A STUDY OF THE PATIENT IDENTIFICATION NUMBERING SYSTEM AT THE BEXAR COUNTY HOSPITAL DISTRICT, SAN ANTONIO, TEXAS

A Problem Solving Thesis

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Hospital Administration

By

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Waco, Texas

August, 1971

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ABSTRACT

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The problem was to determine the most effective method of assigning and controlling patient identification numbers by the Bexar County Hospital District, San Antonio, Texas.

In the approach to the study, research of pertinent literature was undertaken, observations of personnel actually engaged in the process were made, interviews were conducted in order to gain insight into the operations of such a system, and analysis and interpretation of findings relating to hospital procedures manuals, policy guides and forms utilized in such a system were accomplished in order that recommendations could be made which would promote efficiency and reliability through the best use of personnel and facilities.

It was concluded that by improving the current system, the screening process could be enhanced, thereby insuring effective identification of patients. This improvement would result in prompt retrieval of medical information on patients from the patient index card file, in coordination of patient information between personnel working in patient in-take areas and medical records personnel, and in issuance and control over patient identification numbers by the medical records department. It was further concluded that by establishing clearly defined lines of authority and responsibility within the medical records department, its functions could assist in the overall screening process.

Seven recommendations were made to implement the conclusions. They were the use of social security numbers as a means of patient identification to insure prompt retrieval by filing a family's medical records together; the development of a notification form informing departments of errors made in the patient identification process; the revision of hospital by-laws, rules and regulations governing the issuance and control of patient identification numbers by the medical records department; the use of prefixes to indicate the geographical area of a patient's residence as another means of patient identification; the development of adequate job analysis criteria for medical records personnel to insure proper job performance; and the establishment of a liaison advisory committee to detect and solve problems dealing with patient identification.

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ii

LIST OF TABLES v

Chapter

I. INTRODUCTION. 1

General Information. 1
Hospital Setting and History 3
Conditions Which Prompted the Study. 5
Statement of the Problem 6
Definitions. 6
Objectives 9
Criteria 9
Limitations. 9
Assumptions. 9
Research Methodology 10
Literature Review. 12
Footnotes. 16

II. DISCUSSION. 18

Present System 18
Analysis of the Present System 23
Possible Improvements of the Present System. 34
Summary. 42
Footnotes. 44

III. CONCLUSION. 47

Conclusions. 47
Recommendations. 48

APPENDIX

A. ORGANIZATION CHART FOR THE BEXAR COUNTY HOSPITAL DISTRICT 50

B. ORGANIZATION CHART OF THE BEXAR COUNTY HOSPITAL, BEXAR COUNTY HOSPITAL DISTRICT, DAY SHIFT 52

C. ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL, BEXAR COUNTY HOSPITAL DISTRICT, DAY SHIFT 54

D. ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL, BEXAR COUNTY HOSPITAL DISTRICT, EVENING AND NIGHT SHIFT 56

E. EMERGENCY ROOM REGISTRATION FORM, BEXAR COUNTY HOSPITAL DISTRICT. 58

F. PATIENT IDENTIFICATION CLINIC CARD. 60

G. BEXAR COUNTY HOSPITAL DISTRICT FORM 335 MEDICAL RECORDS REQUEST LOG 62

H. BEXAR COUNTY HOSPITAL DISTRICT FORM 147 PATIENT INDEX CARD. 64

I. FLOW CHART ON PATIENT IDENTIFICATION NUMBER REQUEST. 66

J. A SAMPLE MASTER PATIENT INDEX CARD. 68

K. BEXAR COUNTY HOSPITAL DISTRICT FORM 333 MEDICAL RECORD TRACER CARD. 70

BIBLIOGRAPHY 72

LIST OF TABLES

Table		Page
1.	Work Load Data: Bexar County Hospital District for April 1-30, 1970.	6
2.	Bexar County Hospital District Monthly Admissions	19
3.	Out-Patient Clinic Visits.	19
4.	Work Load at the Robert B. Green Memorial Hospital.	28
5.	Work Load at the Bexar County Hospital	30
6.	Work Shifts of Medical Records Department, Robert B. Green Memorial Hospital.	32
7.	Work Sampling Study of Medical Records Employees For Screening of Patient Identification Numbers.	33

CHAPTER I

INTRODUCTION

General Information

The measure of a good patient identification numbering system is whether it insures prompt patient identification and maximum utilization of medical record data in order to achieve the hospital's objectives of providing a high degree of patient care. Good patient identification can also serve as a valuable legal tool in substantiating evidence that specific care has been or is being rendered to a patient. Hospital accreditation by the Joint Commission on Accreditation of Hospitals depends on the quality and quantity of medical care performed within a hospital as determined by examining various medical records. It therefore behooves a hospital to have an effective method of assigning and controlling patient identification numbers that will enable medical records personnel to maintain complete and accurate medical records. Any control and assignment method should be easy to implement and adaptable to unexpected change.

Because the Bexar County Hospital District is composed of two medical treatment facilities separated by a distance of ten miles, there are certain problems with respect to patient identification. Patients are seen in two emergency rooms, hospitalized as inpatients in two facilities, and treated on an outpatient basis at two facilities. It is, therefore, imperative that a central medical records office be established that has the ability and authority to operate a central patient identification

numbering system. This numbering system should be responsible for maintaining accurate patient index cards on all categories of patients who have been seen on an emergency basis, admitted as an inpatient, or followed up as an outpatient in one or several outpatient clinics.

A primary function of such a central medical records office would be to coordinate patient identification numbering activities in such areas as (1) the preparation of medical record folders, patient index cards, operation index cards, and disease index cards; (2) the correct filing of data in patients' medical records; (3) the release of accurate medical information from patients' medical records; and (4) the filing of loose medical record material and the retrieval of filed medical records for use by the medical staff and other authorized personnel.

Concomitant with the above-stated functions of a central office to coordinate patient identification numbering activities, are certain responsibilities which must be stipulated and adhered to by all personnel concerned within such a system. These responsibilities are as follows: (1) the formulation and implementation of medical records policies and procedures; (2) the overall coordination of medical records procedures throughout the two hospitals; (3) the orientation of the hospital staff to the patient identification numbering system by informing them of the scope and availability of information, as well as advising the staff of policies and procedures governing the operation; (4) the selection and training of all new personnel within the medical records department as to how the patient identification numbering system operates, and the assignment of job tasks necessary to meet the workload required of the system; and (5) the maintenance of the number-control register and the

issuance of patient identification numbers to patient in-take areas responsible for new admissions to the hospital.

In recent years, patient identification numbering systems have been of grave concern to hospital districts operating with two or more separate treatment facilities.[1] The problem of an adequate patient identification numbering system has at the same time continued to confront hospital administrators in their never-ending attempts to insure complete and accurate recording of patient information, regardless of the patient category. If a hospital district is to have an efficient patient identification numbering system, a complete and thorough understanding of its present system and how a central office could eliminate costly duplication of effort and staff is needed if the ultimate objectives of the hospital district are to be achieved.

Hospital Setting and History

The historical background of the Bexar County Hospital District is one which has been written by the efforts of countless citizens for more than half a century. The original hospital for the county, the Robert B. Green Memorial Hospital, was founded in 1915, completed in 1917, and named in memory of a local distinguished jurist and legislator, the Honorable Robert Berrien Green. Despite the fact that the hospital was the sole tax supported institution whose primary mission was to serve the medical needs of the indigent sick of Bexar County, the hospital was plagued with financial hardships for thirty years and was forced to close its doors to the needy in July 1947. However, the closing was short-lived; because of spirited interest and community concern, the hospital was able to re-open its doors in July 1948, although only on a limited basis to

care for infant diarrhea, obstetrical and polio cases. Even with limited services being offered, the hospital regained its accreditation by the American Hospital Association. Furthermore, the Committee on Medical Education of the American Medical Association re-approved the hospital for an intern and residency program. With this new impetus, the hospital was fully re-opened in July 1949.[2]

With its re-opening in July 1949, the hospital began operating under the financial guidance of the City of San Antonio and the County of Bexar. Yet, because of an inadequate tax rule utilized in the financial maintenance of the hospital, city dwellers were paying twice as much for the hospital's operation as opposed to their county neighbors.[3] To offset this dissatisfaction, a constitutional amendment was submitted to the voters of Texas which authorized a county-wide hospital district with its own taxing power. This proposal failed, however, but was presented again in 1955 with provisions for a new state law for the creation of individual hospital districts. This time the proposal passed. In July 1955, the Bexar County Hospital District was established. In addition to the establishment of a hospital district, the new law also eliminated the double payment standard for city residents.[4]

The overall responsibility for the financial operation of the Bexar County Hospital District was given to the County Commissioners Court which has the responsibility for appointing a Board of Managers of not less than five nor more than seven members who are charged with the administration of the Hospital District.[5]

As the medical needs of the county increased, the citizens of Bexar County passed a $7,500,000 bond issue in 1960 to enlarge the Robert B.

Green Memorial Hospital and to provide $5,000,000 to be matched by $10,000,000 in federal funds, for the construction of a teaching hospital for the University of Texas Medical School at San Antonio. In May 1963, the Board of Managers of the Hospital District negotiated a contract with the University of Texas which provided for the construction and operation of a 500-bed teaching hospital to be operational by July 1968. On November 9, 1968, the Bexar County Hospital was dedicated and opened its doors to receive patients from the county.[6]

Today, the Robert B. Green Memorial Hospital and the Bexar County Hospital work closely with the new University of Texas Medical School at San Antonio. Both hospitals are certified for intern training and residency training; educational programs in paramedical areas, such as laboratory technology, X-ray technology, professional nursing; and social service.

At the present time, the Robert B. Green Memorial Hospital has a total of 79 beds (58 obstetrical, 21 labor); 90 bassinets (78 regular, 12 intensive care units); and 52 outpatient clinics. The Bexar County Hospital has 504 beds and three outpatient clinics.

The daily average workload performed by the Bexar County Hospital District during April 1970 is presented in Table I on the following page.[7]

Conditions Which Prompted the Study

The administrator of the Bexar County Hospital District, the assistant administrator in charge of ambulatory care, and the directors of admitting and the emergency rooms expressed a deep concern for the

TABLE I*

WORK LOAD DATA:
BEXAR COUNTY HOSPITAL DISTRICT
FOR APRIL 1-30, 1970

	Daily Average
Outpatient and Specialty Clinic Visits.	199.1
Admissions.	35.6
Discharges.	37.1
Beds Occupied**	495.5
Births.	10.2
Surgical Operations	11.6
Laboratory Procedures	3,154.2
X-ray Examinations.	196.3
Emergency Room Visits	253.9

*Source: Hospital records
**Does not include newborns

medical records department which was hampered by a "two-number" patient identification system,[8] and further by not having control of the issuance of numbers within the Bexar County Hospital District. They were also concerned with the fact that the medical records problem was complicated by improper utilization of the emergency room numbering system. Of specific concern was the duplication of functions in the screening process and in the issuance of patient identification numbers which resulted in increased personnel requirements and in decreased emphasis on proper medical record identification.

Statement of the Problem

The problem is to determine the most effective method of assigning and controlling patient identification numbers by the Bexar County Hospital District, San Antonio, Texas.

Definition of Terms

For the purpose of this study, the following definitions will apply:

Admissions is the process by which a patient is admitted to a hospital for inpatient service and for occupancy of a bed or bassinet.

Color Coding is a system which utilizes colored medical record jackets to assist in accurate filing and retrieval of medical records.

Diagnostic Classification Code Number is a means of classifying diseases, injuries, and operations so that these classifications can be used to index hospital records.

Discharge is the process by which a patient is discharged from the hospital upon completion of treatment or when a patient's condition does not warrant further hospitalization.

An element is a basic unit in a hospital setting which represents a segment of an operation.

A function in a hospital setting is made up of the operations required to accomplish a given task necessary for patient care, medical care, and hospital administration.

