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A STUDY TO DETERMINE THE COST OF QUALITY
ASSURANCE TO THE DEPARTMENT OF SURGERY
AT US ARMY MEDICAL DEPARTMENT ACTIVITY
FORT BENNING, GEORGIA

A Graduate Research Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration
by
Captain John A. Becker, MSC
8 May 1984

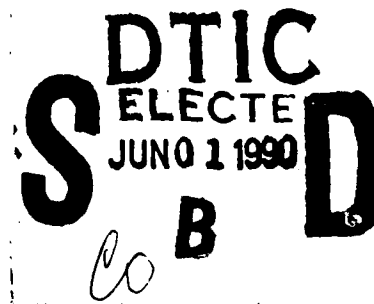
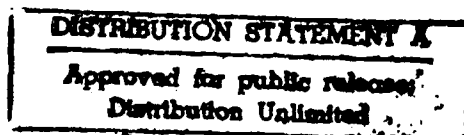


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6a. NAME OF PERFORMING ORGANIZATION US Army - Baylor University Graduate Program in Health Care		6b. OFFICE SYMBOL (If applicable) Admin/HSMA-IHC		7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) Ft. Sam Houston, TX 78234-6100			7b. ADDRESS (City, State, and ZIP Code)		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS		
		PROGRAM ELEMENT NO.		PROJECT NO.	TASK NO.
					WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) A STUDY TO DETERMINE THE COST OF QUALITY ASSURANCE TO THE DEPARTMENT OF SURGERY AT US ARMY MEDICAL DEPARTMENT ACTIVITY, FORT BENNING, GEORGIA					
12. PERSONAL AUTHOR(S) CPT John A. Becker					
13a. TYPE OF REPORT Study		13b. TIME COVERED FROM Jul 83 TO Jul 84		14. DATE OF REPORT (Year, Month, Day) May 84	
15. PAGE COUNT 109					
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Health Care, Quality Assurance		
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>This study was conducted to determine the cost of quality assurance to the Department of Surgery at the Medical Activity at Fort Benning, Georgia. The time spent in quality assurance activities was assessed from committee minutes and a physician questionnaire. The "cost" to the department was assessed by computing a physician productivity profile based on MCCUs and computing the "loss" of patient contact hours due to quality assurance activities. The study found a 5.5 percent loss in productivity to the Quality Assurance Program. The Program was being run in accordance with Army Regulation 40-66 and significant benefits were being derived.</p>					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION		
22a. NAME OF RESPONSIBLE INDIVIDUAL Lawrence M. Leahy, MAJ, MS			22b. TELEPHONE (Include Area Code) (512) 221-6345/2324		22c. OFFICE SYMBOL HSMA-IHC

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ACKNOWLEDGEMENTS

A project of this scope cannot be completed without the assistance and encouragement of others. I would like to express my thanks to all those individuals that helped make this effort a success.

Colonel Lawrence K. Vann, my preceptor, was instrumental in helping select a topic that was both challenging and of interest to the institution. His guidance and support during the entire residency year have been outstanding, for which I am very appreciative.

Colonel Ronald G. Williams, Deputy Commander for Clinical Services, and Colonel Joseph C. Macdonald, Chief, Department of Surgery, provided much needed advice, guidance, and support during the entire project. I owe a debt of gratitude to the physicians in the study, for without their support this project could have not been completed. A special thanks to the secretaries and noncommissioned officers on each of the services within the Department of Surgery, for they were instrumental in helping collect data.

A sincere thanks is extended to Mr. Smiley K. Davis, Programmer Analyst, Data Processing Division, for his assistance in data collection. Mrs. Elaine A. Tate, Medical Librarian, is also to be thanked for her assistance in locating the literature needed for this project.

A heartwarm thanks is offered to Ms. Ann Dobbs, Secretary to the Deputy Commander for Administration, for her technical expertise and outstanding support in the typing of this document. Her administrative support and friendship during the residency helped make this a most enjoyable year.

My wife, Terri, and children, Shannon and Eddie, must be recognized for their support, encouragement, and love. Their sacrifices over the past two years have been great, and no words written here can adequately thank them.

This Graduate Research Project

is dedicated to

my father

Alvin J. Becker

My father passed from this earth on 27 August 1983, a time during which the proposal for this project was being developed. He helped instill in me at an early age the importance of higher education, and had hoped to see me reach graduation. Although this was not to be, he will be remembered for that important foundation from which this work has risen. Thanks Dad, for the goal has been reached!

I. INTRODUCTION

Defense resources are limited and competition for them in Congress is intense. In order to defend the minimum essential level of health resources needed for the Army, the Army Medical Department (AMEDD) must have complete information to explain its responsibilities and objectives and demonstrate the costs and benefits of its programs to meet them.

One such program is quality assurance (QA). The Joint Commission on Accreditation of Hospitals substantially revised its approach to quality assurance in April 1979, and a "new" standard went into effect 1 January 1981. Department of the Army established a formalized quality assurance program in July 1980 with the publication of Army Regulation (AR) 40-66, "Medical Records and Quality Assurance Administration."

A change in the complexion of health care delivery both in the Army and the nation has made quality assurance a central health care issue. An increase in medical technology, the growing complexity of hospital services, and the rapid emergence of new health care professions have been contributing factors. The level of education of the public has improved dramatically, contributing to greater awareness of and expectations from the health care field. Hospitals have become increasingly responsible and accountable to government and society.

Significant Congressional interest has been generated in this area since 1981 due to publicized malpractice cases brought against Department of Defense (DOD) medical facilities. This concern was prompted by adverse publicity surrounding the inadequate investigation of alleged improprieties at Wilford Hall US Air Force Medical Center--and a subsequent \$1.8 million malpractice judgement against the Government. Defense Department auditors are currently examining a number of aspects of quality assurance in the military medical system.

This environment has caused the AMEDD to place a great deal of emphasis on its quality assurance program. The goal is to provide optimal patient care within available resources.

Quality assurance requires physician involvement and time, which reduces the time that can be spent in patient care. A dilemma arises for the physician because he is responding to the requirements of quality assurance, but is also being depended upon to generate workload. The hospital's resource requirements are defended on the basis of workload accomplished.

The physicians at Martin Army Community Hospital (MACH) "perceive" that they are required to spend a significant amount of time in quality assurance activities, which is decreasing their productivity. They are given no workload credit for their effort and feel this to be unjustified.

The purpose of this research, therefore, is to determine if their perception is correct. How much time are they actually spending in quality assurance, and what is the impact on productivity? Is there evidence to suggest that workload credit needs to be given for time spent in quality assurance?

The Department of Surgery provides an excellent opportunity for meaningful research in this area. Surgeons are involved in generating all of the inputs for the current AMEDD measure of productivity, the Medical Care Composite Unit (MCCU). They are also significantly involved in quality assurance due to the nature of their specialty.

Statement of the Problem

The problem is to determine the cost of quality assurance to the Department of Surgery.

Criteria

1. The quality assurance activities considered in this research will be those specifically outlined in AR 40-66.
2. Productivity will be measured in terms of the Medical Care Composite Unit.
3. Cost will be measured in terms of "lost productivity." ("Loss" as used in this criteria is a loss that is not recoverable, i.e., quality assurance "costs" will not be eliminated, nor is there an intent to do so.)
4. Time spent in quality assurance will be measured in manhours.

Assumptions

1. That each physician will be involved in direct patient care if not spending time in quality assurance.
2. That physician responses to the quality assurance questionnaire and their daily accounting of manhour availability

for the Manpower Availability Report and Clinician Manhour Distribution Report are accurate assessments.

3. That the data gathered from patient administration and the clinics is accurate.

4. That physician staffing will remain stable during the period of the study, and the physicians will be receptive of the study.

Limitations

1. This project will be limited to the Department of Surgery and to only those physicians in the department who contribute directly to the MCCU. This will consist of fifteen physicians.

2. The time frame will be limited based on the approval date of this proposal and the due date of the project.

3. The MCCU is the methodology being used by the AMEDD to measure productivity, but it is not necessarily the best measure.

Literature Review

A comprehensive literature review was conducted utilizing MEDLINE and manual searches, with a focus on the cost of quality assurance. The search logic utilized the topic identifiers of quality assurance; productivity; efficiency/ measurement; cost benefit analysis and quality assurance; and quality assurance, health care and costs/cost analysis.

"While the importance of quality assurance programs to hospital operation has been widely recognized, little attention has been devoted to the costs of such programs."¹ Cost has been overlooked as a subject of investigation.² As a result, relatively little has been published in this area.³

There was a great debate in the past about the cost-effectiveness of professional standards review organizations (PSROs), but this controversy centered mainly on their ability to reduce utilization of hospital days and hence the cost of care. Quality review, although mandated in the original PSRO legislation, was largely ignored by the cost debaters.

From time to time, questions about the expense of quality assurance surfaced from other quarters. Chairpersons of hospital medical committees wrote articles or letters to medical journal editors complaining about how much it cost to perform required audits (and how ineffective such audits seemed to them in terms of improving quality of care). Some audits were said to have cost in excess of \$5,000.

Warner discusses some thoughts about the cost of QA.⁴ He feels the cost of QA activities can be considerable, especially if absorbed costs are taken into account. When looking at Veterans Administration (VA) facilities, health maintenance organizations and similar institutions with salaried medical staffs, physician committee time represents actual on-duty hours, the cost of which the facility must absorb. Zelman and Jessee consider physician committee time as an "in kind" contribution-donated service that is not paid for by the hospital.⁵

Warner also points out that the VA has been reviewing QA studies performed at its facilities for some time. Most of the studies show largely absorbed costs somewhere between \$500 and \$1000 per study, depending on the number of criteria used, the size of the data sample, and the amount of expensive professional committee time required.

Wallace and Donnelly calculated the cost of medical audit, utilization review, and nursing audit programs at Little Company of Mary Hospital, Eugene Park, Illinois.⁶ This was done in an attempt to determine whether the benefits of these programs outweighed their cost.

The cost of each program was divided into salary expense, non-salary expense, and indirect expense. The salary expenses were then divided into three occupational categories: clerical, professional, and physician. The total hours each individual in each category was involved in each program during the space of a year were calculated and multiplied by the amount each earned per hour.

After studying the activities of the various audit-related committees and the amount of time physicians spent working on these committees, the hospital arrived at an average number of hours physicians spent per year working on audits only.

When computing physician cost, the hospital multiplied the total yearly hours by \$25, assuming that such an hourly figure would not be unreasonable if the hospital had to contract for these services. It was discovered that physicians spent 437 manhours in medical audits, 1040 manhours in utilization

review, and 120 manhours in nursing audits. The total cost of the medical audit program was \$37,972, the utilization review program cost \$76,351, and the nursing audit program cost \$33,163.

Determining whether the programs' cost to the hospital were completely justified was difficult. The hospital's utilization review program decreased the overall length of stay by one day. Yet quality of care is relative; its degree is a function of a hospital's definition of such care. Little Company of Mary Hospital is convinced that the benefits of these programs outweigh their cost.

McSherry studied the cost-effectiveness of utilization review (UR) and medical audit at the New York Hospital-Cornell Medical Center.⁷ He discovered that physician members of the UR Committee contributed a total of approximately twenty hours per week to committee activities. In the course of one year, 1,040 hours were expended. A study of the effectiveness of UR found it to be an extremely expensive program yielding no significant benefits.

McSherry also found that the cost of medical audit studies (average \$4,788) yielded no justifiable benefits.

Phelps develops a benefit/cost analysis framework with which to assess the gains to society from undertaking a quality assurance program.⁸ His basic premise is that casual benefit/cost analysis will likely overstate benefits and understate costs of QA programs. Phelps points out that the opportunity cost of a resource is of primary importance in assessing costs.

An example he used was a study done by a hospital of the cost of its QA program. Much of the work undertaken in that QA program was done by staff physicians whose time was donated in return for access to the hospital facilities. The computation of costs for that program allowed nothing for the time of the physicians on the grounds that the hospital had to pay nothing to them for their time. While this procedure may have been accurate on accounting grounds, it was an unfortunate error from the point of view of society--the physicians involved in that study could have been undertaking other activities which saved lives or stamped out disease, and it is the value of that time which is the opportunity cost of having them perform QA work for free.

Phelps concludes by saying that QA programs are being promoted as devices capable of improving the quality of medical care, reducing malpractice and malpractice law suits, and reducing the costs of medical care through elimination of unnecessary treatment. The efficacy of these programs in achieving any of these goals has not been tested yet in any systematic fashion.

Williamson points out that quality assurance activity in the United States has expanded rapidly in terms of manhours and resource expenditures.⁹ Yet there is not much in the way of evidence that the results are commensurate to the effort. Providers are becoming disenchanted by the efforts required of them in the face of little documented benefit.

