A STUDY TO DETERMINE METHODS OF ESTABLISHING MANAGEMENT CONTROL OVER OUTPATIENT MEDICAL RECORDS MAINTAINED AT THE CENTRAL OUTPATIENT RECORDS ROOM, BROOKE ARMY MEDICAL CENTER, FORT SAM HOUSTON, TEXAS

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CHAPTER I

INTRODUCTION

General Information

Rapidly escalating costs and increasingly vocal consumer dissatisfaction with deficiencies in the delivery of health care in this nation have subjected the health care industry to increasing pressure, from those who receive and those who finance medical services, to develop suitable mechanisms for achieving a more efficient and effective allocation of health resources. One response to this pressure has been a major shift in emphasis on the part of providers from inpatient to ambulatory care. The emergence of the outpatient facility as a major component of the health care delivery system has had a profound impact upon institutional providers of care, which will continue to necessitate reorientation of perspectives and reordering of priorities on the part of the entire health care delivery system.

Prior to the 1960's, the hospital was viewed primarily as a concentration of beds, with outpatient services as an adjunct. Providers of medical care had sanctified the inpatient, and surrounded him with a vast armamentarium of data, procedures, and concern.[1] Outpatient services had not progressed much beyond the pattern of fragmented and discontinuous care provided for the sick-poor in a varied array of general and speciality clinics within the hospital. During

recent years, however, rapid advances in medical technology which made hospital-based medical practice both feasible and necessary; extraordinary increases in the costs of care; and the emergence of the hospital outpatient facility as the provider of primary care for increasingly greater segments of the population, have all been contributing factors to the recognition of ambulatory services as occupying the center stage of the health care delivery system.

An indication of the degree to which outpatient services have assumed prominence may be obtained through a comparison of the national demand for such services, over a period of time. In 1947, there were 41 million outpatient visits to hospitals in the United States; and by 1966, this number had increased to 142 million.[2] In 1973, according to the American Hospital Association, demand for outpatient services exceeded 233 million visits.[3] There is every reason to believe that this trend will continue into the foreseeable future. Indeed, one writer suggests that the health care facility of the future should be an ambulatory care center with inpatient beds attached, rather than a concentration of beds with outpatient facilities attached.[4]

The reorientation of medical facilities to accommodate the increased demand for ambulatory health care services has presented many challenges to institutional providers of care. One problem to which a definitive solution has yet to be achieved is that of developing a responsive and adequate system for managing outpatient medical records. As Finnengan notes, hospital record systems have tradi-

tionally been designed to store and retrieve records of patients confined to hospital beds.[5] Indeed, the literature would suggest that, at their current state of evolution, outpatient record systems and departments which can assure the availability and adequacy of records are somewhat rare!

It is an almost universally acknowledged fact that the maintenance of high quality medical records is essential for good patient care. Huffman suggests that records are as necessary for the practice of medicine as medications are for effective treatment.[6] Because of the essentially episodic and fragmented nature of ambulatory health care services, the outpatient medical record assumes critical importance, as a vehicle for medical communication and a mechanism for effectively achieving continuity of care. Aring notes that it is not unusual that proper treatment may depend on the alacrity with which information about what had transpired previously is marshalled.[7] He further suggests, however, that the availability of medical records leaves much to be desired.[8]

In relative contrast with the civilian health care sector, government institutions have traditionally maintained a greater interrelationship between their inpatient and outpatient services.[9] Military hospitals have historically served their populations as both family physician and hospital. As a result, the military medical services have developed a standardized outpatient medical record system which is flexible and readily adaptable to changing requirements. As

it has evolved, this system has been continuously evaluated and periodically modified to enhance its acceptability for use in hospitals that vary widely in size, location, and function.

Despite the relatively greater emphasis placed on outpatient services within the Armed Forces, military health care providers have encountered challenges and difficulties quite similar to those experienced in the civilain sector. There has occurred within the traditional military health care delivery system what one prestigious commander termed a form of "not so subtle discrimination" in which major efforts were directed toward those patients who were "in" at the expense of the larger number of patients who were "out".[10] Concern with the quality and acceptability of ambulatory care has led to a proliferation of studies, conferences, and special inquiries within the military, designed to identify problem areas and reorder priorities.

Deficiencies and problem areas in the management of outpatient medical records within the military health care delivery system have been extensively documented. In its celebrated study of Department of Defense Medical Departments, the Westinghouse Electric Corporation reported that:

> Although the administration of medical and health records for service personnel, dependents, and retirees is one of the most important activities in the Medical Health Care System, it is also one of the weakest. At almost every level of health recording, numerous delays and errors are not only possible, but predictable and tolerated.[11]

Among the problem areas specifically discussed in this study, the ineffective

procedures for filing, retrieving, and maintaining outpatient medical records were viewed as constituting a common problem in all institutions visited.[12] A 1972 study of ten U. S. Army hospitals by the Comptroller of the Army, revealed that "poor handling of records" was the most common cause of patient dissatisfaction with the Army system of ambulatory health care delivery, and the third greatest irritant with hospital staff members.[13]

As a result of these and other studies, the highest levels of authority within the U. S. Army have placed considerable emphasis on upgrading the quality of outpatient records management.[14] Intensive efforts at all levels within the Army Medical Department have been directed toward the establishment of a system which will assure the effective filing, retrieval, and maintenance of outpatient medical records. However, there exists considerable evidence that serious deficiencies in records management remain a common problem in most military treatment facilities.

This study of the outpatient medical records system at Brooke Army Medical Center, Fort Sam Houston, Texas, was an effort to analyze the present system; to document and describe its weaknesses; and to formulate useful recommendations concerning the management of outpatient records within the center.

Hospital History and Setting

Brooke Army Medical Center (BAMC), located on picturesque and

historic Fort Sam Houston, in the center of San Antonio, Texas, has enjoyed a long and illustrious history of service to the military and civilian community. Established as an Army Hospital in 1872,[15] it has provided continuous service in support of our nation, and evolved into one of the largest teaching hospitals in the Army Medical Department. Its name commemorates Brigadier General Roger Brooke who commanded the facility from 1929 to 1933.[16] Designated as Brooke General Hospital in 1946, the facility was reorganized and redesignated as Brooke Army Medical Center, effective 1 April 1973.[17]

Brooke Army Medical Center's present complex is composed of three principal buildings and several satellite units. The main hospital building, a large 7-story structure located at the north end of Fort Sam Houston, was completed in 1937.[18] Beach Pavillion, a 3-story, U-shaped building which was annexed by the hospital during World War II, is located approximately one mile south of the main hospital. Chambers Pavillion, which is presently used as a psychiatric facility, is located approximately three and one-half miles from the main hospital. An illustration of the locations of these facilities is provided in Appendix A.

Brooke Army Medical Center presently maintains and operates 632 hospital beds for definitive inpatient treatment which includes all phases of medical, surgical, and neuropsychiatric care.[19] In addition, the internationally recognized U. S. Army Institute of Surgical Research provides medical facilities and support to severely burned or

injured patients, both military and civilian, or those requiring formidable surgery or definitive care, who are transferred from other Army Hospitals both within the continental United States and overseas. The population served is approximately 95 thousand.[20] The average daily bed census for the Second Quarter of Fiscal Year 1975 was 440.[21]

The medical center offers a wide spectrum of teaching programs. The Graduate Medical Education Program at BAMC includes residencies in nineteen specialities, and eight different categories of medical internships.[22] Graduate Dental education consists of a rotating dental internship and dental residencies in five specialties. In addition, the medical center provides residency and internship training in Health Care Administration, Pharmacy, Dietetics, and Clinical Pastoral Education, as well as training in many allied science fields.[23]

Outpatient services are provided in fifty-three clinics scattered throughout the medical center's separate facilities. Average daily outpatient visits during the Second Quarter of Fiscal Year 1975 totaled 2,124 per day; an increase of 31 per cent over the corresponding quarter of the previous fiscal year.[24] A summary of the total outpatient workload at BAMC for the Calendar years 1971 through 1974 is provided at Appendix B. Heavy workloads, intensive diversity of activities, and considerable limitations imposed by the wide dispersion of its facilities have had considerable impact upon the complexity of Brooke Army Medical Center's outpatient records activities.

Conditions Which Prompted the Study

The study of the management and control of outpatient records at Brooke Army Medical Center was initiated at the request of the executive officer of the hospital. He indicated that his attention was being frequently directed to the non-availability of outpatient medical records through patient complaints, and expressions of dissatisfaction on the part of hospital personnel. The hospital had engaged in repeated efforts to recognize and correct deficiencies in the current system. The executive officer indicated, however, that the persistence of deficiencies in current procedures was resulting in patient inconvenience, and mistrust of the system on the part of hospital physicians. These factors were causing considerable frustration on the part of providers and recipients of care, and were having an unacceptable impact upon the delivery of outpatient care within the medical center.

Subsequent interviews with administrative and professional personnel involved in the delivery of ambulatory care, and selected patients confirmed the executive officer's conclusion that a study of current outpatient record management and control procedures was warranted. In view of the continued emphasis on ambulatory care discussed previously, it is imperative that a system of outpatient records management which will assure the availability of the medical record during the physician-patient encounter be developed. The study was directed toward identifying areas of weakness and providing recommendations

for increasing control over, and thus, the availability of outpatient records.

Statement of the Problem

The problem was to determine methods of establishing management control over outpatient medical records maintained by the Central Outpatient Records Room, Brooke Army Medical Center, Fort Sam Houston, Texas.

Objectives

The objectives of this study were to:

1. Analyze the present system of outpatient medical record filing, retrieval, and control.

2. Document the effectiveness of the present system through statistical sampling techniques.

3. Determine areas of weakness in current procedures.

4. Develop recommendations for establishing a system of control over outpatient records.

Limitations

The following limitations were placed on this study:

1. Only outpatient medical records would be considered. By definition, military health records and clinical records were excluded.

2. Investigation was limited to those aspects of outpa-

tient records operations which directly influenced or impacted upon the filing, retrieval, and control of records.

3. With the concurrence of the Hospital Executive Officer, the study was limited to those records maintained by the Central Outpatient Records Room of the medical center.

4. The Hospital Executive Officer requested that recommended changes be limited to a manual system. Proposed solutions requiring the use of automated or electronic data processing were specifically excluded.

5. Any changes recommended must permit compliance with current Army regulations.

Criteria

It was established that any proposed solution to the problem should result in a system of records management and control which would:

1. Provide continuous accountability for records charged out.

2. Inform records room personnel of the location of records which were transferred from one outpatient clinic to another.

3. Reduce the number of records charged-out beyond established suspense policies to only those records properly identified as being retained by professional personnel for legitimate reasons.

4. Reduce the record misfile rate to less than 1 per cent.

5. Increase the record retrievability rate to at least 97 per cent of records which are requested and are maintained by the Central

Outpatient Records Room.

Factors Bearing on the Problem

The following factors were determined to have a bearing on the problem:

1. Activities of Brooke Army Medical Center which were served by the Central Outpatient Records Room were widely dispersed throughout Fort Sam Houston.

2. The medical center did not have a mechanical delivery system, such as a conveyor or pneumatic tube system. Installation of such equipment was not feasible under the current configuration of the medical center.

3. The Central Outpatient Records Room was scheduled for relocation to a larger area of the basement of the main hospital building as a part of a renovation project scheduled for completion by June, 1975.

4. Brooke Army Medical Center provided outpatient services to active duty and retired Air Force personnel and their dependents. Individuals in these categories frequently hand-carried their outpatient records which were maintained at Air Force treatment facilities.

Assumptions

The following assumptions were considered for this study:

1. Brooke Army Medical Center will continue operations in its current configuration for the foreseeable future.

2. Outpatient workloads will remain at essentially present levels.

Definitions

Active Duty Military.--Any member of the United States Army, Navy, or Air Force who is called to active service or active duty for training for a period of not less than 30 days. Included are cadets of military academies and military prisoners.

Central Outpatient Records Room (CORR).--That unit responsible for obtaining, receiving, reviewing, processing, filing, and disposing of all outpatient medical records at Brooke Army Medical Center. (Three notable exceptions were present in the Brooke Study: (1) The Pediatrics Chart Room maintained a separate outpatient records file. (2) The health records of active duty military personnel assigned to Brooke Army Medical Center were maintained in the CORR; and (3) The health records of other active duty military personnel were maintained at several troop clinics located throughout Fort Sam Houston).

Clinical Record.--That record which is prepared for every patient, military or civilian, admitted to a medical treatment facility, including newborns, and other cases which are carded for record only.

Health Record.--That permanent, continuous, and locally available outpatient medical record which is initiated and maintained for all active duty military personnel.

Nominal Index.--An index maintained on plain 3 by 5 inch cards for outpatient records which are filed under the Terminal Digit Filing System, as a cross-reference between the patient's name and Social Security Account Number.

Outpatient.--An individual who receives general or emergency, diagnostic, therapeutic, or preventive health services through a hospital facility or health program, and who, at the same time, does not occupy a bed.

Outpatient Medical Record.--That medical record which is maintained for each outpatient who has been treated at a medical facility, and for whom maintenance of a health record is not required.

Terminal Digit Filing System.--A method used in the military of filing outpatient medical records numerically, according to the digits of the military sponsor's Social Security Account Number.

Research Methodology

An extensive review of both military and civilian literature pertinent to the general problem area was conducted. Bibliographies were obtained from the Defense Documentation Center, the Health Care Studies Division, Academy of the Health Sciences, and other recognized sources. Studies and reports previously completed on the subject were reviewed.

The on-site phase of this study was accomplished in March, 1975, during which the writer visited Brooke Army Medical Center for

a period of two weeks. At this time, the symptoms of weaknesses associated with the outpatient records system were presented by the Executive Officer; the scope of the study was narrowed; and limitations were established. A review of hospital organization and function manuals, records, and reports, correspondence and historical files, and policy statements relevant to the problem was accomplished.

In an attempt to determine the adequacy of the present system, unstructured personal interviews were conducted with the following professional personnel: Chief, Department of Medicine; Chief, Department of Clinics and Community Health Care Services; Chief, Department of Orthopedic Surgery; Chief, Gastroenterology Service; Nursing Supervisor, Emergency Room; and selected physicians at the hospital. Interviews were also conducted with the Chief, Administrative Support Branch, Department of Clinics; various administrative personnel at the various clinics and treatment areas; and selected patients, as well as the Hospital Inspector General, and the Patient Assistance Officer.

A continuing review of record operations was conducted throughout the study period through discussions of procedures, policies, and practices with records room personnel, and through direct observation of record room procedures.

A telephonic survey of all Army Medical Centers in the Continental United States; other military and civilian hospitals in the

San Antonio area; and other selected Army Hospitals was conducted to determine specific approaches being utilized at other institutions to seek solutions to common problems.

In an effort to determine the effectiveness of the current system of records filing, retrieval, and control procedures; and to define areas of deficiency which would indicate directions for further investigation, an analysis of outpatient record operations was conducted. This was accomplished by employing a series of statistical sampling techniques and management indicators which were extracted from the literature by the writer. Arrangements were made with supervisory personnel of the Central Outpatient Record Room to collect data on a daily basis reflecting the number of records requested, the number of records located, and the number of records requested which were charged-out to clinics. Data was collected by the writer upon which to calculate a record misfile rate, a retrieval success rate for records charged-out beyond the suspense period, and a natural record return rate. In addition, an audit of charged-out records was conducted, to determine the extent of record retention by various agencies within the hospital, and to pinpoint specific problem areas in which added emphasis might have the greatest impact. Finally, statistical sampling techniques were used to obtain indications of the adequacy of record retrieval by record room personnel, the accuracy of the use of the current system of records charge-out, and the completeness and filing accuracy of the nominal index.

Review of the Literature

The vital role which the medical record plays in the delivery of medical care is extremely well documented in the literature. Huffman traces the history of medical records to silhouettes depicting the practice of medicine which appear on the walls of paleolithic caverns in Spain, and views their development as paralleling the development of medicine.[25] McNabb includes the medical record as one of the five most important pieces of paperwork generated in the life of a human being.[26] Graves suggests that the medical record is an integral part of the reality of medicine, and, as the handle which the practitioner has on this reality, in a real sense, determines the very nature of medicine.[27] In the context of the major emphasis currently being placed on evaluation of the quality of care, the medical record has assumed increased importance as an essential vehicle for documenting the process and outcome of care rendered.