Man-Time (man-minutes or man-hours) is a term that refers to the time it takes to perform a defined element or operation. The man-time for a particular element or operation may be spent by many different people.

An operation in a hospital setting is an activity that is performed to assist in achieving the objectives of a function.

The patient identification card is a plastic, embossed card, similar to a charge plate, that is issued to a patient. It contains his Bexar County Hospital District identification number, name, address, and other related data. It is used to imprint various forms and records used in the hospital and in the outpatient clinics, and serves as a

means of identification for eligibility to receive medical care. It is also referred to as the clinic card.

Required staff time is a term that refers to the amount of man-time which should be spent on a total operation. It consists of the sum of the normal times for all elements in the operation. The required staff time assumes that a steady pace is maintained.

A serial numbering system is a system of issuing admission numbers where a patient is given a new number on each admission to the hospital regardless of the number of re-admissions. The medical records for each admission are not consolidated.

A serial-unit numbering system is a system of issuing admission numbers where a patient is given a new number on each admission. All previous medical records are brought up and filed under the latest number on each re-admission.

A soundex system is a filing system which uses only one letter and a three digit code system.

Terminal digit filing is a system in which medical records are filed numerically by the last two digits in the patient identification number. It eliminates unnecessary filing mistakes since filing personnel need only to remember the last two digits which are called primary terminal digits.

A unit file system is a system of medical record keeping which uses one record to contain records of all admissions and all outpatient clinic visits.

A unit numbering system is a system of issuing admission numbers whereby a patient is given an admission number on his first admission to

the hospital and retains that same number through all subsequent admissions or visits to any department in the hospital.

Objectives

The following are objectives for this study:

1. To analyze the present patient identification numbering system and how it is administered.

2. To analyze the current organizational and administrative framework of the medical records department.

3. To analyze requisitioning, duplication, and processing of patient identification numbers by the medical records department.

Criteria

Any proposed solution should offer the following:

1. The control over assignment of patient identification numbers.

2. A reliable patient identification system that is easily implemented and readily available.

Limitations

The following limitations have been placed on the study:

1. Lack of statistical data on duplication of patient identification numbers before and during the study.

2. Lack of statististical data on work sampling of medical records employees under the current system.

3. Lack of written policies and regulations governing the medical records department.

Assumptions

The following assumptions were made prior to and during the conduct of this study:

1. That the hospital district's mission will not change in the near future.

2. That the upward trend in the number of patients treated will continue.

3. That complete, legible medical record forms will increase in importance as a source of information concerning inquiries about medical treatment of patients.

Research Methodology

The following methods of the study were undertaken: (1) a review of textbooks and current literature; (2) observations; (3) interviews; and (4) an analysis and interpretation of findings relating to hospital procedures manuals, policy guides, and forms currently being utilized in order to determine the possibility of any contributory facts which could be related to either an increase or decrease in the efficiency of the particular situation at either the Robert B. Green Memorial or the Bexar County Hospitals.

Review of Textbooks and Literature

A review of textbooks and current literature was undertaken to familiarize the author with patient identification numbering principles and procedures in hospitals with a view toward the overall performance of such a system. Particular attention was given to all patient in-take areas that have the responsibility of proper identification of patients before, during, and after medical care has been rendered.

Observations

Observations were accomplished in five distinct phases:

1. A familiarization tour of the two medical records departments

was made to observe first hand the procedures, workflow, use of equipment, and relationships with various ancillary services involved in the proper identification of patients.

2. An analysis of individual job tasks was made in order to determine if the personnel actively engaged in the operations of the present system were being utilized efficiently and effectively.

3. To have an appreciation of the individual problems confronting the patients within the system, various categories of patients were followed through the system to formulate recommendations or conclusions.

4. An inspection of the medical records storage area was accomplished to observe the type of storage facilities and the total space available.

5. Patient in-take areas were visited to observe the requesting and receiving of patient identification numbers in the two treatment facilities. This was done to determine the extent of duplication of similar functions, screening requirements, and problems encountered in the operation of the present system.

Interviews

Interviews were held with the following personnel: (1) Assistant Administrator, Ambulatory Care; (2) Administrative Director of the Emergency Rooms and Clinics; (3) Director of Admissions for the Bexar County Hospital District; (4) Director, Health Records Management for the Bexar County Hospital District; (5) Medical Records Librarian for the Robert B. Green Memorial Hospital; and (6) Medical Records Librarian for the Bexar County Hospital. These formal interviews were conducted to gather background information on the present system and to evaluate its

effectiveness with respect to managerial authority, control, staffing methods, and organizational measures that deal with the operation of the patient identification numbering system.

Informal interviews were also conducted with all of the regular members of the two medical records departments, nurses in the emergency rooms and clinics, clerks in the admitting office, and various members of the medical staff. These interviews afforded the author an opportunity to gain further insight into the operations of the system and to note the relationships between the medical records departments and the other sections of the hospital. These interviews also helped to determine whether or not personnel were adhering to policy guides, procedures manuals, and hospital directives relating to the operation of the present system.

Literature Review

A review of the literature regarding patient identification numbering systems reveals that even though there are established procedures and policies to clearly follow, hospitals, large and small, have developed their own modified numbering systems. Despite the development of modified numbering systems, current literature reveals that medical records departments are still confronted with problems. For instance, as patient care has become more specialized, it has not always been possible to maintain adequate medical records systems to keep pace with the rapid advances in medicine. Today, it is not uncommon to find individual clinic departments in some larger hospitals throughout the nation still maintaining their own patient identification card files of case record information. Although this type of information is valuable to the clinic in treating

the patient, it is of little use to the other clinics which may also be treating the same patient, yet without the benefit of additional medical information. Such fragmentation and a dispersed patient identification system make it difficult for the administration of comprehensive patient treatment.[9]

Before any type of patient identification numbering system can be considered, the first factor which must be determined is the kind of numbering system to be utilized and how this system will work with either the alphabetical or the numerical filing system. Three basic numbers can be utilized in such a system: the admission number, the discharge number, and the diagnostic classification code number. Hospitals have used all three systems, but experience has shown that the admission number is preferred for patient identification purposes and filing of the medical records.[10]

One of the primary advantages in using the admission number in patient identification and filing purposes is that it is easy to screen for prior admission information on a given patient. In addition, if medical records become lost or are missing, they are easily traced by using the patient's admission number. In addition, the admission number is also carried in the patient register, on the patient number index card in the medical records department, and on the ledger cards found in the business office of the hospital. Due to the fact that the utilization of patient admission numbers provides safeguards against medical records becoming lost in the files, it is now a widespread practice to file by using only the admission number given to a particular patient.[11]

Today, with more emphasis being placed on simplifying the patient identification numbering system, the unit record system is being adopted as the simplest method of patient identification. Under the unit record system, permanent numbers can be given to a patient whether he is initially treated in the emergency room or as a patient in the hospital. This unit numbering concept takes on additional value when it is utilized in the identification of X-ray film, account ledgers in the business office, and other medical materials which are retained, but separate from the patient's medical records. By using such a system for all categories of patient care within the hospital environment, the medical records department is encouraged to provide prompt and accurate medical record identification by keeping the patient index file up-to-date.[12]

The Joint Commission on Accreditation of Hospitals strongly endorses the use of a unit record system for patient identification numbering. The Social Security Administration in its publication, Conditions of Participation for Hospitals, lists a requirement for a unit record system. These two strong influences in the field of hospital administration maintain that such a system can be organized in two ways: (1) the unit numbering method to be used by all inpatient admissions and outpatient visits; and (2) the serial numbering method to be used on each new admission to the hospital. However, each hospital must evaluate its own needs and then determine what system is best for it to use.[13]

Although it is generally agreed that the unit record system is the most effective in accurate patient identification and medical record filing, the term is often loosely employed and the concept misunderstood. Original use of the unit record system called for a single, chronological

medical record which covered all inpatient and outpatient care received by a given individual. The possibility that medical information being kept on a patient might become separated or duplicated in various clinical and treatment areas was thus avoided. With the elimination of more than one set of medical records on a patient, the value of certainty in identification was assured, even if such a patient were treated for a prolonged period of time either as an inpatient and/or as an outpatient.[14]

Along with the use of the unit record system is the element of internal controls which is necessary for the efficient operation of the system. This element of control not only includes the patient number registry for inpatients, but also private and staff outpatient numbering, laboratory numbering, radiology numbering, employees' health service numbering and emergency room numbering of patients.[15] Such controls are needed in these areas by the medical records department in reporting to required agencies and in providing patient information to the hospital administration and the medical staff. The latter may then determine whether the desired quality of medical care is being administered to all patients within their institution.[16]

In any patient identification numbering system, certain functions of the central medical record file room in a hospital are essential. The functions should include the following:

> (1) formulating and implementing medical record policies and procedures; (2) coordinating medical record operations throughout the hospital; (3) adapting the medical record system to further changes as needed; (4) orienting the hospital staff to the medical record program in informing them of services available at the central office, and advising them of policies governing content

and use of records, time limits for submitting medical record data; (5) selecting and training all new medical records personnel; (6) maintaining the master patient index; (7) maintaining the number-control record and issuing numbers for first admissions to the hospital; (8) forwarding previous records of readmitted patients; and (9) receiving requests for information about patients and relaying those about current patients to respective units.[17]

Footnotes

[1]George MacDonald, The Organization of the Hospital for Optimal Patient Care (Boulder, Colorado: Western Interstate Commission for Higher Education, 1962), p. 1.

[2]"History, Robert B. Green Memorial Hospital" (unpublished fact sheet, Robert B. Green Memorial Hospital, n. d.), p. 1.

[3]"Welcome to the Bexar County Hospital" (unpublished bulletin, Bexar County Hospital, n. d.), p. 2.

[4]Ibid., p. 2.

[5]Ibid., p. 2.

[6]Ibid., p. 3.

[7]"Census Report" (unpublished bulletin, Bexar County Hospital, April 30, 1970).

[8]See p. 20 for a discussion of the "two number" patient identification system.

[9]Helen B. McQuire, "A Simplified System of Medical Records," The Modern Hospital, LXXIX (August 1952), 87.

[10]Edna K. Huffman, Manual for Medical Record Librarians, (4th ed., rev.: Chicago: Physicians' Record Company, 1955), p. 167.

[11]Ibid., p. 169.

[12]Mary E. Converse, "Gearing the Medical Record Department For Increasing Outpatient Service," Hospitals, Journal of the American Hospital Association, XLI (February 1, 1967), 82.

[13]Mary E. Converse, "Unit Record System," Hospitals, Journal of the American Hospital Association, XLIII (February 1, 1969), 34.

[14]Mary E. Converse, "Numbering Medical Records," Hospitals, Journal of the American Hospital Association, XLII (March 1, 1968), 24.

[15]Ann M. Ball, "Consolidate Gains, Improve Accessibility," Hospital Management, LIII (October 1953), 102.

[16]Huffman, Manual for Medical Record Librarians, p. 447.

[17]Frances C. Nemec, "A Useful Medical Record System for a Decentralized Mental Hospital," Hospital and Community Psychiatry, XVII (October 1966), 313.