An examination of the literature published to date yields certain general conclusions. All work done has dealt strictly

with monetary costs and has been carried out in the civilian health care sector. Little research has been done and many questions about the cost and value of quality assurance remain unanswered.

Although costs are important in the military health care sector, the annual operating budget is based upon past productivity as measured by the Medical Care Composite Unit. For this reason, the researcher feels a more relevant approach will be to evaluate manhours expended not in terms of "dollars" but in terms of MCCUs, which equate to "dollars" in the military health care system.

Objectives

1. The operational aspects of the Department of Surgery will be fully described.
2. The operational aspects of the Medical Care Composite Unit as a measure of productivity will be fully described.
3. Army Regulation 40-66 will be thoroughly analyzed to determine the requirements for the AMEDD quality assurance program.
4. A questionnaire will be developed to quantify on an individual basis time spent in QA activities.
5. The time spent in quality assurance activities will be identified and quantified per physician.
6. A physician productivity profile will be established to determine what each physician is producing as measured in MCCUs.

7. The potential impact of case-mix differences on productivity among the various surgical specialties will be addressed.

8. The cost to the department will be determined based upon the analysis of the data gathered.

9. An assessment will be made of the quality assurance program at MACH to determine what benefits there might be that would offset any costs determined above.

10. The final objective is to recommend further applications of this research within the military health care delivery system.

Research Methodology

General Approach

This research effort will be purely "descriptive" in nature and does not seek to explain casual relationships, test hypothesis, or make predictions. The data collected does not lend itself to inferential statistical analysis.

Data Collection

Time spent in quality assurance activities will be extracted from committee minutes and a physician questionnaire. This data will be recorded per physician as shown in Appendix A.

An individual physician productivity profile will be established using the MCCU. The MCCU = (average daily beds occupied) + (10 x average daily admissions) + (10 x average daily live births) + (0.3 x average daily clinic visits).¹⁰

Clinic visits per physician will be extracted from individual clinic log-in sheets. Admissions, beds occupied, and live births attributed to each physician will be extracted from computer generated patient index cards. The daily Admissions and Dispositions Report published by the Patient Administration Division (PAD) will be used to determine discharge dates. The patient index cards are updated by PAD upon discharge to indicate the attending physician, if different from the admitting physician. Adjustments will be made to reflect those occasions when the admitting physician is not the attending physician. The above data will be recorded as shown in Appendix B.

Hours spent in direct patient care per physician will be extracted from the Manpower Availability Report and Clinician Manhour Distribution Report, each of which is generated by HSC. Both reports constitute a daily accounting and identification of each physician's manhours spent in patient care, administration, etc. This data will be recorded as shown in Appendix C.

All of the above data will be collected over the same three month period (December 1983-February 1984).

Data Analysis

The MCCUs produced per physician during each month (Appendix B) will be divided by their respective hours spent in direct patient care during this time (Appendix C). The resultant number will be MCCUs/hour (e.g., what the physician is producing on average). The total number of hours spent in quality assurance per physician will then be multiplied by their

respective productivity levels with the resultant number being lost productivity due to time spent in quality assurance. The loss will be summarized for the period of the study, and this will be the cost to the Department of Surgery (Appendix D).

A percentage loss in productivity per physician and for the department will then be calculated. The MCCUs lost due to quality assurance will be divided by what that physician could have potentially produced if not involved in quality assurance. Potential productivity will equal the summation of actual productivity and lost productivity (Appendix E).

Data Interpretation

The cost of quality assurance may not necessarily be the true cost if offsetting benefits exist. Although not the purpose of the research effort, this issue will be addressed through a "soft" analysis of the quality assurance program at Martin Army Community Hospital. Is the program doing what it was designed to do (identify and solve problems), or is it just a paperwork exercise? Both quantifiable and abstract aspects will be considered.

Case-mix differences among the various surgical specialties will also be addressed in a general manner to determine what impact they may have on a physician's input to the MCCU measurement.

FOOTNOTES

¹William N. Zelman and William F. Jessee, "Budgeting Quality Assurance Activities," Quality Review Bulletin (February 1983), 42.

²Robert F. Wallace and Michael Donnelly, "Computing Quality Assurance Costs," Hospital Progress (May 1975), 53.

³Allan M. Warner, "Thoughts About the Cost of Quality Assurance," Quality Review Bulletin (February 1983), 39.

⁴Ibid., p. 40.

⁵Zelman and Jessee, "Budgeting Quality Assurance Activities," p. 47.

⁶Wallace and Donnelly, "Computing Quality Assurance Costs," p. 53.

⁷Charles K. McSherry, "Quality Assurance: The Cost of Utilization Review and the Educational Value of Medical Audit in a University Hospital," Surgery (July 1976), 122-129.

⁸Charles E. Phelps, "Benefit/Cost Analysis of Quality Assurance Programs," Quality Assurance in Health Care (Rockville, MD: Aspen Systems Corporation, 1976), p. 289.

⁹John W. Williamson, The Health Accounting Approach to Quality Assurance (Cambridge, MA: Balinger Publishing Company, 1978), p. 270.

¹⁰

U.S., Department of the Army, "Health Services Performance: Description and Measurement," U.S. Army Health Services Command Study Report (November 1982), 2-2

II. DISCUSSION

Operational Aspects--Department of Surgery

The Department of Surgery is organized as shown in Figure 1. The department is responsible for the diagnosis, care, treatment, and proper medical disposition of patients; conduct of graduate medical education; conduct of other professional training; evaluation of medical care as prescribed by AR 40-66; preparation and completeness of all medical records; and the preparation and submission of records and reports.

Table 1 depicts physician staffing within the department.

TABLE 1

DEPARTMENT OF SURGERY STAFFING DURING THE STUDY

<u>Service</u>	<u>Assigned</u>
Anesthesia and Operative	2
General Surgery	4 (Includes Chief, Department of Surgery)
Urology	2
Orthopedic Surgery	4 (1 Part-Time Civilian)
Otolaryngology	0
Ophthalmology	2
Obstetrics/Gynecology (OB/GYN)	5 (1 Part-Time Civilian)

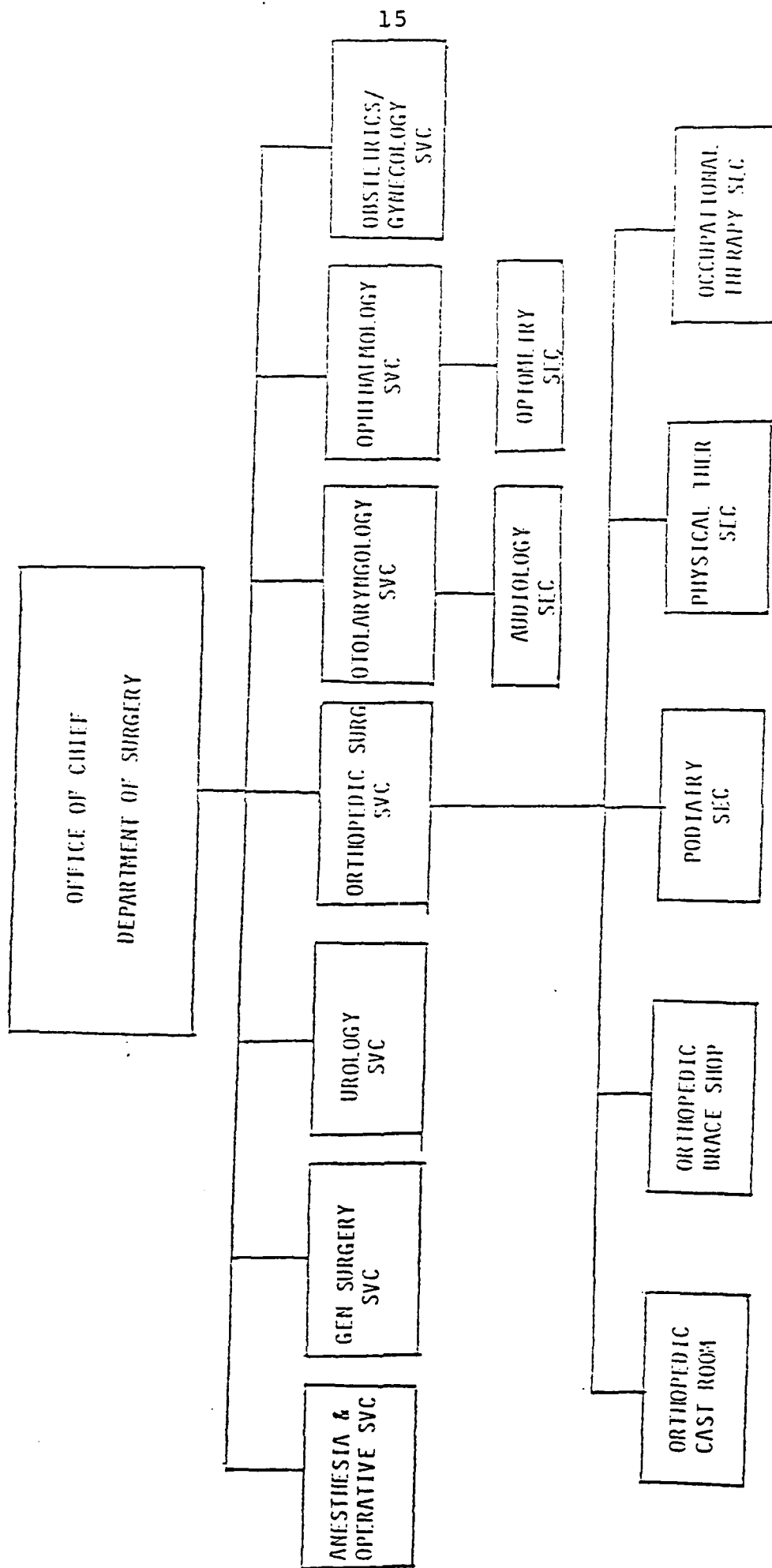


Figure 1. Department of Surgery Organizational Structure

For purposes of this study, the physicians in Anesthesia and Operative Service are not included because they provide no inputs for the MCCU measurement due to the nature of their specialty. The two civilian physicians are not included because they work only part-time.

All services (except otolaryngology--no physician) operate clinics and perform surgery on a weekly basis. The Chief, Anesthesia and Operative Service is responsible for scheduling the four operating rooms in an efficient manner to make maximum use of available time.

General Surgery averaged ninety-six operative procedures per month during 1983, ophthalmology averaged fifteen per month, urology averaged nineteen per month, orthopedics averaged sixty-six per month, and OB/GYN averaged fifty-nine per month.¹ The department is responsible for approximately 34 percent of all MCCUs produced at MACH.

For privacy reasons, physician names will not be used. A coding system utilizing letters of the alphabet will associate physicians with their respective services for analysis purposes. A master listing is provided in Table 2.

TABLE 2
PHYSICIAN MASTER LISTING

<u>Identification Code</u>	<u>Service</u>
A-D	General Surgery
E-G	Orthopedics
H-I	Ophthalmology
J-K	Urology
L-O	Obstetrics/Gynecology

Medical Care Composite Unit

The Medical Care Composite Unit was developed in 1958 and has been in use by the U.S. Army Medical Department ever since to evaluate cost and staffing in U.S. Army hospitals. The Department of Defense has also used it for health resource planning and allocation. The philosophy of the original development included the following considerations:²

Patient Turnover (Admissions/Beds Occupied) - Patients with a short duration of stay represent a considerably heavier workload per patient day than longer term patients. As the average length of stay is reduced, the relative volume of administrative and professional staff time utilized for admissions, initial work-up, diagnosis, initiation of treatment regimen, and subsequent disposition of patients becomes increasingly important. Field surveys in a selected group of military hospitals established that the manpower associated with the admission and disposition process was equal to approximately ten times the manpower value of one day of inpatient care exclusive of the turnover factor. Thus, considering the patient day as representing a "normal" or standard day of care with a weight of one, an admission is assigned a weight of ten.

Births - Newborn infants are not counted as an admission while the mother remains in the hospital. Field studies again showed that the added workload of caring for the newborn indicated that a weight of ten should be assigned to live births.

Outpatient Care - The volume of outpatient care in Army hospitals has constantly expanded in contrast to the decline in inpatient care. Therefore, it was considered essential to establish outpatient care as a separate element with its own weight. An average outpatient visit was found to have an average manpower value of three-tenths that of a normal patient day and a weight of 0.3 is used.

The current MCCU measure was described earlier under "Research Methodology."

Analysis of Army Regulation 40-66

Army Regulation (AR) 40-66, "Medical Records and Quality Assurance Administration," provides the basis for the Army Medical Department's quality assurance program. This regulation was analyzed to determine the requirements it sets forth with respect to quality assurance activities.