Despite the dramatic increase in ambulatory services experienced within the last decade, and the essential role which the outpatient medical record serves in coordinating information among physicians and ambulatory services dealing with the same patient, the vast majority of the literature discusses outpatient record services as a function of the traditional hospital medical record department. From the perspective of many authorities in the field, the principles of medical records management are equally applicable to both inpatient and outpatient activities. In the sixth edition of Huffman's Medical

Record Management, only one specific reference is made to "outpatient records."[28] Although McGibony devotes an entire chapter to outpatient services, specific references to record operations in support of these services are rare.[29] The American Hospital Association's Medical Record Departments in Hospitals: Guide to Organization includes one chapter on outpatient records.[30]

Converse comments that traditional emphasis on inpatient consideration has led to treatment of the outpatient record as an unwanted step-child, for which institutional planners grudgingly recognize the need for only a sheet of paper and filing space.[31] Finnegan further suggests that outpatient medical records systems usually consist of "an old file cabinet in a back corner," and notes that standards commonly applied to inpatient records have generally not been applied to records for outpatients.[32]

Despite a rather consistent preoccupation with hospital inpatient records, the literature presents many considerations which have applicability to outpatient record operations. Hayden offers a lucid model against which medical records management systems might be evaluated, and presents a worthwhile summary of the major factors which lead to deficiencies in records management.[33] Smale discusses the need for effective control of medical records,[34] and many sources emphasize the essential requirement of prompt retrievability of needed information as the primary criterion against which to evaluate the effectiveness of any records management system. McGibony notes that three of

the basic principles of medical records are that they must be accurately written, properly filed, and easily accessable. If they do not meet these prerequisites, he adds, they become simply an "expensive nuisance."[35]

In response to the increased demand for outpatient services, recent literature has become increasingly concerned with difficulties and challenges specifically related to outpatient records management. Brenner and Paris emphasize the requirement for an efficient medical data system to achieve a coordinated and continuous delivery of care in the fragmented and episodic setting of outpatient services.[36] Laird further supports the expanded role of the medical record as a communications vehicle among the many varied treatment encounters ambulatory services entail.[37] The American Hospital Association considers it imperative that documentation of the cause of illness and treatment provided accompany the patient who is transferred from various services in an ambulatory setting.[38] Metsch and Schwartz suggest that despite the emphasis on medical record organization and professional review, with the increase of ambulatory care, the access to records and control of records distribution, retrieval, and processing are as significant concerns as the internal development of the record itself.[39]

The importance of effective control mechanisms to assure the availability of records when they are needed is addressed by several sources. Reed suggests that the application of strict controls and scheduled delivery of records in an ambulatory care setting was necessary

to achieve the goal of maximum provision of records for a minimum period of time at any one location.[40] Finnegan reports the successful application of a hospital outpatient records suspense policy which, although somewhat rigid, was considered essential at the University of Illinois Medical Center.[41] Tufo and Spiedel evaluate the outpatient records departments in five hospitals, and conclude that failure to have the record available at the appropriate time results in the waste of time and resources, and adversely affects the efficiency of any health care facility.[42] Beck emphasizes that a record system must be acceptable, and capable of winning the support and cooperation of its participants.[43] He suggests that this is more important than the capability of achieving absolute accuracy. Several authors agree that an essential element of any records management system is a data collection system capable of identifying problem areas in the distribution of records.

Military literature has reflected the increased emphasis being placed on ambulatory health care within military treatment facilities. The Ambulatory Patient Care Program, developed by the U. S. Army Health Services Command, contains specific models directed towards improving the orientation and training of records room personnel,[44] and the general management of outpatient records operations.[45] The latter reference offers a series of management indicators with which record operations might be evaluated, and suggests control procedures designed to increase the effectiveness of records management.

Despite significant advances in computer technology and the increased application of electronic and automated data processing techniques to medical information systems, there is general agreement in the literature that outpatient records systems will remain manual for some time to come. A general concensus exists that computer applications have not yet reached that stage at which it would become economically or practically feasible to convert outpatient medical information systems to their use.

The literature is generally agreed that the most efficient system of records storage involves the use of open shelf filing which provides increased accessibility to records than do other mechanical storage devices. Huffman notes that the main advantages of the Terminal Digit Filing System are that this system distributes workload by randomly distributing records throughout the files, facilitates the assignment of specific areas of responsibility among records room personnel, and substantially reduces misfiles.[46]

White suggests that despite the top-heavy emphasis on hospital inpatient care which has traditionally been given in this country, the vast majority of transactions between health care providers and the population served occur in ambulatory or outpatient settings.[47] McGuire comments that a wide spread sense of urgency needs to be maintained to assure that the science of medical records better serves not

only sick people, but also well people, before they get sick.[48]

Footnotes

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[22]Ibid., p. 10.

[23]Brooke Army Medical Center, Organization and Functions, p. 6.

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[33]Adaline C. Hayden, "What Would An Administrative Evaluation of Your Record Department Reveal?" Hospital Management, CVIII (September, 1969), 32.

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CHAPTER II

DISCUSSION OF THE PRESENT SYSTEM

Organizations and Functions

In an effort to improve the responsiveness of outpatient records management to the increased emphasis being placed on ambulatory care, the Army Surgeon General directed, in August, 1972, that responsibility for administration and control of outpatient treatment records in Army hospitals be transferred from the Patient Administration Division to the Chief, Department of Clinics and Community Health Care Services.[1] Brooke Army Medical Center has complied with this guidance. The outpatient records section is directly subordinate to the Chief, Administrative Support Branch, Department of Clinics (Appendix C). The Chief, Administrative Support Branch is directly subordinate to the Chief, Department of Clinics, who, in turn is subordinate to the Chief of Professional Services (Appendix D).

The outpatient records section is responsible for obtaining, receiving, reviewing, processing, filing, and disposing of all outpatient treatment records within the medical center. Health records of military personnel assigned to Brooke Army Medical Center are also maintained by the outpatient records section. The section's responsibilities include the processing and filing of all reports of

diagnostic and therapeutic procedures and other materials which are generated during the course of the patient's treatment. In addition, records room personnel prepare embossed plastic patient identification cards as required.

In order to accomplish its functions and responsibilities, the outpatient records section operates two separate records rooms: the Central Outpatient Records Room, which is located in the main hospital building, and the Pediatrics Chart Room at Beach Pavilion. The latter is responsible for maintaining the outpatient records of patients who have not reached their thirteenth birthday, and is located within the area occupied by the Department of Pediatrics. Consistent with imposed limitations, the study was confined to the management of outpatient records maintained by the Central Outpatient Records Room.

Central Outpatient Records Room

General

At the time of this study, the Central Outpatient Records Room was located in the basement of the east wing of the main hospital building, on the same corridor in which the emergency room and triage area were located. The records room was approximately fifty feet from the latter activities. In addition to the outpatient records room, the records section utilized a small room directly across the corridor for preparation of patient identification cards. In-

active records were stored in a room located in a satelite building which was approximately one-hundred yards to the rear of the main hospital building.

The records room was observed to be quite convenient for walk-in patients, because of its proximity to the emergency room area. The location of the room was adequately identified by prominently displayed signs and directional indicators. The records room was located in one of the hospital's most active areas; and considerable noise and high traffic density were present throughout the majority of each week. The room's configuration did not provide any meaningful barriers to muffle these environmental factors. It was observed that records personnel were required to shout in order to communicate with each other during peak periods.

Space and Layout

The central records room occupied an area which measured twenty-seven feet by twenty-six feet or 702 square feet, and was enclosed by four permanent walls (Appendix E). The front of the room faced onto the corridor and contained a counter which served as a customer service area at which requests for records were processed. Space, lighting, and other environmental factors appeared to be adequate.

At the time of the study, the records room was scheduled for relocation by June 1975 as part of a major rennovation project. A floor plan of the projected records room area is provided in Appen-

dix F. Because of the planned relocation of the records room, an in-depth consideration of facilities was excluded from the scope of this study.

Equipment

The central outpatient records room contained approximately 11,000 linear inches of open shelf file space, of which approximately 8,500 linear inches were occupied by active outpatient records. The remainder of the filing equipment was being used for the storage of office supplies and equipment, blank file folders, and miscellaneous items required for record maintenance operations. A circular Savasort Sorter was utilized for manually sorting documents to be filed in treatment records.

Nominal index files were contained in two locations. Files started in January, 1974 were contained in five four-drawer modular units which were stacked from the floor up in a corner of the central records room. Nominal index files prepared prior to 1974 were being stored in similar equipment in the patient identification card room.

The satellite storage area contained approximately 5,250 linear inches of open shelf file space. This area was being utilized for the storage of outpatient treatment records of individuals who were last treated in 1971, 1972, and 1973.

Personnel

The work force in the central outpatient records room consisted of seven military and eleven Civil Service personnel. This

staff was augmented by two part-time employees who worked a total of 30 hours a week under the auspices of the San Antonio Youth Opportunities Program (SANYO). This is a federally sponsored work-study program designed to assist students in obtaining a high school diploma or equivalency. The records room staff was further augmented by three members of the United States Army Reserve who were on active duty for training, during the on-site phase of the study. The military complement consisted of one Staff Sergeant who had supervisory responsibility for the entire records section, and six Specialist Four medical records technicians. The civilian work force was composed of one GS-4 supervisor, four GS-3 file clerks, and six GS-2 file clerks.

A review of the records section files revealed the existence of a high degree of personnel turnover within the section. Turnover of military personnel within the twelve month period preceding the study had been 110 per cent; civilian personnel turnover for the same period had been 64 per cent. Informal discussion with the civilian employees revealed that while most considered their job important, there was universal concern about the low grade structure associated with the section. Several employees were actively seeking positions which would provide greater remuneration. Although the attitude of records room personnel was generally favorable, many employees apparently viewed their current employment as merely a stepping-stone to a better position.

It was noted that no formal program of job orientation was being accomplished within the records section. Records of job related

training were non-existent. Several of the civilian employees were retired military non-commissioned officers, and had received considerable administrative experience during their military careers. However, none of these individuals had backgrounds which were specifically related to medical records management. Job descriptions for civilian employees were very general in their definition of duties to be performed. No office policies and procedures manual was available. There was no written material of any kind which might detail specific duties and serve as a training guide for employees. Appreciation of the duties entailed and procedures to be followed was being obtained by employees through unstructured and extremely informal on-the-job training.

Organization and Functions of Duty Shifts

The central outpatient records section was organized to operate in three shifts for twenty-four hours a day, seven days a week. Tours of duty corresponded to working hours throughout the medical center. The first shift, which worked from 7:00 AM to 3:00 PM was staffed by four military personnel, including the military supervisor, and four civilian employees, including the civilian supervisor. The part time SANYO employees also worked during this tour. The second shift, which worked from 3:00 PM to 11:00 PM, was staffed by two military and five civilians. The shift supervisor was a civilian GS-3. The third shift was staffed by one military member and two civilians, including a GS-3 supervisor, and operated from 11:00 PM to 7:00 AM. Week-end

duties were performed by civilian personnel on a routine basis. Weekend staffing consisted of two employees during the first and second tours and one employee for the third. Membership on the various shifts was relatively constant; personnel did not rotate their tours of duty.

The first shift was responsible for filing and retrieving records in support of ambulatory services throughout the medical center. Records requested by various clinics for appointed patients were retrieved from the files and delivered to the clinic by this shift. Records were also picked up from the various clinics, sorted, and returned to the files during this tour. In addition to its primary responsibility of records retrieval for appointed patients, this shift was tasked with the responsibility for sorting reports of diagnostic and therapeutic procedures to be filed in treatment records. Personnel also staffed the customer counter on a continuous basis, for immediate retrieval of records requested by walk-in patients. Finally, the demand for the preparation of embossed patient identification cards occupied one member of this shift on a generally constant basis.

Although the second shift was also responsible for retrieving records requested by walk-in patients arriving at the emergency room, its primary function was the maintenance of the active outpatient record files. Individuals on this shift were assigned specific sections of records, and were responsible for filing all material in the individual records; for screening their respective sections for misfiles and other errors; and for the preparation of new record folders

and nominal index cards. In addition, this shift was responsible for screening records for retirement.

The third shift was responsible primarily for the maintenance of approximately 1,500 military health records filed in the records room. As will be discussed in a subsequent section, this shift was also tasked with screening the files to identify those records which had remained charged-out beyond the established suspense period. This shift was also being utilized by the military supervisor for whatever "special projects" might be required.

Records Filing, Retrieval, and Control

Filing System

Two records filing systems were being used in the central outpatient records room. Military health records were being filed alphabetically, and outpatient medical records were being filed under the Terminal Digit Filing System. Since this study was limited to the latter category of records, only the terminal digit system will be discussed.

The U. S. Army converted to the Terminal Digit Filing System for outpatient medical records on 1 January 1969.[2] All outpatient records at the central outpatient records room were being filed under this system. The principal characteristic of the terminal digit system is the filing of records by the last four or terminal digits of the military sponsor's Social Security number rather than alphabetically by name. The Social Security number is divided into three

groups of numbers which are considered from right to left. The terminal digits include a primary group consisting of the last two digits, and a secondary group composed of the next to last two numbers. The remaining five digits of the Social Security number constitute a tertiary group. As an example, in the Social Security number 104-32-9861, the numbers 9861 are the terminal digits. The numbers 61 are the primary group, and 98 are the secondary group. The tertiary group contains the remaining numbers 10432.

In a terminal digit file there are 100 primary sections, ranging from 00 to 99. Records are arranged by primary group numbers, without regard to the size of the file. Within each primary section, records are further arranged by secondary group numbers, also from 00 to 99. Records are filed within the secondary sections by the numerical sequence of the remaining or tertiary group numbers. Commas, spaces, hypens, and alphabetical characters are discarded if they appear. Thus, if the file identified by the number 104-32-9861 is desired, the clerk goes to the 61 primary section, locates the 98 secondary group within this section, and searches for the tertiary numbrs 10432 filed in numerical sequence.

The Terminal Digit Filing System has been generally accepted as a mechanism which substantially reduces the rate of record misfiles.[3] To obtain positive control over misfiling, the military system uses file folders which are color tinted and blocked. Ten file folder color codes are used to indicate various segments of the primary number groups.

For example, orange represents primary groups 00 to 09, light green represents 10 through 19, etc. The digits 0 through 9 are preprinted along the right-hand border of each file folder. The last digit within the primary group is identified by blocking out the appropriate digit along the border. The upper right corner of the file folder contains space for prominently marking the digits of the secondary group.

It was noted that the filing system in use by the central records room involved filing records according to the last four terminal digits only. Records were then filed alphabetically by last name, within the secondary groups.

Processing Records Requests

The central outpatient records room received requests for records through three primary means. At the time of the study, Brooke Army Medical Center had partially implemented a central appointment system. Requests for records of patients appointed for those 18 clinics which were utilizing the central appointment system were received in the form of a computer print-out. Records requested for patients appointed to those clinics not utilizing the centralized system were prepared in written form by each clinic. The third primary means was by direct request from unappointed walk-in patients who presented themselves for treatment in the emergency room, or other outpatient clinics. It was observed that records are also requested telephonically by the clinics and through other miscellaneous methods. However, the three primary means accounted for over 95 per cent of requests experi-

enced during the study period.

Requests for records of patients appointed for those clinics not utilizing the central appointments system were prepared on BAMC Form 1-784, Outpatient Appointment Card (Appendix G). This is a four copy form with interleafed carbons, and has twelve patient data blocks the size of a patient identification card. The fourth copy of the form is of heavier paper, and is perforated around each patient data block. This form was being prepared separately for each clinic. The original of each form was retained as an appointment list by the appropriate clinic and the three remaining copies were forwarded to the records room. Since clinics were accustomed to forwarding this records request as soon as the twelve appointment spaces were filled, the records room was maintaining a suspense file for records requested in this manner.