CHAPTER II

DISCUSSION

Historical Evolution of the Present System

The Bexar County Hospital District has operated as a center for the needy sick since 1955. As the county's population grew, the problems of the hospital district also grew. One of the major problems affecting the rendering of adequate medical care to a patient population of 500,460 in 1950, 687,151 in 1960, 771,451 in 1965, and an estimated 900,000 plus in 1970, is that of a proper patient identification numbering system for the two hospitals of the Bexar County Hospital District, the Robert B. Green Memorial Hospital and the Bexar County Hospital.[1]

An evaluation of the patient statistical figures for hospital admissions for 1969 through April 1970, and the patient statistical figures for outpatient visits for 1969 through April 1970, are presented in Tables II and III on the following page.[2]

These figures reflect the heavy patient work load, the latter being a major reason for the difficulty encountered by the hospital district in trying to establish a simple, but yet accurate, patient identification numbering system. Although these figures represent, in part, return visits to the clinics, medical records personnel still find it difficult to accurately identify patients. Many patients who have the same surnames, and even the same given names, fail to bring

TABLE II

BEXAR COUNTY HOSPITAL DISTRICT
MONTHLY ADMISSIONS

	Month	Admissions
1969	January	1379
	February	1139
	March	1306
	April	1212
	May	1277
	June	1418
	July	1616
	August	1606
	September	1441
	October	1521
	November	1454
	December	1307
1970	January	1190
	February	1110
	March	1260
	April	1168

TABLE III

OUTPATIENT CLINIC VISITS

	Month	Number of Clinic Visits
1969	January	7088
	February	6433
	March	6865
	April	7078
	May	7280
	June	6933
	July	7093
	August	6766
	September	6604
	October	7442
	November	5971
	December	6629
1970	January	6743
	February	6520
	March	5783
	April	6988

either their appointment slips or clinic cards. The phenomenon of common names is not unusual among San Antonio's large Mexican-American population.

In order to fully appreciate the present patient identification numbering system, it is important to understand the problems of the past patient identification numbering system. Prior to April 6, 1970, the Bexar County Hospital District's patient identification numbering system operated under a two-number system. Blocks of numbers were given to various patient in-take areas. The emergency room used its own numbering system. As a result, this two-number system fostered inadequate integration of medical records on patients who had been seen on either an emergency, inpatient, or outpatient basis. In addition, there were no internal control procedures and no written policies to govern the administration of the numbering system.[3] Patients coming into the emergency room were given an emergency room number and were never screened with medical records to see if they had any previous records on file. Only if the patient volunteered that he had been there before, would a request for screening from the emergency room, either at the Robert B. Green Memorial Hospital or the Bexar County Hospital, be initiated. If previous records could be found in the medical records department, they were pulled and sent to the requesting emergency room. Under the two-number system, many patients had two or more medical record files, contributing to confusion in patient identification.[4]

The patient master file index, which is kept at the Robert B. Green's medical records department, has over 250,000 patient index cards, many of which are duplicates because inadequate patient information

was originally received. Such duplication of effort is due, in large measure, to the fact that the hospital district's staff by-laws, rules, and regulations do not contain any information that is helpful to the medical records personnel in carrying out their responsibilities. The only reference in the staff by-laws, rules, and regulations concerning completion of medical record information is the statement that the attending physician will be responsible for completion of the medical record when requested to do so by the proper personnel in the medical record department.[5] For the medical records personnel involved in the patient identification numbering system, there are no written procedural manuals. Although the medical records librarians realize the need for such a manual, as well as for a general policy statement for the medical records department, no action has been taken. Furthermore, there was never an organizational chart of the medical records department at either the Bexar County Hospital or the Robert B. Green Memorial Hospital prior to January 1969, resulting in confusion and duplication of effort. Today, the hospitals have an up-to-date printed organizational chart for their medical records departments and also of the Bexar County Hospital District.[6] (See Appendices A, B, C, and D for these charts.)

Accompanying the two-number patient identification numbering system was the fact that there was, and still is, no adequate record retirement system. Space for storage of medical records at the Robert B. Green is extremely sparse. An investigation of this area revealed 200,000 medical records with improper patient identification viewing. Records are packed so tightly that actual screening of the files for a

given record is a time-consuming process.

Seventy per cent of all patients admitted to the hospitals entered through the emergency rooms,[7] fifty per cent of whom failed to bring their patient identification cards or knew their patient identification number. Such a high percentage of admissions through the emergency rooms was the source of the hospital district's heavy patient load. The latter complicated the old two-number patient identification system, and placed a burden on the medical records departments since they did not have control over the issuance of numbers within the hospital district.

As a result of these problems, various proposals were made in an attempt to correct the situation. It was recommended that (1) the two-number system for medical records be totally eliminated and the medical records department assume responsibility for issuing all new identification numbers; (2) a medical record on each emergency room patient be established and the patient identification number be received from the medical records department, after a thorough patient screening process; (3) a method for screening all patients coming into the Bexar County Hospital District through the patient in-take areas of the Robert B. Green Memorial Hospital and the Bexar County Hospital be established.[8]

It was with these proposals in mind that the hospital district formulated a one-number patient identification system.[9] This present system will now be discussed and analyzed, with recommendations being made for improvements of any facets of the system.

Analysis of the Present System

One-number system

On April 6, 1970, the Bexar County Hospital District instituted a one-number patient identification numbering system. At this time, all medical records personnel were instructed that in any patient in-take area of either the Robert B. Green Memorial Hospital or the Bexar County Hospital, patients were to be screened through the medical records department of the Robert B. Green in order to receive a patient identification number. This number is composed of six digits and is referred to as the "G" number. The personnel in the emergency rooms of both hospitals were instructed to register all patients coming to the emergency rooms by means of a patient registration form as the first step in the new patient identification numbering system. (See Appendix E for a sample registration form.) Upon the completion of the registration form, each patient was screened to determine whether he already had a number or if he was a new patient and needed a number. With the issuance of the new number, a permanent record was initiated on the patient.[10] (For a sample clinic card, see Appendix F.)

A detailed procedure is followed in obtaining a patient identification number from the medical records department for the emergency room at either the Robert B. Green or Bexar County Hospitals. The registration personnel in the emergency rooms first determine if the patient seeking treatment has a clinic card with him. If the patient does not have a card, then upon completion of items one, two, and three of the registration form, the registration personnel will telephone medical records at the Robert B. Green and request that the patient's name be screened for

a unit number. While registration personnel are on a hold line, they continue completing the additional items on the front of the registration form. When the personnel at the medical records department at the Robert B. Green either confirm a unit number or issue a new number, the registration personnel will type the unit number on the registration form. When the registration personnel in the emergency rooms of the Robert B. Green or the Bexar County Hospitals initially request screening for a given patient, they utilize the telephone extension 310 for patients whose last names begin with the letters A through Mc, and telephone extension 311 for patients whose last names begin with the letters M through Z.[11]

In the preparation of a clinic card for a new patient, the following information is obtained and embossed on the clinic card: the unit number, last name, first name, and middle initial. A sample of the format on the card is as follows:

00 00 00
Doe, John D.

After completion of the clinic card, the registration clerk then attaches the card to the registration form. The patient is then taken to a treatment room. The responsibility of the registration clerk is ended, and the medical record screening process is completed.

If an emergency case is brought to either of the two hospitals and requires immediate laboratory or X-ray workup, the patient identification numbering system is modified. In such a situation, the emergency room gives the patient an emergency room number pending the unit number received from medical records. As soon as the unit number is available, it is typed or written on the patient's registration form, laboratory and X-ray request forms. In non-emergency cases, information from the

clinic card is stamped on all paperwork utilized in treatment of the patient.

The patient identification procedure also applies to the admitting office at either of the two hospitals. Medical records will screen the patient for a unit number, utilizing given name and date of birth. Then the medical records personnel will either confirm a unit number or issue a new number. If a new number is issued, then the process of preparing a clinic card is necessitated. The same patient identification process is also followed for patients who are seen at the outpatient clinics. The adoption of the clinic card by the Bexar County Hospital District has resulted in a greater degree of accuracy in patient identification. Previously, physicians were sometimes derelict in fully completing patient identification on various patient treatment forms. Furthermore, this handwritten patient identification was, at times, illegible, resulting in misfiling of records. The clinic card also reduces much of the confusion in patient identification where many patients served by the hospital district have the same given names and surnames.

Medical records department's responsibility

In utilizing the one-number system, the medical records department of the Robert B. Green Memorial Hospital is primarily concerned with screening all patients who appear at the patient in-take areas without a clinic card or number. Personnel screen calls only by using the master patient index card file. Calls requesting patient information other than screening information are transferred to the general medical records line.[12]

In screening medical record data from patient in-take areas, the

medical records personnel first record all identifying information on Bexar County Hospital District Form 335, which is the Medical Records Request Log. (See Appendix G for Form 335.) This information will include name, address, date of birth, nearest relative, name of caller, and extension. After the medical records personnel have completed this information on the Medical Records Request Log, they then screen the master patient index card file. After screening the patient index card file, two patient categories will result: (1) those patients with a previous record number; and (2) those patients with no previous record number. If a patient has a previous record number, it is then written on the Bexar County Hospital District Form 335 and given to the caller, who has been on the hold line. For those patients with no previous record number, all identifying data from Form 335 will be recorded in the general number ledger record. The new number is then given to the caller, who has been waiting on the hold line. The medical records personnel then type all of the information on a 5 x 8 patient index card, Bexar County Hospital District form 147. (Appendix H contains form 147.) The patient index card is then filed in the master patient index file. Before filing the patient index card, however, the personnel write this information in the general number ledger record with either red ink for the night shift (10:30 P.M. to 7:00 A.M.), blue ink for the day shift (7:00 A.M. to 5:00 P.M.), or green ink for the evening shift (2:00 P.M. to 11:00 P.M.). In addition, the personnel have to initial each new number given to a patient in-take area, thus helping to reduce any type of mistake or oversight on their part. Mistakes, and the source of these mistakes, are easier to detect by using different colors of ink. (See the flow chart in Appendix I

on patient identification number requests.)

Twenty-nine people work in the medical records department at the Robert B. Green. Ten are employed in the medical records department at Bexar County Hospital. Work load categories at the Robert B. Green Memorial Hospital and the Bexar County Hospital are described in Tables IV and V on the following pages.

Of the 29 personnel at the medical records department of the Robert B. Green, only ten come into direct contact with the patient identification numbering process. These personnel are placed on shifts which are shown in Table VI on page 32.

In order to effectively evaluate the shifts working in the medical records department of the Robert B. Green Memorial Hospital, a work sampling study was conducted in the following manner: (1) observations were made and recorded each day at various times; (2) the number of observations in each operation was totaled at the end of each day; (3) the percentage of daily occurrences in each category was computed; (4) a record of the total hours worked each day was maintained; and (5) a record of work units produced was maintained in order to determine unit time values.

This work sampling study was conducted in order to ascertain how the workers' time was spent in accomplishing the following job operations: (1) answering the telephone; (2) screening Cardex file for patient identification number; (3) giving number to caller over the telephone; (4) placing the new number on the General Number Ledger; (5) typing new information and number on 5 x 8 patient index card; (6) filing the patient index card in the master patient index file; (7) performing other operations,

TABLE IV

WORK LOAD AT THE ROBERT B. GREEN MEMORIAL HOSPITAL

Position	Number of People	Job Description
Clerk	2	These people supervise the medical records department.
Clerk	1	This person is in charge of coding and indexing.
Clerk	1	This person is responsible for the computation of vital statistics.
Clerk	2	These clerks handle correspondence.
Supervisor	1	The evening supervisor is responsible for four clerks who file laboratory and X-ray reports, pull records for physicians' referral (billing) at Bexar County Hospital, pull records for insurance (billing) at Bexar County Hospital, and pull records for patients admitted at night.
Supervisor	1	The night supervisor opens as many clinic records as possible, checks for clinic deficiencies and tries to correct these deficiencies. She supervises three clerks who not only file clinic records back on the storage shelf, but who file laboratory, X-ray and miscellaneous reports in medical records.
Clerk	3	These personnel, who work the morning shift, pull all records for the clinics to make sure that all records for clinic appointments have been pulled.
Clerk	1	Working on the morning shift, this person pulls records for late appointments and puts records returned from the clinics in terminal digit filing order. Actual filing is done by the night shift.
Clerk	2	These record control clerks on the morning shift are responsible for the incomplete record file. They pull records needed by doctors for completion or needed for patient return to either the clinic or the hospital. They refile records that are pulled and file loose reports, such as X-ray and laboratory, on incomplete records.