The Quality Assurance Program (QAP), within the context of the AR, involves patient care assessment, credentialing, utilization review, and risk management.³

The first requirement establishes a minimum number of QAP committees. They include the Executive Committee, Quality Assurance Committee, Credentials Committee, Therapeutic Agents Board, Infection Committee, and Nursing Quality Assurance Activities Committee.

These committees are required to meet monthly (except Credentials Committee and Therapeutic Agents Board which are quarterly) and evaluate the quality of care on an ongoing basis. Each committee is also required to keep minutes of all meetings. These minutes must report the number and types of cases sampled and reviewed, problems studied, pertinent discussions, findings, and recommendations.

A QAP education program is another requirement. QAP activities and findings should be presented to the entire professional staff and not be given to just a single department. A statistical review of all deaths, hospital infections, and other complications should be part of the education program.

A major requirement is that of patient care assessment. This is a review of medical records and other appropriate sources of information to evaluate the quality of patient care. Departmental committees may be established to do patient care assessment in departmentalized medical treatment facilities (MTF). Patient care assessment includes the following:

- a) Assessment criteria, problem identification, and corrective actions.
- b) Documentation review of medical records for their accuracy, timeliness, completeness, clinical pertinence, and adequacy as medico-legal documents.
- c) Review of all deaths; adverse outcome from failure, delay, or inappropriate diagnosing or treatment; and unresolved problem cases.
- d) Review of the following treatment-related cases:
 - 1) Hospital-incurred trauma, complications, and infections.
 - 2) Any readmission within thirty days.
 - 3) Patients returned to the operating room on the same admission.
 - 4) Return for emergency care within 48 hours after emergency or outpatient treatment.
- e) Surgical audit (tissue review), anesthesia audit, and analysis of necropsy (autopsy) reports.
- f) Blood utilization review.
- g) Drug use review.
- h) Consultation review.
- i) Review of special care units, emergency units, outpatient services, and home care programs.⁴

Another requirement is that of Utilization Review (UR). UR is the ongoing evaluation of health resources management. It covers the appropriateness of admissions, services ordered and given, length of stay, discharge planning and practice, and outpatient services. The aim of this review is cost containment.

A Risk Management (RM) program is also required. This program is to be concerned with accident and injury prevention and

the lowering of financial losses after an incident has occurred. It will identify problems or potential risk circumstances that must be eliminated or reduced to prevent future accident and injury.

Credentialing is the final requirement of a QAP. This involves the delineation of clinical privileges for all health care practitioners who are directly responsible for the diagnosis, treatment, and disposition of patients. The Credentials Committee is required to evaluate and either reinstate or modify the privileges of all clinical practitioners at least annually.

The QA requirements discussed above are the minimum that must be met by all Army medical treatment facilities. These requirements provide a definitional basis for "quality assurance activities" as used in this study.

Development of QA Questionnaire

The bulk of QA requirements set forth in AR 40-66 are accomplished through an extensive committee structure at MACH. As a result, much of the data quantifying time spent in quality assurance activities is available in committee minutes. Physicians spend time, however, in quality assurance activities that support the requirements of AR 40-66, but this time is not captured in committee minutes. After discussion with the physicians in the department, a general consensus was reached concerning what these activities should be. They include the documentation review (audit) of medical records, identification/resolution of QA problems, preparation for attendance at QA related meetings,

completion of QA related reports, and attendance at QAP education programs.

A questionnaire was developed (Appendix F) to quantify time spent in these activities and it was administered to each physician on a weekly basis over the period of the study.

Data Collection/Analysis

Time spent in quality assurance activities was extracted from committee minutes and the physician questionnaires. This data was recorded per physician as shown in Appendix G. Table 3 depicts a compilation of that data for the three-month study period.

One can see a wide variation among the physicians. Man-hours ranged from 2 to 76.05, with a mean of 34.5. There are are several possible reasons for this variance.

The physician questionnaire had some subjectivity since each physician evaluated their own contribution to the QA effort without scrutiny from others. Individuals vary many times in their perception of what they are actually doing.

Humans, by their very nature, perform similar tasks at different rates. The amount of time required to complete the QA activities considered in this study probably differed based on one's experience and rapidity in performing such tasks.

A wide variance existed in the numbers and types of QA activities each physician was involved with (see Table 3 and Table 4). Five of the physicians had no involvement in committees, while the remaining ten had varying involvement. Each of the service chiefs attended more committees than the physicians

TABLE 3

BREAKDOWN OF PHYSICIAN TIME SPENT IN QUALITY ASSURANCE ACTIVITIES

PHYSICIAN	DOCUMENTATION REVIEW	STUDIES	PREPARATION	REPORTS	EDUCATION PROGRAM	COMMITTEES	TOTAL
A	8	6	1.25	6.5		26.33	48.08
B	53	9			1	2.5	65.5
C	45	6	5	2.5		5.08	63.58
D	20.5	14	17.5	7	3	14.05	76.05
E	10		1	3	2	8.58	24.58
F	3						3
G	47	2			3		52
H	11.5	5	3.5	2		12.25	34.25
I	2						2
J	6		8		2	10.5	26.5
K	5.5					1	6.5
L	5					5	10
M	13				3		16
N	24	5.5	3	1.5	1	5.25	40.25
O	11.5	17		4.5	3		36
TOTALS	265	64.5	39.25	27	18	90.54	504.29

*DEPARTMENT CHIEF

**SERVICE CHIEF

TABLE 4

PHYSICIAN COMMITTEE INVOLVEMENT

	PHYSICIAN	NUMBER OF COMMITTEES ATTENDED
*	A	11
	B	2
	C	2
**	D	5
**	E	4
	F	0
	G	0
**	H	6
	I	0
**	J	6
	K	1
**	L	4
	M	0
	N	4
	O	0

*DEPARTMENT CHIEF

**SERVICE CHIEF

within their respective services. The department chief sat on eleven separate committees, far more than any other physician in the study.

All physicians performed documentation review of medical records, but to varying extents ranging from 2 manhours to 53 manhours. Eight physicians were involved in QA studies, eight spent time in preparation for attendance at QA related meetings, seven were involved in completing QA related reports, and eight attended QAP education programs.

The differences addressed above were influenced by the numbers and types of documentation review required of each service, the number of physicians on each service to perform these functions, the number of QA problems that occurred on each service, the number of reports required of each service, and the number of committees for which these physicians were designated members or stand-ins.

When considering time spent in QA activities as a department (Table 3), 52 percent of that time was spent in documentation review, 13 percent in QA studies, 8 percent in preparation for attendance at meetings, 5 percent in completion of QA reports, 4 percent in QA education programs and 18 percent in committees.

Documentation review is by far the largest consumer of physician time, with committee meetings a distant second.

An individual physician productivity profile was established using the MCCU as a unit of measurement (Appendix H). Table 5 depicts what each physician produced during the period of the study. Individual physician productivity levels ranged from 7.43 MCCUs to 83.7 MCCUs.

The nature of the MCCU measurement had an impact on these productivity levels. Because admissions and live births are each weighted by a factor of 10 as compared to a weighting of 0.3 for clinic visits and 1 for beds occupied, OB/GYN physicians show a much greater productivity level than other physicians. They are the only physicians generating live births for the MCCU, and they also have a high admission rate due to the nature of their specialty.

TABLE 5
SYNOPSIS OF PHYSICIAN PRODUCTIVITY (MCCUs)

PHYSICIAN	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	MCCU
A	324	53	270		31.11
B	312	60	509		35.57
C	355	64	570		38.37
D	532	70	630		46.97
E	599	82	938		56.49
F	395	30	477		27.87
G	256	28	577		23.67
H	106	49	800		27.77
I	10	6	502		7.43
J	163	34	418		20.82
K	81	18	475		13.31
L	337	93	760	47	64.52
M	439	120	696	57	79.73
N	367	104	511	56	77.24
O	440	121	915	59	83.70
TOTAL					634.57

Case-mix differences also impacted on productivity levels. Case-mix is usually measured by aggregating groups of patients sharing one or more characteristics. Case-mix measurements have been related to many variables: length of stay (LOS), cost per case, total hospital budget, death rates, and measures of morbidity.⁵ This study will compare the average LOS among the various surgical specialties to determine what impact this may have had.

Table 6 displays data obtained from the Patient Administration Systems and Biostatistical Activity, Fort Sam Houston, Texas, for Martin Army Community Hospital during calendar year 1983.

TABLE 6
AVERAGE LOS BY SURGICAL SPECIALTY

SPECIALTY	AVERAGE LOS
General Surgery	8.7
Obstetrics	3
Gynecology	4.6
Ophthalmology	3.4
Urology	7.2
Orthopedics	16.3

These differences in LOS were absorbed in the average daily beds occupied component of the MCCU. Orthopedics, for example, had a much higher number of beds occupied than ophthalmology (Table 5), part of which can be attributed to differences in the types of patients seen and their lengths of stay. OB/GYN's shorter lengths of stay were overcome by extremely high admission rates. The impact of these differences is lessened through the overall MCCU calculation, however, since the "beds occupied" component is only weighted by a factor of one.

Hours spent in direct patient care per physician are shown in Appendix I. This data was extracted directly from the Manpower Availability Report and Clinician Manhour Distribution Report from HSC.

The productivity loss due to QA was computed per physician as shown in Appendix J. A compilation of that data is depicted in Table 7.

TABLE 7
SYNOPSIS OF PHYSICIAN PRODUCTIVITY LOSS (MCCUs)

PHYSICIAN	PRODUCTIVITY LOSS
A	3.488
B	3.378
C	3.341
D	4.753
E	2.833
F	.155
G	2.084
H	2.464
I	.051
J	.979
K	.186
L	1.008
M	1.905
N	4.109
O	4.314
TOTAL	35.048

The total loss to the Department of Surgery was 35.048 MCCUs. Compared to a total of 634.57 MCCUs produced by the physicians in the study, this represents a 5.5 percent loss in productivity due to quality assurance activities, and is the cost to the department.

A percentage loss in productivity per physician was then calculated as shown in Table 8.

TABLE 8
PRODUCTIVITY LOSS (PERCENTAGES)

PHYSICIAN	Y	÷	(X+Y)	=	PRODUCTIVITY LOSS (%)
* A	3.488		34.598		10
B	3.378		38.948		8.7
C	3.341		41.711		8
** D	4.753		51.723		9.2
** E	2.833		59.323		4.8
F	.155		28.025		.6
G	2.084		25.754		8
** H	2.464		30.234		8.2
I	.051		7.481		.7
** J	.979		21.799		4.5
K	.186		13.496		1.4
** L	1.008		65.528		1.5
M	1.905		81.635		2.3
N	4.109		81.349		5
O	4.314		88.014		5

KEY: X = MCCUs PRODUCED PER PHYSICIAN *DEPARTMENT CHIEF
 Y = MCCUs LOST DUE TO QA **SERVICE CHIEF
 (X+Y) = POTENTIAL PRODUCTIVITY

These losses ranged from 0.6 percent to 10 percent per physician, with a mean of 5.3 percent. This data indicates that as a group, the physicians in the General Surgery Service had the greatest percentage loss, ranging from 8 percent to 10 percent. Three out of five service chiefs had the greatest percentage loss within

their service. The Chief, Department of Surgery had a 10 percent loss in productivity, the highest among the physicians in the study.

Analysis of Quality Assurance Program

The cost of quality assurance arrived at earlier may not necessarily be the true cost if offsetting benefits exist. A "soft" analysis of the QA program at MACH was done to determine if any such benefits exist, and if the program is being implemented in accordance with AR 40-66. Included in this analysis will be hospital-wide activities, departmental activities, and medical staff functions.

Hospital-Wide Activities

The QA Program at Martin Army Community Hospital was designed to ensure that patient care services are provided at an optimal level within available resources and consistent with achievable goals.⁷ The singular, overall goal of the program is to ensure an integrated approach is achieved. The QA Committee and the Administrative Management Committee, and those other committees which forward their written minutes to the Executive Committee directly serve as the primary mechanism to direct and conduct routine quality assurance activities on an on-going basis. The committee structure and reporting mechanism are shown in Figure 2.⁸ The Executive Committee, which reviews, supervises and acts upon recommendations of all committees' activities, and which is chaired by the MEDDAC Commander, ensures the goals and objectives of the QAP are adequately being accomplished.

