PROBLEMS OF MEDICAL RECORD DEPARTMENT
IN TEACHING HOSPITALS OF IRAN

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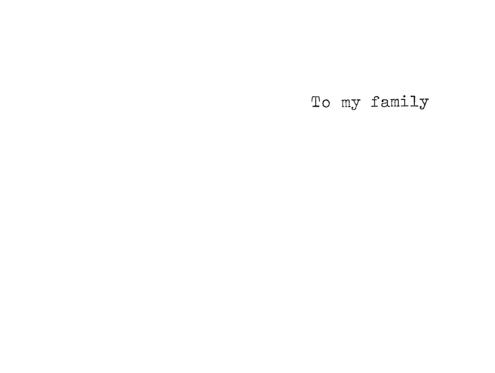
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     Yukarıdaki imzaların, adı geçen öğretim üyelerine
ait olduğunu onaylarım.

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                                    Prof. Dr. Tuğrul ÇUBUKÇU
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To my family

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ABSTRACT

The purpose of this study was to find out the important problems of management of the medical record department in teaching hospitals of Iran and provide recommendations for solving problems.

The organization and management of medical records to meet present day and future requirements of the patient health care providers, medical and social researchers, government agencies, and educational institutions requires the fixing of responsibility for medical record management; the production of records plan; the development of guidelines and standards; the establishment of a retention and disposal program; evaluation of records media; the provision of adequate and appropriate storage systems, and input from staff with professional knowledge and experience. The primary study in this field has shown that the medical record department of teaching hospitals of Iran are not able to serve researchers and medical students sufficiently. The most important cause of this defficiency is the lack of effective management in those departments. There is not enough skilled personnel in this field and the standard of medical records is generally poor, their content is usually inadequate and it is difficult to extract information quickly.

Collection of data for this study were involved in sending questionnaires to the managers of the medical record departments and the hospital's administrators, direct observations, visiting hospitals and reviewing the existing literature. The survey method was used throughout the study.,

Analysis of replies to questionnaires which were distributed among the managers of the medical record departments shows that they are not sufficiently successful to fulfill the management activities in their

departments. Analysis of replies to questionaires which were distributed among the hospital's administrators shows that the managers of the medical record departments have not enough skill to manage those departments. Hospitals' administrators believe that they need a manager who is university graduated in this field, while most of the managers are highschool diploma holders. The analysis of interviews and observations shows that the standard of the medical record is generally poor, and their content is usually inadequate and it is difficult to extract information from them quickly.

It is recommended that:
- A council for legal aspects of medical record and a council for standardization of medical record be establised by the Vice Minister of Research, Ministry of Health and Medical Education.
- To establish an educational program for training teachers of medical record science at post graduate level.
- Reviewing the existed educational program in this field and improve its level to the standard which exist elswhere in the world and planning a program for informal education of personnel.
- To estabish the Iranian Medical Record Association as soon as possible.

ÖZET

Bu çalışma İran'da eğitim veren hastanelerdeki tıbbi dokümantasyon bölümlerinin yönetimsel sorunlarını ortaya çıkarmaya ve çözüm önerilerinde bulunmayı amaçlamaktadır.

Tıbbi Dokümantasyon Bölümünün yönetim ve organizasyonunda hasta, hastane personeli, eğitim kurumları, devlet kuruluşları ve bunlara benzer kullanıcı gruplarının şimdiki ve gelecekteki ihtiyaçlarına cevap verebilmek için yasal, yönetimsel, eğitimsel, standardizasyon ve personel gibi çeşitli konulardaki sorunların ortadan kaldırılması gerekmektedir. Bu konuda yaptığımız çalışmalarla İran'da eğitim veren hastanelerdeki tıbbi dokümantasyon bölümlerinin tüm araştırmacılara ve tıp öğrencilerine yeterince hizmet vermemesinin nedenleri incelenmiştir. Nitelikli personel eksikliği, yeterli standartların olmaması ve gereken bilginin tam olarak toplanmamasının sorunlara neden olduğu ortaya çıkarılmıştır.

Konu ile ilgili mevcut basılı kaynakların incelenmesi çalışmanın temelini oluşturmuştur. Araştırma ile ilgili anket ve görüşmeler yapılmış ve böylece çalışmaya yön veren asıl yöntem betimleme yöntemi olmuştur.

Çeşitli yollarla elde edilen bulguların analizi tıbbi dokümantasyon yöneticilerinin bölümlerine etkin bir şekilde yönetemediklerini, nitelikli personel sayısının az olduğunu ve tıbbi dokümantasyon standartlarının ihtiyaçları karşılayamadığını göstermiştir.

Bu konu ile ilgili olarak şunlar önerilmiştir:

- Sağlık ve Tıp Eğitimi Bakanlığının Araştırma ile ilgili Bölümünce tıbbi dokümantasyonun standardizasyon ve kanuni yönleri üzerinde çalışacak komite oluşturulmalıdır.

- Yüksek Lisans düzeyinde tıbbi dokümantasyon bilimi için öğretmenler yetiştirecek eğitim programları hazırlamalıdır.

- Dünya'da uygulanmakta olan standartlar ve eğitim programları incelenerek personelin informal eğitimi için programlar planlanmalıdır.

- İran Tıbbi Dokümantasyon Derneği mümkün olan en kısa zamanda kurulmalıdır.

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I. INTRODUCTION

Information has become one of the commanding heights of power in the modern world. Access to information was first held as the privilege of the rich, then used as the driving force of political change and accepted as the bare necessity for economic survival. In short information is becomimg one of our richest resources (An Information Agenda for the 1980s 1981 : 1). We are talking of information, whatever the medium, ' medical record ' is the source of information for many purposes. Medical record management has all essential elements of an information system; a source, a user, a means of access, and a process discipline or technique which controls the source in the interest of the user (Newton 1986: 79).

Medical record is an important primary tool in the practice of medicine and the whole idea behind it is to provide better care of the patient through careful recording of every detail having to do with his case. " The medical record is the who, what, why, where, when and how of the patient care during hospitalization " (Huffman 1963: 34). Medical record is the only his-tory of achievement, the only measurement of work being done by the medical and nursing staff, the only record of progress of the patient, and it is the source of information for many purposes.

> Because ' patients forget and records remember ', the record is of value to the patient, the hospital, the physician, and for research and teaching (Huffman 1963: 129).

Among several functions of the medical record is the support of researchers. Medical records play a key part in facilitating clinical and epidemiological research; they provide the history-taking discipline that plays an essential part in the education of medical

students and junior doctors (Jones 1981 : 1164).

Medical record department's personnel is responsible for designing and implementing a system to provide for education, retention and future utilization of patient information. Patient information is used to plan patient care, perform medical research, evaluate patient care, and provide information for authorized users.

Medical record management is distinct from librarianship because the source of information is unique and the users must be authorized because of confidentiality of the medical record. It is related to information systems very logically and intimately, since it is directed at those vital and essentially unique sources of information which are created in the course of patient treatment. Besides

> it is a key role in the process of developing
> information systems since it addresses the
> issue of media, classification, retrieval,
> retention, and storage which must be put into
> a satisfactory ' architecture ' (to borrow
> computer jargon) if there is to be an effective
> strategy for the development of information
> systems (Newton 1986 : 81)

within any health care institution.

While the history of medical records runs parallel with the history of medicine, teaching hospitals were not keeping records very well prior to the twentieth century. At the beginning of this century, medical record received serious consideration by other types of hospitals and especially by medical and hospital associations. The greatest improvement began with the introduction of hospital standardization movement in 1918. This was later followed by the founding of the organization of the medical record workers and the establishment of specialized training programs.

Information is of obvious importance for the appropriate treatment of patients. The true cost of generating information to support modern management is not always quantifiable, its value in this particular case is not measurable. So, medical records management is essential to ensure that patient information sources are so maintained and ordered that when technological systems are applied or data bases constructed from such sources they provide a solid foundation not a quick sand (Newton 1986 : 82).

It was in 1954 that Namazi Hospital in Shiraz, Iran, began to collect medical record in a modern sense. In 1964 The Ministry of Health made allowance for one medical record archivist for each new hospital and published a manual for medical record keeping. Two surveys have been done by Hamideh Mohsenin: A Survey of Problems of Establishment and Keeping of Medical Record Section, and Nemat-Allah Moghbeli : Methods of Medical Record Keeping for Imperial Army Hospitals of Iran as Master's theses in the field of hospital administration.

I. 1 PURPOSE

The purpose of this study is to find out the important problems of management of the medical record department in teaching hospitals of Iran, and provide recommendations for solving problems.

The organization and management of medical records to meet present day and future requirements of the patient health care providers, medical and social researchers, government agencies, and educational institutions requires the fixing of responsibility for medical record management; the production of records plan; the development of guide lines and standards; the establishment of a retention and disposal program; evaluation of records media; the provision of adequate

and appropriate storage systems, and input from staff with professional knowledge and experience. In short the solution of legal and managerial problems as well as those involving the shortage of specialized and skilled personnel, and standardization. All of these problems exist in the medical record department of the teaching hospitals of Iran. So, we may ask, is it possible to manage the medical record department of teaching hospitals of Iran to meet the present day and future requirements of the above groups? If so what are the supporting and obstructing factors?

The conclusion of primary study in this field can be expressed as a hypothesis that discusses a probable answer to the problem.

Hypothesis : Medical record department of teaching hospitals of Iran are not able to serve researchers and medical students sufficiently. The most important cause of this deficiency is the lack of effective management in those departments.

This basic hypothesis consists of the following subhypotheses:
-- there is not enough skilled personnel in this field
-- the standard of medical records is generally poor, their content is usually inadequate and it is difficult to extract information quickly.

Analysis of the collected data will prove whether this hypothesis is true or false.

I. 2 FIELD, SOURCES OF DATA, PLACE, TIME AND SUPPORT

The field of this study was the medical record departments of teaching hospitals in Iran. The accepted definition of management for this study was one defined by R.D.Agarwal as :

Management is the social process of planning,

organizing, staffing, directing, coordinating
and controlling for the determination and
achievement of organizational objectives in a
dynamic environment (Agarwal 1982 : 5).

At the beginning of the study three weeks working
experience was acquired in the medical record department
of Hacettepe Hospital, Ankara, Turkey. A list of bib-
liography was prepared by searching the following
sources:

-- Excerpta Medica : Health Economics and Hospital
Management, Section 36.

-- Hospital Literature Index.

-- Index Medicus.

-- Information Science Abstracts.

-- Iranian National Bibliography.

-- Iranian National Union Catalog.

-- Library and Information Science Abstracts.

-- Library Literature.

-- Türkiye Bibliyografyası.

-- Türkiye Makaleler Bibliyografyası.

It was possible to visit 22 medical record departments
of teaching hospitals in Shiraz, Tehran, Esfehan,and
Hamadan. It was also possible to visit 2 medical record
departments of teaching hospitals in England, 4 in the
USA and 2 in the Turkey.

One questionnaire was prepared and mailed to the
managers of the 38 medical record department of teaching
hospitals of Iran to measure managers ability to manage
their departments. Another questionnaire was prepared
and mailed to the administrators of 38 teaching hospitals
of Iran to collect data about qualifications and
capabilities of the manager of the medical record de-
partments as well as hospital's administrators opinion
about the necessary qualification of manager of the
medical record department. An interview questionnaire

was also prepared and used during visiting of the
medical record department of teaching hospitals of Iran.

Case studies has been done about medical record
in England and USA because it was supposed that the
medical record keeping techniques were highly developed
in those countries. A case study also has been done
about medical redord in India because it was supposed
that among developing countries India has been more
developed in this .field. A case study has been done
about medical record in Turkey to maintain the
condition of medical record keeping in home study
country.

Questionnaires were mailed to hospitals during July
1987, reminders were mailed during October 1987. 31 out
of 38 medical record department's managers turned back
filled questionnaire\which all of them was acceptable.
30 out of 38 administrator's of the hospitals turned
back filled questionnaires which all of them was
acceptable. Visiting hospitals accored between July
to December 1987.

During preparation of proposal for dissertation ,
the Medical Faculties which were a part of the Ministry
of Culture and Higher Education were separated and formed
into the different universities of medical sciences
and joined to the Ministry of Health which changed its
name to Ministry of Health and Medical Education.
The number of the universities of medical sciences
was increased and the number of the hospitals related
to these universities was increased too, so during
selection of the teaching hospitals the problem was
that, although some hospitals were related to a univer-
sity of medical sciences they were not really educational
hospitals. Besides, some of the new universities of
medical sciences did not have any teaching hospital.

It was not possible to visit all of the teaching
hospitals, because of the geographical distance and
lack of formal permission.

I. 3 METHODS AND TECHNIQUES

At the beginning of this study a comprehensive
literature search in this field was done, and the most
important items were mentioned. The review of that
literature as well as collected data from hospitals
medical record departments was the basis of this
research.

The basic method which was used for this study was
the survey method.

> The survey constitutes a primitive type of
> research in that the investigation of any
> problem must begin with a ' survey ' of its
> nature before it can move into the more
> structured and vigorous phase. At its most .
> elementry stage, the survey is concerned with
> determining the immediate statuse of a given
> phenomenon (Mouly 1970 : 237).

This method was used through out the study.

Kate L. Turabian, A Manual for Writers of Term-
papers, Theses, and Dissertations and Hacettepe
Üniversitesi: Sosyal Bilimler Enstitüsü, Yüksek Lisans
ve Doktora-Sanatta Yeterlilik Tezleri Yazım ve Basım
Yönergesi Nisan- 1989 were used for form of quotations,
footnotes, references and bibliography entries.

The data was gathered according to information
which were available till summer 1987, it is supposed
some changes occurred during 1988- 1989 but it has not
completely been considered in this survey.

II MEDICAL RECORD AND MEDICAL RECORD

DEPARTMENTS

II. 1 DEVELOPMENT OF MEDICAL RECORD

II. 1. 1 <u>HISTORY</u>

History of medical record keeping goes back to
very early times, when surgical procedures were recorded
on the walls of caves of the Old Stone Age, and tre -
phining and amputation of fingers were depicted on the
walls of the caverns   in Spain. These date back to
about · 25,000 B .C.

The record related to ancient times are engraved
on clay tablets · from Bablyon and Nineveh,   written
on long rolls of papyrus or on the walls of the
Egyptian tombs · and temples.

Later on medical records became more detailed and
some of them are highly ordered, especially those of
the Greek and Roman periods, · some of which contain
the writing of Hippocrates, Celsus, Galen, and Antyllus
(MacEachern 1962:719). While such early medical re-
cords and writings were primitive in form and very
different from today's modern medical records, they
serve to record medical achievements for later gene-
rations.

Benjamin Franklin who served as secretary of
the Pennsylvania Hospital of the United States (es-
tablished in 1725) wrote many earlier hospital records
of that hospital in his own handwriting. Each record
contained patient's name, address, disorder, the date
of admission and discharge, and the result on discharge.
This form of the record keeping continued up to the .
1803. · In 1803 it was ordered that a detailed record
be kept of the interesting cases (Huffman 1963:17).
In the 1873 the first patient's index was started and
hospital began to keep histories.

Massachusetts General Hospital, Boston, Massachusetts,

which was opened in 1921, has the distinction of having
a complete file of clinical records, dating from the day
it was opened. In this hospital all of the cases are
cataloged. It seems that this is

> the first to have a medical record librarian.
> She was Mrs. Grace Whiting Myers (1859-1957),
> first president of the Association of Record
> Librarians of North America   (Huffman
> 1963: 18).

In 1902, the importance of records was discussed
for the first time at the conference of the American
Hospital Association. Later on physicians began to
consider about the value and importance of the adequate
medical records. In 1905, Dr. George Wilson of Portland,
Oregon, in his paper " A Clinical Chart for the Records
of Patient in Small Hospitals " which was read at the
56th annual meeting of the American Medical Association
pointed out

> the necessity for a complete record of the
> progress of the patient in the hospital both
> for reference and for medicolegal needs
> (Huffman 1963: 20).

The greatest improvement began with the introduc-
tion of the hospital standardization movement in 1918.
American College of Surgeons required the submission
of fifty complete copies and fifty abstract of case
records of patients upon whom the candidates of fellow-
ship had performed major surgery, in order to evaluate
properly the surgical work of them, so the college
realized that

> some method would have to be devised in their
> standardization program to provide better
> medical records for use not only by candidates
> for fellowship, but also for something much
> more important-for efficient care of the patient
> in present and future illnesses, for the medico-

legal needs of the hospital- physicians and
the patient, and for use in medical research.
(:Huffman 1963:21).