TABLE IV--Continued

Position	Number of People	Job Description
Clerk	1	The record analysis clerk checks the deficiencies in Robert B. Green records, assigns records to doctors for completion, fills in blanks on normal newborn records and normal delivery records, and types the remainder of the face sheet for the physician's signature.
Clerk	2	These admission and patient screening clerks are responsible for the patient index file. Patient index cards are 5 x 8 cards which are stamped with an addressograph stamp by the admitting office in each facility on patients admitted to the hospitals. All master patient index cards are sent to the Robert B. Green admitting clerks, since here is where the master patient index is maintained.
Clerk	1	The obstetrical records clerk is responsible for records of OB clinic patients and for pulling records for the labor room. She is also responsible for filing laboratory and X-ray reports on obstetrical records.
Clerk	2	The file room clerks file loose reports on records. Loose reports are lab reports, X-ray reports, and any other reports that belong in the medical record.
Clerk	1	The telephone clerk answers all calls from hospital sources. She maintains five "ledgers" which indicate the source of the request received. For each record requested, a requisition slip is made out which serves as an outguide for the file. The telephone clerk gives the request to the appropriate file clerk to find and send the record. The five ledgers maintained are as follows: admissions to Bexar County Hospital; emergency room at both hospitals; admissions to the Robert B. Green; miscellaneous, such as social service, physical therapy, and so forth; requests for "G" number, or hospital number.
Clerk	1	This person finds records of "walk-in" patients who are not on the clinic appointment list. Requests for such records are made via the telephone clerk.

TABLE V

WORK LOAD AT THE BEXAR COUNTY HOSPITAL

Position	Number of People	Job Description
Director	1	The Health Records Management director is responsible for the function of the medical records departments at both hospitals. She is responsible for coordinating the medical record work at both facilities.
Clerk	1	The statistics clerk handles the daily census, discharge analysis, and monthly report. She also prepares a monthly discharge service analysis for the medical staff departments.
Clerk	1	The vital statistics clerk handles the death certificates and keeps a ledger of deaths.
Clerk	1	The record analysis clerk assembles the records of patients discharged from Bexar County Hospital, checks for deficiencies in the records, and assigns the records to the doctors for completion.
Clerk	1	This person controls records coming and going from the medical records department. This includes receiving records from the Robert B. Green Memorial Hospital for patients admitted and for any other sources requesting records from the Robert B. Green. She accounts for the records that come in and the records that are sent back to the Robert B. Green.
Clerk	1	This clerk obtains records for the insurance office, for billing purposes, and for the physician's referral office, for billing purposes. Since members of the medical staff see private patients at Bexar County Hospital, the records of these private patients are kept in the Bexar County Hospital medical records department. This employee handles these records. She is also responsible for incident reports.

TABLE V--Continued

Position	Number of People	Job Description
Clerk	1	A correspondence clerk maintains health records on all of the employees in the Bexar County Hospital medical records department. She also handles part of the correspondence load, such as requests from insurance companies, lawyers, other hospitals, doctors, and so forth. This correspondence is on patients currently in the Bexar County Hospital and on patients who have been discharged from the Bexar County Hospital. In order to answer requests for information, she must request the record from the Robert B. Green. She completes the correspondence when the record is received and returns the record to the Robert B. Green Memorial Hospital.
Supervisor	1	This person handles all incoming telephone calls, answers inquiries, keeps the time sheets on the employees, and serves as the general supervisor of the medical records department.
Clerk	2	These personnel are part-time workers. One worker is the secretary to the Director, Health Record Management. She is in charge of reports needing doctors' signatures. The other worker helps assemble records.

such as in-service training, delays and rest periods, and so forth.

TABLE VI

WORK SHIFTS OF MEDICAL RECORDS DEPARTMENT
ROBERT B. GREEN MEMORIAL HOSPITAL

Shifts	Time	Number of People
Monday-Friday	7:30 A.M.-4:30 P.M.	1
	8:00 A.M.-5:00 P.M.	1
	4:30 P.M.-11:00 P.M.	1
	11:00 P.M.-7:30 A.M.	1
Saturday	7:30 A.M.-4:30 P.M.	1
	4:30 P.M.-11:00 P.M.	1
	11:00 P.M.-7:30 A.M.	1
Sunday	7:30 A.M.-4:30 P.M.	1
	4:30 P.M.-11:00 P.M.	1
	11:00 P.M.-7:30 A.M.	1
		10

This work sampling survey, which was conducted at random times each day, covered a period of fifteen work days. Ten employees were each observed five times a day. Since an observation of each individual was considered a separate observation, fifty observations would normally be accumulated each day (10 employees x 5 observations). At the end of three weeks, the study produced 730 observations out of the possible 750 (50 x 15 days), since employees were not always performing a job task at every observation. The results of the study showing the various categories of job tasks performed in screening patient identification numbers are shown in Table VII on the following page.

Column A represents the seven operations sampled in the work survey. Column B shows how the total 730 observations were distributed into each operation. Column C reflects the percentage of occurrences of each operation and is determined by dividing 730 into each figure in

Column B. Column D shows man-time worked by the medical records personnel and is based on a 40-hour work week with each of the ten employees working 120 hours during the three-week period, less any leave of absence. In the study, the employees are shown to have worked 1168 hours out of a potential 1200 hours. Thus by multiplying 1168 hours by the occurrence percentage in Column C, the estimated number of man-hours spent on each operation during the study period can be calculated. If work units produced (step 4), such as the number of patient numbers, were recorded during the study, that number could be divided into the man-time of screening to give the average time spent screening each patient number. Column E is the precision factor of the study for each operation studied and was obtained from the following formula which is based on the computation of two standard deviations of the normal curve:

$$2\ S.D. = 2\sqrt{\frac{P(I-P)}{N}}$$

Where: the P value is the average percent of occurrence of the operation and the N value is the total number of observations in the sample[13]

TABLE VII

WORK SAMPLING STUDY OF MEDICAL RECORDS EMPLOYEES FOR SCREENING OF PATIENT IDENTIFICATION NUMBERS

A Operation	B Number of Observations	C Percentage of Occurrence	D Man-Time (Column C x 1168)	E Precision (Plus or Minus)
1	89	12%	140	2%
2	103	14%	163	2½%
3	153	21%	245	3%
4	103	14%	164	2½%
5	146	20%	234	3%
6	53	7%	82	1%
7	83	12%	140	2%
	730	100%	1168	NA

Both the Director of Health Records Management and the Medical Records Librarian at the Robert B. Green Memorial Hospital feel there is a need for additional medical records personnel to perform the various job tasks, especially filing. Due to budgetary cutbacks, however, no new personnel are envisioned.[14]

Possible Improvements of the Present System

One-number system

In using a one-number system for patient identification purposes, it would be feasible to thoroughly utilize a screening process whereby all patients, regardless if they have clinic cards or not, would be screened by medical records for possible mistakes, such as incorrect spelling of last name, incorrect date of birth, incorrect address, and so forth. Such a procedure by the medical records department could work by adequately screening all patients who enter the Bexar County Hospital District without proper clinic cards. All patients being screened would be checked by the medical records department at the Robert B. Green Memorial Hospital. The procedure would be initiated by having two individuals, who operate the Cardex file system, screen cards from the patient in-take areas and record appropriate patient data on the Bexar County Hospital District Form 335. This information would include patient name, address, date of birth, nearest relative, and name of caller and extension.

After thorough screening by the medical records personnel through the master patient index file, two patient identification categories would result: (1) those patients with previous identification numbers; and (2) those patients with no previous identification numbers. The procedure for those patients with previous identification numbers would

be to: (1) write the number on the Bexar County Hospital District Form 335; (2) give the number to the caller; and (3) ask the caller to repeat the number. The procedure for those patients with no previous identification number would be to: (1) have either of the two medical records personnel give out numbers at the Robert B. Green medical records department, and only then to the six patient in-take areas so designated; (2) record on the general number ledger record all identifying data from Bexar County Hospital District Form 335, such as patient identification number, patient name, address, date of birth, next of kin, source of call, and patient index card (yes); (3) have medical records personnel supply the new patient identification number to the caller and ask the caller to repeat the number and tell the caller that this is a new patient identification number; (4) have medical records personnel type all appropriate information on a 3 x 5 patient index card for all new patient identification numbers that are given out. (See Appendix J.) Information would include number, name, address, date of birth, next of kin, and source of call. The patient index card would then be filed in the master patient index file.

Social security numbering system and color coding

In recent years, there has been a growing trend to the use of numbers in place of names as a means of identification, the one-unit patient identification number being part of this trend. One of the earliest precursors of this trend was the social security number. Since 1936, more than 170 million people have been assigned social security numbers. This type of numbering system, on a permanent basis, can provide one billion such numbers without the hazard of any number being

duplicated.[15] Throughout the United States, the use of social security numbers for patient identification and numbering medical records has been increasing.

In implementing the use of social security numbers in the Bexar County Hospital District, in-take area personnel could begin screening all patients for a social security number and preparing a new clinic card with the social security number transcribed on it. In turn, personnel responsible for the master card file can be given the new number so that corrections can be made on the patient's master card. Any individual treated in the hospital who does not have a number, or who does not know his number, can be given either a number from a separate numbering system or a pseudo social security number. Such a pseudo number could be constructed by a three-series dash, two-series dash, four-series of numbers. The initial pseudo social security number selected can vary as long as the pseudo numbers assigned are in chronological order.[16]

In utilizing the social security number, the last two digits in the number serve as primary digits with respect to filing. For example, social security number 458-64-3728 would be indicated as 45864 37 28. Twenty-eight would be the primary digits. An integral part of using social security numbers as the primary basis for patient identification numbering is the assignment of one number to a family. Medical records of all members of the family are filed according to the social security number belonging to the head of the household. In addition to the family having a primary number, each family member can be assigned an additional two-digit prefix according to his status in the family. Such an additional

number helps to distinguish the individual family members. A proposed prefix numbering system is as follows: 01--father; 02--mother; 03--first child; 04--second child; 05--third child; 06--fourth child, and so forth. For those persons residing in the household who may or may not be dependent on the head of the household, such as in-laws, sisters, brothers, aunts, uncles, cousins, and unrelated persons, the number 50 and upward can be reserved for adequate numbering identification of these individuals.[17] With this type of numbering system, the only time a patient's identification number changes is in the event the marital status is altered.[18]

In regard to the correct notation on the master card file, the appropriate information would be transcribed to agree with the changes in status of any members in a given household. This information would include any marital changes and/or death of family members.