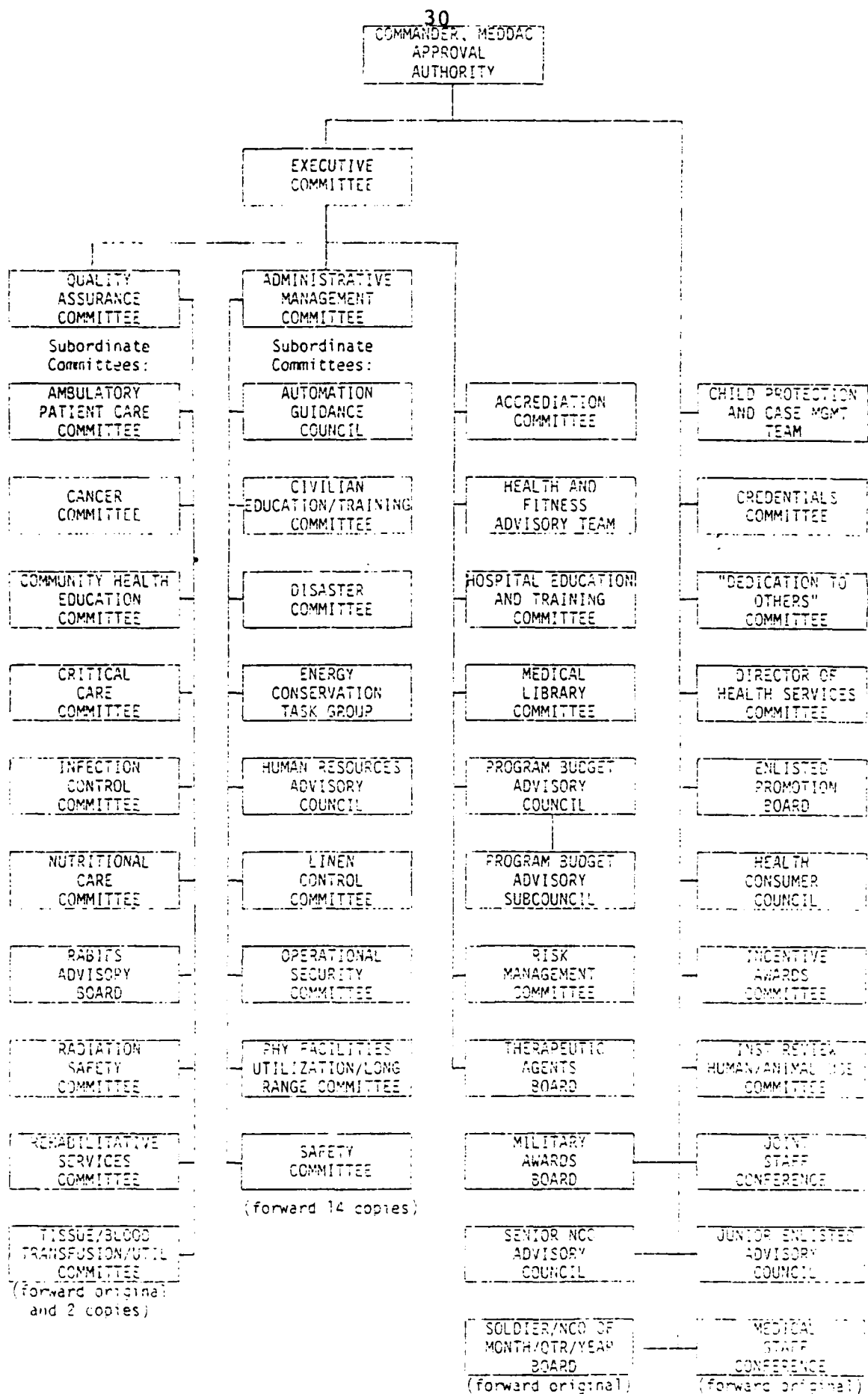


Figure 2. Martin Army Community Hospital Committee Structure

All committees are required to earmark in their minutes a section entitled "Quality Assurance." Within this paragraph, quality assurance problems relating to subject areas pertinent to the function of that committee are identified. As a minimum, all QA problems documented in the committee minutes contain the problem, solution, and name of the project officer.

The Executive Committee directs comprehensive integration of problems to all interested activities, and if not accomplished at a lower committee, will assign responsibility for problem resolution. The Executive Committee also directs appropriate follow-up action through its committee review process, and through the action of the individual Executive Committee members within their discipline (medical, nursing, and administration).

This committee monitors problem resolutions on a monthly as well as annual basis. The QA manager compiles a report by extracting identified problems from appropriate committee minutes each month. This report tracks the following data by committee:

1. Date problem identified
2. Problem
3. Project officer
4. Target date for completion
5. Problem resolved?
6. Resolution
7. Resolution date
8. Follow-up dates
9. Remarks

In this manner, the committee is kept aware of all documented QA problems, their status, and can ensure problem resolution does occur.

The QAP focuses on known problems, problems for which there are local solutions, and problems that adversely impact on patient care.

The following list of data sources are used to assist in problem identification:

1. Ancillary services requests and reports
2. AAA reports
3. Blood utilization review
4. Committee findings
5. Current literature
6. Financial Data
7. IG reports/complaints
8. Incident reports
9. Infection control surveillance
10. Internal Review studies
11. JCAH Survey recommendations
12. Laboratory reports
13. Letters of Complaint/Comment
14. Medical audits
15. Medical records
16. Medical statistics
17. Nursing audits
18. Observations
19. Patient or practitioner profile data

20. Patient surveys.
21. Personnel interviews
22. Pharmacy prescriptions
23. Radiology reports
24. Safety findings/inspections
25. Tissue review
26. Utilization review

During calendar year 1983, 45 QA problems were identified hospital-wide. Thirty-two of these problems have been resolved, while 13 are pending resolution.¹¹ The resolution of QA problems has resulted in improved clinical performance and patient care. These improvements can not be quantified in numbers, however, due to the vastness of the QA program (in which many problems are identified and solved before ever reaching the Executive Committee level), and subjectivity in measuring the actual impact of many corrective actions taken. Several representative examples will be discussed as indicators of the type of benefits that are being derived.

One significant QA problem that surfaced in 1983 was a high staphylococcus infection rate in newborn infants. This issue was raised by the Infection Control Committee, and a pediatric physician and the Infection Control Nurse were made project officers with a high priority placed on resolution. The nursery was closed for a period of time; proper washing procedures stressed; staff carriers identified, and prophylaxis initiated. The nursery was then reopened, with special precautions taken to prevent infection.

These corrective actions have resulted in no recurring problems to newborns, with monitoring being done on a monthly basis as a precaution.

An issue was raised at the daily Executive Committee concerning the familiarity of surgeons with new equipment coming into the hospital (specifically orthopedics). The Chiefs of Logistics, Orthopedics, and OR Nursing were assigned as project officers. The resolution was to conduct familiarization classes for physicians on new equipment. This is currently an ongoing program which has assisted the surgeons in their clinical performance.

The final problem to be discussed is that of nitrous oxide levels in the operating rooms (during cases) exceeding established guidelines. The Chief, Anesthesia Nursing Section was assigned as the project officer. High priority was placed on resolution, and it was discovered that several tanks containing nitrous oxide were faulty. The tanks were repaired and are 100 percent operational, with no further problems arising during monthly checks. This prospective action prevented injury from occurring to staff and patients in the operating room, and is an excellent example of the benefits being derived from the QA program.

Most resolved QA problems have resulted in some benefits to staff, patients, or both. These benefits many times are intangible, such as greater patient satisfaction with the health care encounter, or increased staff satisfaction with the work environment and patient encounter.

Statistics kept by the Patient Affairs Liaison (PAL) Office at MACH are an indicator of patient satisfaction. The PAL office deals with requests for assistance, complaints, and requests for information. Historically, letters of appreciation have outnumbered letters of complaint by a ten to one margin.¹² This appears to indicate that patients in general are positive in their attitudes concerning the quality of health care they are receiving.

The findings of a visit by the Health Services Command Annual General Inspection Team during the period 26-30 March 1984 are an indicator of staff morale.¹³ The team stated staff morale was "excellent," and that Martin Army Community Hospital was the "best" medical facility they had inspected during the past year. It appears the QA program is generating benefits that are having a positive effect not only on patients but on the staff and their care for patients.

A review of statistical data presented to the QA Committee on a monthly basis comparing the rates of various hospital service indicators against both professional standards and last year's data indicates the standard of care at MACH is well within established limits in all categories (see Appendix K). This is another indicator of the benefits being derived from quality assurance.

Utilization Review activities form an integral component of the Quality Assurance Program.¹⁴ UR is the ongoing evaluation of how well the organization is managing its resources. The goal is simply to ensure that the greatest benefits possible are derived from the resources available.

The primary vehicle that is utilized at MACH for conducting UR activities is the committee structure. All committees have utilization review functions and responsibilities appropriate to their area of expertise. Ongoing utilization review takes place within all of the organizational elements as part of their daily management practices.

The central focus of UR occurs in the QA Committee. It is there that the following UR functions are performed:

1. Review of one-day admissions
2. Review of rescheduled admissions
3. Long-term patient roster
4. Review of length-of-stay profiles
5. Review of unanticipated lengths-of-stay
6. Review of consultation usage
7. Review comments, PAL Office
8. Review supplemental care

The committee includes nine physicians, and there is significant involvement in the review process. Medical records are reviewed and discussed when appropriate, and particular emphasis is placed on the long-term patient roster, review of supplemental care, and review of unanticipated lengths-of-stay. Physicians with patients in the hospital over certain expected lengths of stay are required to discuss the reasons before the committee. Dispositions have been generated by this process.

A review of supplemental care has shown exceedingly high expenditures are being made for Computer Assisted Tomography (CAT) scans, sometimes accounting for 50 percent of fund expenditures

for the month. This review has contributed to a procurement action for a CAT scanner to be installed at MACH this fall. The hospital will save considerable resources as a result.

The high cost of cardiology and otorhinolaryngology consults/tests discovered through supplemental care review have contributed to the initiation of a Joint Health Benefits Delivery Program. It is expected this program will save considerable resources also.

Unanticipated lengths of stay are carefully scrutinized by physician review of the record to determine possible causes, trends, and corrective actions that may be necessary.

These are just a few of the many benefits being realized by the hospital through its Utilization Review function.

The Risk Management (RM) function is also an integral part of the QA Program.¹⁵ Its purposes are to prevent hazardous injuries and lower the risk of financial loss to the government. At the center of this activity is the Risk Management Committee, which functions mainly for information gathering, analysis, and development of plans related to risk management. Direct action and intervention in risk management is vested in each individual within the hospital, to include the first line supervisor in all areas.

The reporting system for RM utilizes both formal and informal information gathering mechanisms. Those more commonly utilized include, but are not limited to:¹⁶

1. Reports of unusual occurrence
2. Safety reporting system

3. Patient affairs liaison: direct contact with patients
4. Patient Administration Division: various audits and reports
5. Staff contacts
6. Other committees

This function is being performed in an adequate manner. Upon notification of an unusual occurrence, department/division/activity chiefs are insuring that proper corrective action is initiated. The Risk Manager (Deputy Commander for Clinical Services, also Chairman of QA Committee) is contacting the Staff Judge Advocate (SJA) representative upon notification of an occurrence involving a possible loss to the government. The Risk Management Committee is reviewing all reports of unusual occurrences reported during each month. Overall trends are compared and recommendations for change made, as appropriate.

Problems, actions taken, and other related data can not be discussed because of the sensitive nature of information relating to this area. It was obvious during the assessment, however, that benefits are being derived from the program.

Departmental Activities

The primary mechanism for conducting QA activities at the departmental level is the QA subcommittees. Within the Department of Surgery, the Subaudit Committee performs this function. Committee minutes are forwarded to the QA Committee for review.

The chief of each service within the department sits on the committee on a monthly basis, with the chairman being the chief of the department. Each service makes a report to the

committee concerning numbers of admissions, clinic procedures, and operative procedures. The results of medical record documentation review for both outpatients and inpatients are also reported. All complications, infections, hospital-incurred trauma, and deaths are reviewed and explained in a narrative format. Cases that warrant further investigation are formalized as a QA issue and an Ad Hoc Committee is formed to study the case and make recommendations. This information is forwarded to the QA Committee for review. Any cases that are potentially compensable are immediately coordinated with the Risk Manager. Quality assurance issues arising through mechanisms other than medical record review are also dealt with in this committee, as well as are general business issues concerning the department.