Requests initiated by the central appointment system were submitted in terminal digit order, on separate computer print-outs in two copies for each clinic. IBM punch cards containing necessary patient data accompanied printed requests. Requests prepared by the central appointment system were annotated with "WBR," for "will bring record," in the space which normally contained the identifying Social Security number, if the patient indicated to the appointment clerk that the record would be hand-carried to the hospital.

Requests for records received from walk-in patients were prepared on blank slips of 3 x 5 inch paper by records room personnel

at the customer counter. Necessary patient data were transferred to this slip using the embossed patient identification card, and the date and initial destination of the patient were handwritten on the slip.

Records which were requested through the appointment mechanisms were delivered to each clinic by records room personnel. Records requested at the records room counter were handed to patients in a plain manila envelope sealed by means of a gummed label which indicated that the contents of the envelope were U. S. Government property (Appendix H). The size and properties of the label allowed reuse of these envelopes.

Records Retrieval

As has been previously noted, filing and retrieval of records for appointed patients was being accomplished by the day shift. Requests for records for a given day would be separated by clinic and distributed among those clerks available for records retrieval. Clerks searching for records requested on BAMC Form 1-784 would tear apart the perforated fourth copy of each sheet, and arrange the individual patient data blocks in terminal digit order, by clinic. Clerks retrieving records requested by the central appointments system would merely follow the terminal digit sequence of each print-out. In either case, records would be retrieved in terminal digit order, by clinic.

As each record was retrieved, either the perforated patient data block or the IBM punch card would be inserted in a charge-out folder which was then inserted in the record's position on the shelf.

In those instances in which a requested record was already charged-out; or if, after a careful search, it was determined that no such record was filed on the shelf, the clerk would make an appropriate annotation on the clinic copy of either the BAMC Form 1-784 or the computer print-out. It was noted that follow-up procedures for requests annotated with "no chart" or "chart out to (appropriate) clinic" were not routinely being performed by records room personnel. Discussions with personnel both in the records room and in various clinics revealed that patients for whom "no chart" was reported would be treated without a record. Upon receipt of substantive evidence that treatment had occurred, records room personnel on the second shift would prepare an outpatient record for the individual. Patients whose records were charged-out to other clinics would generally be asked to retrieve their record upon arrival at their appointed clinic. In some instances, clinic personnel would attempt to perform this function upon notification of the record's location by the records room.

Retrieved records would be batched by clinic and the clinic copies of the records request forms would be included as cover sheets. All appointed records were being delivered to clinics throughout the medical center by one of the military records technicians who was designated as a full-time messenger. Records for clinics located within the main hospital building were delivered via a large records cart; and those destined for clinics at Beach Pavilion and in other areas of the post were delivered via vehicles obtained from the post motor

pool. The messenger routinely made two full circuits of all clinics each day, to deliver records and pick-up whatever records were being returned by the clinic, as well as additional requests for records. It was noted that requests for records received by the records room by 9:00 AM of the day prior to the patient's appointment were generally delivered to the clinic on the afternoon of that day.

Records requested by walk-in patients were retrieved immediately by personnel working at the customer counter. The aforementioned 3 x 5 inch slip of paper would be inserted into a charge-out folder to indicate the record's initial destination. Patients whose records were charged-out would be informed of the records' locations, and asked to retrieve them personally. Patients for whom no chart was indicated would be routinely asked if and when they had last received outpatient treatment at the medical center. If a patient's response indicated the probable presence of a record in the inactive files located in the satellite building, a note would be prepared for the military supervisor who, when time permitted, would conduct periodic searches of this area. In the interim, patients would be instructed to seek treatment without a record.

Records of both appointed and walk-in patients were generally returned via the messenger, who would sort records into their primary groups upon arrival at the records room. Prior to actual filing, clerks would sort records by their secondary digits. Filing of

records generally occurred during the afternoon, and as was the case with records retrieved, no identification of specific areas of filing operations was apparent. Those clerks available for record filing simply acted in concert until all records were back in place. As each record was placed on the shelf, its charge-out folder would be withdrawn, and the patient data card discarded. Any material which might be contained in the charge-out folder would not routinely be placed in the record. Instead, reports of therapeutic or diagnostic procedures which had been filed in the folder would be placed on the circular sorter, for refiling by the second shift.

Records Control Procedures

Procedures and policies concerning the control of outpatient medical records were specified in Brooke Army Medical Center Memorandum 40-20, Centralized Outpatient Records System, dated 28 February 1974.[4] This memorandum established a 48-hour suspense period for the return of outpatient records charged-out to clinics,[5] and specified the use of the multi-copy BAMC Form 1-784 as a mechanism for establishing accountability for charged-out records.[6] The military supervisor indicated that although this memorandum constituted the only form of Standing Operating Procedures available to the records section, many of its requirements were "impractical" and, thus, were not being implemented.[7] The 48-hour suspense period had been extended to 72 hours, because the wide dispersion of facilities throughout the post made the former unrealistic. The use of the first copy of BAMC Form 1-784 as a

receipt for records received by each clinic was not being practiced, because it was too "time consuming" to expect the messenger to wait for each clinic to verify the presence of the records delivered.[8]

Control procedures for records retained beyond the established suspense period included the required use of BAMC Form 165, Outpatient Record Locator Card (Appendix I). This form was to be completed by clinic personnel and returned to the records room whenever a record was transferred to another clinic. Submission of this form was also required in those instances when a clinic desired to retain the outpatient record beyond the established suspense period. It was noted that this form was capable of being stamped by means of the embossed patient identification card.

A system of record charge-out folders was in effect at the central records room. Whenever a record was withdrawn from the file, a folder would be inserted in its place, and would be used to identify the record, indicate the date of record withdrawal and its destination, and provide a mechanism for filing reports of diagnostic or therapeutic procedures received during the record's absence. These folders were made of vinyl and featured a special pocket for insertion of patient identification information, a clear plastic front which provided a pocket for the insertion of laboratory reports, etc., and a tab which protruded considerably beyond the edges of the other records on the shelf (Appendix J). The folders were color coded to identify the day on which records were charged-out. Four daily colors; red, green, blue,

and white were being used on a continuously rotating basis. One additional color was being used to indicate those records which were overdue. The vinyl charge-out folders had been purchased under the auspices of the Ambulatory Patient Medical Records System Pilot Project conducted by the Health Care Studies Division of the Academy of Health Sciences.[9]

The color coded system of records charge-out was operated in the following manner. The use of each day's color would commence at 11:00 PM the night before, and would continue for the next 24 hours. All records charged-out during this period would be replaced by a folder of the designated color. For example, if red folders had been in use on Monday, the use of white folders would begin at 11:00 PM on Monday night and continue throughout Tuesday. Blue would commence on Tuesday night and continue throughout Wednesday. Records charged-out on Thursday would be replaced with green folders. The third shift was responsible for replacing these remaining charge-out folders which had been used 72 hours previously with the yellow folders. This signified that the record was overdue. The color so replaced would then become the following day's color. Thus, in the above example, those red out folders remaining in the files at 11:00 PM on Thursday night would be replaced with yellow folders. The red charge-out folders would then be used on Friday, and the cycle would repeat itself. It was noted that separate colors were not designated for Saturday and Sunday, because of the light demand for records and the almost non-existant return

of charts during week-ends. Records charged-out on these days would be replaced with the color folders designated for Monday.

A graphic device which showed what color was in use on a given day was prominently displayed in the records room (Appendix K). The vinyl charge-out folders appeared to be sturdy, and to provide adequate space for storage of material received during the absence of the record. The protruding tabs were very readily visible, and facilitated the refiling of records. The system also provided a ready assessment of the number of records charged-out or overdue on a given day.

Footnotes

[1]Letter from the Department of the Army, Office of the Surgeon General, Washington, D.C., August 29, 1972. Subject: Improvement of Outpatient Health Care.

[2]U. S., Department of the Army, Army Medical Treatment Facilities General Administration, Army Regulation 40-2 (Washington, D.C.: Government Printing Office, 1973), p. 78.1.

[3]Huffman, p. 183.

[4]U. S. Department of the Army, Health Services Command, Brooke Army Medical Center, Centralized Outpatient Records System, BAMC Memorandum 40-20 (Fort Sam Houston, Texas: Brooke Army Medical Center, 1974).

[5]Ibid., p. 5.

[6]Ibid., p. 4.

[7]Interview with Staff Sergeant Robert F. Hardin, Non-commissioned Officer in Charge, Outpatient Medical Records Section, Brooke Army Medical Center, March 4, 1975.

[8]Ibid.

[9]U. S. Department of the Army, Academy of the Health Sciences, Health Care Studies Division, Ambulatory Patient Medical Records System Pilot Project--Progress Report II (Fort Sam Houston, Texas: Academy of the Health Sciences, 1973).

CHAPTER III

ANALYSIS OF THE SYSTEM

General Comments

In accordance with the scope of this study, the analysis of the outpatient records system was limited to those aspects which had a direct bearing on the retrievability and control of records. An initial review of the numerous activities and diverse procedures which were involved in the management of the records system made it apparent that a detailed investigation of every aspect of the system would not be feasible. Accordingly, investigatory efforts were focused on identifying those areas of deficiency which, if corrected or improved, would have the greatest impact on increasing the number of records available during the treatment encounter.

It was intended that the study be based as much as possible upon objective data which was free from bias. In an effort to achieve this goal, the records system was analyzed by means of a series of statistical sampling techniques which were extracted from the literature. Results of various surveys were compared with criteria and management indicators offered by various sources. The objective of these efforts was to gain insight into the effectiveness of existing procedures and to identify areas in which subsequent investigation was warranted. The analysis was further supplemented by pertinent information obtained from observation of procedures and from interviews

with appropriate administrative and professional personnel within the medical center.

Record Retrievability

The purpose of any records filing system is to facilitate the prompt and complete retrieval of pertinent information whenever the need arises.[1] The American Hospital Association suggests that the degree to which information is retrievable and utilized should be the ultimate evaluative criterion against which to judge the effectiveness of a medical records system.[2] Uncertainty surrounding the availability of medical records can often result in a tendency on the part of physicians and other practitioners to retain records in their possession, or to encourage the personal retention of records by their patients. Although such actions may assure the record's presence during the treatment encounter, they quickly decrease its value. Once a record is removed from the system, reports of diagnostic and therapeutic procedures are effectively precluded from entry into its information content.

In order to provide a basis for assessing the effectiveness of record retrieval under the existing system, data was collected over an eight-day period from which a record retrieval rate could be calculated. This data was obtained by recording, on a daily basis, the number of records requested by the various clinics for appointed patients, and the number of records which were retrieved and made available in

response to these requests. This data was also collected, on a daily basis, for all unappointed patients who personally requested their records at the central outpatient records room. Data was also collected to identify those requested records which were unavailable due to their being "charged-out" to other clinics. The records retrieval rate was established as a measure of the success of the records room in responding to requests for records. This rate was expressed as a percentage of the total number of records retrieved, divided by the total number of records requested and multiplied by 100.

A record accountability rate was calculated from the same data for investigatory purposes. This was expressed as a percentage of the total number of records retrieved, plus the total number of records requested which were charged-out to clinics and thus "accounted for," divided by the total number of records requested, and multiplied by 100. It was established that an observed difference between the record retrieval rate and the record accountability rate would serve as one indicator of the extent of any breakdown in the system of records retrieval and distribution.[3] This indicator was used as a starting point for further analysis.

Prior to actual data collection, it was determined that the record retrieval rate would be compared with a standard of 97 per cent. A review of the literature revealed that a calculated retrieval rate of less than 97 per cent was generally accepted as warranting a detailed review of filing and control procedures.[4] This standard was considered

to be appropriate for evaluating the records system under study, despite the high degree of patient mobility and the increased risk of records loss in the military environment.

No precise criteria were found in the literature against which to evaluate the record accountability rate. However, for investigatory purposes, it was established that if the existing system were operating perfectly, the difference between the record retrieval and accountability rates would be zero. Any difference between these two measurements would thus serve as an indicator of possible deficiencies.

Results of Record Retrieval Survey

A total of 6059 records were requested during the eight-day study period. Of these, a total of 4840 records were actually retrieved (Table 1). On the basis of this data, a record retrieval rate of 79.9 per cent was calculated (4840 ÷ 6059 x 100). This retrieval rate was significantly below the standard of 97 per cent used for comparison. The results of this survey were generally consistent with those for which the literature suggests a detailed review of procedures.[5]

Of the 1219 records which were not retrieved, a total of 526 were "charged-out" to other clinics. A record accountability rate of 88.6 per cent was thus calculated (4840 + 526 ÷ 6059 x 100). The difference between the record accountability rate and the record retrieval rate was 8.7 per cent. This was interpreted as indicating that 8.7 per cent of the records which were requested during the study period were not available to the requesting clinic because they were charged-out to

another clinic. No audit was performed of records in this category to determine the length of time these records had been charged-out. Further, this information was not intended to establish a basis for making inferences concerning the system in general. However, the results of this survey were considered to be an indication that deficiencies in records control procedures were resulting in the retention of records by clinics, and were causing less than optimal responsiveness on the part of the outpatient records system.

TABLE 1

RECORD RETRIEVAL AND ACCOUNTABILITY DATA

Day	Records Requested	Records Retrieved	Reason Not Retrieved: No Chart	Reason Not Retrieved: Chart Out	Retrieval Rate	Accountability Rate
1	876	717	105	54	81.8	88.0
2	656	522	75	59	79.6	88.6
3	856	695	93	68	81.2	89.1
4	823	629	115	79	76.4	86.2
5	722	589	68	65	81.6	90.6
6	604	480	67	57	79.5	88.9
7	667	518	81	68	77.7	87.9
8	855	690	89	76	78.0	89.6
Total	6059	4840	693	526	79.9	88.6

Source: Study conducted by the writer at Brooke Army Medical Center, March 3-14, 1975.

The writer did not attempt to conduct a rigorous audit of the remaining 693 records which were not retrieved, to determine the precise cause of non-retrievability in each case. It was determined that such an effort would not be consistent with the scope of the study. Nevertheless, two possible sources of record non-retrievability were discovered in the course of subsequent investigation. One of these involved records filing procedures, and will be discussed in a subsequent section of this chapter. The other possible source of record non-retrievability was attributable to patients retaining their records in their personal possession.

Central appointment system receptionists routinely asked individuals who desired an appointment whether or not their outpatient medical records were maintained at Brooke Army Medical Center. In those cases in which the individual indicated that he or she would bring the record personally, the computerized records request would be annotated "WBR" in the area normally used to indicate the patient's identifying Social Security number. Records room personnel would thus be alerted that these records were not on file and need not be searched for. (Records requests so annotated were not included in the retrieval rate calculation). This information was not being collected by clinics that did not utilize the central appointment system.

An indication of the possible impact of patient retention of records on the record retrieval rate was obtained by comparing the retrieval rate of records requested through the central appointments system

with the retrieval rate of records requested via BAMC Form 1-784 during the study period. Of 2,045 appointments scheduled by the central appointments system for the eight-day period, 359 or 17.6 per cent were annotated "WBR." Of the 1,686 remaining appointments for which records were requested, 151 or 8.9 per cent were not retrieved due to "no chart." Of 1,780 records requested via BAMC Form 1-784 during the same period, 287 or 16.1 per cent were not retrieved due to "no chart." The considerable difference in retrieval rates for records which were requested via these alternate mechanisms led the investigator to suspect that at least part of the reason for the non-retrievability of records could be attributed to the probability that records were being requested from the records room which, in fact, were in the possession of individual patients.

It was recommended that all clinics which were scheduling appointments be directed to seek information regarding the location of the patient's record at the time the appointment was made. It was the writer's belief that this information would serve a two-fold purpose. It would provide hospital management with added insight into the extent to which personal retention of records was being practiced by patients. This might provide a useful basis for establishing a public relations program directed at reducing the incidence of this practice. This information would also be of considerable benefit to the records room, for it would confine records search and retrieval efforts to those records actually maintained by that activity. This would not only reduce unnecessary and somewhat frustrating effort on the part of records room

personnel; it would also make possible a more accurate assessment of record retrievability.