Of prime importance to the medical records department in utilizing such a system would be the advantages realized in filing and locating patient cards. Keeping the medical records of a family together provides a faster filing and retrieval system in a situation where the records of the entire family are needed for prompt treatment in emergency admissions. One major problem area eliminated would be the difficulty encountered when many patients have the same last name and when patients frequently change their last name to avoid payment of hospital bills. Another problem which could be eliminated is that of improper patient identification as a result of combining emergency room, inpatient, and prior admission charts. Also, by fully utilizing the social security number, a sequence of numbers would not "run out", and renumbering would not have

to be begun again. It is also feasible that the question which is asked numerous times by admission personnel--"What is the patient's number?"--would be eliminated. For newborns or pediatric patients who would possibly be re-admitted at a later date after they had acquired a number, their previous record could easily be corrected from the pseudo number to the actual number of the parents, if the latter had one.[19]

The last two digits of the social security number serve as primary digits with respect, not only to filing, but to color coding as well. The color coding system calls for ten basic colors, with each color assigned to the primary group of digits in the social security number. The primary group of digits would be colored as follows:[20]

Primary Groups	Color of Folder
00-09	Orange
10-19	Light Green
20-29	Yellow
30-39	Gray
40-49	Tan
50-59	Light Blue
60-69	White
70-79	Brown
80-89	Pink
90-99	Red

Color coding can also be applied to retirement of records. By using different colored tapes attached to the upper right hand corner of the folder, a retirement schedule can be implemented. A color sequence could be established in the following manner:

Year for Records to be Retired	Color
1969	Dark Blue
1970	Dark Green
1971	Yellow
1972	Silver
1973	Black
1974	Red

If a record is retired but later returned to the active files, a different piece of tape can be attached to the right hand corner of the medical record folder and placed over the previous tape.[21]

Use of the terminal digit system and color coding offers several advantages. Retrieval is fast. Misfiling is largely eliminated, since all folders of a given color are filed together. Misfiled records are easily discernible since they would be placed with records of a different color. The undue time spent in trying to locate a misfiled record often causes delays in patient care. In some instances, such delay results in needless repetition of diagnostic tests and examinations, contributing therefore to increased costs of patient care. One study estimates that the cost of finding a misfiled record ranges from $2.75 to $63 per misfile.[22] After adopting the terminal digit system, one hospital realized the following advantages: (1) time required for handling patient charts was cut in half; (2) time for filing was reduced by at least 25 per cent; and (3) record room personnel were released for important associated duties.[23]

If the Bexar County Hospital District found it economically unfeasible to adopt social security numbering as a means of patient identification after recently adopting the six-digit one number system, the latter could be adapted to color coding and the principles of social security numbering. Color sequences can be based on primary digits, namely the last two digits in the six-digit number. In order to file the medical records of a family together, the six-digit "G" number can be assigned to the head of the household, as well as to each member thereof. A two-digit prefix can be assigned to each family member to distinguish

his status in the family.

The experience of the Bernalillo County Medical Center in Albuquerque, New Mexico, in adopting color coding can perhaps serve as a guide to the cost of implementing such a system. Bernalillo Center serves much the same kind of patient population as does the Bexar County Hospital District, namely the indigent sick and a large Mexican-American population. Its files contain approximately 180,000 medical records. In January 1970, the Bernalillo Center initiated color coding at an initial cost of $12,000 for 40,000 colored folders. At the present time, the center is still converting to color coding.[24]

Patient screening

Adequate procedures for the screening by all patient in-take areas at the Robert B. Green and Bexar County Hospitals could work by having patient in-take areas call directly to the medical records department of the Robert B. Green Hospital on two lines, with the alphabet split between the two numbers. Registration personnel in these patient in-take areas would be responsible for interviewing the patients as well as securing the information to be given to the medical records personnel during the actual screening process. The registration personnel would then wait until the screening personnel either confirmed previous admission with a patient identification number or gave a new patient identification number to the patient. At this time, it would be the responsibility of the registration personnel in the in-take areas to type the patient identification number on the registration form. For all new numbers, the letter "N" would be typed on the outside margin of the registration form preceding the New Patient Identification Number. (See Appendix E

for sample form utilized in one patient in-take area, the emergency room.)

Corrections

Regardless of the amount of time spent on screening patients by name and closely checking patient identification numbers, mistakes will always be made in these two areas. In transmitting new patient identification numbers to in-take area personnel, medical records clerks may give erroneous digit(s). Registration personnel in the in-take areas can inadvertently transcribe digit(s) incorrectly. In addition, the same new number can be given twice when medical records personnel fail to fill out the Medical Records Request Log. It would, therefore, behoove the medical records department and the personnel directly concerned with these two areas to have a procedure whereby those mistakes can be quickly corrected. The procedure for name correction by the medical records personnel could work in the following manner: (1) verify patient name correction; (2) type a 3 x 5 Master Patient Index Card with original name and corrected name to be filed under the original name of the patient; (3) type a 3 x 5 Master Patient Index Card with corrected name and necessary information to be filed under the corrected name of the patient; and (4) type a notification form. Below is a sample format:

Notification of Correction

Original Information
Name_____
Number_____

Corrected Information
Name_____
Number_____

(5) Send the notification form to the respective patient in-take area

at either the Robert B. Green Memorial Hospital or the Bexar County Hospital, to the accounts receivable control department, Bexar County Hospital District, and to the admitting department, Bexar County Hospital District.

Maintenance of two master patient index cards results in a cross index file whereby cards with incorrect information refer screening personnel to the corrected card. The corrected card would also refer personnel to the card with incorrect information.

The procedure for number correction by the medical records personnel could work in the following manner: (1) verify patient number correction; (2) pull original 3 x 5 Master Patient Index Card from the master patient index file; (3) cancel the original number by typing all identifying information on the corrected card. Then file the corrected card; (4) place a tracer card in the master patient index file under the original number stating that the files have been transferred to a correct number (see Appendix K); (5) type a notification form; and (6) send a notification form to the respective patient in-take area at either the Robert B. Green Memorial Hospital or the Bexar County Hospital, the accounts receivable control department, Bexar County Hospital District, and to the admitting department, Bexar County Hospital District.

Summary

A study of any patient identification numbering system should begin with an understanding of the historical evolution of the numbering system utilized by the hospital or hospitals concerned. In this study, the two hospitals which comprise the Bexar County Hospital District were using a patient numbering system in which blocks of numbers were given

to the patient in-take areas. As a result, there were no actual controls over the individual issuance of those numbers by the medical records department. In addition, the emergency room had its own numbering system, meaning that a patient's records were never combined if he was seen in the emergency room and later admitted to the hospital as an inpatient. However, the hospital administration was aware of the problems being faced by the medical records department with respect to patient identification numbering. As a result, proposals were made in an attempt to alleviate the situation. The proposals were basically geared to a formulation of a one-number patient identification numbering system. A reorientation of all medical records personnel was undertaken to instruct them in their areas of responsibility concerning the proposed plan. Another factor in this proposed plan was the realization that all departments in the hospital responsible for patient in-take would have to work closely together if the proposed plan was going to be judged fairly on its merits.

Close analysis of the operations of the medical records department and its personnel was made in order to ascertain work time spent in the area of prime importance with respect to the screening process of the patient identification numbering system. This study involved seven major operations and the amount of time spent in performing each of the seven operations. Since there is a lack of back-up data, additional work sampling studies would be necessary to determine if the percentages have changed. Changes would indicate how well medical records personnel are performing their job tasks under the new numbering system.

One element of the system which continues to hinder the effectiveness

of the overall plan is the fact that an adequate filing method is lacking. Such a shortcoming presents problems for filing patient records, even with the use of a one-number system.

The problems encountered in the implementation of a one-number system were the adequate screening of patients and the acquisition of relevant information to relay to the medical records department in order to allow it to respond in the manner previously outlined. This system has merits, provided that the callers from the in-take areas obtain relevant information from the patients, and the information transmitted to the medical records personnel is correct. The primary merit of this system is that it allows for certainty of patient identification by utilizing a single number, issued and controlled by one department, thereby enabling effective patient number screening and eliminating duplication of effort as far as erroneous patient numbers and master patient index cards are concerned.

Despite advantages of the new patient identification numbering system, errors will be made by both medical records personnel and patient in-take area personnel. When errors are made, they should be brought to the attention of those responsible so that corrections can be made before complications can arise in any phase of the patient identification numbering system.

Footnotes

[1]"Census Report" (unpublished bulletin, Social Security District Office, San Antonio, Texas, July 1969), p. 1.

[2]"Hospital Statistical Reports" (unpublished bulletin, Bexar County Hospital District, n. d.).

[3]Interview with A. Mitchell Belchic, Assistant Administrator, Bexar County Hospital District, San Antonio, Texas, February 19, 1970.

[4]Ibid.

[5]Interview with Marjorie Weston, RRL, Director, Health Records Management, Bexar County Hospital District, San Antonio, Texas, February 16, 1970.

[6]Ibid.

[7]Interview with Charles L. Hill, Director of Admissions, Bexar County Hospital District, San Antonio, Texas, April 16, 1970.

[8]Interview with A. Mitchell Belchic, April 16, 1970.

[9]In its evaluation of the medical records department on February 24, 1970, the Joint Commission on the Accreditation of Hospitals, headed by Dr. Henry K. Speed, recommended a one-unit numbering system for the Bexar County Hospital District.

[10]"Issuing New Unit Numbers" (unpublished memorandum, Bexar County Hospital District, April 6, 1970).

[11]Interview with Mary Jo Quinn, RRL, Medical Records Librarian, Robert B. Green Memorial Hospital, Bexar County Hospital District, San Antonio, Texas, February 19, 1970.

[12]Ibid.

[13]John Gaut, "Work Sampling," Medical Record News, XXXV (April 1964), 51.

[14]The Bexar County Commissioners Court reduced the ad valorem property tax for the Bexar County Hospital District from 72 cents to 69 cents per $100 valuation.

[15]Roy L. Swift, "The Social Security Number As An All-Purpose Identification," Hospitals, Journal of the American Hospital Association, XLI (November 16, 1967), 62.

[16]Mary E. Converse, "Numbering Medical Records," Hospitals, Journal of the American Hospital Association, XLII (March 1, 1968), 24.

[17]Sheila Quinlan and Marie Baum, "A Number for Everyone Means Better Care for the County," Medical Record News, XXXIX (February 1968), 59.

[18]In the event of divorce, the father retains his number. Any children staying with the father retain their number but are assigned new prefixes. The mother is assigned a new number, as are any children who remain with their mother. These children are assigned new prefixes.

[19]Max L. Brabson, "Social Security Numbers Identify Patients," Southern Hospitals, XXXVI (December 1968), 14.

[20]Army Regulation, C6, 40-2, December 30, 1968, p. 78.3.

[21]"Terminal Digit Filing of Clinical Records, Outpatient Medical Records, and X-Ray Film Files," Unnumbered Army Regulation 40-xxx, n. d.

[22]See Stephen S. Henkin, "An Evaluation of Color Coding As a Solution for Misfiled Records," Hospital Management, XCVIII (August 1964), 22.

[23]Remington Rand Office Systems, Hospital Medical Records Filing and Retrieval (Boston: Remington Rand Office Systems, 1967), n. p.

[24]Telephone interview with Robert L. LaChance, Medical Records Director, Bernalillo County Medical Center, Albuquerque, New Mexico, September 4, 1970.

The Bernalillo County Medical Center uses a six-digit patient identification number but is presently conducting a study to determine the feasibility of using social security numbering.

CHAPTER III

CONCLUSION

Conclusions

Based on an analysis of the patient identification numbering system at the Bexar County Hospital District, San Antonio, Texas, it is concluded that methods for improving the current system will:

1. Enhance the patient screening process and enable effective identification of patient records.

2. Enable prompt utilization of medical record data by insuring a fast retrieval system through the use of the screening process.

3. Allow for coordination of patient admission information between patient in-take areas and medical records personnel for filling in master patient index card file.

4. Allow for more efficacious issuance and control over patient identification numbers to patient in-take areas by the medical records department.

5. Eliminate confusion over patient identification numbers due to emergency room admissions and routine patient admissions.

6. Reduce duplication of effort by personnel of the two medical records departments in trying to update patient identification numbers.

7. Provide for the establishment of clearly defined lines of authority and responsibility within the medical records department so that its functions assist in the overall patient screening process.

Recommendations

In consideration of the limitations imposed on this study and based on the foregoing discussion and conclusions, the following recommendations are made:

1. A study should be undertaken to determine if social security numbers could be utilized as patient identification numbers and replace current "G" number.

2. A study should be conducted to determine if the use of an additional prefix on the patient identification number would enable all of the patient index cards on one family to be filed together, thereby preventing personnel from spending unnecessary time searching for index cards. Use color coding on patient index cards to insure proper filing of records as well as to assist in prompt retrieval when required.

3. Simplification studies should be devoted to the major functions of the medical record department and the patient in-take areas, thereby producing a more efficient overall organization. Develop a notification form to correct erroneous information transcribed by medical records personnel from patient in-take areas.

4. Consideration should be given to include specific authority concerning the issuance and control of patient identification numbers by the medical records department in the by-laws, rules, and regulations of the hospital district.