The Department of Surgery's QA efforts can best be summed up in the "Finding of Recognition" the department received for its QA Program during a recent Health Services Command Annual General Inspection:

A detailed review of the Department of Surgery Quality Assurance functions indicated that their department had instituted a Department wide program that involved all surgical services. This Department's Quality Assurance functions were well integrated and clearly demonstrated an active concurrent and retrospective record review of all assigned providers. Complications, infections, and deaths were actively reviewed on an on-going basis and clearly demonstrated that morbidity and mortality reviews were accomplished in a timely manner.¹⁷

Medical Staff

The basic responsibilities of the medical staff with respect to QA are as follows:¹⁸

1. Continually assess and reappraise credentials and privilege delineation granted to all personnel considered as health care providers

2. Document evaluation of:

- a) Surgical care review (tissue review)
- b) Blood utilization
- c) Antibiotics utilization
- d) Pharmacy and therapeutics
- e) Medical records
- f) Utilization review
- g) Continuing medical education
- h) Cardiopulmonary resuscitation
- i) Ambulatory care services provided in troop medical clinics and hospital-based outpatient and specialty clinics
- j) Other activities as determined by the Executive Committee

3. Evaluate quality of the following services at intervals prescribed by the Executive Committee:

- a) Anesthesia
- b) Dietetics
- c) Emergency
- d) Hospital Sponsored Ambulatory Care
- e) Infection Control
- f) Pediatric Emergencies
- g) Nuclear Medicine
- h) Pathology
- i) Pharmacy

- j. Physical and Occupational Therapies
- k. Radiology
- l. Respiratory Therapy
- m. Special Care Units
- n. Social Work

The majority of these responsibilities are executed through the committee structure. As shown by the findings of this study, physician involvement in the formal committee structure varies greatly.

Two areas all physicians are involved in include credentialing and documentation review of medical records. The credentialing function is formally carried out by the Credentials Committee. Each clinical department or specialty has criteria for granting clinical privileges in that department/specialty. Physicians are continually assessed as to their clinical abilities, which causes them to maintain proficiency or have privileges suspended or revoked.

Credentialing at MACH has been linked to physician performance in the timely completion of medical records. Physicians that have delinquent charts are given an opportunity to make corrective actions. If adequate action is not taken, a permanent statement is entered in their credentials file. Repeated deficiencies in this area result in modification or suspension of hospital privileges. This policy, established by the Deputy Commander for Clinical Services, has reduced the number of delinquent charts, thus improving the quality of care. Ongoing

care to patients whose medical records are not available or are incomplete is difficult and potentially detrimental to the patient.

A recent Health Services Command directive requires that mortality and complication rates be documented for all health care providers, and that these rates be compared against norms.¹⁹ This review is part of the annual credential review. If the provider's rate is above the established norm, a review occurs to determine why, and if action should be taken. This places an additional incentive on physicians to provide quality care. As of this study, no physician at MACH has exceeded the standards for DOD health care provider performance.

This study revealed that all physicians are involved in documentation review of medical records. This is one of the primary mechanisms for evaluating the quality of patient care and identifying QA problems. Preestablished, clinically valid criteria are being utilized in this review. Examples include a standard medical record evaluation, which utilizes 27 criteria; an anesthesia care audit, which utilizes 30 criteria; and a blood audit, which utilizes 10 criteria (Appendix L).

Physicians also attend a QAP education program, for which they receive Continuing Medical Education (CME) credits. This program is conducted through a professional staff conference held one hour each week for all physicians. Various topics relating to QA are discussed, as well as cases of interest within the hospital.

The physicians in the Department of Surgery know what their responsibilities are with regard to quality assurance,

and they are executing these responsibilities in an exemplary manner as evidenced by the Annual General Inspection report alluded to earlier, and the findings of this analysis.

FOOTNOTES

¹U.S. Army Medical Department Activity, Fort Benning (Georgia), Minutes of Meeting of Department of Surgery Sub-audit Committee, Meeting of December 1983.

²U.S., Department of the Army, "A Study Comparing Utilization, Staffing, and Cost Trends in Civilian and CONUS Army Hospitals," A Decade of Change in U.S. Hospitals, 1953-1963 (Washington, DC, Office of the Surgeon General, May 1965), pp. 47-48.

³U.S., Department of the Army, "Medical Record and Quality Assurance Administration," Army Regulation 40-66 (15 June 1980), p. 9-1.

⁴Ibid., pp. 9-3; 9-5.

⁵Dale N. Schumacher, Cathy J. Clopton, and Dennis A. Bertran, "Measuring Hospital Case Mix," Quality Review Bulletin (April 1982), 21.

⁶Telephone call to Patient Administration Systems and Biostatistics Activity, Fort Sam Houston, Texas, 10 April 1984.

⁷U.S., Department of the Army, "Quality Assurance Program," MEDDAC Regulation 40-81 (22 September 1981), 1.

⁸U.S., Department of the Army, "MEDDAC Committees, Subcommittees, Conferences, Boards and Councils," MEDDAC Regulation 15-1 (31 August 1984), Annex B.

⁹U.S. Army Medical Department Activity, Fort Benning (Georgia), MEDDAC Annual Quality Assurance Report of 19 January 1984, p. 1.

¹⁰U.S., Department of the Army, "Quality Assurance Program," Annex 2.

¹¹U.S. Army Medical Department Activity, MEDDAC Annual Quality Assurance Report, pp. 1-16.

¹²Telephone interview with Patient Affairs Liaison office representative, Fort Benning, Georgia, 29 March 1984.

¹³U.S., Department of the Army, Health Services Command Annual General Inspection Report of Inspection of Fort Benning, 26-30 March 1984.

¹⁴U.S., Department of the Army, "Utilization Review--
Quality Assurance," MEDDAC Regulation 40-84 (1 May 1982), 1.

¹⁵U.S., Department of the Army, "Risk Management/Incident
Reporting," MEDDAC Regulation 40-80 (12 April 1982), 1.

¹⁶Ibid., p. 2.

¹⁷U.S., Department of the Army, Health Services Command
Annual General Inspection Report of Inspection of Fort Benning,
Finding 43.

¹⁸U.S. Army Medical Department Activity, MEDDAC Annual
Quality Assurance Report, pp. 2-4.

¹⁹U.S., Department of the Army, Health Services Command
Message 2272, Patient Care Assessment and Risk Management Func-
tions, Message of June 1983.

III. CONCLUSIONS

The cost of quality assurance to the Department of Surgery was a 5.5 percent loss in productivity. The "significance" of this loss is a subjective judgement that must be made by the reader. The researcher feels that if the Department of Surgery is representative of all departments within the hospital, then the total cost to the facility may warrant concern. An analysis of the Quality Assurance Program, however, revealed that it was being conducted in accordance with AR 40-66 and significant benefits were being derived. The researcher feels that these benefits outweigh the cost even if some benefits are intangible.

The impact of quality assurance activities on individual physician productivity varied greatly, ranging from 0.6 percent to 10 percent. Fifty-two percent of time spent in QA activities was devoted to documentation review, while 18 percent was spent in committees. For the three month period of the study, 504 man-hours were spent in QA activities. This evidence suggests that enough time is spent in QA activities to warrant workload credit, but further research is required to validate this finding.

Further Applications Within the Military Health Care Delivery System

The methodology used in this research effort is entirely applicable to alternate Army medical treatment facilities. This

methodology has proven its effectiveness at the departmental level. Further research should concentrate on applying it hospital-wide to determine the total cost to the facility. Physician time spent in QA activities may vary greatly among facilities based upon how individual programs are implemented and physician interest/involvement. Likewise, the benefits derived may vary significantly depending on the effectiveness of these programs.

It is recommended that the definitional basis of "Quality Assurance" be expanded beyond that of AR 40-66 to include other QA related activities such as time spent on ward rounds, time spent teaching interns and residents, time spent teaching and preparing lectures for house staff, etc.

Further applications should include the development of relative value scales and workload credits for QA activities that physicians perform.

The cost of quality assurance programs will continue to be an issue of concern in these times of increasingly limited resources. Further research is needed to help solve the dilemma that exists between increased quality assurance requirements and decreased resources with which to conduct these programs.

APPENDIX A

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

QA ACTIVITY						
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	OTHER	Weekly Total	
Week						
1						
2						
3						
4						
Monthly Total						
5						
6						
7						
8						
Monthly Total						
9						
10						
11						
12						
Monthly Total						
GRAND TOTAL						

APPENDIX B

PRODUCTIVITY PROFILE (MCCUs)

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: _____

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total					
Daily Average					
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	+ + + =				
5					
6					
7					
8					
Monthly Total					
Daily Average					
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	+ + + =				
9					
10					
11					
12					
Monthly Total					
Daily Average					
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	+ + + =				
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = _____					

APPENDIX C

MANHOURS AVAILABLE FOR DIRECT PATIENT CARE

MANHOURS AVAILABLE FOR DIRECT PATIENT CARE

[illegible]

APPENDIX D

PRODUCTIVITY LOSS (MCCUs)

APPENDIX E

PRODUCTIVITY LOSS (PERCENTAGES)

PRODUCTIVITY LOSS (%)

[illegible]

KEY: X = MCCUs Produced per Physician
Y = MCCUs Lost Due to QA
(X+Y) = Potential Productivity

APPENDIX F

QUALITY ASSURANCE QUESTIONNAIRE

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

HSXB-AR

SUBJECT

Time Spent in Quality Assurance Activities (Graduate Research Project)

TO Adjutant

ATTN: Admin Resident

FROM

DATE

CMT 1

I spent the following amount of time in quality assurance activities for the period _____:

Activity

Time

Audit of Patient Treatment Records

Identification/Resolution of QA Problems (QA Studies)

Preparation for Attendance at QA Related Meetings

Completion of QA Related Reports

QA Education Program

APPENDIX G

QUALITY ASSURANCE TIME LOG--COMPLETED

QUALITY ASSURANCE TIME LOG (MANHOURS)

PHYSICIAN NAME: A

TIME PERIOD:

QA ACTIVITY																																								
AUDIT		QA STUDIES		ATTENDANCE PREPARATION		QA REPORTS		ACCREDITATION COMMITTEE		PATIENT CARE		AMBULATORY		QUALITY ASSURANCE		CREDENTIALS		HOSPITAL EDUCATION & TNG		MEDICAL STAFF		RISK MANAGEMENT		AGENTS BOARD		THERAPEUTICS		OF SURGERY		CONTROL		INFECTION		CANCER		QA EDUCATION		Weekly Total		
1	1	1	1	.25	.5	.83	1																																	8.33
2	1	1	1																																					5
3	1	1	1																																					1
4																																								
Monthly Total	3	2	.25	.5	.83	1																																		14.33
5	1	1	1																																					2
6																																								3.17
7	1	1	1																																					4.5
8	1	1	1																																					6.41
Monthly Total	3	1	3																																					16.08
9		3	3																																					6.75
10	1	1	1																																					3
11			1																																					5.92
12	1	1	1																																					2
Monthly Total	2	3	1	3																																				17.67
GRAND TOTAL	8	6	1.25	6.5	.83	2.17	2.5	2.42	.66	1.75	1.30	4.87	4.75	.5	4.58																									48.08

QUALITY ASSURANCE TIME LOG (MANHOURS)

62

PHYSICIAN NAME: B TIME PERIOD:

QA ACTIVITY												
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	TISSUE/BLOOD	CANCER						QA EDUCATION	Weekly Total
Week												
1	5	2			.5							7.5
2	4											4
3	4	2										6
4	5											5
Monthly Total	18	4			.5							22.5
5	4	2										6
6	3											3
7	5	1										6.0
8	4				.67							4.67
Monthly Total	16	3			.67							19.67
9	5											5
10	4	1									1	6
11	5				1.33							6.33
12	5	1										6
Monthly Total	19	2									1	23.33
GRAND TOTAL	53	9			1.17	1.33					1	65.5

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

PHYSICIAN NAME: C

QA ACTIVITY												Weekly Total
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	AD HOC COMMITTEE	CANCER						QA EDUCATION	
Week												
1	5	1	1	2								9
2	3	2	2		1.5	1.25						9.75
3												
4												
Monthly Total	8	3	3	2	1.5	1.25						18.75
5												
6	4											4
7	5											5
8	6				1							7
Monthly Total	15				1							16
9	6											6
10	5	1	1	.5								7.5
11	6				1.33							7.33
12	5	2	1									8
Monthly Total	22	3	2	.5	1.33							28.83
GRAND TOTAL	45	6	5	2.5	1.5	3.58						63.58

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

D

PHYSICIAN NAME:

Week	QA ACTIVITY										Weekly Total
	AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	CRITICAL CARE COMMITTEE	MEDICAL STAFF CONFERENCE	AD HOC COMMITTEE	SUBAUDIT, DEPT OF SURGERY	CANCER	QA EDUCATION	
1	1.5	2.5	2	1.8				1.5			9.3
2	2	1						1.25			4.25
3	2										2
4											
Monthly Total	5.5	3.5	2	1.8				1.5	1.25		15.55
5	2	2	1								6
6	2	2		1						1	8
7	2	2						1.5			7.5
8	2	2		1						1	8
Monthly Total	8	7	1	2				1.5		2	29.5
9	2	1	2					1.75		1	7.75
10	2	2	1	1							6
11	1	1	2	1	.92			1.33			8.25
12	2	2	2	2	1						9
Monthly Total	7	6	7	4	.92	1	1.75	1.33		1	31
GRAND TOTAL	20.5	14	17.5	7	4.8	.92	1	4.75	2.58	3	76.05

