS) (cont'd)

reimbursement on average, within each DRG. Payment rules enable providers to get additional payment for unusual cases, referred to as outliers. Outliers are defined in terms of both bed days and costs. The point to correct is that diagnosis and procedures are used to define the patient cases assigned to each DRG.

- Program Management. The RCMAS analysis tool is currently being upgraded to enable MTF users to access data on patients currently hospitalized as well as patient's previously dispositioned. This upgraded system referred to as RCMAS for an Open System Environment (RCMAS-OSE) is in alpha testing at Fort Sill as of 2 November 1992 and will be deployed to replace the existing older systems in FY 1993. In addition, the Department will be adding selected precertification options to the Automated Quality of Care Evaluation Support System and the Composite Health Care System in the near future which will continue to focus clinicians on appropriateness and utilization decisions.

- Scope. The methodology employed in the analysis is different than OASD(HA) would have used. Recommend that in future reports a more substantive methodology be developed and included as a separate section. We concur with the study focus on LOS differences from national norms. It would be helpful if this section could indicate more specifically how the analysis was limited or how the decision to focus on only the common set of cases was made. Choosing a different approach to analyze the respective hospitals may have concluded more overall days of care to be excess.

**AUDIT TEAM MEMBERS**

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