When in 1928 The Association of Record Librarians
of North America was found, it took as its main objec-
tive:

> To elevate the standards of clinical records
> in hospitals, dispensaries, and other dis·:- ,
> ·tinctly medical institutions (Huffman
> 1963: 23).

Another objective of this association was to serve as
a means of intercommunication among record librarians.
The first issue of the Bulletin of the Association of
Record Librarians of North America was published and
mailed to the members of that association. This bulle-
tin continued to serve as an educational medium,
throughout the years and later changed its name to
the Journal of the American Association of Medical
Record Librarians, later it changed to Medical Record
News, and now it is publishes under the title of " The
Journal of the American Medical Record Association"
(JAMRA).

In 1933 a registry was established to measure
the ability of the medical record workers and awarding
successful candidates the privilege of using the letters
R.R.L. after their names to indicate their professional
rating.

In 1935 an original educational program was pre-
pared and Massachusetts General Hospital, Boston;
Rochester General Hospital, Rochester, New York; St.
Mary's Hospital, Duluth, Minnesota and St. Joseph
Hospital, Chicago were approved to bring the program
to be executed. In 1953 the first schools for the
training of the medical record technicians were approved.
In the same year a certification committee was estab-

lished to measure the highly qualified type of medical
record librarians. Successful candidates were privileged
to use the title C.R.L. after their names.

In 1952 The Joint Commission on Accreditation of
Hospitals was established. The cases raised in the
previous standards and their effect on medical record
librarians was the strengthening of the requirements
regarding the medical record committee in each hospital.

On the international scene, Canadian Medical Re-
cord Librarians organized their association in 1942.
The Association of Medical Record Officers of Great Bri-
tain was organized in 1948. The Australian Federation
of Medical Record Librarians was organized in 1952.
The world wide participation of medical record per-
sonnel brought The First International Congress on
Medical Records together in London in 1952.

II. 1. 2 VALUE, USES, AND USERS OF MEDICAL RECORD

The medical record is an important primary tool
in the practice of medicine. The whole idea behind it
is to provide better care of the patient through care-
ful recording of every detail having to do with his
case. The medical record is the who, what, why, where,
when, and how of the patient care during hospitaliza-
tion (Huffman 1963:34). The medical record is the
only measurement of work being done by the medical
and nursing staff, the only record of progress of the
patient, and it is the source of information for many
purposes

> Because 'patients forget and recoreds remember',
> the record is of value to the patient, the
> hospital, the physician, and for research and
> teaching (Huffman 1963:129).

The medical record is valuable to the patient
because physicians see many patients a day and it is

impossible for them to remember the details of each
separate case at the same time. The patient of today
may become ill in the future, be admitted to the same or
another hospital with the same or another illness,and
then may be examined by the same or a different phy-
sician, so

> If the detail of the examinations and findings
> on a former admission are accurate and readily
> accessible, the necessity for repeating many
> of the examinations done previously may be
> obviated, and valuable information is made
> immediately available. Additional expense
> avoided, and the time required for diagnosis
> is materially shortened, the latter, in some
> cases, being the deciding factor between life
> and death   (MacEachern 1962: 722).

The medical record is valuable for hospitals
because it contains information relative to the com-
petency of the medical staff. From the end results
of treatment the hospital is able to analyze the qua-
lity and quantity of service. It is also of value to
the hospital for medicolegal purpose.

> If it is properly written and maintained the
> medical record will be a hospital's or a
> practitioner's primary defense and an ad-
> vocate in any official proceeding
> (Hemelt 1977: 52).

In addition to the medicolegal value, the medical
record is a recognized aid in the informal education
of physicians. It contains information which can be
used for review of all cases which a physician has had
in any given time.

When a record is made scientifically accurate, it
adds to the mass of data available for study, so making
it possible for researchers to form conclusions more
exactly. Medical records

> play a key part in facilitating clinical and
> epidemiological research; they provide the
> history-taking discipline that plays an essen-
> |tial part in the education of medical stu-
> dents and junior doctors   (Jones 1981:
> 1164).

The American Medical Record Association prepared
a list of uses and users of information in medical
records (Appendix 1).

II. 1. 3 LEGAL ASPECTS OF MEDICAL RECORD

Medical records as an order of business are the
property of the hospital. At the same time they are
considered the property of the patient because they
contain personal data. Medical records have both
medical and legal aspects, so they can be a subject
of medical jurisprudence. Medical records are used as
evidence in the courts, so medical record personnel must
become familiar with the laws governing medical records,
in general, and in particular, to one's own country.
Medical records protect attending physicians against
unjust claims of malpractice, and hospitals against
unjust criticism and claims for injuries and damages.

> Since the medical record itself must frequently
> be used as evidence in court, it can serve as
> protection to the hospital, physician, and
> patient only when it clearly shows the treat-
> ment given the patient, by whom given, and
> when given. It must show that the care and
> service given by the hospital and by the
> physician were consistent with good medical
> practice   (Huffman 1963:455).

The record should be completed at the hospital,
and should never be removed from there, not even for
purpose of completion,

> it should be put away for safekeeping and should
> be preserved under strictest possible rule so

as to preserve its legal validity on behalf of
the patient   ⎧ ⎧ᵉ⎧ (Hayt 1964:44).

Medical records have the confidential communication
character.

> A confidential communication is one which
> contains certain private information given by
> a patient to his physician, by a client to his
> attorney, or by a person to his religious
> adviser   (Huffman: 478).

It has the same relative standing as the oral state-
ment of physicians or nurse.

The medical record, as a property of both . hospi-
tal and patient, contains information which is essential
for the successful processing of some legal proceedings
and insurance claims. A patient must waive his claim
for privilege by giving written authorization for the
inspection of his record. Without this authorized
written waiver, which is signed and dated by patient
or his guardian, the medical record personnel are not
allowed to release the information in the record to the
requesting party. A physician should sign all clinical
entries which he himself makes. The attending physician
should countersign at least the history, physical exa-
mination, and summary. Any form of the authorized sig-
nature such as that made by a rubber stamp, typewriter
symbols, or initials is acceptable and valid in the
courts. It is necessary to have written permission
for the operation and administration of anesthetics
field in the medical record. Written permission for
autopsy is as important as an authorization for operation.

II. 1. 4 CONTENT OF MEDICAL RECORD

The medical record is a written account of what
happened to a patient during a specific time in the
hospital, a physician's office, a health maintenance

organization, a nursing home, or any other place where medical care was given. The content of medical record is developed as a result of the interactions of an interdisciplinary group or team, who use it as their communication tool. It is made up of components which are arranged in a logical sequence.

The ideal medical record should contain details of

> physical and mental history of the current and previous illness, social factors which may contribute to the illness such as job, marital or other personal conflicts, the finding on physical examinations, results of diagnostic test such as X-ray, electrocardiograms, laboratory values, findings and opinions of consulting specialists, the treatment prescribed, a description of the patient's response to that treatment (or lack of response), diagnoses, operations and the plans for and goals of follow-up care (American Medical Record Association 1978: 10-11).

II. 1. 4. 1 PROBLEM ORIENTED MEDICAL RECORD (POMR)

In 1969 Lawrence L. Weed realised that traditional medical records did not place sufficient emphasis on managing the patient, or particularly on looking at the patient as a whole. So, he advocated a change of the record format in order to improve medical record keeping by promoting the Problem Oriented Medical Record (POMR) system for recording. POMR permits a new approach to clinical teaching and research, and is far more than a change in medical record format, " it is a system which organizes medical data in such a manner as to facilitate precision in documentation (Esley 1973: 38). Weed believed that

> Problem-Oriented Medical Record can become a vehicle for converting a broad philosophy of education into specific attainable goals. Through the creation of a proper record and the

> proper management of that record, the physi-
> cian's actual performance in given areas can
> be exposed to critical evaluation in the same
> way that the scientist's work is evaluated
> by journal editors; the physician can be
> assisted to demonstrate throughness and reli-
> ability in the formulation of all of the
> patient's problems, and he can be guided in
> the exercise of sound analytics through,
> coupled with good clinical judgement, in
> establishing patient-care plans and in follow-
> ing up patient progress in each problem area.
> (Weed 1971:10).

According to Weed, each medical record must contain the following parts:

-- Data base, this may include any or all of the following; chief complaint, patient's profile and related social data, present illness, past history and system review, physical examination, and laboratory reports.

-- The problem list, on the patient's admission to the hospital, a numbered list of problems is drawn up, containing every problem in the patient's history, past and present.

-- The initial plan, the next step is the preparation of a list of plans-diagnostic and therapeutic orders-for each problem, keyed by number to the original problem list.

-- Progress notes, it contains

--Narrative notes, each progress note is related directly to the list of problems and should be numbered and titled accordingly. Operative notes and notes by nurses and paramedical personnel are to be included.

   -- Flow sheets,

> Flow sheets, containing all the moving para-
> meters should be kept on all problems where
> data and time relationships are complex.
> The flow sheets and the progress notes cons-
> titute the following up phase of the record
> -keeping process and , as such, are the
> dynamic center of the medical record

(Weed 1971: 13).

-- Discharge summary,

> No patient should be discharged until the house officer of the hospital has written an adequate retrospective note on each numbered problem on the patient's list   : Weed 1971: 13).

Up to now, POMR system has been introduced and applied in many hospitals of different countries.

II. 1. 4. 2 ASSEMBLING ORDER

The arrangement of the patient's record on the floor differs from that used in assembling for permanent filing. On the floor, the records are most often arranged chronologically, while after discharge of the patient, this order is revised in the medical record department for convenience in meeting later demands.

In January 1968, the Record Development Committee of the American Association of Medical Record Librarians decided to develop standards for assembling order and color of the records. Through extensive study of various methods of record assembling, the committee determined that all records, whether in a teaching or community hospital, could be divided into seven sections. There are as follow: face sheet, medical section, diagnostic section, treatment section, orders, nurses section, and miscellaneous. This assembling order as well as selected color was accepted and applied by many hospitals.

II. 1. 4. 3 STANDARDIZATION

Standardization should be an essential feature of the record and record keeping. Standardization can

apply to hospital forms, folders, /filing within the
folders, and procedures. It should at least be possible
to standardize nationally such things as heading and
size of the record, and regionally record's content and
format. Advantages of standardization are many:

> the standardization of procedures and documents
> would produce financial saving as well as
> saving in labor. Standardization would also
> result in a reduction in the number of assorted
> forms at present in use and further more,
> would release professional staffs from a number
> of chores. (Kirk 1971: 84).

II. 2 MEDICAL RECORD PERSONNEL

Medical record keeping has become a highly com-
plex job which requires a medical record administrator
with many talents. It is an increasingly important
profession in the modern hospital, because of the rapid
development in the practice of medicine and clinical
research. The medical record administrator has taken
his place as one of the recognized heads in the hos-
pital.

> He is a department head, and as such his capa-
> bilities must be of the type that will enable
> him to coordinate his department with other
> departments of the hospital and thus make it an
> efficient unit integrating with the system of
> the entire institution. He is a specialist in
> the field of medical record science just as
> the nurse and dietitian are specialists in
> their fields   (Huffman 1963: 134).

The medical record administrator must deal with
many types of professional people daily, doctors, hos-
pital administrators, technicians, nurses, investi-
gators, lawyers, and patients, so

> He must be prepared to advance with changing
> trends and be sufficiently discontented with
> his department and the service it renders to
> be continually striving for improvement
> (Huffman 1963:133).

II. 2. 1 PROFESSIONAL ETHICS

The medical record profession has its own code
of ethics as well as ethics generally accepted for
members of any other profession. Ethics is   the
science of proper conduct or the differentiation bet-
ween right and wrong (Huffman 1963:135). Medical
record personnel have a close relationship with
librarian and the physician, so they must have a
fundamental knowledge of ethics in general and of

medical ethics in particular. He must familiarize him-
self with the Oath of Hippocrates upon which all medical
ethics is based, The American Medical Record
Association has a pledge which is in part a modification
of the Oath of Hippocrates. It states:

> I pledge myself to give out no information
> concerning a patient from any clinical record
> placed in my charge, or from any other source,
> to any person whatsoever, except upon order form
> the chief executive officer of the institution
> which I may be serving; and to avoid all commer-
> cialization of my work (Huffman 1963:137).

The code of ethics for the practice of medical record
science provides that a member should

> preserve and protect the medical records in
> his custody and hold inviolate the priviledged
> contents of the records and any other infor-
> mation of a confidential nature obtained in his
> official capacity, taking due account of appli-
> cable students and of regulations and policies
> of his employee (Hayt 1964: 10).

II. 2.2 PROFESSIONAL QUALIFICATIONS AND EDUCATIONAL PREREQUISITES

The medical record personnel, as any one else
who endeavors to lead a life of service and who wishes
to be successful, must have or develop many personal
qualities in order to create a feeling of confidence
in those who come to him. He comes in contact with all
types of people each day, so good appearance and a
pleasant personality are both essential qualifications
of this profession.

> Even though the essential personality factors
> have been fixed and the individual will remain
> essentially stable, there will still be advance
> in the breadth and detail of personality factors.

> This must be influenced in the proper direction
> by the individual.   (Huffman 1963:141).

The medical record personnel must learn to develop tact
and be able to determine the proper moment to approach
physicians regarding an incomplete record. At the same
time, he must learn and develop the habit of being a
good listener.

The attitude of the medical record personnel makes
the "tone" of his department as a whole. Having a
pleasant and courteous behavior to all, reflects in his
work, and is evident to all who come into his depart-
ment, and realize the importance of the work of the
department. The medical record personnel must exhibit
high ideals in his personal contact. He must be ener-
getic interested, keen, alert, industrious and in the
practice of his profession fulfill all duties and
obligations conscientiously. He must be constantly on
the job and

> uphold the standards of his school, his pro-
> fession, his hospital, his administrator, the
> physician with whom he works, and his co-workers.
> (Huffman 1963:142).

He can not be lazy or a mere routinist.

The medical record personnel has to contact the
same person repeatedly. If he has developed a pleas-
ing personality, he will find that persistency does
not create antagonism. In all of the hospitals

> there must be organized, well-directed, and
> persistent effort if the work of attending
> physicians, consultants, interns, residents,
> pathologists, roentgenologists, physical
> therapists, anesthetists, surgeons, nurses,
> dietitians, and social service workers is to
> be coordinated into a whole by the medical
> record librarian   (Huffman 1963:144).

Accuracy is an essential qualification of a successful
medical record personnel. Accurate and complete
medical records have great value and furnish the basis
for analysis of hospital activities, but if they are
not accurate they can be misleading. It is necessary
that the medical record personnel maintains a coop-
erative attitude with every department or committee who
is in need of his specialized knowledge. If he is
to receive adequate support, he must maintain an
attitude of cooperation and be tactful and discreet.

The medical record personnel who wishes to re-
main aware in his profession must be progressive
because there is still much to learn in his special
field. He must refresh his knowledge and experience
through contact with others, by visiting other hospitals,
observing the work in other medical record departments,
attending meetings, and reading professional, hospital
and medical journals.

Within the last three decades, the responsibilities
upon the medical record department have increased to
such an extent that many hospitals have several grades
of personnel, such as, health information coordinator,
medical record administrator, medical record technician,
stenographer , and file clerk . Most of the time
every one working in a medical record department is
called a medical record professional, regardless of his
qualifications. As the field of medical records has
developed, the responsibility placed upon the custodians
of the records has grown, and greater responsibilities
are placed upon this group. The work has grown more
technical, and as a result, it has become necessary to
raise the prerequisites for matriculation, as well as
the educational standards for the schools approved for
such training. Generally the medical record personnel
must be familiar with natural science including anatomy,

physiology, medical terminology, and statistics.

Within the last decade, the most significant change in the medical records profession was computerization of record information. As a result, having a working knowledge of computer terminals is necessary. In addition, it is helpful if the medical record personnel has a working knowledge of typing and stenography.

II. 2. 3 RESPONSIBILITIES AND DUTIES

The medical record personnel must be trained for working in various sizes and types of hospitals. He must be ready to adapt himself to the procedures which are used in particular hospitals where he may be employed and to carry on any or all of the responsibilities, duties, and technical skills of medical record practice. The medical record department's personnel are responsible to design and implement a system to provide for education, retention and future utilization of patient information.