5. Further study on patient identification number coding based on geographical distribution of population within the county should be conducted.

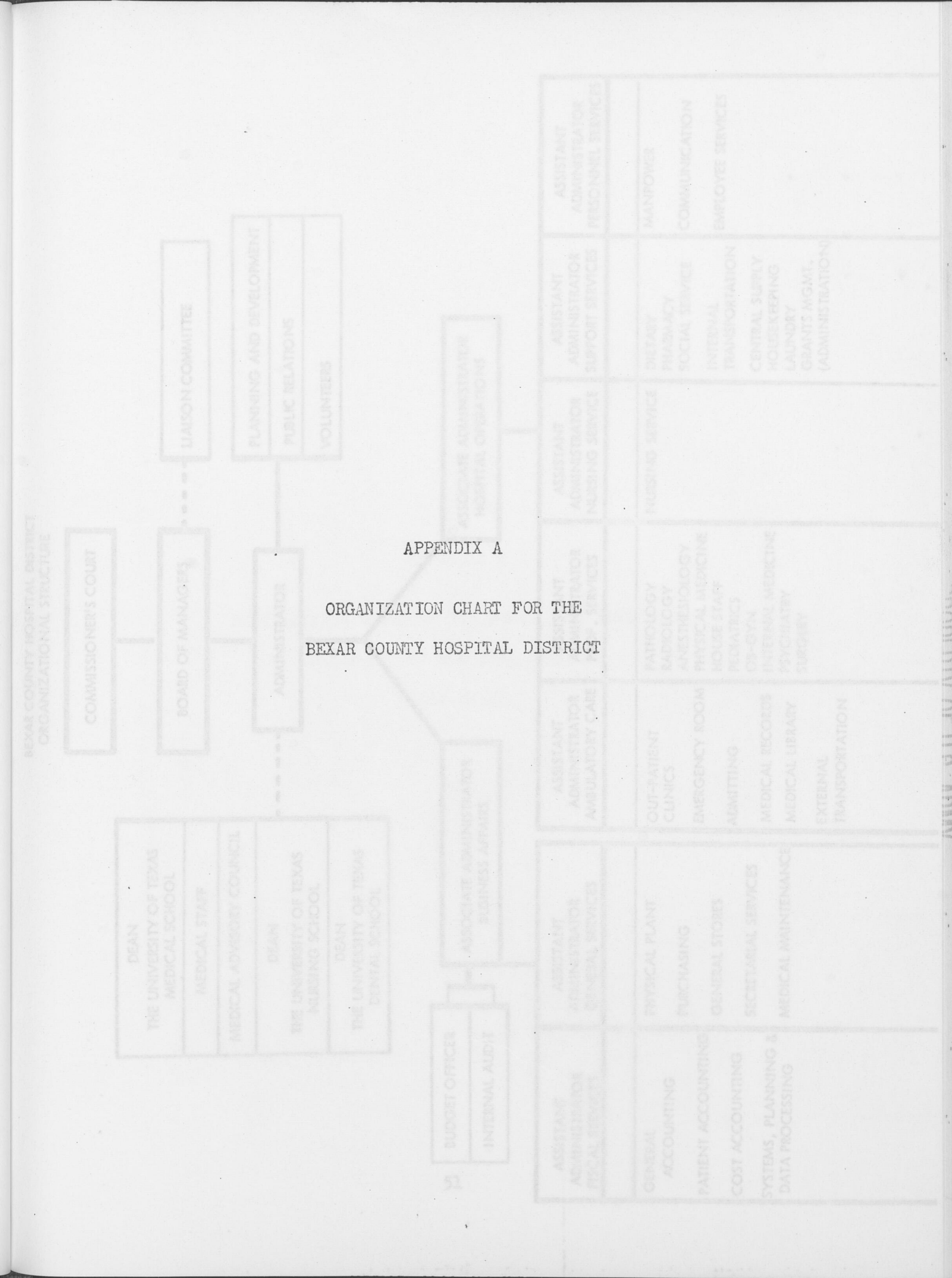
6. A work flow study should be undertaken to develop adequate

job analysis of each position. Job policies should be written to insure personnel compliance with job task descriptions.

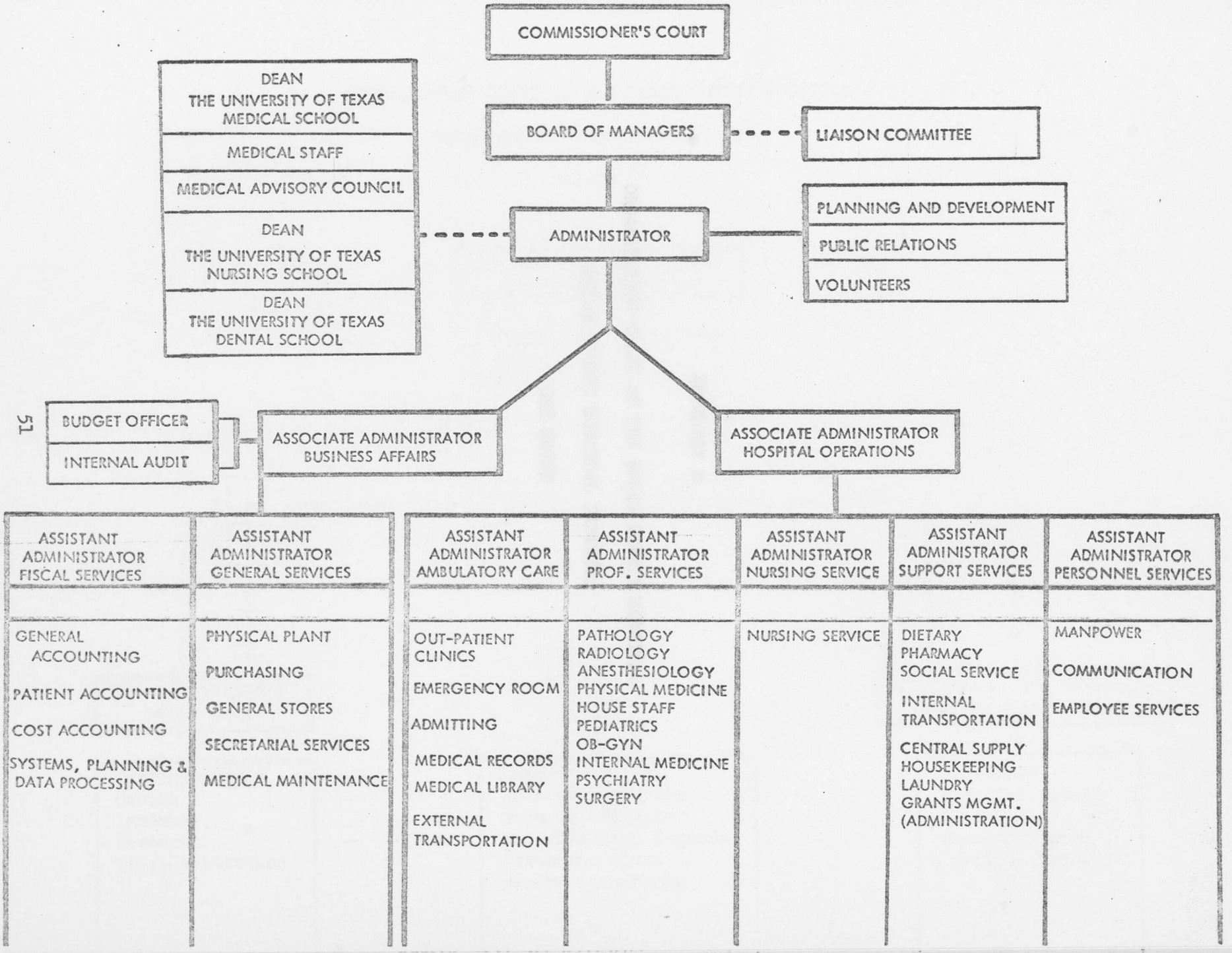
7. In order to insure that the system continues to operate effectively, it would be advisable for the hospital district to appoint a liaison advisory committee on patient identification. This committee would be responsible for determining problem areas within the system, discussing problem areas with appropriate personnel, and recommending alternatives or solutions to these problems through administrative channels.