Record Filing Procedures

The accuracy with which items are filed will have a direct impact upon the retrieval success of any records system, and should thus be used as the standard against which to evaluate the adequacy of the filing system. Prior to investigation of the accuracy of the outpatient records files, it was established that a standard of acceptability against which to judge accuracy would be a misfile rate of 1 per cent or less. It was further established that an observed misfile rate which exceeded 3 per cent would indicate that serious deficiencies existed in the system.[6] The analysis of filing procedures consisted first of establishing a record misfile rate and comparing it with the above criteria. Specific problem areas related to record filing procedures were identified through observation and interviews, and recommendations for improvement were offered.

Determination and Evaluation of the Record Misfile Rate

In order to establish a data base which would provide an indication of the record misfile rate with a tolerance of .05 and a confidence level of 95 per cent, a sample of 500 records was used for the study. To reduce the possibility of bias arising from environmental factors (eg. convenient/inconvenient shelf location), the study sample consisted of five randomly selected samples of 100 records each. A

random numbers table was used to select the terminal digit number of the first record in each sample. The remainder of each group consisted of the ninety-nine records in existing file sequence following the one randomly selected. Each sample was then meticulously screened to determine the number of records which were misfiled.

Discussion of filing procedures with records room personnel revealed that outpatient records were being filed according to the last four terminal digits of the identifying Social Security number; and then alphabetically by last name within each secondary group. It was noted that the implementing directive for the Army Terminal Digit Filing System requires that records within each secondary group be filed in the numerical sequence of the tertiary group or five remaining digits of the Social Security number.[7] Since this was not being done, it was decided that calculation of a misfile rate on the basis of the system in use would be more appropriate than the calculation of misfile according to the entire Social Security number. Data was recorded regarding the number of records in the sample which were misfiled by the last four terminal digits, and the number of alphabetical misfiles within the secondary groups of the sample. The misfile rate for each category was expressed as a percentage which was calculated by dividing the total number of observed misfiles by the sample size of 500, and multiplying this number by 100. The results of this survey are provided in Table 2.

The rate at which records were misfiled to the four terminal digits was 0.6 per cent, and within the limits which had been established

as acceptable. However, the alphabetical misfile rate was 3.6 per cent, and exceeded that parameter at which a detailed reassessment of filing procedures was considered appropriate. It was noted that the samples contained several groups of records which had the same last name. If a record belonging to one of these groups happened to be misfiled, under the current procedure, it could possibly be reported as "no chart" by a clerk pressed for time.

TABLE 2

OUTPATIENT RECORD MISFILE RATE

Sample Number	No. of Records in Sample	No. Misfiled at 4 Digits of SSAN	No. Misfiled Alphabetically
1	100	1	3
2	100	0	2
3	100	2	3
4	100	0	6
5	100	0	4
Per cent of Misfile	--	0.6	3.2

Source: Survey conducted by the writer at Brooke Army Medical Center, March 4, 1975.

In order to evaluate the possible impact on record retrieval which the current system might present, a search was conducted for

eighty requested records which had been listed as "no chart" by records room personnel. Of these, thirteen records were found by the investigator; and nine of these had been misfiled alphabetically. It was felt that the sample size for this survey was too small to permit valid inferences concerning the general system. However, this analysis was intended to merely provide an indication of the possible ineffectiveness of the current procedure. A record which was out of alphabetical sequence apparently had a relatively high probability of being reported as "no chart" under the current system.

The recommendation was made that the current system be modified to require the filing of outpatient medical records using all digits of the Social Security number. It was further recommended that the practice of periodic searches for records annotated as "no chart" be implemented on a routine basis by supervisory personnel, as one means of evaluating the effectiveness of retrieval operations.

Adequacy of the Nominal Index

The American Hospital Association suggests that in any system which files records by numbers, a complete and convenient index to facilitate the location of records by cross-referencing patient names and terminal digit numbers is essential.[8] In the absence of the identifying number, this index provides the only reasonable means of locating a record within the files. The nominal index for records maintained by the central records room was divided into two separate locations, as was noted previously. It was observed that this index was

rarely used by records room personnel, although a number of records were not located due to a missing or illegible Social Security number. This was particularly true of reports of therapeutic or diagnostic procedures which were received for filing.

Discussions with records room personnel revealed that the nominal index located in the central records room had been started in January, 1974. Responsibility for preparation of nominal index cards was placed with the second shift. As each new record folder was prepared, a duplicate label would be typed for placement on a 3 x 5 inch card, and the card would be dated. These cards would be filed by the third shift, which was responsible for maintaining the nominal index. The nominal index for records initiated prior to 1974 was located in the patient identification card room, across the corridor. It was noted that both files were stored in modular file units which were stacked on the floor. This made the accessibility of a considerable portion of the drawers physically inconvenient. In addition, the separation of the files required a relatively inefficient and time consuming search procedure, which further tended to limit the use of the files by personnel.

To establish an indication of the completeness of the nominal index, a sample of 100 records was randomly selected using a random numbers table, and both files were searched to determine the presence of a corresponding nominal index card. A total of thirty-nine records in the sample were not reflected in the nominal index. Of

those records which were cross-indexed, twenty-three were referenced in the "new" file, and thirty-eight were referenced in the "old" file.

While searching the "old" files, the investigator observed the frequent occurrence of misfiled cards. Accordingly, a misfile rate based on four random samples of 100 cards each was calculated, using the previously established filing accuracy criteria. In the total sample size of 400, 51 or 12.7 per cent of the cards surveyed were misfiled.

The analysis of the nominal index revealed serious deficiencies in the ability of this mechanism to perform the function for which it was established. The recommendation was made that the nominal index be consolidated, and that the files be purged of misfiles through a complete audit and restructuring. It was also recommended that the modular file units be placed on a table which would raise them to a comfortable working height.

Discussion of Record Control Procedures

General

It was noted that specific policies and procedures regarding the control of outpatient records had been promulgated in BAMC Memorandum 40-20, which was published approximately one year prior to the initiation of this survey.[9] Nevertheless, as a result of the analytic procedures previously discussed and interviews with personnel at various levels of management within the medical center, it became apparent to

the writer that a detailed analysis of the outpatient records control system was appropriate. The Chief, Administrative Support Branch, Department of Clinics, indicated his belief that the fragmented displacement of facilities within the medical center not only aggravated the difficulties in controlling records, but also made the requirement for effective control mechanisms absolutely essential.[10] He further indicated that because no mechanical delivery system such as a conveyor or pneumatic tube system was present or feasible within the existing configuration of the medical center, the close cooperation of all activities involved was required, for any control system to achieve its objective.

The primary objective of an outpatient medical records processing system is to enhance and foster the continuity of care.[11] This can occur in an optimal fashion only when essential medical information is promptly retrievable to meet unpredictable needs.[12] The primary function of control mechanisms within such a system is to support the accomplishment of these objectives by assuring that a maximum number of outpatient records are available when requested for clinical use. In order for this goal to be realized, the control system must incorporate an accountability mechanism whereby the location of borrowed records is known by records room personnel at all times. The control system must further provide a vehicle which assures that borrowed records remain out of the physical control of the records room for the minimum time span which is consistent with environmental factors and

quality of care considerations. Finally, the control mechanisms must provide a "problem oriented data system" which will identify areas of deficiency in the distribution of records.[13] This system must be capable of identifying those areas within the hospital where records get stalled or lost, as well as those areas to which records cannot be provided. It must also display this information in such a manner that patterns of variance can be detected and remedial action can be taken.

A multi-phased approach was employed in the analysis of record control procedures. The first step involved extracting from the literature those elements of control which the writer considered to be essential for effective operation of a records control system. These elements are shown in Figure 1. The second step involved a determination of whether or not these elements were present in the system being studied. An evaluative judgment of the operational status of those control elements which were observed to be present was rendered on the basis of information obtained from direct observation of control procedures and interviews with administrative and professional personnel. The third phase involved an analysis of the effectiveness of existing control mechanisms. This was accomplished by employing a series of evaluative procedures and sampling techniques offered by various sources.[14] Data obtained from the analysis was evaluated to identify specific problem areas and to formulate recommendations for establishing an effective system of records control.

Essential Control Element	Status at BAMC: Present	In Operation
A method for accounting for borrowed records, such as a charge-out system	Yes	Yes
An established record charge-out suspense policy	Yes	Yes
A method for periodic follow-up of records not returned within the prescribed period	No	- -
A method for establishing continuous control over borrowed records	No	- -
A method of accounting for records transferred to a second user	Yes	No
A method for authorizing the extended retention of records	Yes	No
A method of identifying the age of records charged-out	Yes	No
A method of identifying those hospital agencies which are "chronic offenders"	No	- -
A mechanism for notifying management of significant problem areas	No	- -

Fig. 1.--Essential Elements of Records Control

Source: Review of the literature by the writer.

Age of Records Charged-out

As was noted in Chapter II of this study, the Central Outpatient Records Room employed a system of color coded record charge-out folders to indicate the day on which records were retrieved from the files. A separate color was used to identify those records which had been out of the files for longer than the established suspense policy of 72 hours and were thus "overdue." The relatively large difference between the calculated records retrieval and accountability rates led the investigator to suspect that despite the presence of a relatively sophisticated records charge-out system, a considerable number of records were not being returned within the suspense period. In order to assess the extent of this problem and, if possible, to identify specific areas within the medical center where control breakdowns were particularly noticeable, an analysis of the age of charged-out records was conducted.

Prior to the accomplishment of this survey, the accuracy of the color coded system was assessed. It was decided that this was an essential preliminary step, since the methodology of the survey would rely on the colored charge-out folders as valid indicators of the length of time the records they represented had been out of the files. An error rate of 1 per cent or less was established as a standard of acceptability. It was also decided that an error rate which exceeded 3 per cent would indicate serious deficiencies in the system.

Five samples containing 50 charge-out folders each were randomly

selected, using a table of random numbers to establish entry points into the files, and considering the 50 folders in subsequent numerical sequence. The color code of each charge-out folder in the sample was compared with the date indicated on the charge-out card inside, and any variances observed were recorded. Of the 250 folders sampled, two errors were observed. On the basis of this data, an error rate of 0.8 per cent was calculated (2 - 250 x 100). It was thus determined that the accuracy with which the color coded system reflected the date on which records had been retrieved was within acceptable limits.

The methodology employed to assess the age of records charged-out involved a two-phased approach. First, the total number of records charged-out at a given point in time was determined by counting the charge-out folders present in the files. This data was compiled to reflect the distribution of the four colors in use. These consisted of the three operational color codes which represented records which had been retrieved during the three days within the suspense period, and the yellow color code which represented records which were overdue. The results of this procedure are provided in Table 3. A total of 2,001 records were charged out at the time of the survey. Of these, 1,121 or 56 per cent were represented by yellow folders, and thus considered overdue.

The second phase of this analysis involved a detailed audit of a sample of the overdue record folders, to assess the length of time records in this category had remained out of the files, and to

TABLE 3

AGE OF CHARGED-OUT RECORDS

Length of Time Records Out	Number	Per cent of Total Charged-out Records
Under 24 hours	354	17.7
24 - 48 hours	396	19.8
48 - 72 hours	130	6.5
Over 72 hours	1121	56.0
Total	2001	100.0

Source: Survey conducted by the writer at Brooke Army Medical Center, March 5, 1975.

identify specific activities, if any, to which an unusual proportion of these records had been charged. With a total population of 1121, it was decided that a sample size of 500 would be sufficient to make valid inferences concerning the age distribution of records within the population, at a 95 per cent confidence level, with a tolerance of .01. The sample was randomly selected by determining a terminal digit point of entry into the files from a table of random numbers, and considering every second overdue folder in numerical sequence until 500 overdue charge-out folders had been surveyed. It was felt that since this technique covered over 89 per cent of the population, any possible bias due to record location in the files would be reduced to acceptable limits.

The results of the audit of overdue records are provided in Table 4.

TABLE 4

AGE OF OVERDUE RECORDS

Length of Time Records Out	Number	Per cent of Sample	Estimated Per cent of Pop.
4 days	54	10.8	6.0
5 days	24	4.8	2.7
6 - 10 days	69	13.8	7.8
11 - 15 days	85	17.0	9.6
16 - 20 days	33	6.6	3.7
21 - 25 days	45	9.0	5.0
26 - 30 days	28	5.6	3.2
31 - 60 days	86	17.2	9.6
61 - 90 days	39	7.9	4.3
Over 90 days	37	7.4	4.1
Total	N = 500	100.0	56.0

Source: Survey conducted by the writer at Brooke Army Medical Center, March 5, 1975.

On the basis of data obtained from this survey, it was estimated that of the total number of records charged-out at that point in time, 39 per cent were over ten days old; 18 per cent had been out for over thirty days; approximately 9 per cent had been borrowed over sixty days previously; and slightly more than 4 per cent had been out of the files in excess of ninety days. It was further observed that the distribution of overdue records by activity was relatively uniform,

with one notable exception. Of the 500 overdue folders sampled, a total of 113 or 23 per cent represented records which had been charged-out to the emergency room. Analysis of this phenomenon will be discussed in a subsequent section of this chapter.

Analysis of Records Room Procedures Regarding the Color Coded System

The procedures employed by records room personnel regarding the use of the color coded charge-out system were described in Chapter II of this study. It was observed that personnel were following these procedures up to the point at which records which were overdue were identified by the insertion of a yellow folder. The observed accuracy rate of these procedures was considered to be acceptable. However, no effective system of follow-up to retrieve overdue records once they were identified was in operation. Those procedures which were in existence for the retrieval of overdue records were considered to be inadequate by the investigator.

Follow-up procedures which were in effect were largely the responsibility of the third shift. Personnel on this shift were tasked with "screening" the overdue folders in one primary terminal digit section of the files each evening. However, no action was being taken to effect retrieval until a record had been overdue for ninety days. At this point, a piece of green tape would be affixed to the protruding tab of the folder. When the charge-out period reached 120 days the folder would be removed from the file and given to the military super-

visor for disposition. Action would then be initiated to trace the record through the clinic to which it had been charged-out four months previously. If attempts to locate the record proved unsuccessful, the military supervisor would then direct that a duplicate outpatient treatment record be prepared.

The lack of effective procedures for routine follow-up efforts to retrieve records which were identified as overdue was identified as a critical deficiency in records room procedures which significantly diminished the effectiveness of the color coded system. Although considerable time and effort were being expended in the operation of the system, little was being gained from its use.

It was recommended that immediate steps be taken to establish a procedure for routinely contacting clinics to retrieve overdue records within a short time period after they were so classified. It was further recommended that an overdue records file be established by clinic, and that input to this file be provided at the time the overdue folder was inserted in the records files. The recommendation was also made that requests for overdue records be submitted to clinics in written form, and that duplicate copies of these be retained as a matter of record. Finally, the writer recommended that the responsibility for retrieval of overdue records be placed with one person who would become familiar with emerging patterns of variation from the suspense policy and could establish a working rapport with the various activities within the medical center. It was suggested that the system of color coded

folders had considerable potential as a control device. However, in the absence of an effective feedback loop, much of this potential was being lost.

Retrieval Success Rate for Overdue Records

In order to assess the impact of the retention of records beyond the suspense period on the retrievability of those records, an attempt was made to retrieve a sample of overdue records. A random sample of 100 overdue folders was selected by choosing a terminal digit number from a table of random numbers and considering the next 100 overdue folders in sequence. The name, Social Security number, date, and clinic to which the record was charged-out were recorded for each folder in the sample. Clinics were then contacted telephonically to verify that the records were still in their possession. A record was considered to be "retrieved" if its presence at the clinic was verified. Records were considered to be "accounted for" if their current location within the medical center could be verified by clinic personnel.

Prior to data collection, it was established that if the system were operating perfectly, a retrieval rate of 100 per cent would be observed. The extent of deviation from this standard would provide an indication of the extent of possible deficiencies in records control.