The organization and management of the medical record department is one of the fundamental jobs of the medical record administrator. As a part of his job, he must be ready to think of both ways and means of improving the medical records of his hospital. He must prepare his department more efficiently and make it more available to the staff for reference and research. As head of the department he should have sufficient training and executive type ability to organize, or reorganize the department to meet the minimum requirements of the accrediting agencies of the hospital and medical field.

> The medical record librarian has the duty of using any method that will in any way raise the standards of the department and the clinical records of his institution (Huffman 1963: 146).

He must cooperate with other departments of the hospi -
tal where coordination of the medical record is needed

> Medical record practitioners must work with
> other knowledgeable persons to develop forms
> that will promote adherence to standards for
> documenting patient care, will organize in-
> formation for easy reference, will reduce wasted
> space, and will allow consideration of the
> individual hospital's needs   (Skurka 1984:
> 39).

The medical record administrator must know the
component parts of a medical record, understand what a
diagnosis means, and to be able to judge the scientific
value of the statements of the attending physician. He

> must be capable of offering to all of the de-
> partments practical information which may be
> helpful to them in working out or revising
> their own particular systems of records, so as
> to fit in with the record system of the hospital.
> In other words, the medical record librarian
> should be able to give expert opinion on re-
> cord systems generally   (MacEachern 1962:
> 764).

Familiarity with all methods of numbering and all
systems of filing medical records is another duty of
the medical record administrator. He should know
the relative value of each method, and be able to make
recommendations as to which method will best suit the
particular institution. Of equal importance to that of
filing, is knowing various types of diseases and opera-
tion nomenclatures, and indexing systems.

> Medical record practitioners should be aware
> of the various systems and services available
> and, where possible, take advantage of the
> automated systems that offer services and
> flexibility in providing data for multiple-
> purpose use   (Skurka 1984: 61).

The medical record administrator must be capable

of submitting accurate and complete statistical data,
and preparing comprehensive reports from a well or-
ganized medical record department. Special reports
may be required from time to time, and the medical
record administrator has to prepare the necessary data
and formulate reports with absolute accuracy and without
undue delay. Helping researchers and preparing
necessary data for their studies is another responsi-
bility of the medical record personnel.

> The talents of the medical record practitioner
> should not be limited to record systems for
> the medical record department only. The me-
> dical record practitioner can also serve as
> consultant or resource person for record
> systems in other areas of the hospital
> (Skurka 1984:7).

The medical record administrator must be familiar
with the legal requirements of his country and should
cultivate discretion to the highest degree, so thereby
coping with the medicolegal problems that will come
under his supervision. He must be able to differentiate
between legitimate and illegitimate requests for infor-
mation.

> He must learn to be tactfully ignorant when
> questioned by outsiders regarding any hospital
> matters or concerning any information gleaned
> from a patient's record... His position is one
> of special trust; hence he must always be
> honest, reliable, and loyal   (Huffman
> 1963: 147).

II. 2. 4 ASSOCIATION

The first professional association of medical
record personnel was established in the United States
of America in 1928. It called itself the Association
of Record Librarians of North America and its main
objective. was to elevate the standards of clinical

records in hospitals, dispensaries, and other distinctly
medical institutions. Another objective of this asso-
ciation was to serve as a means of intercommunication
among record librarians.

Canadian record librarians organized their asso-
ciation in 1942. The Association of Medical Record
Officers of Great Britain was organized in 1948, and
the Australian Federation of Medical Record Librarians
was organized in 1952. The world wide participation of
medical record personnel brought the First International
Congress on Medical Records together in London in 1952.
The International Federation of Medical Record Organi-
zations, which changed its name to the International
Federation of Health Record Organizations (IFHRO) in
1976, established its office in England. The purpose
of this federation is:
-- to provide a means of communication between persons
working in the field of health records in the various
countries of the world
-- to advance the standards of health records in hos-
pitals, dispensaries, and other health and medical
institutions
-- to promote and/or develop techniques for efficient
use of health records for patient care, statistics,
research, teaching, and to disseminate these among
member organizations
-- to provide means for the exchange of information
on education requirements and training programs for
health records in all countries.

A professional association is necessary for the im-
provement of medical record science healping its
members by:
-- defining roles and responsibilities of the medical
record personnel
-- developing a career ladder with curriculum, education-
al programs, extension courses to prepare the medical

record personnel for greater responsibilities and
staff level positions in the future
-- providing attention to the consulting activities
including |guidelines, direction and educational
opportunities
-- providing data to country agencies, and hospital
associations for better delineation of medical record
personnel's job classifications
-- encuraging educational institutions to develop
" open-ended" collegiate programs and graduate pro-
grams for medical record personnel.

II. 3. NUMBERING AND FILING MEDICAL RECORD

> The common goal among all medical record de-
> partments is efficiency and accuracy in the
> maintenance of chronological record, numbering,
> and filing systems   (Skurka 1984:17).

The objective of all numbering methods, and all filing
systems, is to make available the complete record of
the patients at all times. Alphabetical or numerical
filing methods are used in the medical record depart-
ment, but for filing the medical record, the numerical
method is the only one which we are concerned with.

II. 3. 1 NUMBERING SYSTEMS

Hospitals have used three kinds of numbering in
the past; admission number, discharge number, and
diagnostic classification code number. The last two
are not still in use in modern hospitals, and the
admission number is to be performed for filing all
documents concerning a patient. This number is assigned
to the patient on admission. Using this number for
filing makes it easier to trace missing or lost records
because the number is carried in the number index and
patients' register.

> Even if the patient's index card is lost, there
> are several ways of locating the identification
> number of a particular medical record...Because
> the use of admission numbers safe guards medical
> records against becoming 'lost'in the files. it
> has become the accepted system for filing medical
> record   (Huffman 1963:208).

Filing systems for medical records using the
admission number are as follows:
-- Serial Numbering System, in this method a new number
is assigned for each admission, regardless of the
number of readmissions. The new number is the next
unused number in either the patients' register or the

number index. In this method, the patient record is
filed in one or more places in the file depending on
the number of admission. Hence, the medical record
personnel has to spend much time for gathering records
whenever a physician asks for all records of a patient
at the last readmission. This system

> requires a cross referencing system for
> number identification in the master patient
> index and in the medical record file
> (Skurka 1984:22).

-- Unit Numbering System, in this method, the patient
receives a number at the time of his first admission,
and retains this number on all subsequent admissions to
the inpatient or outpatient department of the hospital.
This method automatically gains a unit record in
which all admissions are filed together in one folder
under one number. If the hospital uses the unit num-
bering system, shelves must not be filled to more than
seventy five percent capacity, because addition to
folders takes place at each readmission.
-- Serial Unit Numbering, it is a modification of the
serial and unit numbering methods, a new number is
assigned for each admission but the records are brought
forward and filed under the latest number. Records of
various admissions are bound together by an Acco-type
fastener or one similar to it, and when the record is
moved forward, a marker left in the file indicates the
location of the medical record. When this method or
serial numbering method is used by a hospital, shelves
may be filled to capacity because the records are
complete when they are filed.

A master summary sheet should be used for any unit
record regardless of the number of times the patient is
hospitalized. This will save considerable time for
those who have the possibility to refer to the unit

record of a patient. The master summary sheet lists
the dates of all admissions and discharges, the final
diagnosis made, and operations performed, if any,
during each separate hospitalization, so it is a real
picture of the medical history of the patient during
all hospitalizations. In hospitals with well developed
and active outpatient clinics (centralized) which
use a unit number, another type of master summary sheet
takes the place of a separate summary sheet for each
admission, which has a place for the signature of the
attending physician responsible for the care during
each hospitalization, as well as a place for diseases
and operations code number. In this type of unit
record , the different sections of the medical records
may be arranged in departmental . order, regardless of
the number of readmissions, each kind being arranged in
chronological order. It may be arranged in a so-called
integrated unit medical record in which all notes and
reports are recorded in strict chronological order re-
gardless of who, or what department is responsible
(Huffman 1963:214)

The medical record may be numbered to 999,999 or
higher if a hospital decides to use the terminal digit
filing system. Using a new series of numbers each year
with a letter or number for the new year as a prefix to
the admission number (e.g., B-448 or 89-658) is an
old and confusing method which is not recommended for
use today with any method of numbering.

II. 3. 2 FILING SYSTEMS

There are two filing systems which are applicable
to any numbering system employed in the hospital:
-- Decentralized System, in which inpatient and out-
patient departments have their own individual records
which files independently within a related department.

> There is no connection between the two sets of
> files; if a patient is transferred from one
> department to another, the record can be
> secured only through a loan   (Huffman
> 1963:215).

The decentralized system is not efficient because all
data concerning a patient are not instantly available
at all times. At the same time, it is not economical
because duplication of records increases the amount of
labor and operating costs.

-- Centralized System, under this arrangement, all of
the case records of a patient, whether inpatient or
outpatient, are filed together within a central de-
partment. In this method

> medical records are unified and continuous,
> repetition is avoided, and all information
> concerning the patient is available at all times.
> (MacEachern 1962:767).

The unit method of numbering is the only type that is
practical to the centralized system.

-- Centralized Unit System, this is one in which a num-
ber is assigned to a patient on the first admission to
the hospital and is retained for all subsequent visites
of the same patient, regardless of the number of
admissions or the department visited. In this method,
records are all kept in one folder and filed in one
central medical record department, and the number
assigned identifies the same patient in any department
of the hospital in which he may be treated. This form
of record is unified and continuous; avoids repetition,
and all data concerning the patient are immediately
available at all times.

> Many concider this the ideal for filing medical
> records, particularly if there are numerous re-
> admissions to the hospital and to the outpatient
> department, if the hospital plan is such that a

central office can be assigned for all medical
records   (Huffman 1963:217).

-- Terminal Digit Filing, it is an accurate, simple and
speedy method of filing which assures an even distribution
of records as they are added to the file, and is based
on mathematical principle. This method can be used
with unit or serial-unit numbering system,

its greatest advantage. is in hospitals using
the central unit system of filing and having
large, active outpatient clinics.   (Huffman
1963:217)

With the terminal digit system, numbers are written in
pairs with a space between each pair of digits e.g.,
38-24-65. The last two digits (65) constitute the primary
number, many records are filed in the 65 section, so
it needs to be subdivided first to the secondary num-
ber (24) and then it must be arranged in numerical se-
quence according to the third group of digits or the
final number (38). The sequence of folders in 65
section of the terminal digit file is as follows:

        90-01-65
        91-01-65
        92-01-65
        93-01-65   and so on to
        90-02-65
        91-02-65
        92-02-65
        93-02-65   and so on to
        90-03-65
        91-03-65
        92-03-65
        93-03-65   and so on

     Advantages of terminal digit filing is as follow s:
-- all sections expand uniformly
-- heavy annual transfer of medical records to storage
is eliminated
-- filing is evenly distributed among file clerks
-- misfiles are reduced to minimum because the file

clerk needs to read no more than two digits at a time.

II. 3. 3 <u>FILING CONTROL</u>   .

When a record is removed from the department, an
out-guide or charge-out should be placed in the file
because the personnel of the medical record department
should always be able to determine the location of any
given medical record. The out-guide or requisition
should show the place a record is taken out and the date
of leaving the department. An out-guide should remain in
the file until the record is returned. The charge-out
method should be used both for those records sent to the
floors as well as those which are held out in a specific
plan for study. In large hospitals, written requisitions
should be used for medical records on readmission of
patients, or by a department of the hospital for
reference, or for research and study by the physicians.
A three copies form should be filled. One copy should
remain in the issuing department, one copy is attached on
the record and used as a routing slip, and the third one
is placed in an appropriate colored folder and filed
in the place of the record.

When medical record is returned to the file, the
charge-out, the out-guide or the requisition should be
removed, otherwise confusion will arise, and the value
of the control is lost. Most hospitals do not have
twenty-four hour service in the medical record depart-
ment, so only one person should be assigned for taking
records from the department at the night or over a
weekend. During the night or weekend requisitions are
filled out and remain on the desk of the medical record
administrator, if the record is returned before morning,
it should not be returned to the file and must be placed
on top of the requisition for the administrator's
attention the next morning.

II. 3. 4 FILING EQUIPMENTS AND FACILITIES

File drawer cabinets and shelves are two types of equipment, which should be used for the filing of medical records. File drawers are too expensive, need a great amount of space, and the opening and closing of heavily loaded file drawers is noisily and very tiring. They are usually five drawers high and file clerks have difficulty for their opening, closing and working the fifth drawer.

Shelf filing is the most popular because filing and finding is accomplished faster, and efficiency is increased. The initial cost of the equipment is less, and less floor space is required to file the same number of records. While a hospital uses shelevs for filing of medical records, to avoid dusty records it must set up a regular schedule of cleaning shelves, and train file clerks to keep their files neat. To decrease the chance of error in filing, every shelf must be guided. Using color-coded folders helps to reduce errors. When the file clerk makes a possible error in filing, he is immediately alerted because of a disagreement in colors.

> While terminal digit filing greatly decreases the chance of error, because the file clerk is concerned with no more than two digits at a time, the adoption of color-code folders helps to further reduce errors (Huffman 1963: 228).

Then different colors with greater contrasts can be used instead of 0,1,...9. Printed color codes on the outside front of the folders is not only helpful when pulling and filing medical records, but

> are also a great help when looking for a special record in a stack of medical records being processed. One need only check those

with the proper color band. This is a distinct
advantage when in a hurry. (Huffman 1963:
230).

Further simplification in filing procedures can
be made by placing a specific color out-guide in the
file when the medical record is removed on readmission
of the patient to the hospital, for research, for a
clinic visit or for any other reason. Different color
out-guides designating a certain place where records
are sent e.g., an orange out-guide may indicate that
the record is out for study.

II. 4 INDEXING MEDICAL RECORD

Indexes are the keys to use in locating various types of information. Indexing is one of the most important functions performed in the medical record department.

> An index is only as good as the original records, and as are those who are compiling it and using it, and so it provides necessary current information   (Huffman 1963:315).

If the medical record is to be of maximum service to the patient, and in medical research four indexes must be maintained, it is essential that they be kept up-to-date. It is also important that they be economical from the standpoint of both time and cost.

II. 4. 1 PATIENT'S AND NUMBER INDEXES

The patient index or Master Patient Index (MPI) is the most important index in the medical record department. It is key for locating medical record of patients. It is an alphabetical arrangement of cards containing the names of patients who were admitted to the hospital. The patient's index card must contain his name, address, birth date, sex, hospital number, name and address of nearest   kin, physician's name, date of admission, date of discharge, and change of address if any.

The filing arrangement of a patients' index may be
-- an alphabetically arranged index, following the alphabet letter through the surname and if necessary, continued through the given and middle name. If the hospital keeps this index as a perpetual file, using vertical filing equipment, medical record personnel need only to look in one place for a specific name. When the quality of cards is great enough and activity

of the file is sufficient, using a mechanical elevator
file is particularly : helpful. These types of equip-
ment save considerable time and cut fatigue as the
operator can sit in the chair and bring the required
section of the index by touching a button,
-- phonetic system of filing patient's index, in this
method

> the patient's index card is filed behind the
> appropriate guide for the initial letter of
> the surname, but according to sound rather than
> according to spelling (Huffman 1963:251).

In this filing system, indexing each name is not
according to the exact spelling like a straight alphabe-
tical file, but name variations are brought together by
the code number which represents the key letters. This
system is applied especially in those communities having
a large population with foreign names, or for those
having languages which have a different letter with
approximately the same sound, such as Farsi.

In the phonetic system, a form of simplification
is applied e.g., the English alphabet with 26 letters is
reduced to 6 key letters with a corresponding numeric
code. Vowels, a,e,i,o,u and letters w, h, and y are
not coded. The key letters, their code numbers, and
the equivalents of the key letters in English are as
follows, other languages develop a convenient key letter
according to their languages.

key letters	code numbers	equivalents
b	1	p f v
c	2	s g k j q x z
d	3	t
l	4	non
m	5	n
r	6	non

With this system the name Martin is coded 635 and
should be filed according to this number in the M section
of the file. Here all of the variations of this name

such as , Martin, Martan, Mortin, Murten, Merton...
are coded 635, and they will all be filed together.