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

PHYSICIAN NAME: E

QA ACTIVITY												
QA EDUCATION												Weekly Total
												Weekly Total

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

PHYSICIAN NAME: F

QA ACTIVITY		QA EDUCATION	Weekly Total
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS
Week			
1			
2			
3	1		1
4			
Monthly Total	1		1
5	1		1
6			
7			
8			
Monthly Total	1		1
9			
10	1		1
11			
12			
Monthly Total	1		1
GRAND TOTAL	3		3

6

PHYSICIAN NAME:

QA ACTIVITY								Weekly Total
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS					
Week 1	3							3
2	3							3
3	5							5
4	5							5
Monthly Total	16							16
5								
6	4	2						7
7	4							4
8	5							5
Monthly Total	13	2						16
9	4							4
10	4							5
11	4							5
12	6							6
Monthly Total	18							20
GRAND TOTAL	47	2						52

QUALITY ASSURANCE TIME LOG (MANHOURS)

PHYSICIAN NAME: _____ H _____ TIME PERIOD: _____

QA ACTIVITY											
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	AMBULATORY PATIENT CARE	QUALITY ASSURANCE COMM	COMMITTEE CREDENTIALS	HOSPITAL EDUCATION & TNG	CONFERENCE	MEDICAL STAFF	SUBAUDIT, DEPT OF SURGERY	QA EDUCATION
Week											Weekly Total
1	4	1	1	.75					1	1.5	9.25
2	1		.5			1.75					3.25
3											
4											
Monthly Total	5	1	1.5	.75		1.75			1	1.5	12.5
5	1	1									2
6	1		.5		1.5	.67					3.67
7	.5	1		.5						1.5	3.5
8	1		.5		.5	.33			.83		3.16
Monthly Total	3.5	2	1	.5	.5	1.5	.67	.33	.83	1.5	12.33
9	.5	1	.5							1.75	3.75
10	1			.75							1.75
11	.5	1	.5			.92					2.92
12	1										1
Monthly Total	3	2	1	.75		.92			1.75		9.42
GRAND TOTAL	11.5	5	3.5	2	.5	1.5	2.42	.33	2.75	4.75	34.25

QUALITY ASSURANCE TIME LOG (MANHOURS)

PHYSICIAN NAME: I TIME PERIOD:

QA ACTIVITY												
QA EDUCATION												Weekly Total
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS									
Week												
1												
2												
3	.2											.2
4	.2											.2
Monthly Total	.4											.4
5	.2											.2
6	.2											.2
7	.2											.2
8	.2											.2
Monthly Total	.8											.8
9	.2											.2
10	.2											.2
11	.2											.2
12	.2											.2
Monthly Total	.8											.8
GRAND TOTAL	2											2

۲

PHYSICIAN NAME:

QA ACTIVITY															
AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	MEDICAL STAFF CONFERENCE	HUMAN/ANIMAL USE	INSTITUT REVIEW	AD HOC COMMITTEE	TISSUE/BLOOD TRANSFUSION	SUBAUDIT, DEPT OF SURGERY	CANCER					
Weekly Total															
1	.5	2	1					.5	1.5	1					6.5
2															
3	1													1	2
4	1														1
Monthly Total	2.5	2	1					.5	1.5	1					9.5
5	.5	1													1.5
6	.5	1													1.5
7	.5								1.5						2
8	.5							.67							1.17
Monthly Total	2	2						.67	1.5						6.17
9	2	2							1.75						4.25
10	.5	1					1.58								3.08
11															
12	.5	1						1						1	3.5
Monthly Total	1.5	4						1.58	1.75					1	10.83
GRAND TOTAL	6	8	1	1.58	1	1.17	4.75	1						2	26.5

QUALITY ASSURANCE TIME LOG (MANHOURS)

PHYSICIAN NAME: K

TIME PERIOD:

QA ACTIVITY													
		CANCER										QA EDUCATION	Weekly Total
		QA REPORTS											
		ATTENDANCE PREPARATION											
		QA STUDIES											
AUDIT													
Week													
1	1											1	
2													
3													
4	2											2	
Monthly Total	3											3	
5	.25											.25	
6	.25											.25	
7	.5											.5	
8	1								1			2	
Monthly Total	2								1			3	
9													
10													
11	.25											.25	
12	.25											.25	
Monthly Total	.5											.5	
GRAND TOTAL	5.5								1			6.5	

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD: _____

PHYSICIAN NAME: _____

QA ACTIVITY												
		QA EDUCATION										Weekly Total
Week	AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	MEDICAL STAFF CONFERENCE	TISSUE/BLOOD TRANSFUSION	OF SURGERY	SUBAUDIT, DEPT	INFECTION CONTROL			
1		1										1
2		1										1
3												
4												
Monthly Total		2										2
5		1										1
6												
7		1					1.5					2.5
8					.83	.67	1					2.5
Monthly Total		2			.83	.67	1.5	1				6
9												
10												
11												
12		1			.5	.5	.5					2
Monthly Total		1			.5	.5	.5					2
GRAND TOTAL		5			.83	1.17	1.5	1.5				10

TIME PERIOD:

[illegible]

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

PHYSICIAN NAME: N

Week	QA ACTIVITY										Weekly Total
	AUDIT	QA STUDIES	ATTENDANCE PREPARATION	QA REPORTS	AGENTS BOARD	THERAPEUTICS COMMITTEE	AD HOC OF SURGERY	SUBAUDIT, DEPT	CANCER	QA EDUCATION	
1	2	.5	1	1	1.75	1.5	1				8.75
2	2	1								1	4
3											
4											
Monthly Total	4	1.5	1	1	1.75	1.5	1			1	12.75
5	3	1									4
6	3										3
7	2	.5									2.5
8	2	.5	1								3.5
Monthly Total	10	2	1								13
9	3										3
10	2										2
11	3	1	.5								4.5
12	2	1	1								5
Monthly Total	10	2	1	.5	1						14.5
GRAND TOTAL	24	5.5	3	1.5	1.75	1	1.5	1			40.25

QUALITY ASSURANCE TIME LOG (MANHOURS)

TIME PERIOD:

PHYSICIAN NAME: 0

QA ACTIVITY											
QA STUDIES			QA EDUCATION							Weekly Total	
Week	AUDIT	ATTENDANCE PREPARATION	QA REPORTS								
1	1	4	.5								5.5
2	2	2									4
3											
4											
Monthly Total	3	5	.5								9.5
5	1	1									2
6	1	2	2							1	6
7	1	1	.5							1	3.5
8											
Monthly Total	3	4	2.5							2	11.5
9	2	2								1	5
10	2	2									4
11	.5	1	1								2.5
12	1	2	.5								3.5
Monthly Total	5.5	7	1.5							1	15
GRAND TOTAL	11.5	17	4.5							3	36

APPENDIX H

PRODUCTIVITY PROFILE (MCCUs)--COMPLETED

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: A

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS
1				
2				
3				
4				
Monthly Total	38	4	81	
Daily Average	1.23	.13	2.61	
MCCU Weight	-	10	.3	10
MCCU Calculation	1.23	+	1.3	+
			.78	+
				= 3.31
5				
6				
7				
8				
Monthly Total	160	25	98	
Daily Average	5.16	.81	3.16	
MCCU Weight	-	10	.3	10
MCCU Calculation	5.16	+	8.1	+
			.95	+
				= 14.21
9				
10				
11				
12				
Monthly Total	126	24	91	
Daily Average	4.35	.83	3.14	
MCCU Weight	-	10	.3	10
MCCU Calculation	4.35	+	8.3	+
			.94	+
				= 13.59
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>31.11</u>				

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: B

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	24	3	72		
Daily Average	.77	.10	2.32		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.77	+	1	+	.70 + = 2.47
5					
6					
7					
8					
Monthly Total	140	25	192		
Daily Average	4.5	.81	6.19		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.5	+	8.1	+	1.86 + = 14.46
9					
10					
11					
12					
Monthly Total	148	32	245		
Daily Average	5.1	1.1	8.45		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	5.1	+	11	+	2.54 + = 18.64
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = <u>35.57</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: C

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	119	19	207		
Daily Average	3.84	.61	6.68		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.84	+	6.1	+	2
				+	= 11.94
5					
6					
7					
8					
Monthly Total	145	23	202		
Daily Average	4.68	.74	6.5		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.68	+	7.4	+	1.95
				+	= 14.03
9					
10					
11					
12					
Monthly Total	91	22	161		
Daily Average	3.13	.76	5.55		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.13	+	7.6	+	1.67
				+	= 12.4
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = 38.37					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: D

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	150	15	174		
Daily Average	4.84	.48	5.61		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.84	+	4.8	+	1.68 + = 11.32
5					
6					
7					
8					
Monthly Total	215	29	244		
Daily Average	6.94	.94	7.87		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	6.94	+	9.4	+	2.36 + = 18.7
9					
10					
11					
12					
Monthly Total	167	26	212		
Daily Average	5.76	.90	7.31		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	5.76	+	9	+	2.19 + = 16.95
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = <u>46.97</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: E

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	97	8	211		
Daily Average	3.1	.26	6.81		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.1	+	2.6	+	2.0
				+	= 7.7
5					
6					
7					
8					
Monthly Total	287	31	362		
Daily Average	9.26	1	11.68		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	9.26	+	10	+	3.50
				+	= 22.8
9					
10					
11					
12					
Monthly Total	215	43	365		
Daily Average	7.41	1.48	12.59		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	7.41	+	14.8	+	3.78
				+	= 25.99
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = 56.49					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: F

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	112	2	111		
Daily Average	3.61	.06	3.58		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.61	+	.6	+	1.07 + = 5.28
5					
6					
7					
8					
Monthly Total	150	8	178		
Daily Average	4.84	.26	5.74		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.84	+	2.6	+	1.72 + = 9.16
9					
10					
11					
12					
Monthly Total	133	20	188		
Daily Average	4.59	.69	6.48		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.59	+	6.9	+	1.94 + = 13.43
TOTAL MCCUs =					Month 1 + Month 2 + Month 3 = 27.87

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: G TIME PERIOD:

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	86	4	38		
Daily Average	2.78	.13	1.23		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	2.78	+	1.3	+	.34 + = 4.42
5					
6					
7					
8					
Monthly Total	83	4	298		
Daily Average	2.68	.13	9.61		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.68	+	1.3	+	2.88 + = 6.86
9					
10					
11					
12					
Monthly Total	87	20	241		
Daily Average	3	.69	8.31		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3	+	6.9	+	2.49 + = 12.39
TOTAL MCCUs = Month 1 + Month 2 + Month 3 = <u>23.67</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: H

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	8	3	205		
Daily Average	.26	.10	6.61		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.26	+	1	+	1.98 + = 3.24
5					
6					
7					
8					
Monthly Total	45	27	315		
Daily Average	1.45	.87	10.16		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	1.45	+	8.7	+	3.05 + = 13.2
9					
10					
11					
12					
Monthly Total	53	19	280		
Daily Average	1.83	.66	9.66		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	1.83	+	6.6	+	2.9 + = 11.33
TOTAL MCCUs =					Month 1 + Month 2 + Month 3 = <u>27.77</u>

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: I

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	0	0	60		
Daily Average			1.94		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	0	+	0	+	.58 + = .58
5					
6					
7					
8					
Monthly Total	4	2	242		
Daily Average	.13	.07	7.81		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.13	+	.7	+	2.34 + = 3.17
9					
10					
11					
12					
Monthly Total	6	4	200		
Daily Average	.21	.14	6.90		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.21	+	1.4	+	2.07 + = 3.68
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>7.43</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: J

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	19	3	193		
Daily Average	.61	.1	6.23		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.61	+	1	+	1.87 + = 3.48
5					
6					
7					
8					
Monthly Total	78	16	125		
Daily Average	2.52	.52	4.03		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	2.52	+	5.2	+	1.21 + = 8.82
9					
10					
11					
12					
Monthly Total	66	15	100		
Daily Average	2.28	.52	3.45		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	2.28	+	5.2	+	1.04 + = 8.52
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>20.82</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: K

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	22	2	215		
Daily Average	.71	.07	6.94		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.71	+	.7	+	2.08 + = 3.49
5					
6					
7					
8					
Monthly Total	43	10	166		
Daily Average	1.39	.32	5.36		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	1.39	+	3.2	+	1.61 + = 6.20
9					
10					
11					
12					
Monthly Total	16	6	94		
Daily Average	.55	.21	3.24		
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	.55	+	2.1	+	.97 + = 3.62
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>13.31</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: L