Of the 100 records sampled, a total of twelve records were on hand at the clinics indicated by the charge-out card, and were thus considered "retrieved." Nine of the records in the sample had been transferred to other clinics where their presence was verified, and

four records had been returned and were "in the system." Records in this latter group had been out of the files for a relatively short time, and were in fact returned to the records room within 24 hours after this survey. It was noted that an Outpatient Record Locator Card had not been submitted for any of the records which had been retained by the clinics or transferred to other clinics.

It was further observed that twenty of the records in the sample had been charged out to the emergency room. Emergency room personnel indicated that no records were being retained by that activity. The proportion of overdue records, which had been charged out to the emergency room, in this sample, was quite consistent with the results of the survey described in the preceding section.

A total of fourteen of the records surveyed were positively identified by clinic personnel as belonging to patients who routinely retained their records in their personal possession, and hand-carried their records for clinic appointments.

Because of its small sample size, this survey was not intended to reflect the actual distribution of retrieval success for the entire population of overdue records. Nevertheless, it was the writer's judgment that the extreme variance between the standard of 100 per cent and the observed retrieval success rate of 12 per cent reflected the existence of serious deficiencies in the current system of records control.

Natural Records Return Rate

The rate at which borrowed records were being routinely returned to the records room under the existing system was analyzed by establishing a natural records return rate during the study period. This was accomplished by means of the following procedures. First, a section of the record files which would yield at least 100 borrowed records on any given day was identified and designated for observation. The total number of records retrieved from this section of the files on day one of the test period was obtained. These records became the sample to be studied, and their charge-out folders were marked for identification purposes. The natural return of these records was then monitored on a daily basis for a ten day period. This involved a daily audit of charge-out folders which were remaining in the files at the conclusion of the day shift's tour of duty. Information reflecting the name, terminal digit number, date, and requesting clinic was collected for those records which remained out of the files at the conclusion of the 72-hour suspense period. This was accomplished prior to the replacement of the original charge-out folders with yellow "overdue" folders, to assure continuity of data collection.

It was established prior to the collection of data that if the system were operating perfectly, 100 per cent of the records would be returned within the suspense period, or accounted for by means of the Outpatient Record Locator Card. The extent to which the observed return rate of records deviated from this standard would serve as an

indication of possible deficiencies in the effectiveness of the existing system.

The results of this survey are provided in Table 5.

TABLE 5

NATURAL RECORD RETURN RATE FOR CHARGED-OUT RECORDS

Day	Number Returned	Per cent of Sample
1	36	23.4
2	36	23.4
3	45	29.2
4	16	10.4
5 - 10	12	7.7
Over 10	9	5.9
Total	N = 154	100.0

Source: Study conducted by the writer at Brooke Army Medical Center, March 3-14, 1975.

A total of 154 records were retrieved from the designated section of the files on day one of the test period and constituted the sample which was monitored. A total of 117, or approximately 76 per cent of the records in the sample, were returned by the end of the 72-hour suspense period. Twenty-eight records, or approximately 18 per cent

of the sample, were returned over the next seven days. At the close of normal duty hours on the tenth day, nine records, or slightly less than 6 per cent of the sample, were still out of the record files. Five of these records had been charged out to the emergency room.

Summary of Analytic Procedures

The three separate surveys just discussed were conducted to assess the effectiveness of the current system and to indicate areas in which further investigation might be appropriate. The writer concluded that an outpatient records system in which 56 per cent of the records charged-out were overdue; 12 per cent of overdue records were readily retrievable; and 76 per cent of borrowed records were returned within a three-day suspense period did not have an effective system of control mechanisms in operation.

Other Factors Which Contributed to the Problem of Control

It was observed that records room personnel were not utilizing the multiple copies of the records request forms as a control device. Information concerning the disposition of requests for records was not being maintained on a routine basis. Although the clinic's copies of records requests were being appropriately annotated for records which were not retrieved, the records room copies were not. Indeed, the multiple copies for the records room use were routinely destroyed upon completion of each day's retrieval operations. It was recommended that the multiple-copy forms be used as a record of retrieval disposition,

and that the interleafed carbons not be separated until after the clinic copy had been annotated.

There was no system of continuous accountability in effect for borrowed records. Records would be hurriedly dropped off at clinic reception desks with no inventory performed, or transfer of responsibility acknowledged. Those records available for pick-up by the records room messenger would be gathered without any form of accounting procedure and co-mingled with other records being returned. Under existing procedures, it was impossible to fix responsibility for a "lost" record.

It was observed that despite the relatively high incidence of overdue records, the submission of BAMC Form 165, Outpatient Records Locator Card to the records room was almost non-existent. The records room received a total of three observed submissions of these cards during the two-week study period. The transfer or retention of records by clinics without notifying the records room was apparently widespread, and out of control.

Records Control for Walk-in Patients

The high incidence of overdue records which had been charged out to the emergency room, relative to other activities in the medical center, led the writer to investigate specific problem areas associated with the control of records requested by unappointed patients. Record retrieval operations regarding walk-in patients were discussed in Chapter II of this study. Approximately 250 patients in this category re-

quested treatment each day.

It was observed that although the records of all unappointed patients were charged out to the "emergency room," the significant majority of these patients were not treated by this activity. All walk-in patients except those whose condition constituted an obvious emergency were routinely seen at a triage station prior to treatment. Upon completion of the triage interview, during which the patient's chief complaint would be assessed, triage personnel would direct the patient to the appropriate treatment activity for care. This might be the acute minor illness clinic, the emergency room, or one of the speciality clinics within the medical center. Patients who were treated at the acute minor illness clinic were also subject to referral to speciality clinics.

Observation of procedures and discussions with personnel in these activities revealed that effective control over the records of walk-in patients was being lost at the triage point. Triage personnel were not notifying the records room of the referral disposition of patients, and were not maintaining a permanent record of this information. Thus, once a patient completed the triage procedure, the chain of accountability for his or her record was completely broken, and effective knowledge of the record's location and control over its retrieval became non-existent.

In the writer's judgment, this deficiency in control could be very readily corrected through the routine submission of the Outpatient Record Locator Card at the completion of the triage process.

Since this form was compatible with the embossed patient identification card, its preparation would involve a minimum expenditure of effort. Its submission by this particular activity would significantly increase control over outpatient records.

In order to faciliate the notification process at the triage activity, it was recommended that records room personnel stamp the locator card with the patient data at the time of record retrieval for walk-in patients, and affix the card to the front of the patient's record. This card could then be withdrawn from the record and completed by triage personnel in a matter of seconds.

Attitude of Hospital Personnel
Toward the Outpatient Records System

The American Hospital Association suggests that a good working relationship between records room personnel and the medical staff is imperative for any sound medical records system to exist.[14] In order to gain insight into the existing relationship between the professional staff and the records system, a series of unstructured interviews with professional staff at all levels within the medical center was conducted. In the course of these interviews, it was observed that the credibility of the existing system was extremely low among many physicians assigned to the medical center. The general attitude of professional personnel toward the records system reflected a somewhat pervasive expectation that the system would routinely fail to respond to their needs. Despite the calculated retrieval rate of over 79 per cent, physicians were almost

universal in their belief that they were receiving between 30 and 40 per cent of the records they requested.

Considerable uncertainty concerning the responsiveness of the system led physicians to either retain records at their clinics, or, more frequently, to encourage their patients to retain their records in their personal possession. Indeed, the incidence of patients who hand-carried their records was apparently widespread; and, with the exception of the general outpatient clinic, was generally condoned by clinic personnel. A generally permissive response to patients who desired to retain their records was observed. A program of positive action to retain records which were hand-carried to the clinics, in order that they might be returned to the system, was not in effect.

As an expedient means of seeking continuity of treatment, clinics were maintaining duplicate copies of treatment notes which were maintained in informal files at the clinic. The chief of a major department within the medical center indicated unofficially that the practice of establishing partial clinic records and allowing patients, particularly those with serious or complicated conditions, to retain their records was considered to be very necessary under existing conditions. Although he admitted that this was far from an ideal solution, he was firm in his conviction that this practice was a far more effective mechanism for assuring information retrieval than reliance on the system would be.

Clinics were routinely retaining the records of patients for

whom a return appointment or a follow-up procedure was scheduled within ten days. There was a universal belief that the current system was not capable of responding within this time period.

One result of the negative attitude on the part of hospital personnel toward the outpatient records system was a very permissive attitude towards record control procedures. Professional and administrative personnel in the clinics were generally aware of the outpatient records suspense policy and the mechanisms which were available whereby exceptions might be sought. However, there was little evidence that these mechanisms were being taken seriously in daily operations. It was apparent that the absence of effective follow-up procedures on the part of the records room to effect the retrieval of overdue records provided few incentives and no sanctions which would encourage clinic personnel to keep the records room informed of record retention or transfer; or to comply with other provisions of established policy. The lack of any appreciable emphasis regarding the control of records on the part of the records room had apparently resulted in a corresponding reaction on the part of record users. Although several elements of a control system existed on paper, they simply were not operational at the time of this study.

Footnotes

[1]American Hospital Association, p. 11.

[2]Ibid., p. 4.

[3]Jonathan M. Metsch, "Problems in Managing Record Flow to Meet Requests from Clinics," Hospital Topics, LII (March, 1973), 40.

[4]"Ways to File It, Find It Faster At Less Cost," Administrative Management, XXIV (September, 1963), 56.

[5]Gilbert Kahn, et. al., Progressive Filing and Records Management (New York: Gregg Publishing Division, McGraw-Hill Book Co., Inc., 1962), p. 213.

[6]Robert H. Lando, "How to Evaluate a Filing System," Supervisory Management, X (August, 1965), 8.

[7]U. S., Department of the Army, Army Medical Treatment Facilities, General Administration, Army Regulation 40-2, p. 78.1.

[8]American Hospital Association, p. 10.

[9]Brooke Army Medical Center, Centralized Outpatient Records System, BAMC Memorandum 40-20.

[10]Interview with Lieutenant Colonel Alfred Eigenberg, MSC, Chief, Administrative Support Branch, Department of Clinics and Community Health Care Services, Brooke Army Medical Center, March 3, 1975.

[11]Metsch, and Schwarz, "Administrative Processing of Ambulatory Care Records," p. 30.

[12]Mc Guire, "Medical Records in Nursing Homes," p. 25.

[13]Metsch and Schwarz, p. 30.

[14]Health Services Command, Ambulatory Patient Care Program, "APC Model 5."

[15]American Hospital Association, p. 2.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions resulted from this study:

1. The outpatient record retrieval rate at Brooke Army Medical Center was 79.9 per cent. Compared with a standard of 97 per cent, this level of performance was considered to be unacceptable.

2. The existing system under which outpatient records were being filed did not conform to appropriate military directives, and produced a misfile rate of 3.6 per cent. Compared with a standard of 1 per cent, this level of filing accuracy was considered to be unsatisfactory.

3. Serious deficiencies existed in the nominal index files which rendered this mechanism unable to effectively perform the functions for which it was established. A misfile rate in excess of 12 per cent was observed in one portion of the files, and was considered to be unacceptable.

4. Optimal performance of records room personnel was being hindered by:

a. The absence of any formalized orientation and training program within the records section for new employees.

b. The lack of a written policies, procedures, and functions manual for the central outpatient records room.

c. The ill-defined assignment of responsibilities and specific duties for personnel of the day shift.

d. The absence of quality assurance practices on the part of supervisory personnel.

5. There was no effective system of outpatient records control in operation at the medical center. This conclusion was based on the following observations:

a. A total of 8.7 per cent of the records requested during the study period were not available because they had not been returned by other clinics.

b. A total of 56 per cent of the records which were out of the files were overdue.

c. A retrieval success rate of 12 percent was observed for records which were overdue.

d. A natural record return rate of 76 per cent within the established suspense period was observed.

e. No effective follow-up system to retrieve records which were identified as overdue was in existence.

f. Control over records requested by unappointed walk-in patients was being effectively lost at the triage point.

g. A mechanism for notifying the records room of record retention or transfer existed, but was not being used.

h. There were no procedures in effect whereby problem areas in records control could be identified, and management emphasis

brought to bear.

i. The incidence of record retention by patients was widespread and viewed permissively by clinic personnel.

6. There was a widespread lack of confidence on the part of professional and administrative personnel regarding the ability of the existing system to respond to their needs.

Recommendations

As a result of the conclusions which this study arrived at, the following recommendations were made:

1. That the procedures for filing outpatient medical records be modified to include the entire Social Security number in conformity with military directives.

2. That the nominal index files be consolidated, and that positive action be taken to:

a. Increase physical accessability to the files by placing them at a comfortable working height.

b. Reconstitute the files to reduce the incidence of misfiles to within acceptable limits.

3. That an employee orientation and training program be instituted within the records section, and that training records be maintained. It was recommended that the guidance offered by "Model # 4" of the Ambulatory Patient Care Program, of Health Services Command be considered.

4. That a detailed standard operating procedures manual be

developed which would provide a written definition of policies, procedures, and responsibilities for each shift in the central records room. This would serve not only as a training reference but would also provide a measure against which performance could be evaluated.

5. That personnel having supervisory responsibility for the operation of the outpatient records system be encouraged to conduct periodic evaluation of Central Outpatient Records Room operations. It was recommended that the analytic procedures and management indicators offered in Ambulatory Patient Care Program "Model #5" be considered.

6. That a system be established to effectively control outpatient records within the medical center. The following specific recommendations were made:

a. Central Outpatient Records Room

That a position be established within the outpatient records section for a Records Locator/Retrieval Clerk, and that a responsible individual be assigned to this position on a full-time basis. It was recommended that this position be assigned to the day shift, and that this individual's duties include:

(1) Maintenance of a card suspense file by clinic for all records identified as overdue. Input to this file could be prepared at the time a record was identified as overdue, and would include the name, Social Security number, clinic, and date of record charge-out.

(2) Preparation of typewritten requests for the return of overdue records to be sent to the clinics on a routine basis. It was recommended that an interval of one week be considered.

(3) Follow-up suspense efforts with personal visits to clinics to physically retrieve overdue records.

(4) Preparation of requests for overdue records which constituted a second notice, for the personal signature of the Chief, Administrative Support Branch.

(5) The performance of a daily search of the files for records which were annotated as "no chart" by records room employees. The clerk would also verify the location of requested records which were charged-out to other clinics, and take action to assure the availability of these records to the requesting clinics.

(6) Compilation, on a daily basis, of information concerning the number of record requests which were not filled, and the reason for non-retrieval. Maintain this data for periodic review by management.

b. Hospital Management

(1) That management emphasis be placed on the control of outpatient records to encourage clinic compliance with both the established suspense policy, and the required use of the Outpatient Record Locator Card for records which were transferred or retained.

(2) That specific attention be directed toward assuring the use of the Outpatient Record Locator Card by the triage

section, to establish control over records of unappointed patients.