The number index or register is a numerical list-
ing of numbers. It may be a loose-leaf book in which
the cases are listed in numerical order. Each entry
consists of the name of the patient, the name of his
physician, and date of admission. The most important
function of this type of index is a number control,
and it is essential if a unit method of numbering is
used.

II. 4. 2 PHYSICIAN'S INDEX

It is a record of work done and end result of treat-
ment rendered by physicians working in the hospital.
It is usually arranged alphabetically by name of the
physicians, and is filed on visible or vertical files.
The physician's index is a confidential record, and
should be available only to the physician himself for
review and analysis of his own work, the medical
audit committee, the credentials committee of the
organized medical staff for evaluation of the work of
the physician, and only for inspection by the governing
board of the hospital through the administrator. The
physicians' index must contain at least the hospital
number, the service on which the patient was treated,
the name of the patient, his age, sex, result of the
treatment, date of admission, and length of stay in
days.

II. 4. 3 INDEXES FOR DISEASES AND OPERATIONS

Research is one of the reasons for keeping medical
records. Diseases and operation indexing is one of
the major steps in making medical records readily
available for research. The primary purpose of
diseases index is to make available groups of

medical records of patients who have had the same or
related diagnosis. The primary function of the operation
index is to group medical records of patients who have
had the same operation. These indexes are a tool for
locating medical records by subject matter to carry
out activities such as:
-- continuing education programs
-- epidemiology and biomedical studies
-- control of the care
-- consultation of patient responses to the treatment
in previous cases in order to use the same treatment
for a current case
-- compiling statistical data on accurate rates,ages,
sex, and complications or associate conditions
-- review of medical records for regulatory requirements,
for adequacy of documentation and compliance with
accreditation standards.

In both indexes the code number is used for
indexing, and arrangement of the cards in the files is
strictly numerical.

> Indexing of diseases and operations may be
> defined as a listing on a card for specific
> disease or operation entity, according to a
> recognized nomenclature, all essential data on
> each patient having the particular condition,
> with no cross reference on other cards to any
> other entities involved in the case
> (Huffman 1963:318)

Three methods of indexing has been used for indexing
diseases and operations up to now. Dual grouping by
topography and etiology or procedure, and grouping by
master code numbers are not only a type of simplifi-
cation, but also   result in a much less cumbersome file.
Here the modified code number and the title on the card
indicate the type and extent of grouping. Simple
indexing is more time consuming than group indexing

and results in a much larger file because a card is made
out for each code number encountered. Cross-Indexing
of diseases and operations is another method which is
used for indexing. It may be defined as

> listing on a card for a specific diseases or
> operation entity, according to a recognized
> nomenclature, all essential data on each patient
> having that particular condition, with a cross
> reference on other cards to every other entity
> involved in the case   (Huffman 1963:330).

In this case,a patient may be listed on as many individual
cards as he has   diseases, manifestations or con-
ditions experessed by supplementary terms, and operations
during one hospitalization. In the cross-indexing
diseases and operations, each individual card refers to
the cards of all other conditions. In relation to the
simple indexing,cross-indexing is too time consuming; it
should not be done in a hospital unless a survey has
been made which proves that combination of diseases
and/or operations are frequently requested for study
and research. Basic data for any type of diseases and
operations index include the diseases, injuries, and
procedures code; hospital record number, age and sex of the
patient, physician name or code, date of admission and
discharge, associate 'diseases or procedure codes, and
any outcome or death and autopsy.

II. 4. 4 CLASSIFICATION SYSTEMS FOR DISEASES AND

OPERATIONS

They are many types of disease classifications,
each having a different purpose, but the original
purpose of classification and coding record is to
provide access to medical records by way of diagnoses
and procedures, so that the record can be retrieved for
impersonal reasons of medical research, and

> The most efficient classification system for
> hospitals is one that yields adequate infor-
> mation about large numbers of inpatient and
> ambulatory care patients and permits retrieval
> of the maximum number of patient medical records
> with review of the minimum number of records
> (Skurka 1984:65).

Up to now

> Codes were a kind of Dewey Decimal System, but
> for medical records rather than books, and the
> index in which diagnosis and operation codes
> were entered provided access to records just as
> the organization of books on library shelves
> provided access to those books.   (Thompson
> 1978:43).

Although many diseases and operations nomenclatures
and classifications have been used throughout the
years one must remember that

> a classification is a system of classes or
> groups, or a systematic division of a series of
> related phenomena into groups or classes, while
> a nomenclature is a system of names used in a
> particular branch of knowledge   .(Côte
> 1980:757).

Some of the nomenclature such as Standard Nomenclature
of Diseases and Operations (SNDO) have been used as a
classification tool for many years, so we discuss it
here as a classification tool.

II. 4. 4. 1 STANDARD NOMENCLATURE OF DISEASES AND

OPERATIONS (SNDO)

In 1928 when the New York Academy of Medicine
called a conference to formulate an acceptable nomen-
clature as a standard throughout the United States,
The Standard Classified Nomenclature of Disease was
designed, and the first official edition was published
in 1933. The second edition was published in 1935.

The third edition of the Standard Nomenclature of
Diseases and the first edition of the Standard Nomen-
clature of Operation were published in one volume
under the sponsorship of the American Medical Asso-
ciation in 1942. The fourth edition was published in
1952 under the title of Standard Nomenclature of Diseases
and Operations. The fifth and the last edition was
published in 1961. In SNDO every code number is made
up of two parts separated by a hyphen. The first part
indicates the site affected by the disease or operated
upon, and consists of a minimum of three digits. The
second part indicates the cause of the disease and
consists of three digits, where as in the nomenclature
of operations it indicates the procedure used in the
operation and consists of a minimum of two digits. The
SNDO schedule has the following parts:

II. 4. 4. 1. 1 DUAL SYSTEM OF CLASSIFICATION

It consists of:
-- Topographical Classification which is identical both
for disease and operation nomenclature. Here every
digit of the code number has a specific meaning.
-- Etiological Classification in which, as in the
Topographical Classification, every digit has a special
meaning e.g., in the case of chronic cholecystitis the
code number is 687-100,0 . In this example each digit
has a specific meaning as follow:

Topography	6	Digestive system
	68	Liver
	687	Gall bladder
Etiology	1	Diseases due to lower plant or animal parasite
	100.0	Chronic inflammation

In the case of appendectomy which has the code number
661-12 each digit has the following meaning:

Topography	6	Digestive system
	66	Large intestine= appendix
	661	Appendix

Procedures	1	Excision, generally
	12	Total excision of organ

II. 4. 4. 1. 2 NOMENCLATURE OF DISEASES

This is a

listing of acceptable disease terms arranged topographically, first by anatomical system, second by organ or part within each system, and third by subdivision of the organ or part (Huffman 1963:343).

II. 4. 4. 1. 3 NOMENCLATURE OF OPERATIONS

This parts follows the same scheme as the disease nomenclature and is based upon the part of the body affected and the type of operative procedure employed.

II. 4. 4. 1. 4 ANESTHESIA SECTION

This section is important for those hospitals where research is done in anesthesia.

II. 4. 4. 1. 5 DISEASES AND OPERATION INDEX

Two different alphabetical indexes which refer to the disease and the operation nomenclatures are placed here.

II. 4. 4. 1. 6 APPENDIX

It is an abridged statistical classification of diseases which is based on SNDO and designed for use as an indexing tool for small hospitals. SNDO is not used any more in hospitals, instead ICD-A or ICD-9-CM is the most used classification scheme.

II. 4. 4. 2 INTERNATIONAL CLASSIFICATION OF DISEASES

(ICD)

In the 17th century Captain John Graunt, of London
directed the attention of the world to morbidity and
mortality statistics, later on Dr. Jacques Bertillon
presented a draft of classification of the International
Statistical Institute. In 1900, in order to have
accuracy in vital statistics, the first International
Conference for the revision of the Bertillon classi-
fication of causes of death was convoked in Paris. The
conference adopted revision with the name of Inter-
national List of Causes of Death which was published in
1902. Revisions were completed in 1910, 1920, 1929,
and 1938. The responsibility of the sixth revision
turned to the World Health Organization in 1964, so the
sixth revision was published in 1948, and for the first
time it included lists for tabulation of morbidity as
well as mortality and the title was changed to the
Manual of the International Statistical Classification
of Diseases, Injuries and Causes of Death. This pub-
lication was made up of two volumes, one a listing
of the categories of diseases, and the second volume
was an alphabetical index of these listings. The sixth
revision for the first time included many non fatal
diseases and because of these inclusions, some hospitals
began experimenting with the manual by using it as an
indexing tool for classifying diseases, and employing
certain modifications of the listing which caused the
publication of International Classification of Diseases,
adapted for use in the United States (ICDA). The
seventh revision with the title International Classi-
fication of Diseases (ICD) was published in 1957, the
eighth edition in 1967, and the ninth edition in 1978.
The current ICD is a universal classification system
for grouping illnesses, and may be used in hospital

diseases indexing and

> Because the many users of statistical data have
> different needs, ICD classifies conditions by
> various axes, including etiology, manifestation,
> and anatomical site. No single classification
> can satisfy all users. ICD attempts to provide
> a statistical classification of diseases and
> injuries with a common basis for all users.
> (Santo 1978:8).

ICD has been published in the English, French, and
Russian languages.

Adaptations of ICD were made in the United States
for use in hospitals in 1959, 1962,

> The listing found in the two-volume 1962 edition
> are basically those of the International Statis-
> tical Classification of Diseases, Injuries and
> Causes of Death (ISCD), with certain portions
> expanded to fit present day needs of indexing
> diseases and operations   (Huffman 1963:343).

The International Classification of Diseases, adapted
for use in the United States (ICDA) is based on the
eighth revision of the ICD which was published in 1967.
The ninth edition changed its name to International
Classification of Diseases, Ninth Revision Clinical
Modification (ICD-9-CM) which is

> intended for use in reporting, compiling, and
> comparing health care data to assist in
> evaluating the appropriateness and timeliness of
> medical care for PSRO and inter—hospital
> activities, planning health care delivery systems,
> determining patterns of patient care among
> providers for health services, analyzing pay-
> ments for health services, and conducting
> clinical and epidemiological research
> (Santo 1978:8).

It is a statistical classification which is designed
to furnish quantitative diagnostic and procedural data
on groups of causes. ICD-9-CM is not a nomenclature,

so it does not allow for specificity in describing all approved clinical and pathological terminology.

The increased demand by researchers, hospitals, medical care reviewers, and others interested in medical statistical data caused the response of the WHO to expand and amend the ICD-9, to add many fourth-digit subcategories and some fifth-digit subclassifications, and to increase the flexibility of classification. The WHO provided ancillary classifications of related subjects as follow:

II. 4. 4. 2. 1 INTERNATIONAL CLASSIFICATION OF DISEASES

FOR ONCOLOGY (ICD-O)

It represents an extension of chapter II of the ICD-9. It permits the coding of all neoplasms by topography, morphology (histology) and behavior such as malignant, benign, in situ and so forth. It is used in cancer registry programs.

II. 4. 4. 2. 2 INTERNATIONAL CLASSIFICATION OF HEALTH

PROBLEMS IN PRIMARY CARE (ICHPPC-2)

It is an adaptation of ICD-9 intended for use in general medicine. It is designed to group the problems that make up primary medical care.

II. 4. 4. 2. 3 DIAGNOSTIC AND STATISTICAL MANUAL OF

MENTAL DISORDERS, THIRD EDITION (DSM-III)

It is a statistical classification and glossary
with more specificity than is contained in
ICD-9, and it purports to reflect the most
current knowledge regarding mental disorders
(Skurka 1984:67).

II. 4. 4. 2. 4 INTERNATIONAL CLASSIFICATION OF IMPAIR-
MENTS, DISABILITIES, AND HANDICAPS

This classification is mostly used in rehabili-
tation services; it consists of three different parts:
impairments (I-code) which are concerned with abnor-
malities of body structure; disability (D-code) which
reflects the consequences of impairment in terms of
functional performance and activity by the individual,
and handicaps (H-code) which are concerned with the
disadvantages experienced by individuals as a result
of impairments and disabilities.

II. 4. 4. 2. 5 INTERNATIONAL CLASSIFICATION OF PRO-
CEDURES IN MEDICINE

It has a structure similar to that of ICD-9 and
each volume contains a tabular list and alphabetical
index.

II. 4. 4. 3 SYSTEMATIZED NOMENCLATURE OF MEDICINE
(SNOMED)

The Systematized Nomenclature of Pathology (SNOP)
was published in 1965. This multiaxial coding system
was revolutionary because it was capable of the most
specific to the most general coding of medical entities
and concepts.

> This was the first true nomenclature designed
> for the codification of all surgical and autopsy
> diagnoses, which is essence span most of the
> known medical conditions   (Cote 1980:
> 757).

It contains the coding axes of , topography, morphology,
etiology and function. The SNOP successor is the
Systematized Nomenclature of Medicine (SNOMED) which
was published in 1979 by the College of American

Pathologists .

SNOMED catalogs approved terms for describing and
recording clinical and pathological observations. It
has logical open-ended modules that allow the incor-
poration of additional axes in future, and expands to
include new terms necessary to record new observations.
It is also computer compatible. It contains, seven
axes as follows:
-- axis 1. Topography, it is a hierarchical, anatomic
nomenclature.
-- axis 2. Morphology, represents abnormal anatomy, and
refers to abnormalities in the form of structure of the
body or its parts. It is also hierarchical.
-- axis 3. Etiology, consists of causes and causal
agents of diseases.
-- axis 4. Function, it contains the normal and abnor-
mal functions, functional states and physiological
units of the body and the major organ systems.
-- axis 5. Diseases, contains an organized list of classes
of diseases, complex disease entities and syndromes...
-- axis 6. Procedures, is a list of administrative,
diagnostic, therapeutic and preventive procedures.
-- axis 7. Occupation, which is a new axis.

SNOMED and SNOP are used by many pathologists
although the complete specificity of this nomen-
clature prevents it from serving satisfactorily as a
statistical classification because

> Statistical classification of disease must be
> confined to a limited number of categories that
> will encompass the entire range of morbid
> conditions.   (Skurka 1984:69).

II. 5. PRESERVATION OF MEDICAL RECORDS

The length of time that medical records should
be retained and the format in which they should be kept
will vary depending on the purpose of the record keeping.
Although medical records are kept primarily for the
care of the patient's illness and the treatment he re-
ceives, yet they serve many other purposes. A medical
record is kept for the benefit of the physicians, health
care institution, education of doctors and medical
research. At the same time it is the property of the
health care institution, so in selecting a record re-
tention program, the health care institution must be
guided by the clinical, scientific and audit needs of
its own and by the existing country laws. The Joint
Commission on Accreditation states:

> The length of time that the medical
> records are to be retained is depending upon
> the need for their use in countinuing patient
> care and for legal, research, or educational
> purposes   (Skurka 1984:89).

In the absence of legal consideration, it is usually
sufficient to retain the medical records 10 years after
the most recent patient care usage. (Skurka 1984:88).
Usually the complete patient medical records are either
in the original or reproduced form and retained in
health care institution. After the determined retention
time records may be destroyed unless destruction is
specifically prohibited by statute, ordinance, re-
gulation or law.

> some hospitals such as teaching hospitals,
> prefer to keep records even longer than the law
> requires, so that, for research and educational
> purposes, they can check back 20 or more years
> on the care provided patients; even though such
> records are retained, they should not be kept
> in an active access area.   (Presby 1977:77)

Basic information of each record such as date of
admission and discharge, records of diagnosis and
operations, names of the responsible physicians,
surgical procedure. reports, pathology reports and
discharge summary must be kept before destroying records.
Complete medical records of patients under mental dis-
ability must be retained for longer periods.

> It is generally accepted that records of
> juveniles, pediatric cases, or new-borns,
> —in other words, all minor patients— must be
> retained until the patient reaches majority
> (Waters 1979:437).

In the case of a written request of the attending or
consulting physician of the patient: patient or some-
one acting legally in his behalf, and legal counsel for
a party having an interest affected by patient medical
records, complete patient medical records must be re-
tained for longer periods.

In planning a retention system one must not think
only of the medical record as a whole.