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	139	35	147	16	
Daily Average	4.16	1.13	4.74	.52	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.16	+	11.3	+	1.42
				+	5.2
					= 22.08
5					
6					
7					
8					
Monthly Total	129	37	267	21	
Daily Average	4.16	1.19	8.61	.68	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.16	+	11.9	+	2.58
				+	6.8
					= 25.44
9					
10					
11					
12					
Monthly Total	79	21	346	10	
Daily Average	2.72	.72	11.93	.35	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	2.72	+	7.2	+	3.58
				+	3.5
					= 17
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>64.52</u>					

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	136	40	276	23	
Daily Average	4.39	1.29	8.9	.74	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.39	+	12.9	+	2.67 + 7.4 = 27.36
5					
6					
7					
8					
Monthly Total	149	39	272	15	
Daily Average	4.81	1.26	8.77	.48	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.81	+	12.6	+	2.63 + 4.8 = 24.84
9					
10					
11					
12					
Monthly Total	154	41	148	19	
Daily Average	5.3	1.41	5.1	.66	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	5.3	+	14.1	+	1.53 + 6.6 = 27.53
TOTAL MCCUs =					Month 1 + Month 2 + Month 3 = 79.73

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: N

TIME PERIOD: _____

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	107	33	113	21	
Daily Average	3.45	1.06	3.65	.68	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.45	+	10.6	+	1.1
				+	14.28
					= 29.43
5					
6					
7					
8					
Monthly Total	152	41	206	18	
Daily Average	4.9	1.32	6.65	.58	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.9	+	13.2	+	2
				+	5.8
					= 25.9
9					
10					
11					
12					
Monthly Total	108	30	192	17	
Daily Average	3.72	1.03	6.62	.59	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.72	+	10.3	+	1.99
				+	5.9
					= 21.91
TOTAL MCCUs = <u>Month 1</u> + <u>Month 2</u> + <u>Month 3</u> = <u>77.24</u>					

PRODUCTIVITY PROFILE (MCCUs)

PHYSICIAN NAME: 0TIME PERIOD: -

WEEK	BEDS OCCUPIED	ADMISSIONS	CLINIC VISITS	LIVE BIRTHS	
1					
2					
3					
4					
Monthly Total	106	31	284	17	
Daily Average	3.42	1	9.16	.55	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	3.42	+	10	+	2.75 + 5.5 = 21.67
5					
6					
7					
8					
Monthly Total	129	35	332	16	
Daily Average	4.16	1.13	10.71	.52	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	4.16	+	11.3	+	3.21 + 5.2 = 23.87
9					
10					
11					
12					
Monthly Total	205	55	299	26	
Daily Average	7.07	1.90	10.3	.90	
MCCU Weight	-	10	.3	10	MCCU
MCCU Calculation	7.07	+	19	+	3.09 + 9 = 38.16
TOTAL MCCUs =					83.7
Month 1 + Month 2 + Month 3 =					

APPENDIX I

MANHOURS AVAILABLE FOR DIRECT PATIENT CARE--COMPLETED

Physician	Month			Total
	December	January	February	
A	123	150	152	425
B	160	232	240	632
C	253	232	240	725
D	186	275	293	754
E	157	177	182	516
F	103	237	212	552
G	171	179	236	586
H	92	145	118	355
I	48	142	104	294
J	171	218	188	577
K	168	183	87	438
L	156	262	241	659
M	196	285	212	693
N	244	267	243	754
O	216	225	267	708
Grand Total				

APPENDIX J

PRODUCTIVITY LOSS (MCCUs)--COMPLETED

PRODUCTIVITY LOSS (MCCUs)

Physician	Month	MCCUs	÷	Hrs Avail for Direct Pnt Care	=	MCCU/ Hour	x	Hrs Spent in QA	=	Productivity Loss
A	1	.58		48		.012		.4		.005
	2	14.21		150		.095		16.08		1.528
		13.59		152		.089		17.67		1.573
	TOTAL PRODUCTIVITY LOSS									3.488
B	1	2.47		160		.015		22.5		.338
	2	14.46		232		.062		19.67		1.220
	3	18.64		240		.078		23.33		1.820
	TOTAL PRODUCTIVITY LOSS									3.378
C	1	11.94		253		.047		18.75		.881
	2	14.03		232		.060		16		.960
	3	12.4		240		.052		28.83		1.50
	TOTAL PRODUCTIVITY LOSS									3.341
D	1	11.32		186		.061		15.55		.949
	2	18.7		275		.068		29.5		2.006
	3	16.95		293		.058		31		1.798
	TOTAL PRODUCTIVITY LOSS									4.753

PRODUCTIVITY LOSS (MCCUs)

Physician	Month	MCCUs	÷	Hrs Avail for Direct Pnt Care	=	MCCU/ Hour	x	Hrs Spent in QA	=	Productivity Loss
E	1	7.7		157		.049		5.5		.270
	2	22.8		177		.129		11.33		1.462
	3	26.0		182		.142		7.75		1.101
	TOTAL PRODUCTIVITY LOSS									2.833
F	1	5.28		103		.052		1		.052
	2	9.16		237		.039		1		.039
	3	13.43		212		.064		1		.064
	TOTAL PRODUCTIVITY LOSS									.155
G	1	4.42		171		.026		16		.416
	2	6.86		179		.038		16		.608
	3	12.39		236		.053		20		1.06
	TOTAL PRODUCTIVITY LOSS									2.084
H	1	3.24		92		.035		12.5		.438
	2	13.2		145		.091		12.33		1.122
	3	11.3		118		.096		9.42		.904
	TOTAL PRODUCTIVITY LOSS									2.464

Physician	Month	MCCUs	÷	Hrs Avail for Direct Pnt Care	=	MCCU/ Hour	x	Hrs Spent in QA	=	Productivity Loss
I	1	.58		48		.012		.4		.005
	2	3.17		142		.022		.8		.018
	3	3.68		104		.035		.8		.028
	TOTAL PRODUCTIVITY LOSS									
J	1	3.48		171		.02		9.5		.190
	2	8.82		218		.04		6.17		.247
	3	8.52		188		.05		10.83		.542
	TOTAL PRODUCTIVITY LOSS									
K	1	3.49		168		.021		3		.063
	2	6.20		183		.034		3		.102
	3	3.62		87		.042		.5		.021
	TOTAL PRODUCTIVITY LOSS									
L	1	22.08		156		.142		2		.284
	2	25.44		262		.097		6		.582
	3	17		241		.071		2		.142
	TOTAL PRODUCTIVITY LOSS									

PRODUCTIVITY LOSS (MCCUs)

Physician	Month	MCCUs	÷	Hrs Avail for Direct Pnt Care	=	MCCU/ Hour	x	Hrs Spent in QA	=	Productivity Loss	
M	1	27.36		196		.140		2		.284	
	2	25.44		262		.097		6		.582	
	3	17		241		.071		2		.142	
TOTAL PRODUCTIVITY LOSS											1.905
N	1	29.43		244		.121		12.75		1.543	
	2	25.9		267		.097		13		1.261	
	3	21.91		243		.090		14.5		1.305	
TOTAL PRODUCTIVITY LOSS											4.109
O	1	21.67		216		.100		9.5		.95	
	2	23.87		225		.106		11.5		1.219	
	3	38.16		267		.143		15		2.145	
TOTAL PRODUCTIVITY LOSS											4.314
TOTAL PRODUCTIVITY LOSS											

APPENDIX K

HOSPITAL SERVICE STATISTICS

	100 Number		RATES AND PERCENTAGES			
	<u>Current</u>	<u>To Date</u>	<u>Current</u>	<u>To Last Same Month</u>	<u>Year</u>	<u>Last Y</u>
				<u>Date</u>		
1. Gross Death Rate (Excl. fetal deaths, DOA's) (4%)	<u>10</u>	<u>116</u>	<u>1.2</u>	<u>.9</u>	<u>.7</u>	<u>1.4</u>
2. Net Death Rate (after 48 hours) (2.5%)	<u>5</u>	<u>73</u>	<u>.6</u>	<u>.6</u>	<u>.4</u>	<u>.7</u>
3. Maternal Death Rate (.25%)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4. Neonatal Death Rate (2%)	<u>0</u>	<u>7</u>	<u>0</u>	<u>.6</u>	<u>.6</u>	<u>.8</u>
5. Postoperative Death Rate (1%)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6. Anesthetic Death Rate (1 in 5000)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
7. Fetal Death Rate	<u>0</u>	<u>10</u>	<u>0</u>	<u>.8</u>	<u>1.1</u>	<u>0</u>
8. Autopsy Rate	<u>7</u>	<u>49</u>	<u>70</u>	<u>42.2</u>	<u>47</u>	<u>62</u>
9. Number of Tubal Ligations	<u>10</u>	<u>126</u>				
10. Number of Therapeutic Abortions	<u>0</u>	<u>1</u>				
11. Number of Vasectomies	<u>10</u>	<u>101</u>				
12. Normal Tissue Removed Rate (10%)	<u>4</u>	<u>20</u>	<u>2.5</u>	<u>.7</u>	<u>.8</u>	<u>0</u>
13. Cesarean Sections Rate (15%)	<u>11</u>	<u>104</u>	<u>9</u>	<u>8.3</u>	<u>.9</u>	<u>9</u>
14. Postoperative Infection in Clean Surgery Rate (1-2%)	<u>0</u>	<u>29</u>	<u>0</u>	<u>1.2</u>	<u>1</u>	<u>2</u>
15. Patient Consultation Rate (15-20%)	<u>186</u>	<u>2,030</u>	<u>21.8</u>	<u>17.2</u>	<u>16</u>	<u>18</u>
16. Total Hospital Infection Rate (3-4%)	<u>6</u>	<u>93</u>	<u>.7</u>	<u>.8</u>	<u>.7</u>	<u>2</u>
17. All Other Complications Rate (3-4%)	<u>7</u>	<u>184</u>	<u>.8</u>	<u>1.6</u>	<u>1.5</u>	<u>3</u>
18. Deaths:						
a. Active Duty	<u>0</u>	<u>6</u>				
b. Other	<u>10</u>	<u>110</u>				
19. Number of Patients Undergoing Major Surgery	<u>115</u>	<u>1,670</u>				
20. Number of Patients Undergoing Minor Surgery	<u>83</u>	<u>938</u>				

Month of January 1984

	101 Number		RATES AND PERCENTAGES			
	<u>Current</u>	<u>To Date</u>	<u>Current</u>	<u>To Last Date</u>	<u>Same Month Year</u>	<u>Last</u>
1. Gross Death Rate (Excl. fetal deaths, DOA's) (4%)	<u>8</u>	<u>8</u>	<u>.9</u>	<u>.9</u>	<u>.9</u>	<u>2</u>
2. Net Death Rate (after 48 hours) (2.5%)	<u>6</u>	<u>6</u>	<u>.7</u>	<u>.7</u>	<u>.6</u>	<u>2</u>
3. Maternal Death Rate (.25%)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4. Neonatal Death Rate (2%)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>.6</u>	<u>0</u>
5. Postoperative Death Rate (1%)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
6. Anesthetic Death Rate (1 in 5000)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
7. Fetal Death Rate	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>.8</u>	<u>.</u>
8. Autopsy Rate	<u>3</u>	<u>3</u>	<u>37.5</u>	<u>37.5</u>	<u>42.2</u>	<u>47</u>
9. Number of Tubal Ligations	<u>19</u>	<u>19</u>				
10. Number of Therapeutic Abortions	<u>0</u>	<u>0</u>				
11. Number of Vasectomies	<u>12</u>	<u>12</u>				
12. Normal Tissue Removed Rate (10%)	<u>5</u>	<u>5</u>	<u>1.9</u>	<u>1.9</u>	<u>.7</u>	<u>1</u>
13. Cesarean Sections Rate (15%)	<u>6</u>	<u>6</u>	<u>5.9</u>	<u>5.9</u>	<u>8.3</u>	<u>5</u>
14. Postoperative Infection in Clean Surgery Rate (1-2%)	<u>1</u>	<u>1</u>	<u>.4</u>	<u>.4</u>	<u>1.2</u>	<u>.</u>
15. Patient Consultation Rate (15-20%)	<u>213</u>	<u>213</u>	<u>24.9</u>	<u>24.9</u>	<u>17.2</u>	<u>20</u>
16. Total Hospital Infection Rate (3-4%)	<u>5</u>	<u>5</u>	<u>.6</u>	<u>.6</u>	<u>.8</u>	<u>.</u>
17. All Other Complications Rate (3-4%)	<u>14</u>	<u>14</u>	<u>1.6</u>	<u>1.6</u>	<u>1.6</u>	<u>2</u>
18. Deaths:						
a. Active Duty	<u>0</u>	<u>0</u>				
b. Other	<u>8</u>	<u>8</u>				
19. Number of Patients Undergoing Major Surgery	<u>168</u>	<u>168</u>				
20. Number of Patients Undergoing Minor Surgery	<u>103</u>	<u>103</u>				
21. Number Surgical Procedures Performed on Patients Undergoing all Types of Surgery	<u>470</u>	<u>470</u>				