APPENDIX A

ORGANIZATION CHART FOR THE BEXAR COUNTY HOSPITAL DISTRICT



BEXAR COUNTY HOSPITAL DISTRICT
ORGANIZATIONAL STRUCTURE



APPENDIX B

ORGANIZATION CHART OF THE BEXAR COUNTY HOSPITAL

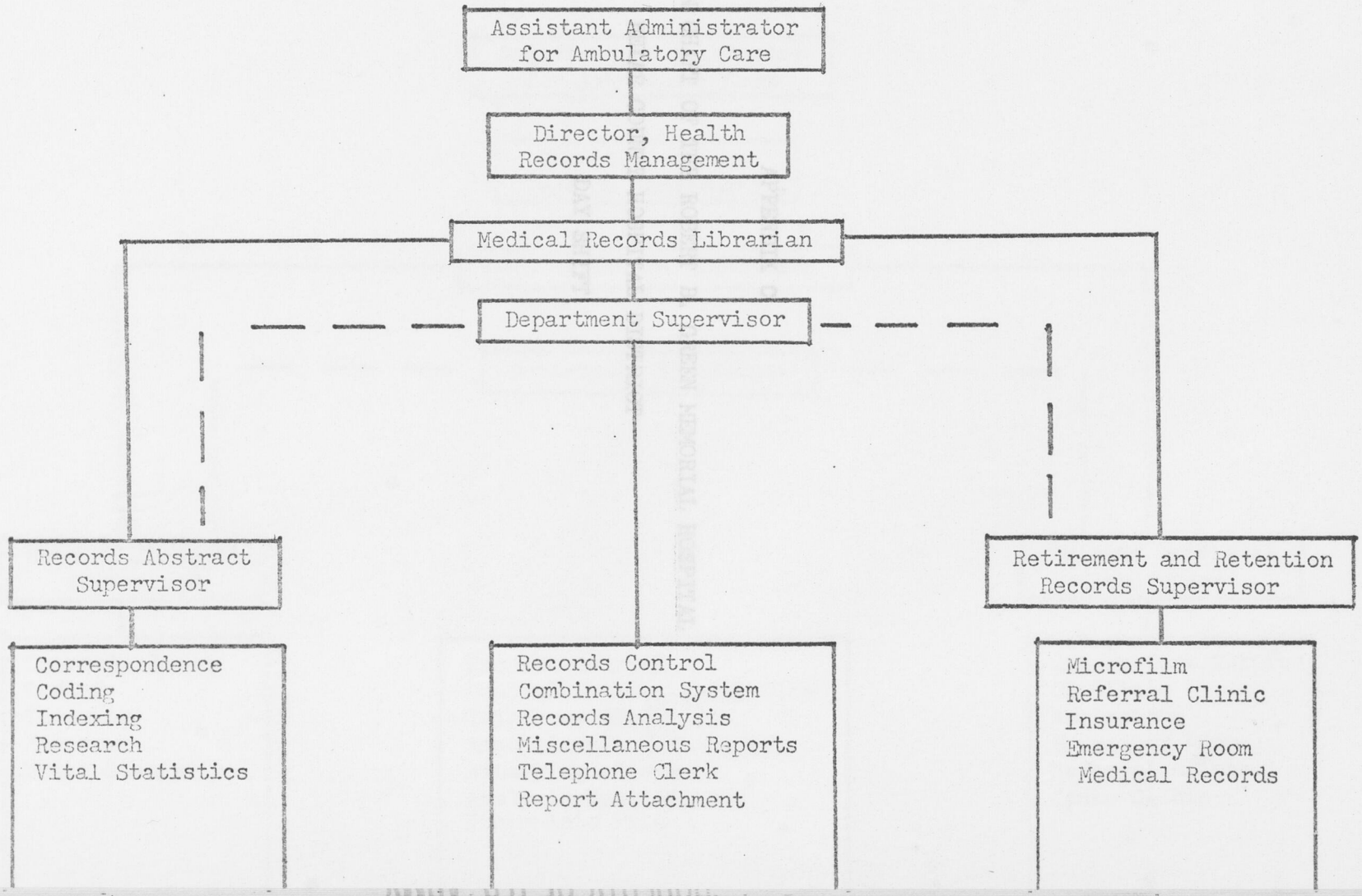
BEXAR COUNTY HOSPITAL DISTRICT

DAY SHIFT

ORGANIZATION CHART OF THE BEXAR COUNTY HOSPITAL

BEXAR COUNTY HOSPITAL DISTRICT

DAY SHIFT



APPENDIX C

ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL

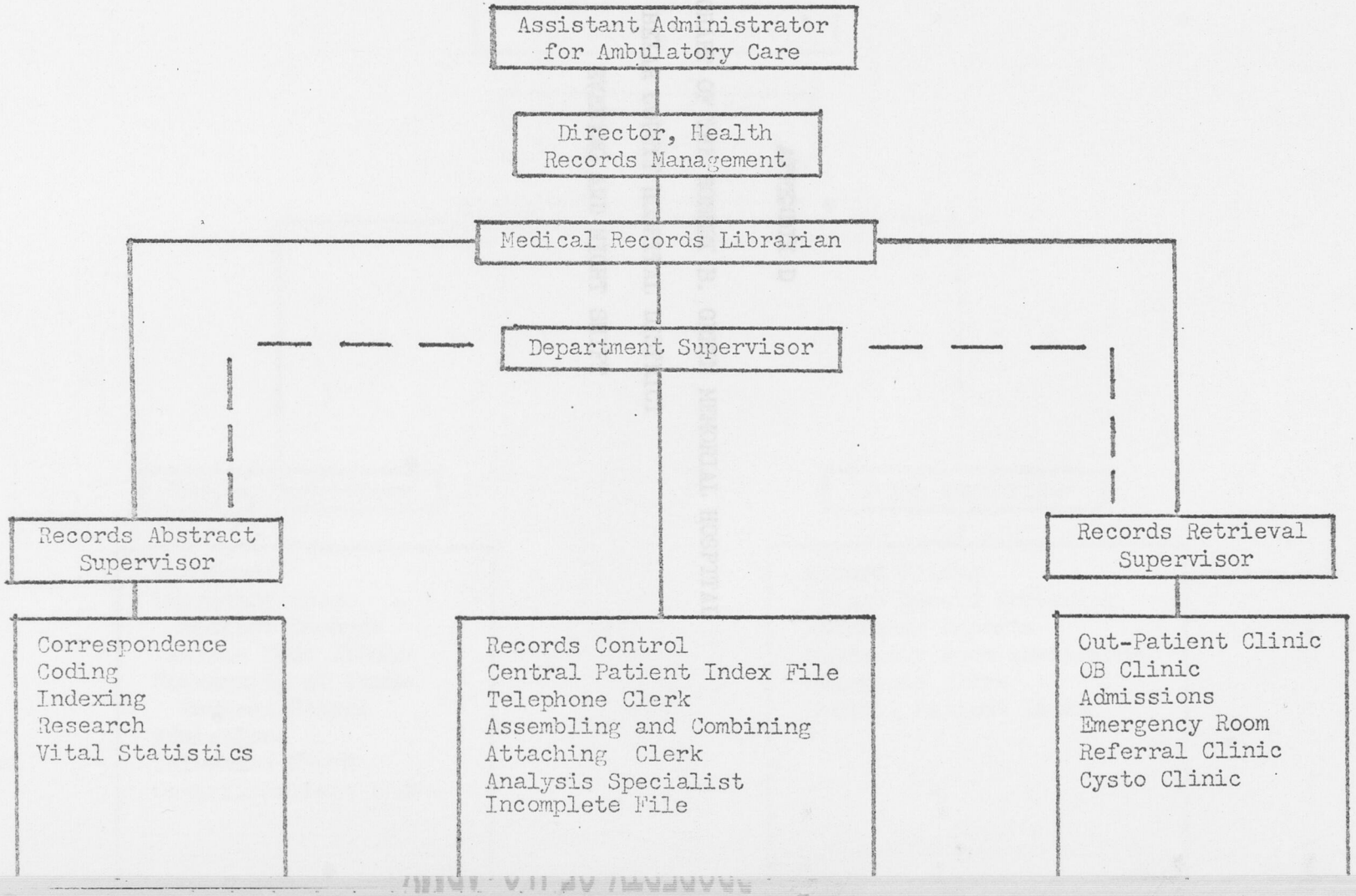
BEXAR COUNTY HOSPITAL DISTRICT

DAY SHIFT

ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL

BEXAR COUNTY HOSPITAL DISTRICT

DAY SHIFT



APPENDIX D

ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL

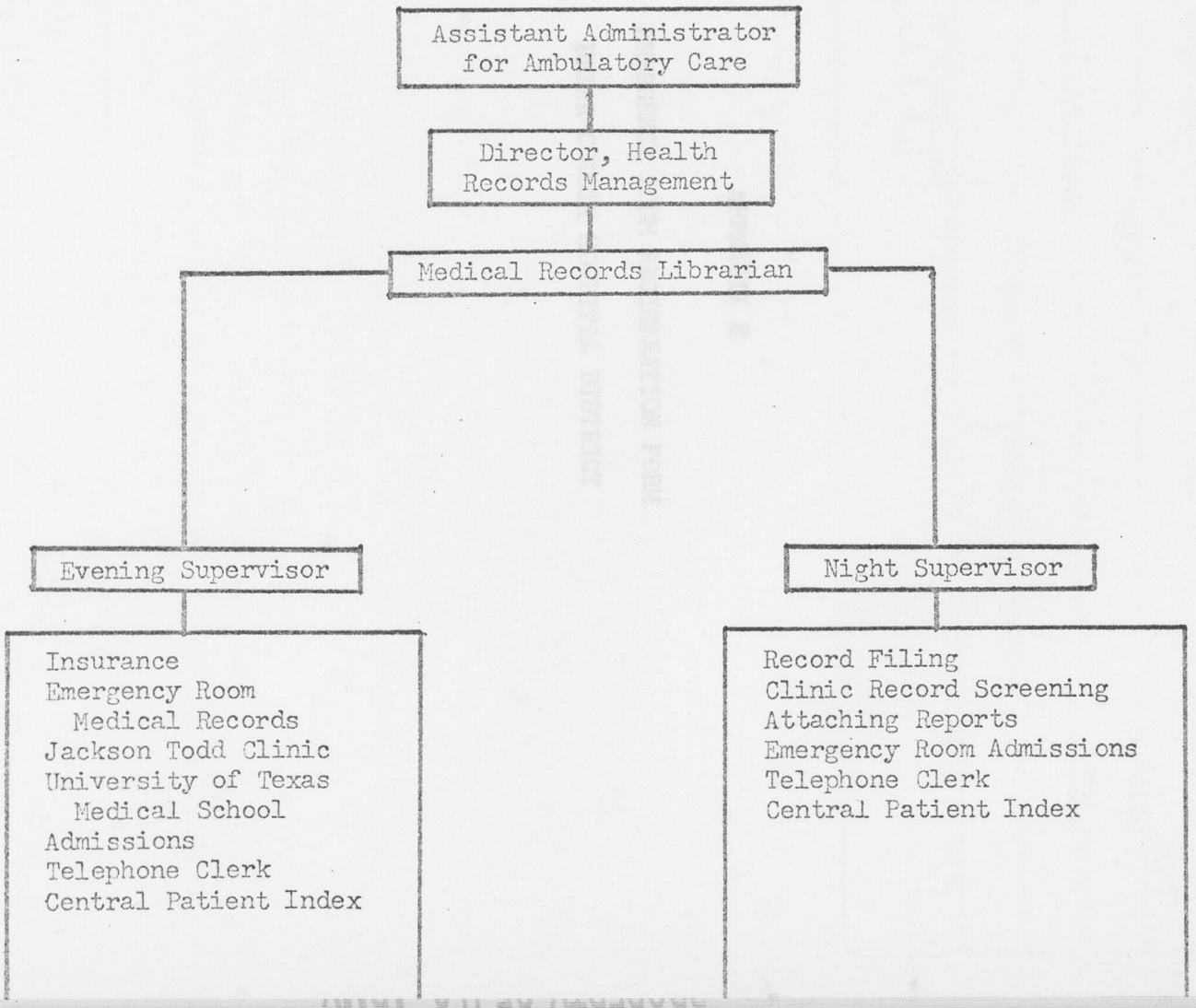
BEXAR COUNTY HOSPITAL DISTRICT

EVENING AND NIGHT SHIFT

ORGANIZATION CHART OF THE ROBERT B. GREEN MEMORIAL HOSPITAL

BEXAR COUNTY HOSPITAL DISTRICT

EVENING AND NIGHT SHIFT



APPENDIX E

EMERGENCY ROOM REGISTRATION FORM

BEXAR COUNTY HOSPITAL DISTRICT

NO.

BEXAR COUNTY HOSPITAL DISTRICT

REGISTRATION FORM

FACILITY	TYPE	REGISTRATION DATE	DATE ADMITTED	HOUR	CLERK ER HOSP.	DATE RELEASED FR ER	HOUR	DP IP CL MH PRIOR ADM. DATE
1								

HOSP. NO.	PATIENT NAME LAST	FIRST	MIDDLE/MAIDEN	SOCIAL SECURITY NUMBER	RACE	DATE OF BIRTH MO. DAY YR.	AGE
2							

PATIENT ADDRESS STREET	CITY	COUNTY	STATE	ZIP	SEX	MARITAL STATUS M S D W SEP

PERSON ADMISSION NAME - IF DIFFERENT FROM ABOVE	BIRTHPLACE	CITIZEN YES NO	TELEPHONE NO.

FORMER ADDRESS OF PATIENT NUMBER STREET	CITY	STATE	RELIGION	BAPTIZED YES NO

CENSUS TRACT SERVICE AREA	EMPLOYER	EMPLOYER'S ADDRESS	OCCUPATION	BUSINESS TELEPHONE NO.	EXT.
6					

SPOUSE OR NEXT OF KIN IF UNMARRIED	ADDRESS	TELEPHONE NO.
7		

PERSON TO NOTIFY IN CASE OF EMERGENCY (IF OTHER THAN SPOUSE OR NEXT OF KIN) ADDRESS	TELEPHONE NO.
8	

REFERRED BY	ADDRESS	TELEPHONE NO.	COMPLAINT: IF INJURY, INDICATE DATE
9			

ADMITTING PHYSICIAN OR RESIDENT	CLASSIFICATION MED SUR OR GYN PSYCH PED	ADMITTING DIAGNOSIS	ROOM NO.	BED NO.
10				

EXAMINATION AND CONDITION

29 TEMP. PULSE RESP. B.P.

30

DIAGNOSIS

31

TREATMENT

32

CHARGES

33

59

PATIENT SEEN BY	NURSE'S SIGNATURE
34 M.D. AT AM PM EXAMINATION COMPLETED AT AM PM	R.N.

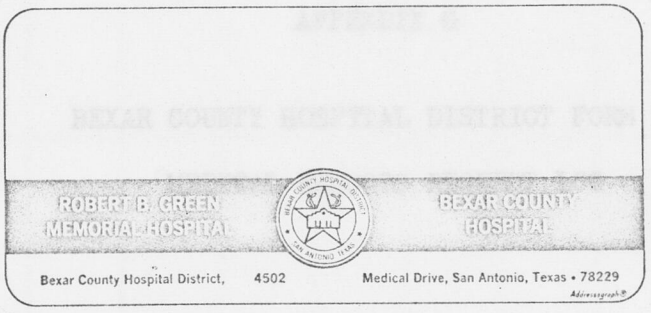
DISPOSITION OF PATIENT	DISPOSITION OF VALUABLES	POLICE NOTIFIED
35		

MEDICAL RECORDS

APPENDIX F

PATIENT IDENTIFICATION CLINIC CARD

PATIENT IDENTIFICATION CLINIC CARD



Sample format: 00 00 00
Doe, John D.