> registers, indexes, consent forms, forms for
> the release of information from the institution,
> medical records, and all various departmental
> diagnostic and therapeutic reports are all data
> that must be considered individually when de-
> termining the statute of limitations of retention
> purposes (Waters 1979:437)

II. 5. 1 METHODS OF RECORD RETENTION

Before the health care institution is faced with
a " paper explosion", a policy must be chosen to allow
an orderly approach and solution to medical record re-
tention. Record retention can be done in one or more
of the following ways:
-- the most active records are stored in the original
form in an easily accessible area, and the least active

record stored in original form in a remote area
-- selective destruction and condensing medical records
by retaining only those data which are considered
essential in their original form
-- setting a retention and destruction schedule which
provides a means of keeping some information while
destroying the bulk of the paper
-- using one or some type of electronic data processing
system for storage of medical record information
-- microfilming medical records.

The last method is the most common way which has
been used and is used as a means of retention of medical
records in a health care institution.

II. 5. 2 MICROFILMING MEDICAL RECORDS

Although in most hospitals space is usually pro-
vided for medical record keeping for a projected period,
the time comes when all available storage area is
filled to capacity. To overcome this problem some com-
mercial companies, in some cities provide storage
centers, and deliver records promptly by messenger or
by mail when needed. This method is adequate for hos-
pitals which rarely use their inactive medical records,
but it is inconvenient because of possible delay for
those hospitals with large outpatient clinics. Micro-
filming, a method of space conservation used for many
years by insurance companies and banks, has been
adapted by many hospitals for retention of medical
records.

When in 1939 the United State Supreme Court handed
down a decision on the admissibility of microfilmed
records in court which stated: " They constitute not
secondary, but primary evidence "(MacEachern 1962:757),
the use of the microfilm increased in that country.
In 1951 the 82nd congress of the United States passed
an amendment to public law 129 which legalized and

accepted the use of microfilm as primary evidence throughout the country.

So if the health care institution would like to preserve its medical records and does not have enough space to keep all records in the original format, microfilming may be a solution to this problem. Before microfilming, the medical record department should contact the country's regulatory agency concerning regulations affecting retention of medical records, microfilming requirements, and specific provisions accompanying microfilm permissibility as evidence in court.

The health care institution can elect to microfilm medical records entirely in the department with the help of the personnel or to contract with an outside company. It is also possible to use a combination of the above choices. In this case the health care institution can do some part of the job such as chart preparation with the help of its own personnel, and let the actual microfilming be done by a service company. Regardless of the way a health care institution chooses, the original medical records should not be destroyed until the medical record personnel have reviewed the microfilm for accuracy in microfilming and quality of film production. If a health care institution decides to contract with a microfilm service bureau, it should consider the following:
-- the cost of the service
-- availability of the service in local area
-- expertise of the staff
-- range of services which the company can offer
-- type of equipment used
-- condition of the equipment
-- quality of services provided within the time allotted
-- record of performance in similar applications.

The key factor in determining retention and microfilming scheduling is the activity of the records.

Microfilming can be done quarterly, semiannually or annually; some institutions microfilm each record as soon as it is completed by the physician.

Anyway once a record is changed to microfilm form, this new record (microfilm) must never leave the archive, only copies of the microfilm are handed out to the user. Only in this case it becomes possible to guarantee completeness of the archive and to make its material available to different users regardless of time and location (Möhr 1976:74).

Various methods and media can be chosen to house microfilm in the medical record department; they are as follows:
-- roll film, it is the most economical media and is suitable for a serially numbered record
-- cartridges and cassettes, they do not have the inconvenience of the manual film handling, they offer more flexibility so they are more expensive than roll film, they are suitable for a serially numbered record
-- microfiche, allows easy and direct access to information, all information on a patient can be placed on one sheet, some microfiches have the feature that allows up-dating of a record
-- computer output microfilm (COM) which has application in computerizing a master patient index.

When a health care institution uses a kind of microfilming, it is wise to store a copy of the films in a safe place against the danger of an accident.

It is necessary to have an intermediate archive because a chart is quite frequently incomplete when it reaches the department, and a number of documents are available only well after the patient's discharge. Another reason for the intermediate archive is because the health care institution's staff prefers to have the original record available for information about recent

events.

II. 5. 2. 1 <u>ADVANTAGES OF MICROFILMING MEDICAL RECORD</u>

It has been said that microfilming has the following advantages:

-- saving of space and filing equipment, microfilming reduces the square footage required in space contributing directly to lower building costs.

> It is estimated that 98 percent of the space
> can be saved when film rolls are used, or
> 75-80 percent when microfilm cards are used;
> the variation in the latter percentage depends
> upon type of card used.   (Huffman 1963:263).

-- accessibility, sending out film copies rather than the original master lets the medical record department guarantee the integrity of the master medical record file; at the same time copies of the film can be sent to more than one clinic or other patient treatment area

-- protection, records on film can not be easily altered

-- efficiency, medical records on film can be filed in the medical record department itself, so this eliminates the time consumed in going to the outlaying store room for records, also the speed with which stored material can be activated and dispatched is important

-- elimination of misfiling

-- many countries accept microfilmed records as primary evidence in court, so for those countries it is legally recognized.

II. 5. 2. 2 <u>DISADVANTAGES OF MICROFILMING</u>

It has been said that microfilming has the following disadvantages:

-- initial cost is very high

-- most of the time they are inconvenient for study because documents on microfilm can not be compared easily

-- mimeographed material, embossed legal seals and faint carbon copies are difficult to photograph

-- it is inconvenient for many doctors, they ask for paper copies and expense of duplication must be considered

-- updating process is not always practical

-- the effect of color which may be important is lost on black and white film.

I I . 6 MANAGEMENT OF MEDICAL RECORD DEPARTMENT

>It is rightly held that development is the
>function not only of capital, physical and
>material resources, but also of their optimum
>utilization.   (Agarwal 1982: 3).

Through effective management one cannot only produce more
output of goods and services with given resources, but
also can expand them through better use of science and
technology.

>Management is the social process of planning,
>organizing, staffing, directing, coordinating
>and controlling for the determination and
>achievement of organizational objectives in a
>dynamic environment   (Agarwal 1982: 5).

The medical record administrator is responsible for
managing health information in his department. To do
so, he must be able to perform the basic function of
management.

>Effective management requires not only adequate
>technical knowledge and skills to perform in a
>given managerial role, but also requires
>attitudes and practice   (Clarkson 1974:
>27).

The task of management is both a science and art. The
old adage that said, in order to be successful one
must be born with management skill,is not true.
Management skill can be learned. In order to be
successful in their responsibilities, medical record
administrators may have to learn how to do with what
they already have.

>To an ever-mounting degree, hospitals and other
>health care institutions, along with indivi-
>duals interested in this area, increasingly
>are recognizing that the accomplishments, as
>well as the efficiency of the health care
>system, are significantly dependent upon the

quality of management   .(Hickey 1970: 32).

Management is the catalyst which brings different
elements together and sets the direction and pace with
which the organization moves.

The management process consists of six fundamental
functions irrespective of the size and kind of orga-
nization. They are, planning, organizing, staffing,
directing, coordinating and controlling. The medical
record administrator, as every manager at every level of
organizational hierarchy, has to perform all these
functions, · in fact, these functions distinguish
managers from non-managers (Agarwal 1982: 3).

II. 6. 1 PLANNING

Planning is the most basic function of management.
All managers at all levels of hierarchy, in all kinds
of organizations, must have a plan for their work.

> Planning is deciding in advance the long-and
> short-range objectives of the enterprise, and
> the means of attaining them. It involves
> looking into the future, anticipating it, and
> attempting to influence it so that the desired
> goals are achieved with maximum efficiency and
> effectiveness.   (Agarwal 1982: 54).

If we are going to group people to work with each
other in the medical record department, they should
know in advance what is to be done, what activities
they have to perform in order to do what is to be done
and when it is to be done. Planning is concerned with
what, how, and when of performance. Planning may be
categorized as: .
-- long term planning, which has a long time horizon
and concerns mainly   the future direction of the
department; its period generally varies from five to
ten years and it is more difficult to prepare it

-- short-range planning or operating plans are prepared
for a shorter period, generally for one to two years
-- functional planning, which is concerned with segmental
plans such as financial and manpower planning
-- corporate planning, which is a composite of all the
functional plans.

Planning involves determining long and short range
objectives; developing strategies and courses of action
to be followed for the achievement of the determined
objectives; and formulating policies, procedures, and
rules, etc. for the implementation of the developed
strategies. To have a truly adequate plan, it should
be logical, comprehensive, formal, flexible and action
oriented; logical planning includes commitment in
terms of time factors and specific action to be taken
(Liebler 1980: 100). There are four steps in the
planning process:

II. 6. 1. 1 FORECASTING

Prediction of the internal and external environ-
ment of the medical record department for the future
is the first step in planning. It would involve
gathering information on items that would influence the
demand for or decrease the department services. Pre-
dictions for the budget, building, employee, new tech-
nology and equipment are a part of forecasting.

II. 6. 1. 2 DETERMINATION OF OBJECTIVES

Determination of the corporate objectives of the
medical record department, and special objectives of
departmental, sectional and subsectional departments
is the second step in planning.

The objectives must be measurable if they are
to be useful; they must be formulated in such a
manner that all participants in the system
understand what is to be achieved

Waters 1979: 499).

II. 6. 1. 3 MEANS FOR ATTAINMENT OF PLANNED OBJECTIVES

In this step the manager establishes policies, procedures, rules, standards, strategies, and methods which are means for achieving the planned objectives.

II. 6. 1. 4 DETERMINATION OF REQUIREMENT OF RESOURCES

Estimation of the required and available manpower, materials, and financial resources is the last step of planning.

II. 6. 2 ORGANIZING

Organizing is

> the basic process of combining and integrating
> human, physical and financial resources in
> productive interrelationships for the achieve-
> ment of enterprise objectives. It aims at
> combining employees and interrelated tasks in
> an orderly manner, so that organizational work
> is performed in a coordinated manner, and all
> efforts and activities pull together in the
> direction of organizational goals
> (Agarwal 1982: 7).

Organizing involves identification of activities which are required to reach the medical record depart-ment's objectives. A manager groups the activities into jobs and assigns jobs to different departments, sections, subsections, and employees. At the same time, he creates a network of relationships and makes provisions for vertical and horizontal coordination of activities. Any job in the medical record department,

> must be organized so that information is pro-
> cessed in an orderly, speedy fashion. The
> medical record administrator must be aware
> of a particular institution's information needs
> and coordinate the activities and performance

> of developmental functions so that medical re-
> cords can be available to those who need them
> when they need them. (Waters 1979: 501).

The outcome of the organizing process is an organization chart and organization manual. The organization chart shows the
-- departments and divisions at vertical and horizontal levels
-- authority-responsibility relations
-- channels of communication.
As a result each employee knows where he belongs in the organization and to whom he is responsible.
(Allen 1973: 15). Organization manuals complement the organization chart because they provide job descriptions for various positions. " A job description is an objective statement of the what, where, when and how of a particular position." (Kach 1973:38). It includes:
-- function of a special position
-- duties of that position
-- responsibilities of the position
-- qualifications required for the position
-- salary ranges
-- patterns of interaction
-- communication and coordination with other positions.

Preparing a good job description helps a manager to find the right person who will succeed in performing that job. A job description usually defines the actual, not the ideal, and in order to be effective, it must be kept up-to-date.

II. 6. 3 STAFFING

One of the primary, vital and continuous functions of a manager is to acquire qualified and trained people to fill various positions. Determining staff require-

ments of the medical record department is needed to determine what tasks are performed; what skills need to be performed; what method is used to perform each task; how much time each task takes; what is the work load volume of each job; and when each task has to be done.

The efficiency and effectiveness of the medical record department, like any other organization, significantly depends on the quality of its personnel. So a manager must improve the quality of himself, as well as his already present employees, by different means, and prepare a plan for the department's manpower for the future. Staffing function includes the following subfunctions:

-- manpower planning
-- selection of the most suitable individuals for the jobs under consideration
-- arranging orientation
-- training employees.

II. 6. 4 DIRECTING

The function of

> leading the employees to perform efficiently
> and effectively and contribute their optimum
> to the achievement of organizational objectives
> (Agarwal 1982: 7)

is called directing. Directing comprises three subfunctions:

II. 6. 4. 1 COMMUNICATION

It is one of the most central aspects of managerial activities because whatever a manager does, he does it by the means of communication. So communication is a channel. In an effective communication, the receiver not only understands the message sent by the communicator, but also accepts and complies with it. Communi-

cation may have several links in medical record de-
partments, for example
-- patient or client with direct care provider
-- patient or client with indirect care provider
-- patient or client with user
-- provider with provider
-- user with user
-- provider with user.
Communication may be carried out by, personal encounter,
telephone, teleprocessing equipment, and transcription
equipment.

II. 6. 4. 2 MOTIVATION

Motivation of individuals who work within the
medical record department is just as important as mo-
tivation in any other environment. Today's workers are
more skilled and more educated, they perform their jobs
with their minds rather than their brawn (Alpert
1986: 15) , so these workers want the work to be inte-
resting, enjoyable, stimulating and challenging, so
the working environment must be pleasant, innovative
and modern.

Motivation is an urge to drive which compels the
employees to act in a particular direction, to an ac-
tive certain goal of the medical record department.

II. 6. 4. 3 LEADERSHIP

> Leadership is the art of influencing individual
> and group effort toward the optimum achieve-
> ment of organizational goals   (Agarwal
> 1982: 232).

The manager must know that people differ in their mo-
tivational patterns. He must stimulate personnel as
individuals and group members, and inspire them to make
their optimal contribution to organizational efficiency

and effectiveness. One of the areas of leadership is the ability to educate employees continually, prepare new members of the department and update information for regular members of the department. A manager must be able to sense a changing environment and discuss it with employeeyes and redirect their efforts to adapt to changing situations.

II. 6. 5 COORDINATING

Coordinating is a fundamental function of a manager and a necessary condition for the achievement of common, explicit goals. It is

> the function of establishing such relationships among various parts of the organization that they all together pull in the direction of organizational objectives (Agarwal 1982: 7).

A manager ties all the organizational decisions, operations, activities and efforts in such a way to achieve unity of action for the accomplishment of organizational objectives. Any medical record department needs coordination because there is a need for division of labor, allocation of limited resources, functional differentiation and individual differences. Coordination may be vertical which integrates activities of employees working in superior-subordinate relationship. It may be horizontal which takes place among employees who are working in the same or different department. Diagonal coordination takes place among employees working at different levels in hierarchy and in different departments. Coordination involves the following subfunctions:
-- defining authority-responsibility relationships in a clear way
-- unity of command
-- unity of direction

-- establishing effective communication

-- establishing effective leadership.

II. 6. 6 CONTROLLING

This function of the manager has equal importance
with other functions.   It is

> the function of ensuring that divisional,
> departmental, sectional and individual perfor-
> mances are consistent with the predetermined
> objectives and goals   (Agarwal 1982: 8).

Any deviation from plans and objectives affects managers
and all managerial processes, including planning, or-
ganizing, staffing, directing and coordination. The
manager must compare actual performance with standards.
He must identify and analyze the deviations and find out
the causes of deviations, and as a result, introduce a
corrective action for them.   In short the manager eva-
luates performance by pointing out errors and weaknesses
and rectifies the situation to prevent recurrence. Con-
trolling includes the following subfunctions:
-- measurement of performance against predetermined
goals; standards can be used as a yardstick for this
subfunction
-- standards should be set for all employees and for
strategic activities
-- identification of deviations from goals by comparing
the actual performance with the standards periodically
-- introduction of corrective action to rectify
founded deviations.

The manager must periodically review the various
phases of management to determine effectiveness of the
management.   In other words, he must audit management
by asking questions and trying to ask again and find
a positive answer for them.   Some of the useful ques-
tions are as follow:

-- Are the goals of the medical record department well
defined, measurable, attainable, and understandable
for all?

-- Are our departmental goals agreeable with the ins-
titutional objectives?

-- Are our plans agreeable with our goals?

-- Do we establish policies, procedures and methods
for all important operations and communicate them in
some sort of readily accessible form for all related
employees?

-- Are our job descriptions designed so that each
individual's responsibility is clearly identified and
understood?

-- What about our standards of performance in positions?

-- Are we doing things in the most effective manner?

-- What about resources, are we making the most effec-
tive use of them?