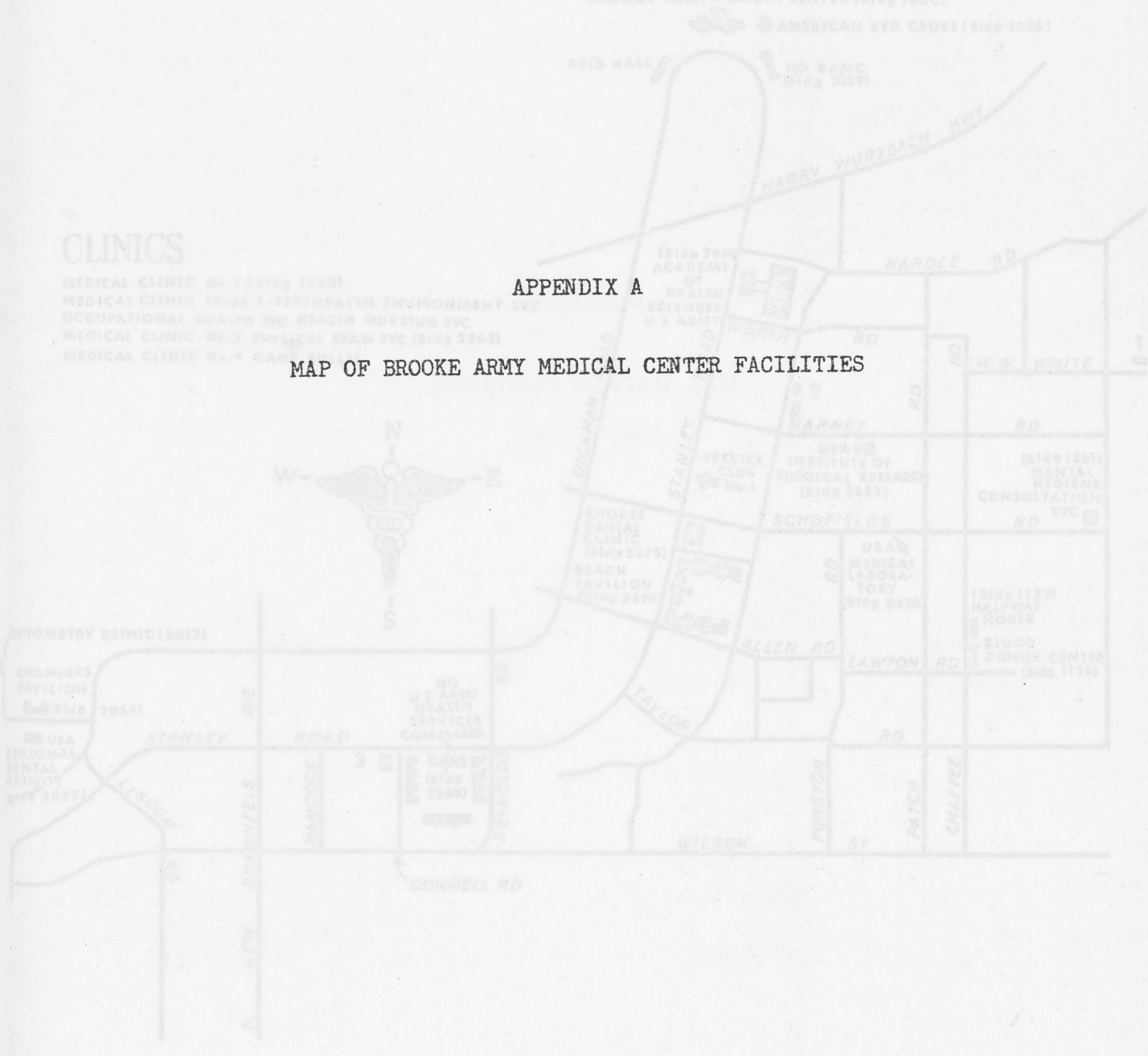
(3) That a policy which actively discouraged retention of records by patients be established.

(4) That clinics which scheduled appointments be directed to ascertain the location of the individual's record at the time the appointment was made. Further, that those patients who indicated that they would bring their records with them be identified on the appointment lists submitted to the records room.

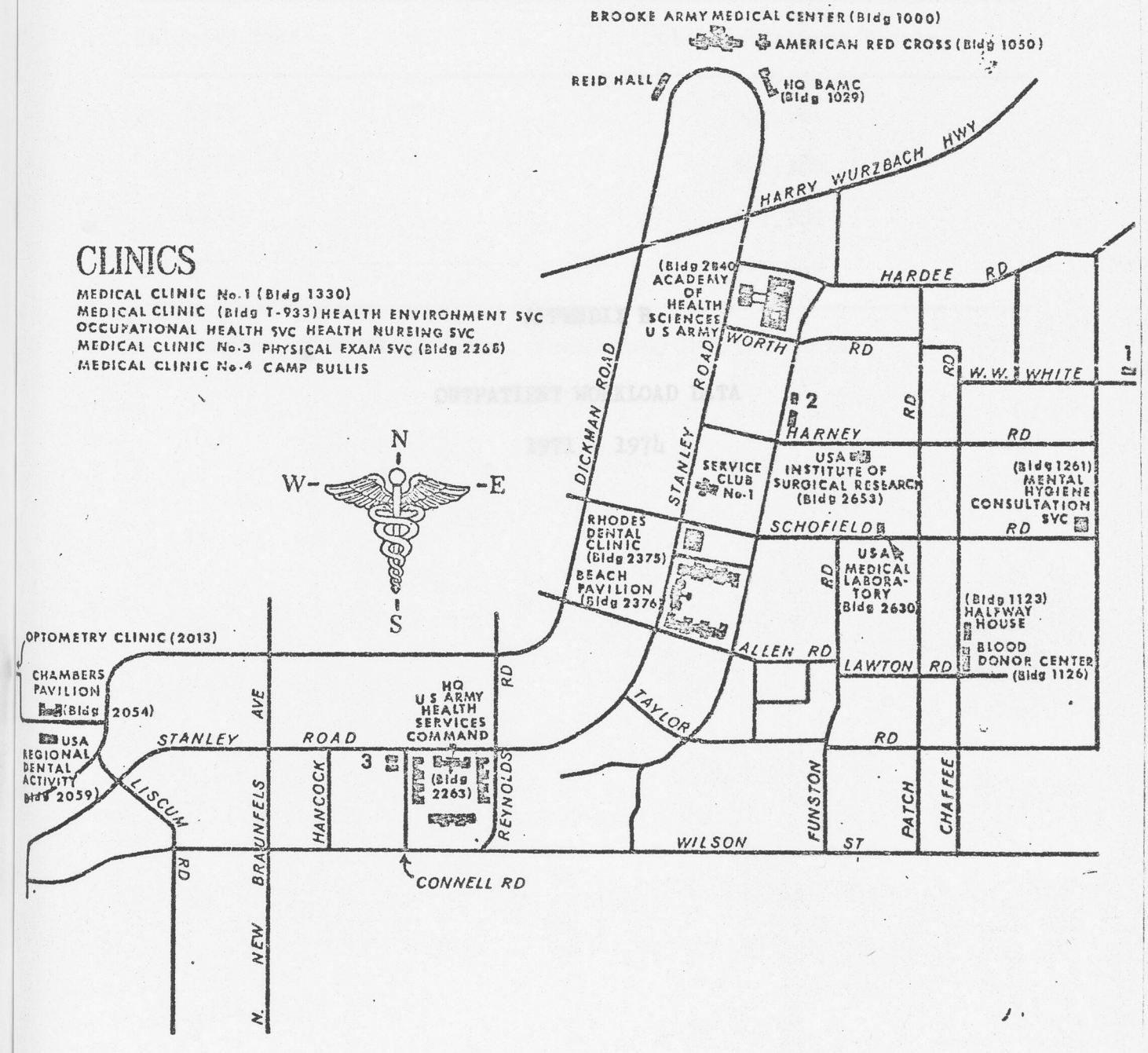
7. That a public relations program be developed to increase the credibility of the outpatient records system among the internal and external publics of the medical center, and to develop understanding of and support for the system.

APPENDIX A

MAP OF BROOKE ARMY MEDICAL CENTER FACILITIES



MEDICAL FACILITIES
BROOKE ARMY MEDICAL CENTER
Fort Sam Houston, Texas



CLINICS

MEDICAL CLINIC No.1 (Bldg 1330)
MEDICAL CLINIC (Bldg T-933) HEALTH ENVIRONMENT SVC
OCCUPATIONAL HEALTH SVC HEALTH NURSING SVC
MEDICAL CLINIC No.3 PHYSICAL EXAM SVC (Bldg 2265)
MEDICAL CLINIC No.4 CAMP BULLIS

APPENDIX B

OUTPATIENT WORKLOAD DATA

1971 - 1974

BROOKE ARMY MEDICAL CENTER

OUTPATIENT WORKLOAD DATE

Calendar Year	Total Outpatient Visits
1971	641,501
1972	625,380
1973	662,909
1974	721,569

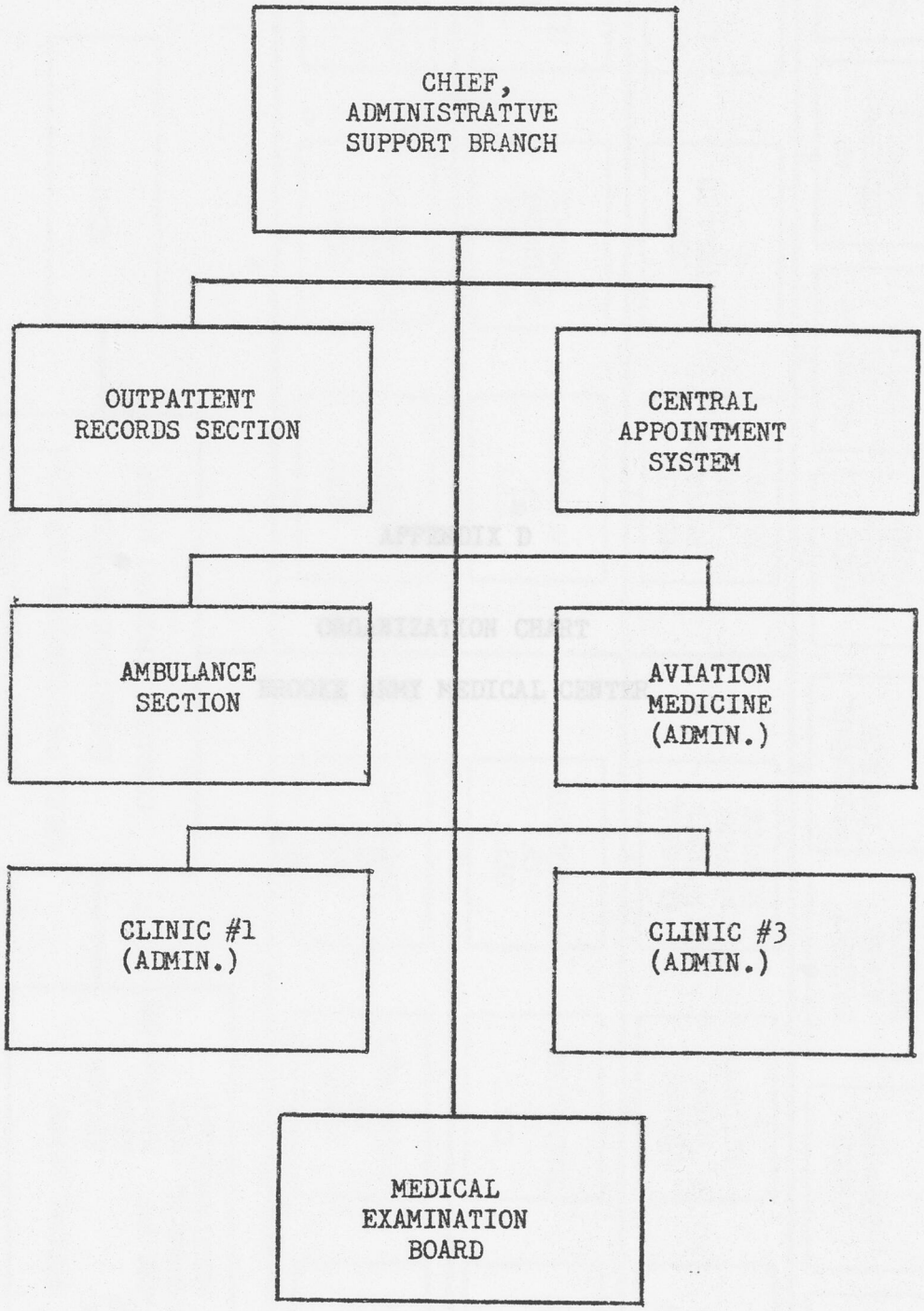
Source: Historical files, Brooke Army Medical Center.

APPENDIX C

ORGANIZATION CHART

ADMINISTRATIVE SUPPORT BRANCH

DEPARTMENT OF CLINICS

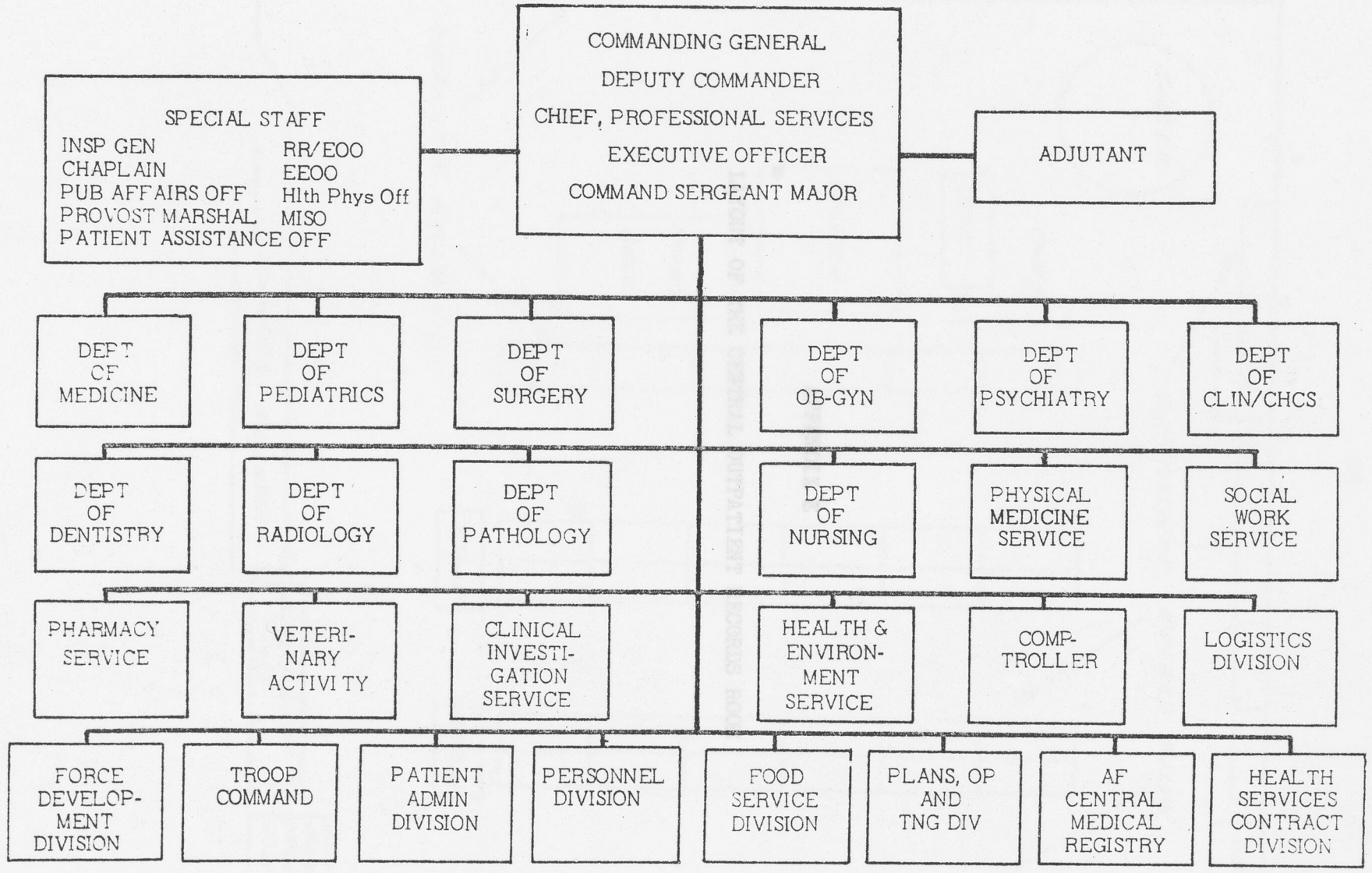

CHIEF,
ADMINISTRATIVE
SUPPORT BRANCH
OUTPATIENT
RECORDS SECTION
CENTRAL
APPOINTMENT
SYSTEM
AMBULANCE
SECTION
AVIATION
MEDICINE
(ADMIN.)
CLINIC #1
(ADMIN.)
CLINIC #3
(ADMIN.)
MEDICAL
EXAMINATION
BOARD