APPENDIX L

EXAMPLES OF AUDIT CRITERIA

SERVICE _____

MONTH _____

EVALUATION OF MEDICAL RECORD

<p>A. Adequacy of:</p> <p>History () ()</p> <p>Phys Exam () ()</p> <p>Prog. Notes () ()</p> <p>X-rays () ()</p> <p>Lab Tests () ()</p> <p>B. Record of Consultations:</p> <p>Consult indicated () ()</p> <p>Consult, if obtained, is () ()</p> <p>included in record on SF 513</p> <p>C. Tissue Information:</p> <p>Tissue removed () ()</p> <p>Tissue report in chart () ()</p> <p>Tissue diseased () ()</p> <p>Path report agrees with dg. () ()</p> <p>D. Operations:</p> <p>Fully described () ()</p> <p>Procedure correct () ()</p> <p>Surgery justified () ()</p> <p>Patient agreed with surgery () ()</p> <p>Surgery report in chart () ()</p> <p>E. Transfusions:</p> <p>Indicated () ()</p> <p>Forms Signed () ()</p> <p>F. Doctors Orders:</p> <p>Signed () ()</p> <p>Appropriate () ()</p> <p>G. Clinical findings justify () ()</p> <p>final dg.</p> <p>H. Drugs used properly:</p> <p>Proper usage of drugs for dg() ()</p> <p>Proper length of time in () ()</p> <p>dosage of drugs used</p> <p>Was use of antibiotic or () ()</p> <p>other drug directed by lab</p> <p>results or other positive findings</p> <p>Were all drugs used simul- () ()</p> <p>taneously in the patient compatible</p>	<p>I. Overall management of this case*</p> <p>J. Overall rating of chart*</p> <p>K. Disposition of Chart:</p> <p>() Have corrections made, then forward to Medical Record Librarian in PAD</p> <p>() Refer chart for discussion in Sub-Patient Care Committee meeting.</p> <p>L. Comments: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	---

Acceptable	Not Acceptable

Signature of Reviewing Officer

*Give reasons for nonacceptability

ANES DATE _____

ANESTHETIST _____

PATIENT # _____

MARTIN ARMY COMMUNITY HOSPITAL -

ANESTHESIA CARE AUDIT--SF 517

	<u>S</u>	<u>U</u>	<u>N/A</u>
I. PRE-ANESTHESIA EVALUATION/SUMMARY			
1. Surgical/Obstetrical Summary	_____	_____	_____
2. History, incl drugs & previous anes	_____	_____	_____
3. Evaluation, incl physical and lab	_____	_____	_____
4. Potential anes problems/ASA Class	_____	_____	_____
5. Anesthesia choice/plan (general, regional, local)	_____	_____	_____
6. Pre-anes meds/evaluation signed by physician	_____	_____	_____
II. REVIEW IMMEDIATELY PRIOR TO INDUCTION			
7. Record of abnormal lab, pre-med, patient condition	_____	_____	_____
III. ANESTHESIA RECORD			
8. Patient data (name, age, sex, hosp no., ssan)	_____	_____	_____
9. Surgical procedure and date	_____	_____	_____
10. Surgical and anesthesia teams identified	_____	_____	_____
11. Signature of anesthetist	_____	_____	_____
12. Anesthesia/surgery times--begin/end	_____	_____	_____
13. Monitors (appropriate & type--ECG,BP,Temp,Stetho,F ₁ O ₂)	_____	_____	_____
14. Vital signs and other pertinent data recorded	_____	_____	_____
15. IV - catheter size/site, fluids, type/qty	_____	_____	_____
16. Blood and blood components--amount/unit numbers	_____	_____	_____
17. Anesthesia agents and techniques	_____	_____	_____
18. Intubation--description, incl post-intubation breath sounds	_____	_____	_____
19. Regional anes (position, prep, needle, location, parathesias CSF, drugs, catheter, results, cx's)	_____	_____	_____
20. Estimated blood loss	_____	_____	_____
21. Tourniquet time/pressure	_____	_____	_____
22. Intraoperative complications--recorded if present	_____	_____	_____
IV. POST-ANESTHESIA CARE--RECOVERY ROOM			
23. Arrival time, condition, mentation, VS, F ₁ O ₂	_____	_____	_____
24. Discharge time, condition, mentation, VS	_____	_____	_____
V. POST-ANESTHETIC VISITS			
25. Identified as "Anes Post-OP Note"	_____	_____	_____
26. Visit date and time	_____	_____	_____
27. Visit within 48 hours (72 on week-end)	_____	_____	_____
28. Anesthesia related complications--stated as none or referred to Progress Notes (SF 509) if present	_____	_____	_____
VI. NURSING PROCESS (DA FORM 3888, & -1)			
29. Do the nursing orders reflect the problem list?	_____	_____	_____
30. Are the Nursing Care Plan and the Medical Plan compatible?	_____	_____	_____

Auditor _____

Date _____

AUDIT of BLOOD and BLOOD COMPONENT USE

Justification for transfusion. The X in column A indicates that either the CRITERIA or the EXCEPTION is sufficient justification for transfusion. The X in column B indicates that the EXCEPTION must be present to justify the use of blood or blood components. Circle the CRITERIA and/or EXCEPTIONS present.

COMPONENT	CRITERIA	STANDARD		EXCEPTIONS
		A	B	
Red Cell Transfusion	1. Hypovolemia due to surgery trauma, or GI bleeding.	X		1. Coronary artery disease, chronic pulmonary disease, or cerebral ischemic disease.
	2. Acute leukemia, aplastic thalassemia, sickle cell anemia, or hemodialysis if hemoglobin (Hg) < 8 gm/dl or hematocrit (Hct) < 24%	X		2. NONE
	3. Iron deficiency anemia,		X	3a. Etiology of blood loss investigated; and b. Previous treatment with iron, Vitamin B-12, or folic acid; and c. Symptoms of chronic anemia.
	4. Unspecified anemia.		X	4a. Preoperative Hg < 10 gm in major and 8 gm in minor surgery. b. Preoperative hypovolemia (flat veins, postural hypotension, low bp, tachycardia or blood volume deficit of 750 cc or equivalent).
Whole Blood	5. Use of Whole Blood		X	5a. Surgical or trauma patient b. Patient w/ acute GI bleeding
Platelets	6. Use of blood platelets		X	6a. Patient bleeding; and b. Platelet count 50,000 mm^3 ; \pm c. Bleeding time > 15 min.; d. Consultation w/ Pathologist
	7. Use of blood platelets for ITP.		X	7a. Lack of response to steroids or contraindications for " b. Hematology consultation. c. Surgical indications.
	8. Use of more than 3 units of platelets.		X	8. Presence of antiplatelet antibodies.
Serum albumin 3 plasma pro- and plasma protein fraction.	9. Use of serum albumin and plasma protein fraction.		X	9a. Surgical patient in shock. b. Severe malnourishment & nephrotic syndrome w/ hypoalbuminemia
Factor IX Complex	10. Use of Factor IX Complex.		X	10a. Fresh frozen plasma not avail. b. Child with Factor IX deficiency (hereditary). c. Hematology consultation.

COMMENT:

*Modified from JCAH, Suggested Criteria for Retrospective Review of Blood Transfusion, QRB, DEC 77

FB (MED) Form 733 1 FLB 81

BIBLIOGRAPHY

Books

Donabedian, Avedis. The Criteria and Standards of Quality.
Ann Arbor, MI: Health Administration Press, 1982.

Egdahl, Richard H.; Gertman, Paul M. Quality Assurance in
Health Care. Rockville, MD: Aspen Systems Corporation,
1976.

Joint Commission on Accreditation of Hospitals. Accreditation
Manual for Hospitals (1984). Chicago: JCAH, 1983.

_____. The Quality Assurance Guide: A Resource for Hospital
Quality Assurance. Chicago: JCAH, 1980.

Luke, Roice D.; Krueger, Janelle C.; Modrow, Robert E.
Organization and Change in Health Care Quality Assurance.
Rockville, MD: Aspen Systems Corporation, 1983.

Pena, Jesus J.; Haffner, Alden N.; Rosen, Bernard; Light,
Donald W. Hospital Quality Assurance. Rockville, MD:
Aspen Systems Corporation, 1984.

Williamson, John W. The Health Accounting Approach to Quality
Assurance. Cambridge, MA: Ballinger Publishing Company,
1978.

Government Documents

NOTE: Army and MEDDAC Regulations are listed numerically at
the end of this bibliography division.

U.S. Army Medical Department Activity. MEDDAC Annual Quality
Assurance Report, 19 January 1984.

_____. Minutes of Meetings of Accreditation Committee. Fort
Benning, GA, 1983-84

_____. Minutes of Meetings of Ambulatory Patient Care Com-
mittee. Fort Benning, GA, 1983-84

_____. Minutes of Meetings of Cancer Committee. Fort Benning,
GA, 1983-84.

- _____. Minutes of Meetings of Community Health Education Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Credentials Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Critical Care Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Department of Surgery Subaudit Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Director of Health Services Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Executive Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Health and Fitness Advisory Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Health Consumer Council. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Hospital Education and Training Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Infection Control Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Institutional Review Human/Animal Use Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Medical Staff Conference. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Nutritional Care Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Quality Assurance Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Rabies Advisory Board. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Radiation Safety Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Rehabilitative Services Committee. Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Risk Management Committee. Fort Benning, GA, 1983-84.

- _____. Minutes of Meetings of Therapeutics Agents Board.
Fort Benning, GA, 1983-84.
- _____. Minutes of Meetings of Tissue/Blood Transfusion
Utilization Committee. Fort Benning, GA, 1983-84.
- U.S., Department of the Army, "A Study Comparing Utilization,
Staffing and Cost Trends in Civilian and CONUS Army
Hospitals." A Decade of Change in U.S. Hospitals,
1953-1963, May 1965.
- _____. Health Services Command Annual General Inspection
Report of Inspection of Fort Benning, 26-30 March 1984.
- _____. Health Services Command Message 2272, Patient Care
Assessment and Risk Management Functions, June 1983.
- _____. "Health Services Performance: Description and Measure-
ment." US Army Health Services Command Study Report,
November 1982.
- _____. "Organization and Functions Policy." MEDDAC Regula-
tion 10-1, 1 August 1983.
- _____. "MEDDAC Committees, Subcommittees, Conferences,
Boards and Councils." MEDDAC Regulation 15-1, 31 August
1983.
- _____. "Medical Record and Quality Assurance Administration."
Army Regulation 40-66, 15 June 1980.
- _____. "Risk Management/Incident Reporting." MEDDAC Regula-
tion 40-80, 12 April 1982.
- _____. "Quality Assurance Program." MEDDAC Regulation 40-81,
22 September 1981.
- _____. "Utilization Review--Quality Assurance." MEDDAC Regu-
lation 40-84, 1 May 1982.

Periodicals

- Couch, N. P.; "The High Cost of Low-Frequency Events." New
England Journal of Medicine (March 1981): 634-637.
- Hetherington, Robert W.; "Quality Assurance and Organizational
Effectiveness in Hospitals." Health Services Research
(Summer 1982): 85-198.

- Kalzuny, Arnold D.; "Quality Assurance as a Managerial Innovation: A Research Perspective." Health Services Research (Fall 1982): 253-265.
- Klastorin, Theodore D.; Watts, Carolyn A.; "On the Measurement of Hospital Case Mix." Medical Care (June 1980): 675-685.
- McSherry, Charles K.; "Quality Assurance: The Cost of Utilization Review and the Educational Value of Medical Audit in a University Hospital." Surgery (July 1976): 122-129.
- Mannisto, M.; "An Assessment of Productivity in Health Care." Hospitals (16 September 1980): 71-76.
- Markus, A.C.; "Quality Assurance--Panacea of Trojan Horse?" Quality Review Bulletin (February 1981): 21-22.
- Rhein, Reginald W.; "Measuring Physicians' Productivity." Medical World News (16 April 1979): 37-44.
- Schumacher, Dale N.; Clopton, Cathy J.; Bertram, Dennis A.; "Measuring Hospital Case Mix." Quality Review Bulletin (April 1982): 20-26.
- Warner, Allan M.; "Thoughts About the Cost of Quality Assurance." Quality Review Bulletin (February 1983): 39-41.
- Wallace, Robert F.; Donnelly, Michael; "Computing Quality Assurance Costs." Hospital Progress (May 1975): 53-57.
- Wood, Walter R.; Ament, Richard P.; Kobrinski, Edward J.; "A Foundation for Hospital Case Mix Measurement." Inquiry (Fall 1981): 247-254.
- Zelman, William N.; Jessee, William F.; "Budgeting Quality Assurance Activities." Quality Review Bulletin (February 1983): 42-46.