II. 7 AUTOMATION AND NEW TECHNOLOGY IN MEDICAL RECORD DEPARTMENT

The complexity of medical care has greatly increased since 1950. Since then, more technology, more professionals and more support services have been involved in the care of the patient , so today's medical care institutions encounter the problem of coordinating and communicating massive quantities of data necessary for clinical care.

> Because of increasing complexity and volume of medical and non medical data recorded on each patient, the traditional recording practices employing hand written or type written notes can no longer guarantee efficient health care, nor can they provide a sound basis for an in-depth audit or for clinical research (Fenna 1984: 82).

The need for better means of recording and retrieving data for medical records is becoming increasingly obvious, so the use of data processing equipment is seen as a necessary step.

Computer can be expected to handle data more efficiently than a humanbeing with respect to accuracy, speed and reliability. It can search its data file much more quickly and easily than a medical record practitioner can search a manual file. Hospitals were beginning to recognize that the availability and low costs of minicomputers make special purpose information systems obtainable and cost effective for even the smallest facilities. Hospitals are no longer required to buy costly computers and there is no need for highly specialized staff to achieve selective goals. At the same time computers permit analyses that have previously been quite impracticable because of the amount of labor involved (Reilly 1969: 67). This feature makes computers a new powerful tool for scientific

researches.

II. 7. 1 COMPUTER APPLICATIONS IN MEDICAL RECORD

DEPARTMENT OPERATIONS

Today, every technical function identified in this study as an appropriate activity in establishing and maintaining an effective medical record department has been computerized. Some of those are computerized in low cost applications, using batch method such as punch cards and many of them have made use of on-line method to acomplish their objectives.

II. 7. 1. 1 MASTER PATIENT INDEX

The permanent listing of all patients treated in a facility, and the foundation for medical records processing, retention, and retrieval are operations which have been computerized. In the registration area, a clerk enters the patient's name on a CRT terminal, and the name of patient along with the hospital or registration number appears in the screen in the case of a previous admission or clinical visit. If the patient has not been there previously the clerk may call for a registration screen display and enter the information provided by the patient directly into the terminal and send the data directly to the computer. In many master patient index systems both alphabetical and phonetic searching of the index will be performed by the computer.

> If the system is part of an integrated automated hospital information system, the appropriate data can be immediately communicated to other departments in the hospital. This would include dietary, housekeeping, laboratory, X-ray, business office, and any other department that may need to know when new admissions or new patients are entering the facility (Waters 1983: 76).

II. 7. 1. 2 CENSUS AND STATISTICS PREPARATION AND DISTRIBUTION

Collecting , validating, and summarizing the number of facility admissions, discharges, and transfers and actual number of patients in facility beds is another activity which has been computerized by batch as well as on-line method.

The name of a newly admitted patient is added to the list that makes up the census report. In the on-line system, each time a patient's name is added, the file automatically will up-date and will be available for those who wish to check the current census. In a batch process the data on a patient is keypunched or typed into a terminal at the time of admission, but the data is not processed beyond the local storage medium at the same time. Each day the census print out which includes a list of admissions, discharges, transfers, and deaths is prepared.

II. 7. 1. 3 CHART COMPLETION

Chart completion means reviewing patient records to ascertain whether all forms are dated, signatures presented, diagnostic conclusions recorded and data entries are completed and accurate. The result of chart completion is the preparation of chart deficiencies under a physician's name, which is another operation that has been computerized in many medical record departments. In this system the patient information is keyed under a physician's name. This automatically stores the information, so the list of incomplete records of a physician can be quickly printed upon request.

This system also produces lists of the total number of chart deficiencies for each physician, which can in turn be grouped according to services such as medicine, cardiology, and so

on. (Waters 1983: 86).

II. 7. 1. 4 DISCHARGE ABSTRACTING

This is an operation in which the records of dis-
charged patients are abstracted to define and describe
the frequency of use of the various hospital services,
and services for a given time period. This operation
has been available in computerized form for a long time.
Many hospitals have subscribed to discharge abstracting
service for many years. In this case the medical
record department's staff completes an abstract form
for each patient upon discharge and sends forms to
the abstracting company. The data items of the abs-
tract forms are compiled to produce a standard set of
statistical reports for the medical record department
by the company. Many hospitals develop their own dis-
charge abstracting system as a natural follow up to an
on-line hospital census and master patient index func-
tion.

II. 7. 1. 5 COMPUTER-SUPPORTED DIAGNOSTIC AND PROCE-
DURAL CODING AND INDEXING

Two computerized coding systems are now available.

II. 7. 1. 5. 1 COMPUTERIZED LEXICON FOR ENCODING AND
RETRIEVAL CODING SYSTEM (CLEAR)

This system provides for on-line encoding of the
names of diseases and procedures according to standard
nomenclatures or according to the physician's own
wording. CLEAR is a lexicon-driven computer based
system which has the ability to transform natural
language (English) terms into the International Clas-
sification of Diseases-9th Revision-Clinical Modifi
cation (ICD-9-CM), Systematized Nomenclature of Me-
dicine (SNOMED), Current Procedural Terminology (CPT),

Drug Coding (whereby names of generic and brand drugs are organized hierarchically according to clinical usage) and Unique Code (Which is the exact wording used by the physician).

This system can provide a daily alphabetic list of discharges which has codes for diagnoses, procedures and drugs. It also can provide daily, weekly, or monthly statistical reports of discharges and diagnoses by categories, such as length of stay or any other statistics required by the user. It also can display all the terms stored in the lexicon under any particular coding systems.

II. 7. 1. 5. 2 CODEFINDER

This is a computerized system developed by Code 3 Medical Systems in collaboration with the Commission on Professional Hospital Activities (CPHA). This system leads users through a direct process in which the encoding process is semiautomatic. In this system the user enters key words of the English text into the computer and requests for detail. As a result, the appropriate SNOMED/ ICD-9-CM/ CPT codes are automatically placed in the computer record.

II. 7. 1. 6 CHART LOCATION AND TRACKING SYSTEMS

These systems were developed to identify the exact location of the record at any given time, improve access and retrieval of the medical record by inquiring through patient number or name on a CRT screen. These systems can be coordinated with chart request operations for research studies, patient readmission, clinical appointment, and other record requests. Chart requests are made through a CRT screen display and the request is listed on a printer in the file area.

II. 7. 1. 7 COMPUTERIZED WORD PROCESSING AND TRANSCRIPTION MANAGEMENT

> Word processing is the use of a computer-type-
> writer interface to prepare documents in such
> a way that they can be extensively edited,
> rewritten, combined with other documents, and
> rearranged internally, all with a minimum
> effort   (Thompson 1980: 42).

Word processors increase. output and improve turnaround time. They have great accuracy with ease of correction, and high speed printout because no document need ever be retyped in its entirety. In word processing only those parts needing changes have to be altered. The transcriptor is able to move whole paragraphs or pages within the document or add from other documents previously typed in the system. After extensive editing and reediting on CRT a hard copy is speedily produced by the printer.

II. 7. 2 NEW TECHNOLOGIES AND MEDICAL RECORD

The impact of computer technology has been felt at all functions of the medical record department. As the age of computers and information management matures, more advances will bring to this department and carry us a step beyond familiar computer applications and closer to totally automated medical information system (American Medical Record Association, Council on Research 1987: 21).

II. 7. 2. 1 PORTABLE INFORMATION TECHNOLOGY

Portable information technology was developed by Drexler Technology of Mountain View, California. It refers to the use of plastic memory cards for storing medical information. These cards look like a credit card and they may have an optical strip , a single

magnetic strip, an electronic strip, or a micro-chip
as the memory bank. They are able to store the entire
medical record of an individual, up to 800 pages in text,
update as needed, and be retained in the patient's posses-
sion at all times. In the market they are known as
Life Card, Laser Card, Optic Memory Card, Personal
Health Card/ or The Smart Card. Blue Cross/Blue Shield
of Maryland is the first domestic user of these cards.
Many other companies in the USA and other countries
such as Hungary, France and Japan have used this tech-
nology in the field of medical records.

II. 7. 2. 2 BAR CODING

Bar coding is usually used in the medical record
department for chart tracking, deficiency systems, and
medical record sign-out systems. A Bar Code is a series
of black lines and white spaces, that ,when stamped on
any product and scanned provide rapid data entry into
a computer. " As a data entry method, bar coding is
efficient, accurate, and rapid " (American Medical
Record Association, Council on Research 1987: 22).
A bar code could be stamped on the patient's medical
record folder; by passing a hand-held scanner across the
bar code (lable), the record could be charged out from
the medical record department to a clinic or nursing
unite. A list of the records which are charged out

> could be printed for recall purposes and/or to
> provide management with reports to assist in
> productivity monitoring, quality control and
> staffing issues   (Lach 1987: 25).

In the medical record department, records could be
tracked from assembly to analysis, to coding, and other
tasks.

II. 7. 2. 3 LOCAL AREA NETWORK (LAN)

Local Area Network (LAN) is

> An interconnection of individual microcomputers
> over a relatively short distance allowing them
> to communicate with each other, share files,
> and share peripherals, e.g., printers
> (Kuyper 1987: 45).

In a local area network any computer in the network
has the ability to access information used by other
computers in the LAN. In a hospital setting, LANs can
connect microcomputers in personnel, accounting, pur-
chasing, admitting, medical records, laboratory, ra-
diology, and nursing stations.

LANs' advantages such as expandability, speed,
flexibility, reliability, elimination of redundancy,
and data confidentiality and integrity put this tech-
nological advancement in a position that could become
another alternative when considering computerization.

II. 7. 2. 4 VOICE RECOGNITION TECHNOLOGY

These systems are able to produce computer-gene-
rated reports upon the automated translation of the
spoken English word. Many of these systems have 95 per-
cent rate of correct recognition. These systems can be
used in radiologic reporting for immediate availability
of information.

> Voice recognition can not yet fully replace
> traditional dictation, but should be considered
> for limited applications such as demographic
> data in the admitting process and for dictation
> of radiology reports and laboratory test
> results   (American Medical Record Asso-
> ciation, Council on Research 1987:22),

II. 7. 2. 5 PICTURE ARCHIVING AND COMMUNICATION
SYSTEMS (PACS)

They can store and transmit huge amounts of infor-
mation from digital imaging systems and interface it
with other systems, for example, health information
systems. One of the derivatives of PACS is Optical
Disk, which may be the medical record personnel's
answer to a paperless medical record department. We
can record the digitized photographs of medical docu-
ments on optical disks. Optical disks are storage
media which utilize low-power laser to retrieve infor-
mation stored in them. They are being widely accepted
because of ' their storage capacities and the rapid
accessibility to information on them ' (American Me-
dical Record Association, Council on Research 1987: 23).
At the same time they are non erasable and relatively
inexpensive.

II. 7. 3 NEW TECHNOLOGY AND CONFIDENTIALITY OF MEDICAL
RECORD

Using computer technology has become common in
health care facilities. As a result there is an increase
in data about an individual patient, large data banks
are developed, and there is advancement in record lin-
kage methods. Data handling becomes a critical support
service in medical care, and the record professional
must use technology to meet medical information goals.
Application of computer in the medical record practice
may pose a threat to the privacy of medical information,
so the need to develop data security is a primary force
in systems design. Administrators of health care fa-
cilities are responsible for security of their orga-
nization's information system, and the industry assumes
the responsibility for data security within its own

organizations and in developing computer systems for
its clients. A data security system must balance a
fine line between preventing data access by ..un author-
rized individuals while, at the same time, not making
access by authorized users too difficult.

Many security methodologies have been developed
today to prevent loss of confidentiality in the health
care system. Security methodologies range   from simple
to very sophisticated computer programs;

> Users can be identified, verified, and role
> authorization validated through machine programs.
> Passwords, fingerprints, speaker verification,
> and ID badges are all methods that can be used.
> In addition, the computer can be programmed to
> limit accessibility of certain files. In some
> cases, persons may be permitted to read files
> but not permitted to change any information
> contained in them. When badges and passwords
> are used, they are changed frequently. Ter-
> minals that are used for access to computer
> files can be locked in secure areas or equipped
> with key-operated power-on switches that can
> not be used without the proper keys. Computers
> can be programmed to produce a log that records
> who has used the system, when and how
> (Waters 1979: 269-270).

II. 7. 4 RECORD LINKAGE

> The process of connecting records on the same
> individual that have been generated at different
> times and in different places is record linkage.
> (.. Waters 1979: 102).

The objective for record linkage programs is to connect
existing records on one person. Linkage brings together,
in one file, all records of an individual by means of
a common identification such as social security number.
Many countries are wanting to use this concept for
epidemiology, genetics, and sociological researches and
administrative planning for improving patient care.

The militry of some countries used record linkage
programs. When a personnel transfers from one part of
the country to another, his medical record goes with him.

> The concept of having a universally-abailable
> computer store of medical information on
> individuals at local or national level is
> originally a British idea   (Brolly 1976:
> 35).

which was developed specially in Oxford, England
during the Oxford Record Linkage Study in 1961.
Application of computer brings an opportunity to
achieve record linkage on a far more comprehensive
scale.

III. APPLICATION OF MEDICAL RECORD

III. 1 MEDICAL RECORD IN THE UNITED STATES OF AMERICA

III. 1. 1 <u>HISTORY</u>

Benjamin Franklin, the secretary of the Pennsylvania
Hospital which was established in Philadelphia in
1752, wrote many earlier hospital records of that hospital
in his own handwriting. In 1803 the hospital began to
keep detailed record of the interesting cases. Since
1873 The Pennsylvania Hospital has kept histories of
the patient. At this hospital the patient index which
was started in 1873 changed its form and began to be kept
on cards in 1906.

The earlier attempts for indexing of diseases and
conditions began in the New York Hospital in 1862.
In 1893 the need for making a card catalog for all
patients' admissions became apparent, so the actual
work of cataloging was done by the Library Bureau.
Before the end of 1897, a librarian by the name of Mrs.
Grace Whiting Myers (1859-1957) had been employed,
and the care of clinical records including their cata-
loging became a part of her work.

The greatest improvement in medical record began
with the hospital standardization movement in 1918,
and later on with the organization of the medical
record workers in 1928 and their establishment of
specialized training programs.

III. 1. 2 <u>LEGAL ASPECTS</u>

Health care institutions must maintain a variety
of records. The public health laws in every state ask
those who operate or own health care institutions to
keep certain statistics relating to patients.

The requirement that hospitals maintain medical
records, including data relating to the admission,

diagnosis, treatment, and disposition of
patients, is found most often in state
licensing regulation (Huffman 1985:
576).

The Connecticut Public Health Code 19-13-D3 and its
regulation is instructive.

(d) Medical records. (1) There shall be a
medical record department with adequate space,
equipment and qualified personnel, to include
at least one registered record librarian or a
person with equivalent training and experience,
in a hospital of one hundred beds or over.
(2) A medical record shall be started for each
patient at the time of admission with complete
identification data and a nurse's notation of
condition on admission. To this shall be added
immediately an admission note and orders by the
attending or a resident physician. A complete
history and physical examination shall be re-
corded by the physician within twenty-four
hours of admission and always before surgery,
except in cases of unusual emergency. (3) All
medical records shall include proper identi-
fication data; the clinical records shall be
prepared accurately and completed promptly by
physicians and shall include sufficient infor-
mation to justify the diagnosis and warrant the
treatment; doctors' orders, nurses' notes and
charts shall be kept current in an acceptable
manner; all entries shall be signed by the
person responsible for them. (4) Medical records
shall be filed in an acceptable manner in the
hospital and shall be kept for a minimum of
twenty-five years after discharge of patients,
except that original medical records may be
destroyed sooner if they are microfilmed by
a process approved by the state department of
health (Huffman 1972:385).

Needless to say, the health care institution must con-
form to the minimum requirements of the state regulation
and statutes. Particularly the hospital should aim
to comply with standards set by the Joint Commission
on Accreditation of Hospitals (JCAH).

Confidentiality is another subject which is really

important in medical record keeping in the United
States. In 1979 three bills were introduced to the
congress, which specifically address

> confidentiality of patient medical records,
> patients'right to access their own medical
> record, and the right to make corrections in
> the record. (Waters 1979:263).

III. 1. 3 STANDARDIZATION

The American College of Surgeons was the originator
of Hospital Standardization in 1913. Although the
purposing standardization

> was not total standardization of all methods
> and activities involved in the provision of
> health care through hospitals but was really
> a standardization of the most common functions
> inherent in serving patients... One of the
> areas in which it set standards was documentation
> of patient care (Waters 1979:393).