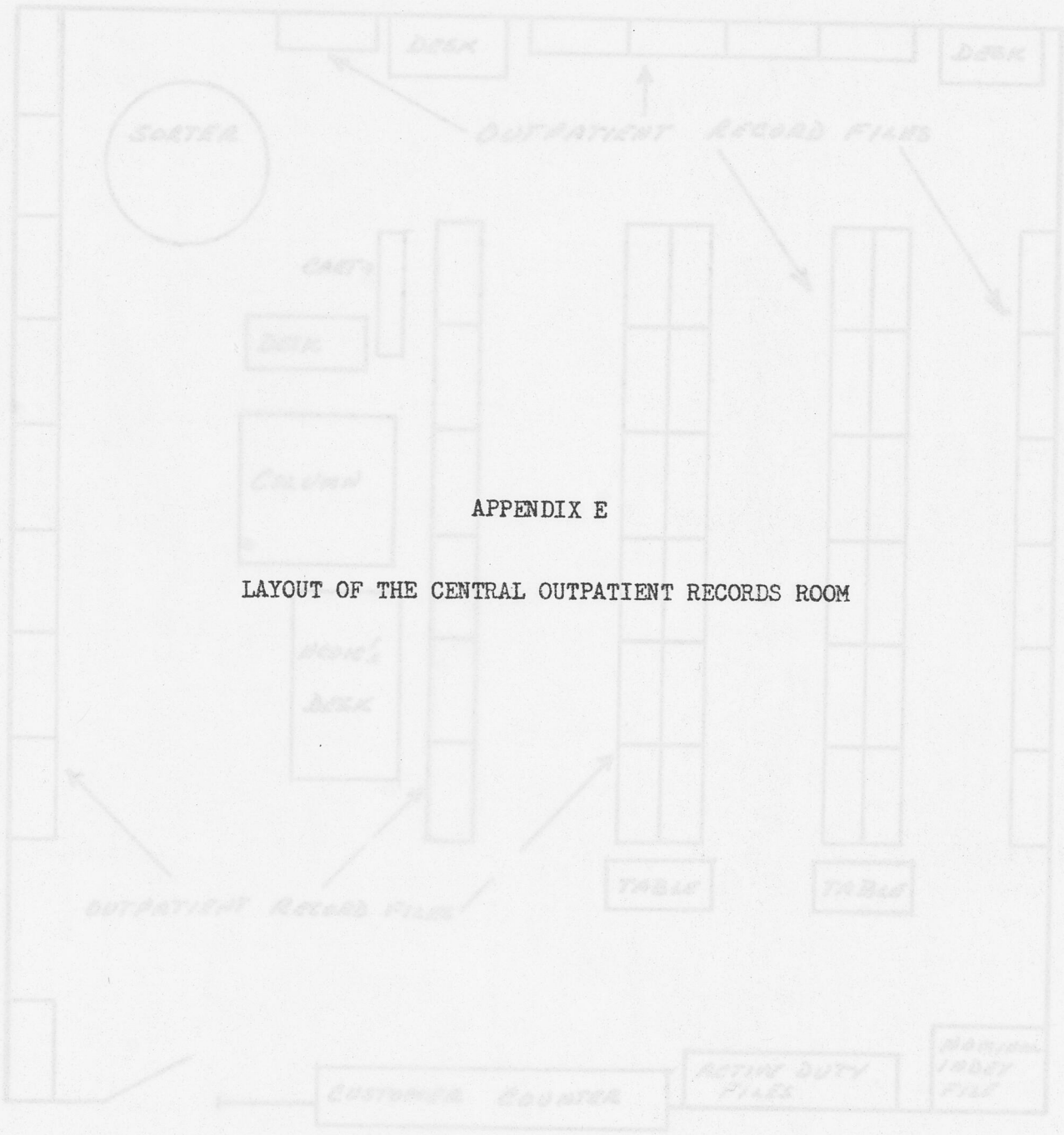
APPENDIX D

ORGANIZATION CHART

BROOKE ARMY MEDICAL CENTER

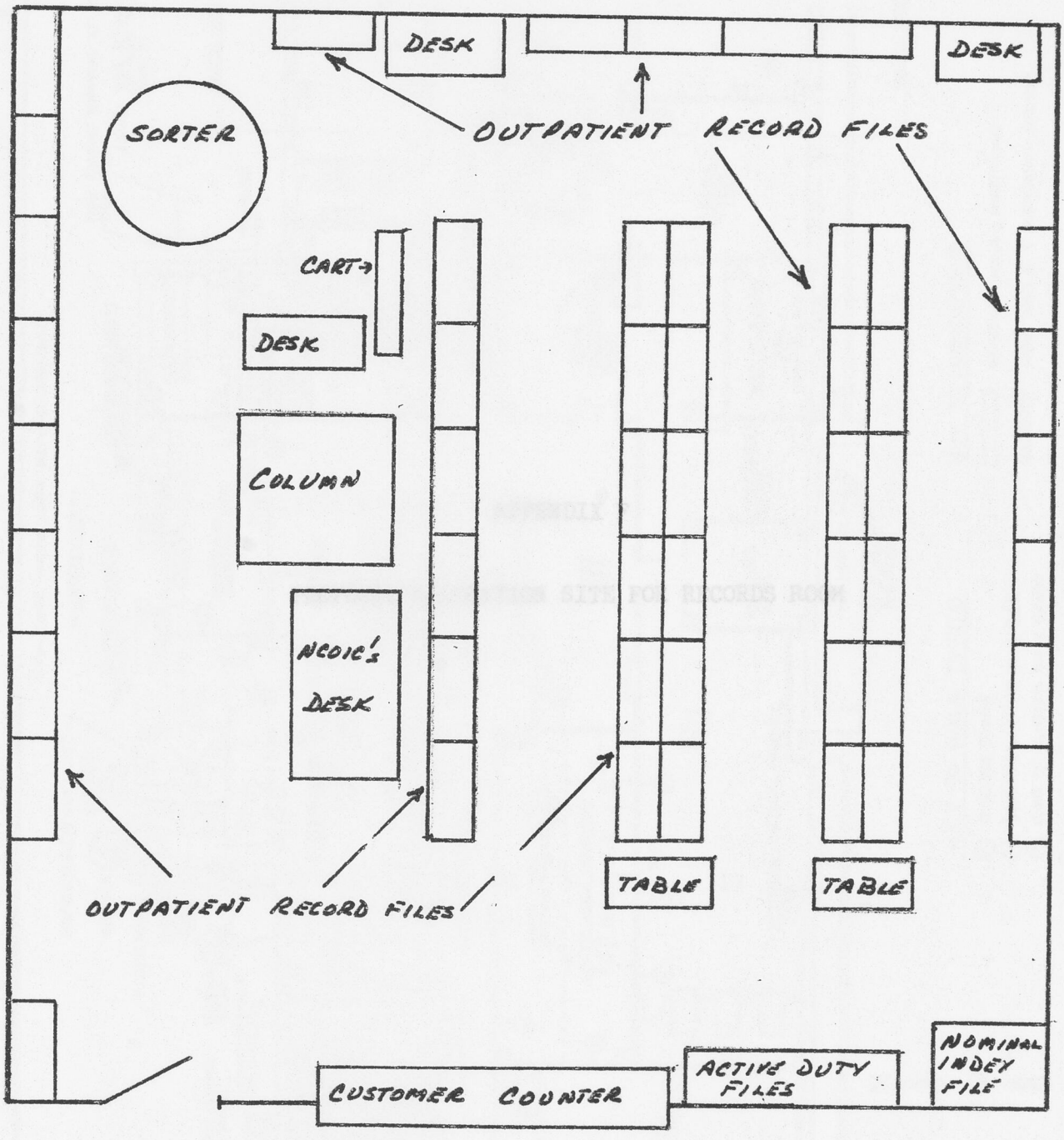
ORGANIZATIONAL CHART, BROOKE ARMY MEDICAL CENTER





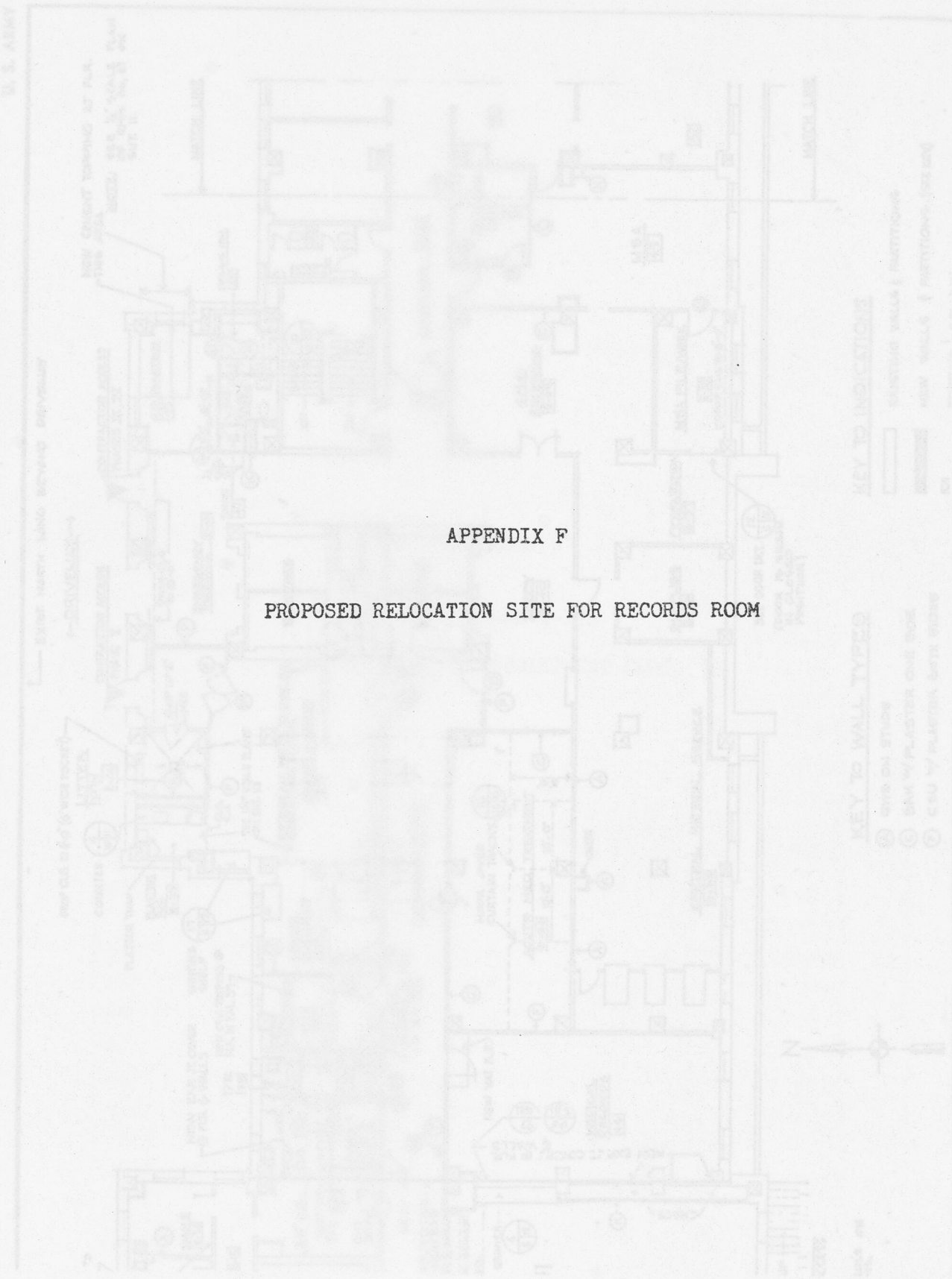
APPENDIX E

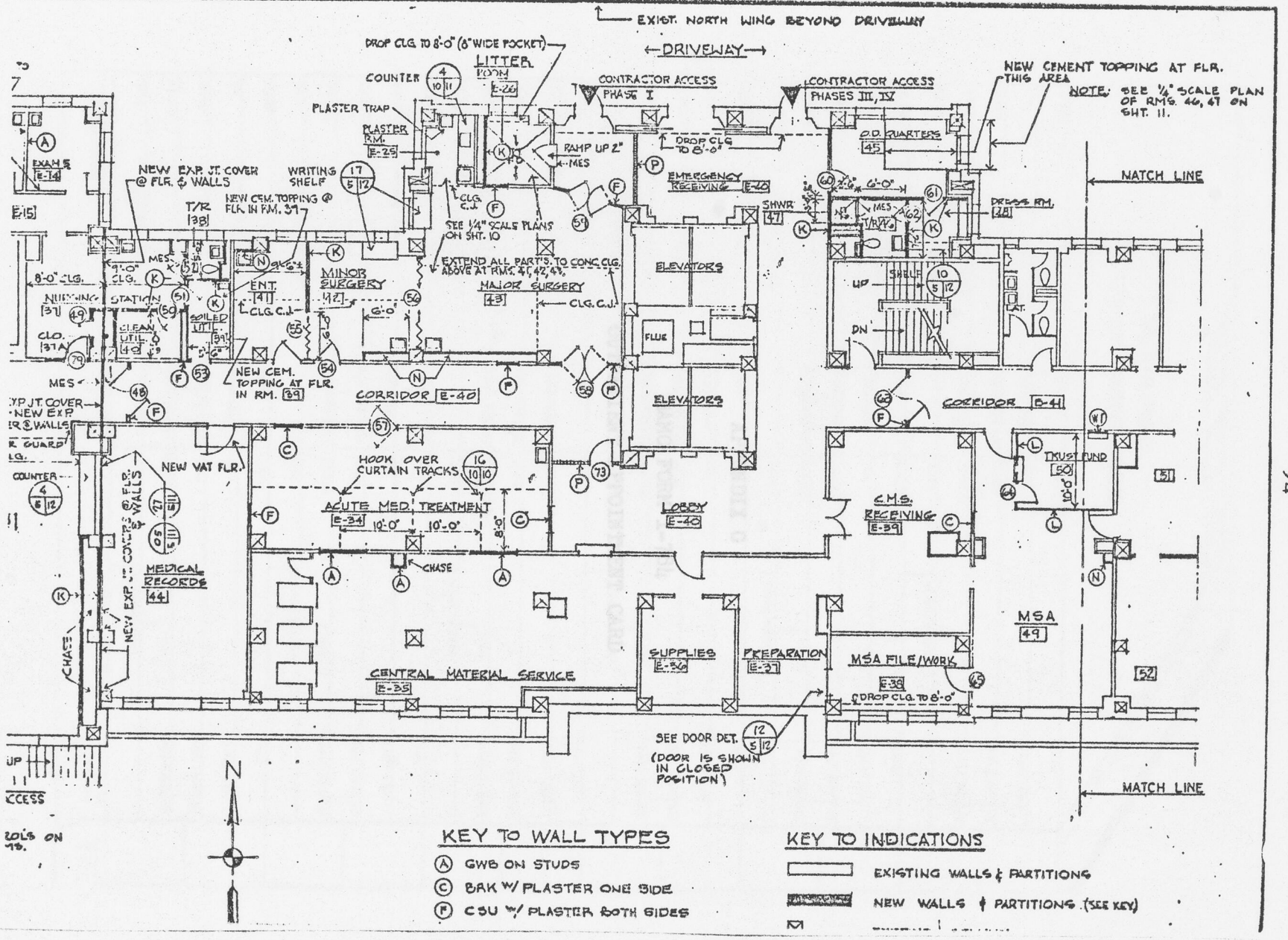
LAYOUT OF THE CENTRAL OUTPATIENT RECORDS ROOM


DESK
DESK
SORTER
OUTPATIENT RECORD FILES
CART
DESK
COLUMN
NCOIC's DESK
OUTPATIENT RECORD FILES
TABLE
TABLE
CUSTOMER COUNTER
ACTIVE DUTY FILES
NOMINAL INDEX FILE