APPENDIX G

BEXAR COUNTY HOSPITAL DISTRICT FORM 335

MEDICAL RECORDS REQUEST LOG

THE UNIVERSITY OF TEXAS MEDICAL SCHOOL A AN ANTONIO

A - Misc. Calls _____
B - Requests for G-Numbers _____
C - Admiss. to _____ Emer. Requests _____

MEDICAL RECORDS REQUEST LOG

	A, B, C		A	A, B	B, C		C			A, B, C	
E/R or G Number	Name	Birth Date	Date of Confinement	Address	Nearest Relative	Floor	Date for Admission	Adm	ER	Requesting Party (Name, Fac., Ext.)	Returned Call: Located / Not Loc
	63										

APPENDIX H

BEXAR COUNTY HOSPITAL DISTRICT FORM 147

PATIENT INDEX CARD

BEXAR COUNTY HOSPITAL DISTRICT FORM 147

PATIENT INDEX CARD

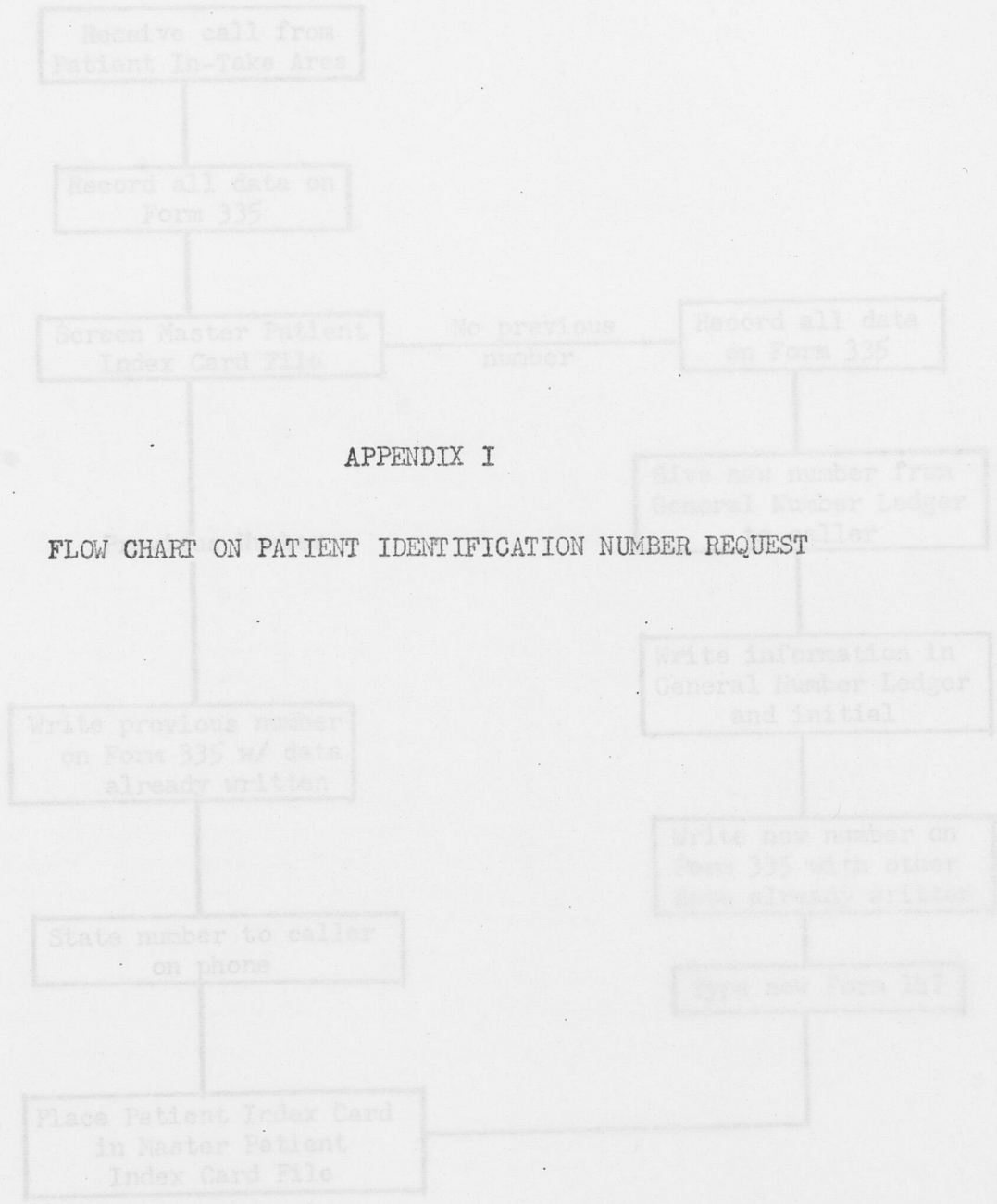
Doe, John D.
100 Blank Street
January 1, 1930 (date of birth)
Doe, Jane (wife)

00 00 00

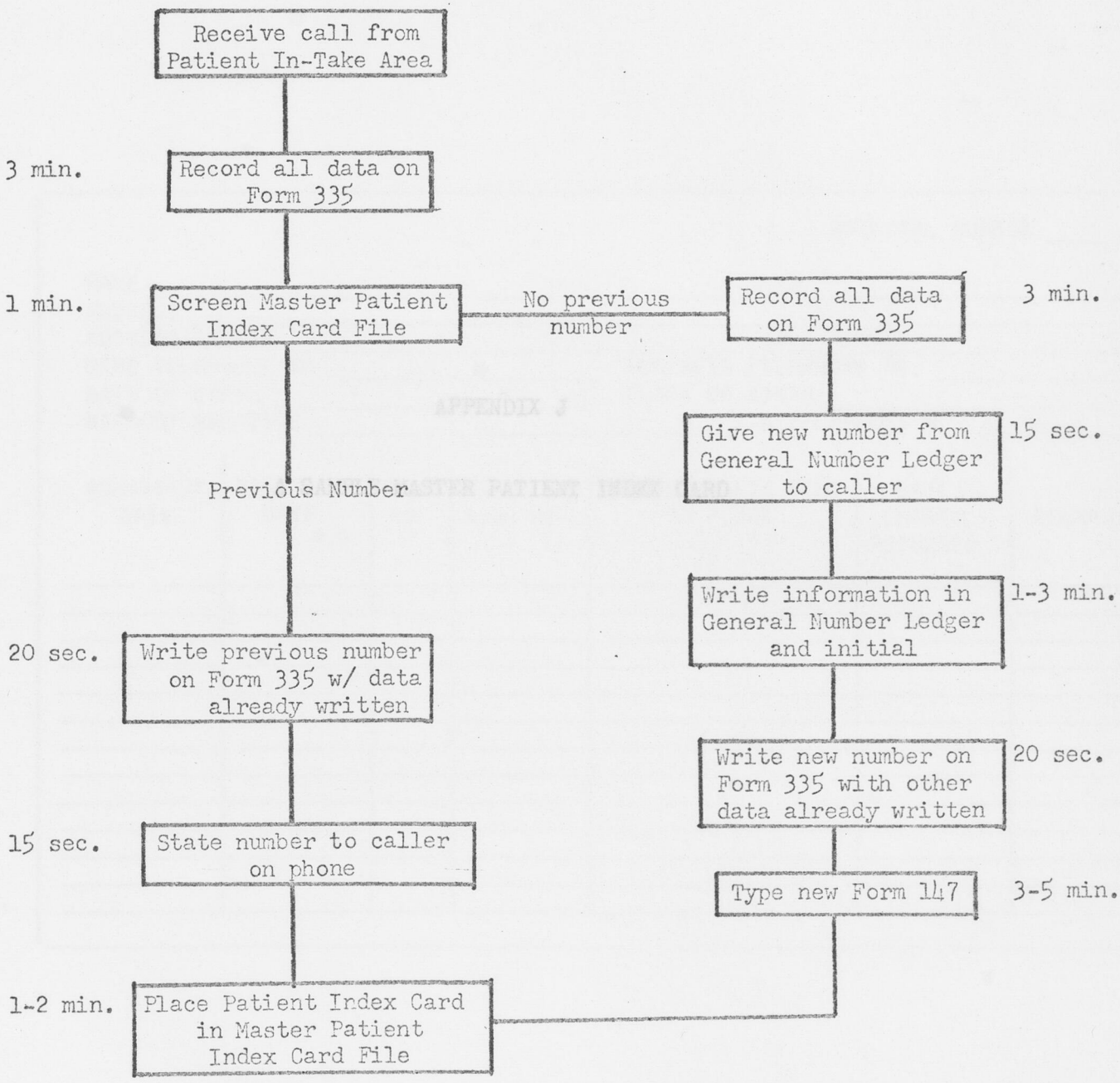
ADMISSION	DISCHARGE	SERVICE	PHYSICIAN	NEW ADDRESS

APPENDIX I

FLOW CHART ON PATIENT IDENTIFICATION NUMBER REQUEST



FLOW CHART ON PATIENT IDENTIFICATION NUMBER REQUEST



APPENDIX J

A SAMPLE MASTER PATIENT INDEX CARD

A SAMPLE MASTER PATIENT INDEX CARD

HOSPITAL NUMBER _____

NAME _____

ADDRESS _____

ADDRESS CHANGE _____

HOME TELEPHONE NO. _____ BUSINESS TELEPHONE NO. _____

DATE OF BIRTH _____ PLACE OF BIRTH _____

NEAREST RELATIVE _____ & TELEPHONE NO. _____

ADMISSION DATE	DISCHARGE DATE	ROOM NO.	TRANSFER ROOM NO.	NO. OF CHARTS SENT TO FLOOR	DATE CHARTS RETURNED	REMARKS

APPENDIX K

BEXAR COUNTY HOSPITAL DISTRICT FORM 333

MEDICAL RECORD TRACER CARD

BEXAR COUNTY HOSPITAL DISTRICT FORM 333

MEDICAL RECORD TRACER CARD

BEXAR COUNTY HOSPITAL DISTRICT
THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT SAN ANTONIO

MEDICAL RECORD TRACER CARD

Patient's Name: _____

Hospital Number: _____

Sent By: _____ How: _____

Received By: _____

☐ Medical Records ☐ Other _____

Received By: _____

Dept.: _____ Date _____

BCHD Form No. 333

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BIBLIOGRAPHY

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BIOGRAPHICAL SKETCH

Captain Philip E. Clark, Jr. [redacted]. After graduating from high school in 1957, he entered the United States Army and served as an enlisted man with tours of duty at Fort Chaffee, Arkansas, Fort Polk, Louisiana, and Fort Hood, Texas. Upon completion of his obligated tour of duty, he entered Texas A & I University in Kingsville, Texas, and was awarded the degree of Bachelor of Science in Education in 1962 and the degree of Master of Science in Administrative Education in 1963.

On May 7, 1965, he received a ready reserve commission in the Medical Service Corps in the grade of first lieutenant and was eventually recalled to active duty, from the reserves, in May 1967. At this time, he attended the Army Medical Service Officer Basic Course, Fort Sam Houston, Texas. Upon completion of the basic course, he attended the Patient Administration Course and the Faculty Development Course at United States Army Medical Field Service School, and was assigned as an instructor with the Patient Administration and Legal Branch, Department of Administration, United States Army Medical Field Service School, from December 1967 to August 1969.

Captain Clark completed the didactic phase of the United States Army-Baylor University Program in Health Care Administration at the United States Army Medical Field Service School in June 1970. He served his administrative residency at Sandia Base Hospital, Albuquerque, New Mexico.