In October 1928 the newly formed Association of
Record Librarians of North America took as its main
objective: " To elevate the standards of clinical re-
cords in hospitals, dispensaries, and other distinctly
medical institutions." (Huffman1972:23) The Joint
Commission on Accreditation of Health Care Organization
(JCAHO) formulates and continually updates accredi-
tation standards. In the medical record services sec-
tion of the Accreditation Manual for Hospitals it
mentions as a principle that

> The hospital shall maintain medical records
> that are documented accurately and in a timely
> manner, that are readily accessible, and that
> permit prompt retrieval of information, in-
> cluding statistical data (Joint
> Commission on Accreditation of Hospitals 1982:
> 83).

The most recent standards of this organization about
medical records are as follows:
-- Standard I. An adequate medical record shall be
maintained for every individual who is evaluated or
treated as an inpatient, ambulatory care patient, or
emergency patient, or who receives patient services in
a hospital-administered home care program.
-- Standard II. The medical record shall contain
sufficient information to identify the patient to
support the diagnosis, to justify the treatment, and
to document the results accurately.
-- Standard III. The medical record shall be confiden-
tial, secure, current, authentical, legible, and
complete.
-- Standard IV. The medical record department shall be
provided with adequate direction, staffing, and fa-
cilities to perform all required functions.
-- Standard V. The role of the medical record per-
sonnel in the overall hospital quality assurance
program and in committee functions shall be defined.
Each standard has an interpretation to explain the
details about that standard. The American Medical
Record Association has clearly stated its goal about
standardization as " Develop and update standards for
health record practice and credentiating of practi-
tioners " (Waters 1979:393).

III. 1. 4 MEDICAL RECORD PERSONNEL AND THEIR PRO-
       FESSIONAL QUALIFICATIONS

There are two levels of recognized professionals in
the area of medical record administration. Medical
Record Administrators are those who practice the ad-
ministration and development of medical records.
Medical Record Technicians are those who are active
participants in the development of medical record.
These titles do not reflect educational and professional

achievements. In order to reflect educational and
professional achievements, the AMRA introduced the
titles of (RRA) Registered Record Administrator and
(ART) Accredited Record Technician.

> A Registered Record Administrator is one who
> has completed a baccalaureate degree program
> in medical record administration and has
> successfully completed a national registry
> examination. Other avenues to registration
> include completion of a baccalaureate degree,
> certain prerequisite courses, and a program
> of study in medical record administration,
> usually known as a certificate program.
> An Accredited Record Technician (ART) is
> a highschool graduate who has completed either
> a school program or an AMRA-sponsored corres-
> pondence course in medical record technology
> and successfully completed a national accre-
> ditation examination   (Waters 1979:398).

Other individuals who work with medical records
and have not passed the above examinations are usually
known as medical record practitioners. Registered
record administrators and accredited record technicians
may have job titles that vary greatly, depending on
where they work. Some examples of job titles are;
Director of Medical Records, Assistant Professor,
Consultant, Research Associate, Department Head,
Information Manager, Systems Manager, Record Manager
and so on.

Medical stenographers, transcribers and clerks
who work in medical record departments are not included
in the educational programs of the AMRA. Some of them
have their own associations such as the Transcrip-
tionists. Medical record professionals have oppor-
tunities to work in the hospitals, skilled nursing
facilities, mental health centers, medical schools,
veterinary hospitals, ambulatory cardiac units, clinics,
X-ray departments, government agencies, prison systems,
insurance companies, home health care agencies, commer-
cial companies, community health centers,and pharma-

ceutical firms.

The medical record administrators work very close with the medical staff in many secondary functions of patient care such as, utilization review, review of medical staff bylaws, review of departmental procedures, review of the documents related to accrediting and licensing programs, evaluation of care, coordination of medical staff policies related to completing and documenting patient records.

III. 1. 5 AMERICAN MEDICAL RECORD ASSOCIATION (AMRA)

This association was founded in 1928 with the name of the Record Librarians of North America. The first president of that association was Grace Whiting Myers, librarian of Massachusetts General Hospital. Today, this association is a nonprofit organization with headquarters in Chicago, Illinois. The number of its members grew from 58 members in 1929 to approximately 30,000 in 1988. The stated purpose of this association is

> to promote the art and science of medical
> record administration and to improve the qua-
> lity of comprehensive health information
> services for the welfare of the public
> Waters 1979:393).

AMRA's goals are as follows:
-- provide leadership in all areas affecting the health record profession
-- provide leadership in promoting the appropriate use of health record information in the best interests of the public
-- promote unity and a sense of common purpose among health record practitioners in all settings
--provide appropriate communication channels to meet the needs of the members

-- represent the health record profession in its dealings
with government and other national groups and inter-
national organizations
-- deal   and promote on an on-going basis the appro-
priate roles, functions, and qualifications of health
record personnel
-- promote and evaluate educational activities that
enable the health record practitioner to achieve and
maintain professional and technical competence
-- develop and update standards for health record
practice and credentiating of practitioners
-- mainta'n and encourage adherence to a stated code
of ethics
-- promote and conduct research programs relating to
the health record field.

AMRA encourages and develops educational programs,
promotes the professional growth of its members, continues
to   establish and develop standards of competency
and continuously addresses itself to greater professional
effectiveness in the development and use of records for
patient care and secondary uses. To carry out its
objectives and to serve as a means of intercommunication
among AMRA members, it publishes a journal and news-
letter. AMRA's journal is the Journal of the American
Medical Record Association (JAMRA) which is published
monthly. This journal continued to serve as an edu-
cational medium through the years. The Medical Record
Educator Newsletter is a quarterly publication which
covers topics in medical record education. A well
organized library (Foundation of Record Education) in
AMRA's headquarter , Chicago, Illinois supports mem-
bers and researchers through its resources and
reference services.

AMRA has an annual meeting program. The latest,
which was the 60th annual meeting, was held on October
23-28, 1988 at the Dallas Convention Center, Dallas,

Texas with the 10th International Health Records Con-
gress. The AMRA is an active member of the Inter-
national Federation of Health Record Organizations
(I.F.H.R.O.).

III. 1.6 CLASSIFICATION SYSTEMS

Classification systems presently used in the United
States range from those statistical in nature to those
that are a catalog of terms for describing and record-
ing clinical, pathological, or procedural terms. The
most predominant classification system in America is
the International Classification of Diseases, Ninth
Revision, Clinical Modification (ICD-9-CM) which is
used in hospitals. ICD-9 is used in state and fede-
ral agencies responsible for preparing vital statis-
tics on births, deaths, and fetal deaths.

> The Joint Commission on Accreditation of Hospi-
> tals recommends use of ICD or a modification
> thereof for indexing hospital medical records
> by diagnoses and operations. The Health Care
> Financing Administration (HCFA) requires the
> use of ICD-9-CM by hospitals in reporting
> diagnostic and procedural data for payment of
> services given to Medicare recipients. State
> medical agencies also require hospitals to use
> ICD-9-CM in reporting data for reimbursement
> purposes. More and more insurence carriers
> are turning to ICD-9-CM for use in hospital
> reporting (Skurka 1984:66).

Other internationally used classification systems such
as International Classification of Diseases for
Oncology (ICD-O), International Classification of
Health Problems in Primary Care (ICHPPC-2), Inter-
national Classification of Impairments, Disabilities,
and Handicaps, International Classification of Pro-
cedures in Medicine are in current use. Besides the
above system, other classification systems such as
Systematized Nomenclature of Medicine(SNOMED),

Diagnostic and Statistical Manual of Mental Disorders,
Current Medical Information and Terminology (CMIT),
Current Procedural Terminology (CPT), The Reason for
Visit Classification (RFVC), Standard Nomenclature of
Athletic Injuries and Symptom Classification are also,
used in related health care facilities. To answer
coding questions, many of the publishers of the above
classification systems have services for their users.

> The American Hospital Association maintains a
> central office on ICD-9-CM cooperation with
> the United States Public Health Service Na-
> tional Center for Health Statistics and the
> American Medical Record Association to answer
> coding questions and to promote the use of
> ICD-9-CM among hospitals   (Skurka 1984:66).

III. 1. 7 RETENTION OF RECORDS

The length of time medical records should be kept
varies from state to state, but it is generally accepted
that

> records of juveniles, pediatric cases, or new-
> borns — in other words, all minor patients—
> must be retained until the patient reaches
> majority, which is age 21 in most states.
> (Waters 1979:437).

The JCAHO does not recommend· . a specific length
of time for retention, and states:

> the length of time that medical records are to
> be retained is dependent upon the need for legal,
> research, or educational purposes   (Skurka
> 1984:89).

In the absence of legal considerations, it is recommended
that the complete patient medical record, either in the
original or reproduced form usually be retained for 10
years after the most recent patient care usage. Des-
truction of records is usually based on different con-

ditions such as, lack of space, record no longer active, and the information is so poorly recorded or maintained that it is no longer legible.

In a retention plan system they usually consider data as a system of parts, rather than thinking only of the medical record as a whole, so indexes, registers, consent forms, medical records, forms for the release of information from the institution and the various departmental diagnostic and therapeutic reports are all considered data and included in the retention plan.

The most common method of retention which is used in medical record departments is microfilming. Hospitals used microfilm or microfiche or both of them for retention of their medical records. Although the 82nd congress of the United States passed an amendment to public law 129, which legalized and accepted the use of microfilm as primary evidence throughout the country, before microfilming, the medical record department needed to contact the state health department and hospital licensing agency

> concerning regulations affecting retention of hospital medical records, microfilming require-ments, and specific provisions accompanying microfilm permissibility as evidence in court (Skurka 1984:89).

In-house microfilming or using an outside company or a combination of the above can be seen. Computer Output Microfilm (COM) has applications in computerizing a master patient index and production of microfiche backups of computerized patient records. The compu-terized record system is rarely used for retention of records. In this method, the information on the patient record may be stored on computer to be on-line and accessible to the users through CRT terminals. After discharge of the patient and when the patient is no

longer involved in active care, the record is transferred
to a magnetic tape for permanent storage, and then
transferred onto computer output microfilm.

Newly optic disk technology have been introduced
to medical record departments.

> It has been predicted, however, that within
> five years, 20 percent of all hospitals will
> be storing information on optical disk or
> similar technology (American Medical
> Record Association, Council on Research 1987 :
> 22).

III. 1. 8 MANAGEMENT

According to the standard IV of JCAHO, the medical
record department shall be provided with adequate
direction. A qualified medical record individual who
is responsible to the chief executive officer or his
designee usually works as director of the medical
record department. This person should be qualified
in education and administrative experience to organize
and manage the hospital's medical record systems.

> This individual shall be either a registered
> record administrator or an accredited record
> technician, based upon successful completion
> of examination requirements of the American
> Medical Record Association (Joint
> Commission on Accreditation of Hospitals 1982:
> 90).

Medical record administrators are usually able to
work harmoniously and effectively with medical staff
members, committees of the medical staff and the hos-
pital, administrative and financial management staff
members, and other department directors. They are
aware of medical record requirements related to hos-
pital compliance with laws, regulations and accredi-
tation standards. They have management skills in
working with employees and in sharing responsibilities

for hospital wide programs. Their duties are clearly defined and their authority is commensurate . with the designated responsibilities.

AMRA has a list of 22 common functions of the medical record administrators and a list of 14 common functions of the medical record technicians which can be seen in appendix. Computer technology enables medical record administrators to extend and expand the departmental service they offer. The new graduates trained to be : health information specialists are capable of developing precise methods of information organization. They have the knowledge and skill to plan, extend and expand patient information systems.

Departmentalization can be seen in the medical record department. New techniques of management, such as the Quality Control Circle, have been newly introduced to medical record departments.

III.1. 9 EDUCATION

The first educational medium in medical record science was the Bulletin of the Association of Record Librarians of North America. It has continued to serve as an educational medium throughout the years. Under the leadership of JeHarned Bufkin, a curriculum was prepared for the use of those hospitals who wanted to establish schools for medical record science. By the year 1935 the educational program was ready to function, and the Massachusetts General Hospital, Boston; Rochester General Hospital, Rochester, New York; St. Mary's Hospital, Duluth, Minnesota and St. Joseph Hospital, Chicago were approved for applying the program.

> St. Mary's Hospital in Duluth was affiliated with the College of St. Scholastica from the very beginning, and its program was the first

to grant a baccalaureate degree in medical
record   : (Huffman 1985:34).

In 1942, the AMRA presented a formal resolution
to the House of Delegates of the American Medical
Association, requesting them to assume responsibility
for the approval of the schools for medical record ad-
ministration. The resolution was accepted and

> the Council on Medical Education and Hospitals
> was authorized to establish standards, inspect
> training programs, and publish lists of approved
> schools   (Huffman 1985:34).

In 1953 the program for the training of medical
record technicians was approved and today there are
84 accredited educational programs for medical record
technicians, and 55 accredited educational programs for
medical record administrators. All of them have been
accredited by the Committee on Allied Health Education
and Accreditation of the American Medical Association.
The length of the technician's program is two years
and completion of highschool is a prerequisite for
entrance. Completion of 2 years college education is
prerequisite for entrance to most of the medical record
administration programs which last 2 years .
Some programs are for 4 years and completion of high-
school is a prerequisite., Most of the medical record
administrator programs end at the degree of Bachelor of
Science, some have a degree of Bachelor of Arts, and
one program ends at the Master of Public Health.

Another educational program conducted by the AMRA
is a correspondence course for those who are employees in
the medical records departments of the health care
institutions.

In order to improve the knowledge of the RRA's
and ART's continuously, the AMRA plans a continuing
education program for them, According to this program,

RRA's must complete 15 and ART's must complete 10 hours of study per year to retain their registration or accreditation status.

> Failure to complete the required education
> hours results in revocation of the individual's
> registration or accreditation status, and the
> person is no longer eligible to use his desig-
> nated credentials   (Huffman 1985:39).

Continuing education has always been important in this field. JCAHO emphasizes that

> Medical record personnel should be involved in
> education programs related to their activities,
> including orientation, on-the-job training,
> and regular in-service educational programs.
> At least supervisory and management personnel
> should participate in outside workshops,
> professional association or other organization-
> al meetings and pertinent correspondence courses.
> Educational achievement should be documented
> for each individual   .(Joint Commission
> on Accreditation of Hospitals 1982:90).

III. 1. 10 AUTOMATION

Computers first were introduced to hospitals through their use in the accounting departments. In 1965 Mary N. Chase said that

> Any discussion of research which has been pre-
> pared for the medical record librarian must
> now include consideration of the use of the
> computer as an important research tool
> (Chase 1965:78).

Today, every technical function of the medical record department has been computerized. Some functions were computerized in low cost applications, using batch methods, others have made use of on-line methods to acomplish their objectives. Although fully operaticnal computer stored medical record systems are not common, some hospitals have used such systems for many years.

There are four strategies for automation in medical
record departments:

-- Using computer technology through contracts with
computer companies. Computer companies have package
 systems that can be purchased. Those are , discharge
abstracting systems, registration, admission, discharge
and transfer system, clinical appointment scheduling·
systems, chart location and tracking systems, master
patient index, chart deficiencies, diagnostic and
procedural coding and indexing.

-- Being a part of the total information system of the
hospital, such as PHAMIS(Public Health Automated Me-
dical Information System). In this case

> Medical record administrators may be working
> with communication networks, on-line data
> retrieval, and/or computerized printouts that
> comprise the record itself. Such a system
> may have pharmacy, radiology, clinical
> laboratory, admission and billing, and uti-
> lization review procedures on computer. The
> patient record may or may not be computerized.
> The master patient index is often an on-line
> component of such a system '   (Waters 1979:
> 602).

-- Alternative setting is another strategy. In this
case the medical record department has a stand alone
system for some of its jobs and at the same time, it
is a part of the related hospital information system.

-- Some medical record departments work in a setting
which has many applications, but no comprehensive total
computerized system that encompasses all departments or
that forms a network between them.

Using technology in the form of computer in the
medical record department requires an extension of the
health care facility's responsibility to preserve con-
fidentiality of patient information. Hence, monitoring
confidentiality goes hand in hand with the technology.