APPENDIX F

PROPOSED RELOCATION SITE FOR RECORDS ROOM

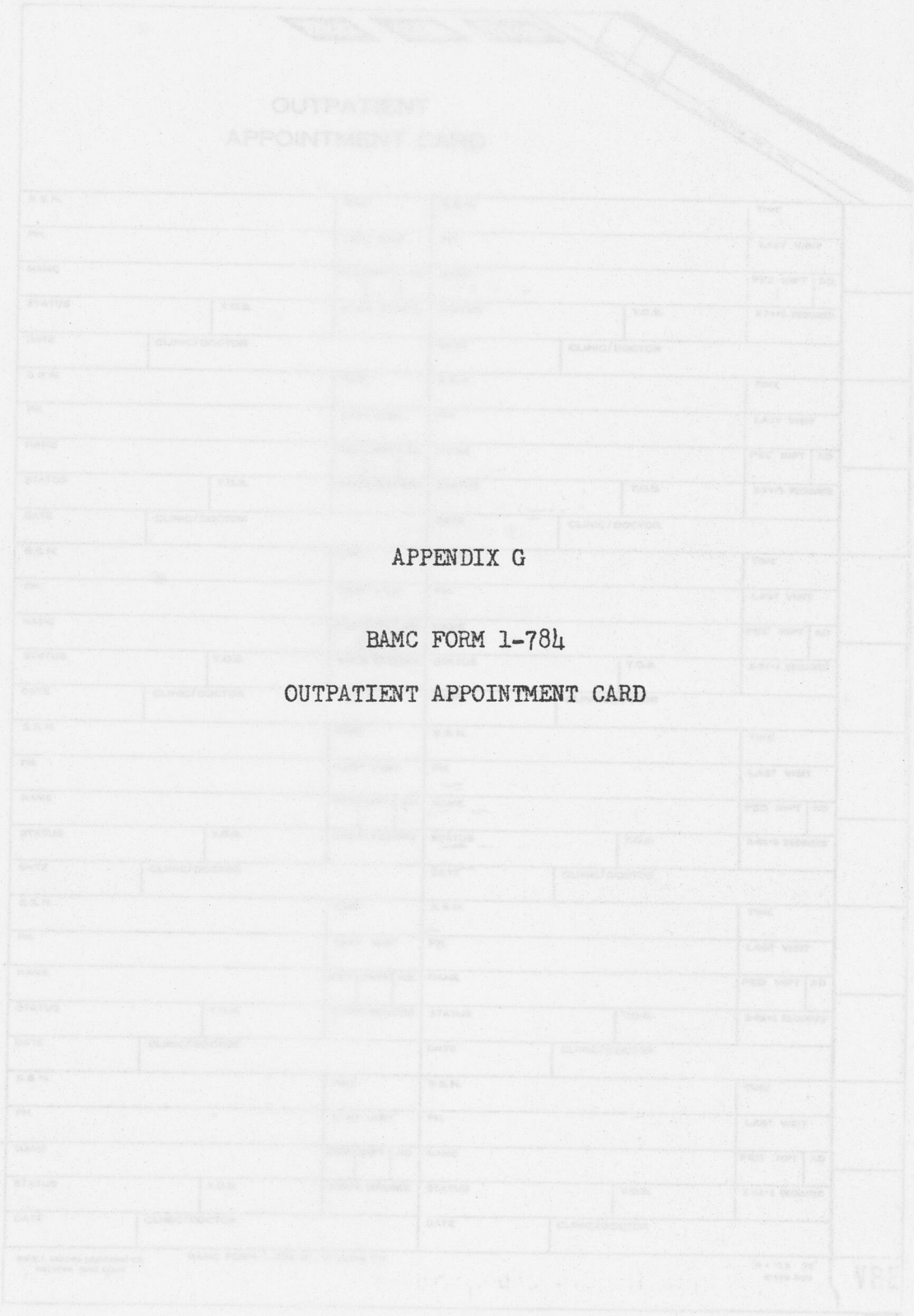



EXIST. NORTH WING BEYOND DRIVEWAY
DRIVEWAY
DROP CLG. TO 8'-0" (6" WIDE POCKET)
LITTER DOWN E-26
COUNTER
CONTRACTOR ACCESS PHASE I
CONTRACTOR ACCESS PHASES III, IV
NEW CEMENT TOPPING AT FLR. THIS AREA
NOTE: SEE 1/4" SCALE PLAN OF RMS. 46, 47 ON SHT. 11.
PLASTER TRAP
PLASTER RM. E-25
RAMP UP 2"
MES
DROP CLG. TO 8'-0"
O.D. QUARTERS 45
EMERGENCY RECEIVING E-20
NEW EXP. JT. COVER @ FLR. & WALLS
WRITING SHELF
NEW CEM. TOPPING @ FLR. IN RM. 39
T/R 38
SEE 1/4" SCALE PLANS ON SHT. 10
CLG. C.J.
EXTEND ALL PART'S. TO CONC. CLG. ABOVE AT RMS. 41, 42, 43.
MINOR SURGERY 42
MAJOR SURGERY 43
CLG. C.J.
ELEVATORS
SHWR. 47
PRESS RM. 48
MATCH LINE
8'-0" CLG.
NURSING STATION 37
CLO. 37A
CLEAN UTIL. 40
SOILED UTIL. 41
ENT. 41
CLG. C.J.
FLUE
UP
SHELF
DN
CAT.
NEW CEM. TOPPING AT FLR. IN RM. 39
CORRIDOR E-40
CORRIDOR E-41
NEW EXP. JT. COVER @ FLR. & WALLS
NEW VAT FLR.
HOOK OVER CURTAIN TRACKS
ACUTE MED. TREATMENT E-34
10'-0"
10'-0"
8'-0"
LOBBY E-40
C.M.S. RECEIVING E-39
TRUST FUND 50
51
MEDICAL RECORDS 44
CHASE
MSA 49
SUPPLIES E-36
PREPARATION E-37
MSA FILE/WORK E-38
DROP CLG. TO 8'-0"
CENTRAL MATERIAL SERVICE E-35
SEE DOOR DET. 12/5/12
(DOOR IS SHOWN IN CLOSED POSITION)
52
MATCH LINE
N
KEY TO WALL TYPES
(A) GWB ON STUDS
(C) BAK W/ PLASTER ONE SIDE
(F) CSU W/ PLASTER BOTH SIDES
KEY TO INDICATIONS
EXISTING WALLS & PARTITIONS
NEW WALLS & PARTITIONS (SEE KEY)

APPENDIX G

BAMC FORM 1-784

OUTPATIENT APPOINTMENT CARD



DAY | MO. | DOCTOR OR CLINIC

OUTPATIENT APPOINTMENT CARD

S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	
S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	
S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	
S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	
S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	
S.S.N.		TIME	S.S.N.		TIME
PH.		LAST VISIT	PH.		LAST VISIT
NAME		PED / INPT / AD	NAME		PED / INPT / AD
STATUS	Y.O.B.	X-RAYS REQUIRED	STATUS	Y.O.B.	X-RAYS REQUIRED
DATE	CLINIC/DOCTOR		DATE	CLINIC/DOCTOR	

VISIBLE RECORD EQUIPMENT CO.
MALVERN, OHIO 44544

BAMC FORM 1-784 (R - 11 JUNE 71)

8-1-03-75
9/299 REV

VRE

APPENDIX H

WARNING LABEL

WARNING

THIS ENVELOPE CONTAINS PRIVILEGED MEDICAL INFORMATION AND WILL NOT BE OPENED EXCEPT BY MEDICAL PERSONNEL WHEN PROVIDING CARE OR DOCUMENTATION.

APPENDIX I

BAMC FORM 165

OUTPATIENT RECORD LOCATOR CARD

OUTPATIENT RECORD LOCATOR CARD

DATE

TREATMENT CLINIC

DESIRE TO HOLD UNTIL DATE:

PATIENT RECORDING CARD IMPRINT

RECORD SENT TO:

CLINIC _____

WARD _____

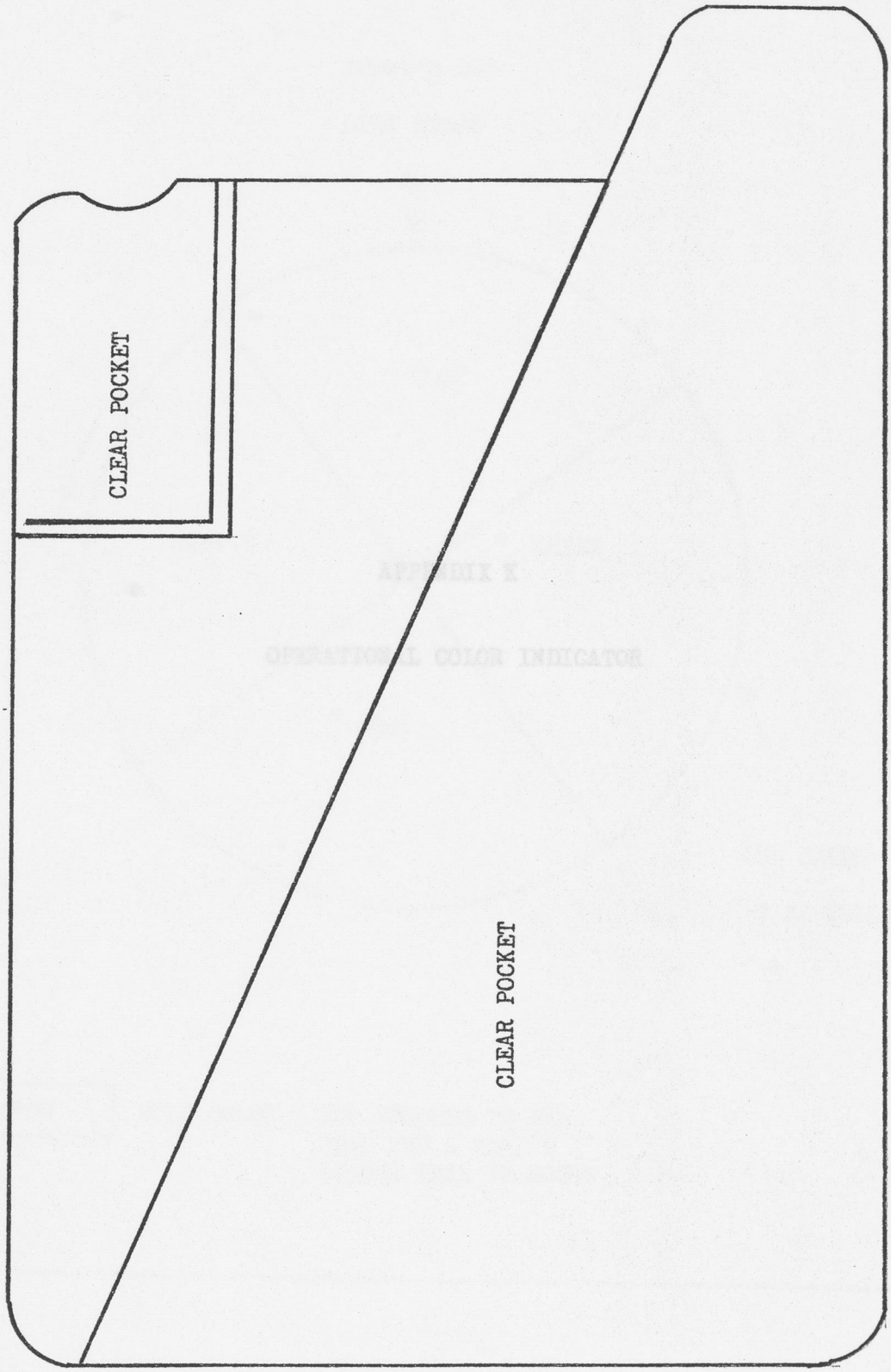
TROOP MEDICAL CLINIC _____

OTHER _____

BAMC Form 165
1 Jan 73

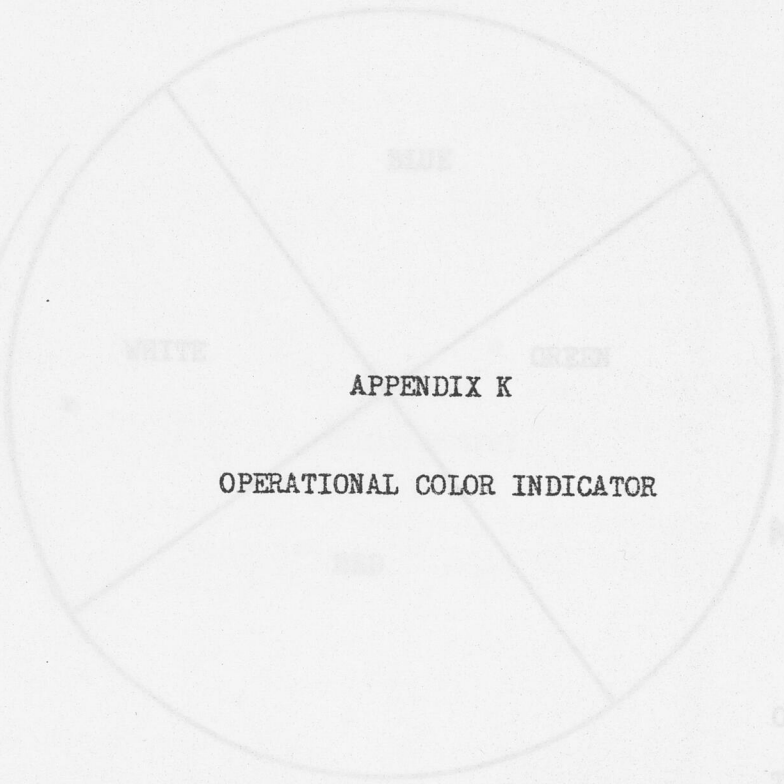
APPENDIX J

RECORD CHARGE-OUT FOLDER


CLEAR POCKET
CLEAR POCKET

APPENDIX K

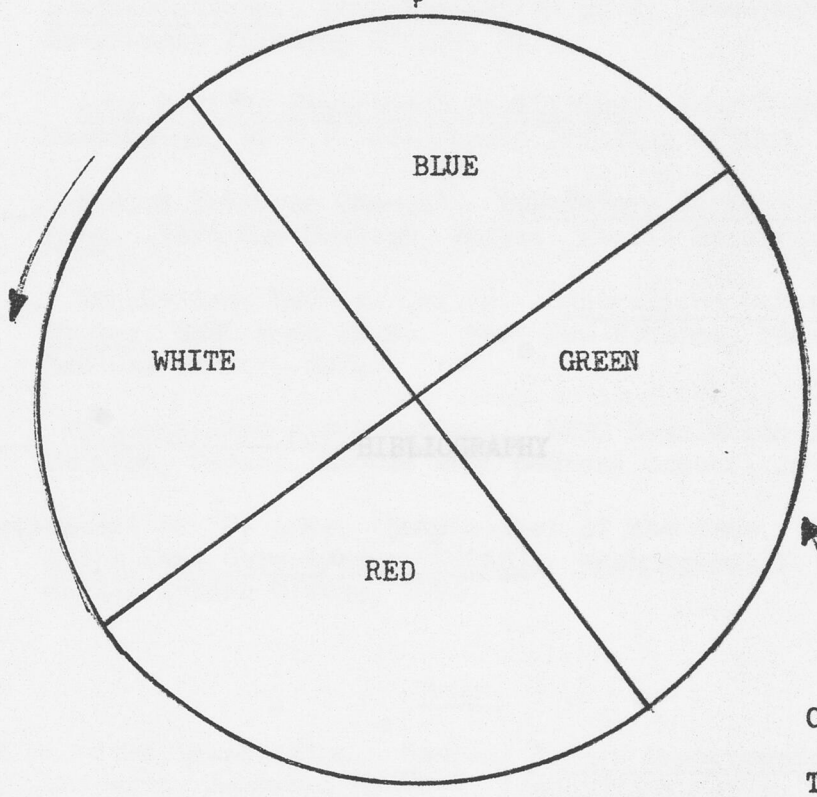
OPERATIONAL COLOR INDICATOR



TODAY'S OUT

CARD COLOR

IS



OUT CARDS

TO BE PULLED

YELLOW	HOLD COLOR - FOR RECORDS TO BE KEPT FOR A PERIOD LONGER THAN 72 HOURS

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