Security methodology which is used in medical record
departments ranges from simply placing the terminals
in a physical location accessible only to authorized
personnel to very sophisticated computer programs that
recognize- fingerprint, voice or eye identification of
the individual making access. In the eye identifica-.
tion system, each individual is identified by a bio-
logical trait that goes beyond even the fingerprint
in its uniqueness and stability; the retinal blood
vessel pattern of the eye.

III.1. 11 SPECIAL FUNCTIONS OF THE MEDICAL RECORD

DEPARTMENT

Medical record personnel should work with the hos-
pital and medical staff to organize and implement the
following functions:

III. 1. 11. 1 QUALITY ASSURANCE

In 1972 the Department of Health and Human Ser-
vices established Professional Standard Review Orga-
nizations (PSROs) to ensure peer review in evaluating
necessity, quality, and cost effectiveness of health
care financed through federal programs. In 1982 The
Tax Equity and Fiscal Responsibility Act created the
Utilization and Quality Control Peer Review Organizations
(PROs). The function to be conducted by the PROs are
similar to those functions of the PSROs, including
reviewing professional activities with regard to pro-
vision of services and determining whether payment
should be made. JCAHO standards require that

> Hospitals have a quality assurance program and
> that they demonstrate an ongoing effort to
> deliver the best patient care possible with
> the available resources and consistent achiev-
> able goals   (Skurka 1984:71).

According to the standard V of the JCAHO

>The role of the medical record personnel in the
>overall hospital quality assurance program and
>in committee functions shall be defined
>(Joint Comission on Accreditation of Hospitals
>1982:91).

So as a function of the medical record department, the
personnel should work with the hospital and medical
staff to organize and implement a quality assurance
program that meet the needs of the individual hospital.

III. 1. 11. 2 RISK MANAGEMENT

Risk management is planning, organizing, and di-
recting a comprehensive program of activities to iden-
tify, evaluate,and take corrective action against risks
that may lead to patient or employee injury, and pro-
perty loss or damage with resulting financial loss or
legal liability. This program should be closely
related to quality assurance. The medical record
personnel assists the risk manager to implement the
program by identifying, evaluating, and eliminating
or controlling risks. They are involved in risk
management program because the medical record is an
important screening tool for identifying information
relating to hospital risks.

III. 1. 11. 3 UTILIZATION REVIEW

Utilization review is the evaluation of the
necessity, appropriateness, and efficiency of the use
of medical services, procedures, and facilities. The
utilization review program must address over utiliza-
tion and under utilization within the hospital.

>The medical record department is often involved
>in concurrent reviews and in reviews and
>initial screenings of patient records at

admission and at designated continued-stay
review dates (See: Skurka 1984:77).

III. 1. 11. 4 DIAGNOSTIC RELATED GROUPS(DRGs)

The Diagnostic Related Group is a patient clas-
sification system that relates demographic, diagnostic,
and therapeutic characteristics of patients to length
of inpatient stay and amount of resources consumed,
that provides a framework for specifying hospital care
mix, and that identifies 475 classifications of ill-
nesses and injuries for which Medicare payment is
made under the prospective pricing program. DRGs
are drived from ICD-9-CM codes. The new payment system
is based on the patient's DRG which must be assigned
according to the documentation in the medical record,
so, the medical record director must manage data in
such a manner to ensure that complete, timely and accu-
rate data are available for DRG assignment and billing
purposes.

III. 2 MEDICAL RECORD IN ENGLAND

III. 2. 1 HISTORY

The St. Bartholomew's Hospital in London, which was founded in 1137, has special significance to medical record personnel. The hospital still has some of the records of patients treated there during its earliest time.

> St. Bartholomew's went so far as to develop bylaws and organizational departments, one of which was analogous to the medical record department of today (Waters 1979: 392).

With the reign of King Henry VIII(1509-1547) rules were drawn up for governing that hospital; the title of those rules was

> The Order and Ordinances for the Better Government of the Hospital of Bartholomew The Lease. Under heading of 'An ordre for the saufe keeping of the evidences and writings apperteining to the hospitall' (Huffman 1963: 14)

the privacy of records as well as importance of keeping records was realized. In the 17 century writing of case records was started. It was the responsibility of the doctor to write his own orders.

> Captain John Graunt made the first study of vital statistics in 1661 when he published his observations made upon ' bills of mortality'; these were lists of burials, marriages, and baptisms (Huffman 1963: 17).

III. 2. 2 LEGAL ASPECTS

Under the Lloyd George's National Insurance Act of 1911, the male working population between the ages of 16 and 71 were compulsorily insured. The Government realized that the statistical information about the health of the working population which became available as a

result of the medical care given under the terms of this
Act by the general practitioners was valuable. Lloyd
George's National Insurance Act included a clause,

> that impose upon general practitioners who
> participated in the scheme an obligation to
> keep such medical records as might be required
> of them under their conditions of services.
> (Tait 1981: 703)

National Health Service (NHS) was introduced in
1948. Introduction of NHS lead to obligatory record
keeping and the record system which already existed in
general practice. In 1953 the Executive Council Notice
113 (Ministry of Health) emphasized that

> A practitioner is required to keep records of
> the illnesses of his patients and of his treat-
> ment of them in such form as the Minister may
> from time to time determine after consultation
> with an organization which is in his opinion
> representative of the general body of medical
> practitioners (Tait 1981: 703).

The medical records are considered the property of
the hospital, according to the code of practice which
has been approved by the Medical Advisory Committee of
the Trent R.H.A.

> Medical record should not be handed to patients
> (except under sealed cover) and every effort
> should be made to avoid patient carrying their
> own records to clinics, wards and departments
> within the hospital (Medical Advisory
> Committee of the Trent Regional Health
> Authority 1978: 87).

Confidentiality is another subject which is men-
tioned in code of practice of Medical Record Officers
in England. It says

> Medical records, including extracts from medical
> records are highly confidential and the greatest
> care and secrecy must be maintained regarding

their contents (Medical Advisory Committee
of the Trent Regional Health Authority 1978:86).

III. 2. 3 STANDARDIZATION

Standardization of medical record was begun with
the publication of the Turnbridge Report in 1965. The
author of the report believed that:

> Standardization was to be recommended because
> it promoted well defined advantages of real
> importance; they also said: ' Hospital doctors
> move between hospitals, particularly when in
> junior posts... It is wrong that they should
> have to accustom themselves to different designs
> of forms in each hospital they work in. At
> best it is inefficient and awkward and at the
> worst it can lead to mistakes. (Jones 1971:
> 70).

In England the general practice record is the key
to continued care. In 1971 the Ministry of Health set
up a working party to redesign medical records in
general practice. They recommended the use of A4 size
record sheets.

There is a basic framework immediately available
for every hospital,and the size and the arrangement of
the notes have been standardized (Jones 1971:70).
A Central Advisory Committee on Hospital Medical Re-
cord was set up to continue the work started by the
Turnbridge Committee, The Committee is responsible
for integration and coordination activities in this
field. This Committee cooperates with the National
Computer Committee which is an advisory committee on
application of computer science to medicine and the
National Health Service. The chairman of this committee
believes that:

> In the absence of some degree of standardization
> it is uneconomic to introduce modern techniques,
> e.g. data analysis, without which we

can never make the best use of our limited re-
sources and check back to see which have been
the most efficient methods of treatment.
Jones 1971: 69).

One of the objectives of this Committee is to achieve
basic standardization.

III. 2. 4 MEDICAL RECORD PERSONNEL AND THEIR PROFES-

SIONAL QUALIFICATION

Those who work in the medical record department
are, medical record and information officers, medical
record officers, medical secretaries, transcriptors,
receptionists and practice administrators. Medical
record and information officers are those who study
in this field and usually do   the administrative jobs;
they have a responsibility, need a strong sense of vo-
cation and much skill. Medical record officers usually
are trained in this field and mostly work as manager
of the medical record department. Medical secretaries,
practice administrators and receptionists have their
own association.

III. 2. 5 THE ASSOCIATION OF HEALTH CARE INFORMATION

AND MEDICAL RECORD OFFICERS

This association was founded in 1948 with the name
of, The Association of Medical Record Officers (AMRO).
Later on the 28th Annual General Meeting which was
held out at Perth in June 1976 resolved that the name
of the association should be changed to the Association
of Health Care Information and Medical Record Officers
(AMRO). One of the objectives of AMRO is, improvement
of techniques in medical record keeping. AMRO requires
a standard knowledge of medical record for acceptance
to its membership.

AMRO encourages and developes educational programs.

It promotes the professional growth of its members, tries to establish and develop standards of record and educational programs. AMRO began to publish " The Medical Record " since May 1949 as a mean of inter-communication among its members. This Journal has become an effective educational medium.

The first chairman of the AMRO, Dr. B.B.Benjamin, said in his introductory message :

> within the membership of A.M.R.O. it will both strenghten   the professional bond and provide a medium for the interchange of knowledge and opinion. It will also, I hope, sustain that mutual criticism which is needed to keep a professional body healthy. Outside A.M.R.O. the journal will serve to promote an awareness that Medical Record Officers, with an Ideal of service to the patient have set themselves to continually improve their skill to contrive ever more efficient means to approach their ideal   (The Medical Record A Review by the Business Manager 1971: 22).

AMRO had 1000 members in 1982. It has 15 Regional Branches in different part of   England. AMRO is an active member of the International Federation of Health Record Organizations (IFHRO). AMRO was responsible for   organizing the first International Conference which was held at london in 1952 and further conferences.

III. 2. 6 CLASSIFICATION SYSTEMS

The first known attempt to classify human diseases was begun in   England in 1700, when the King of England charged his deputy John Graunt to estimate the proportion of live born children who died before the age of 6 years; the result was London Bills of Mortality; which listed 13 classes of diseases in young children,

The prime mover and director of the First International Statistical Congress which was convened at Brussels in 1853 was Dr. William Farr, the Registrar

General and Medical Statistician for England and Wales.

The most predominant classification system in
England is the International Classification of Diseases,
Ninth Revision (ICD-9). Other international classifi-
cation systems such as International Classification
of Diseases for Oncology (ICD-O), International Clas-
sification of Impairments, Disabilities, and Handicaps,
and International Classification of Procedures in Medi-
cine are in current use.

Systematized Nomenclature of Medicine (SNOMED) is
recently used in a few hospitals in England.

III. 2. 7 RETENTION OF RECORDS

The length of time medical records should be ,kept
was generally accepted to be 100 years.

> The 100 years closure period for clinical re-
> cords now generally accepted, was laid down in
> 1961; the hospital authorities have a dis-
> cretion to make records available at an earlier
> date for research   (Nicol 1985:514).

Many hospitals destroy the medical records after re-
commended retention time for possible use in litigation,
some of the hospitals microfilming them. The most com-
mon method of retention which is used in medical record
departments is microfilming. Microfilm or microfiche
or both of them are used. Some hospitals use inhouse
microfilming; some of them use outside companies'
services. Many hospitals microfilm master patient.
index too. Computer Output Microfilm (COM) has been
rarely used for master patient index.

III. 2. 8 MANAGEMENT

Departmentalization method is used for management of
the medical record department. Every employee has his
own job description. Procedures and manuals are usually

prepared and occasionally revised.

III. 2. 9 EDUCATION

The first educational medium in medical record
science in England was the journal of AMRO " Medical
Record". This journal continued to serve as an edu-
cational medium throughout the years by publishing
educational material in its student section.

In 1950, training courses were started for full-
time non-resident students at the Royal Free Hospital,
London, and The Royal Victoria Infirmary, Newcastle .
St. Bartholomew's Hospital, London and Edinburgh Royal
Infirmary began their full-time training in 1963.

Many courses have been organized by different
branches of AMRO in different regions, the attendance
came from all parts of . . England. England trained
many overseas student from countries such as Taiwan,
Nigeria, Ghana...in this field. There are two post-
graduate program, Health Information for Health Ser-
vices Management, and Health Information in relation
to medical record in Harwick University.

III. 2. 10 AUTOMATION

Computers first were introduced to medical record
department for registration. Queen Elizabeth Hospital,
Birmingham,   . began automation in the medical record de-
partment by using punch card for registration in March
1967. Later on this hospital began using online .
technique for master patient index.

A national Computer Committee which is an advi-
sory committee on the application of computer science
to medicine and the National Health Service has been
set up in   England. Computer user's Ethical Sub-
committee (CUE) has been set up to aid the project and
involved users to determine the rules of confidentiality

of records; its terms of reference are;

> To formulate rules of procedures for users of
> the Exter Computer Systems, having regard to
> the particular areas of need for action and
> protection, and to advise the project committee
> appropriately   (Fisher 1978: 365).

Some technical functions of medical record depart-
ments have been computerized in England. One of the
developing fields is linking an area health authority
computer with practices,

> at Oxford this is already highly developed and
> printouts of patient population may be ordered
> by age and sex and even by geographical area
> or street and postal code. This is of help
> when taking on new patients, organizing
> visitors, and to health visitors. Other ser-
> vices available include patient recall systems
> for immunisation, cervical cytology, hyper-
> tension, and diabetes   (Jones 1981: 1165).

Another developing field is using Mickie Computer- based
interviewing system in medical record departments.

III. 3 MEDICAL RECORD IN TURKEY

Ünver (1936: 2) talks about records of patients
who have had leprosy in 1764, 1804 and 1821 at Kayseri.
Uzluk (1958:165) wrote about death statistics
collected by Dr. Sanizade M. Ataullah (1771- 1826).
Gürkan (1950 : 40-41) introduced a document
about statistics. of the Edirne Kapı Gureba Hospital
in Istanbul which shows   the number of patients and
deaths   that hospital in Shaval, 1252 (1936-1937).

Medical record keeping in a modern form was begun
at the Hacettepe Hospital, Ankara, in 1968. Profesor
Doctor Adil Artukoğlu,who was sent to the USA by the
Hacettepe Hospital in order to study in medical record
science came back from the USA and set up a modern
medical record department in that hospital.

According to the Turkish Health Laws and Turkey
Hospital's Manual, hospitals must have a register for
their inpatients. The admission form must be filled
 by a physician and after admission, observation form
must be completed. by a physician within   twenty-
four hours. Permission and signature of director of
the service or specialist physician is necessary for
discharge of the patients.

There are some standard forms for admission,
patient's register, patient's dress, and so on, but
hospitals are not forced to use them. There is
no national program for standardization of the records,
but most of the graduates of this field are familiar
with a kind of standard which has been set up and
prepared at the Hacettepe Hospital (Educational and
Research Hospital of the Hacettepe University, Ankara).

There is no standard about qualification and
number of the personnel who must work in the medical
record department. Medical record personnel were

selected amongst highschool graduates, medical record
technicians, university graduates, and even post-
graduates; many of them were trained in the medical
record departments.

According to the Turkish Hospital's Manual ,
medical record personnel are classified as official
personnel of the hospitals. Their job titles are,
admission officer, archivist, and statistics officer.
The Ministry of Health prepared a job description for
each job mentioned above. Medical record technicians
are those who are graduates of the two-year program
of the Professional Colleges of Health Services,
Medical Record and Medical Secretaries Department.
Other individuals who work in medical record de-
partments are Medical Secretaries and Stenographers.

There is no professional association in this
field, so there is no regular publication for this
group. A few essays related to this subject have been pub-
lished in journals such as Turkish Hospital Association
Journal(Hastane Idareciligi Dergisi) and Computer
(Bilgisayar).

The classification systems which have been used
include ICD-8th edition and ICDA. There is an adapted
translation of ICDA for Turkey, which has not been published
formally (Artukoglu 79). This adaptation was prepared
by Profesor Doctor Adil Artukoglu. It is used in the
Medical Record Department of Hacettepe Hospital, Ankara.
Graduates of the College of Health Services, Medical
Record and Medical Secretaries Department, Hacettepe
University, Ankara, are familiar with the above adap-
tation and in most cases use this source as a
classification tool .

There is no legal specification for the length
of time which medical records should be retained.
Some hospitals such as Hacettepe Hospital use micro-

forms for retention of the patient record, but there
is no law which shows that the microforms are accept-
able in the court as a primary evidence. It is not
common to use outside companies' services for micro-
filming medical record, so those departments which use
this technique do it   themselves.

Methods of   management of the medical record
department differ according to the size and decision ₎
of the administration of the hospitals. Large hospitals
use the departmentalization-method for managing their
medical record department; they have job description and
working procedures. In small hospitals all of the
employees are responsible to the manager of the medical
record department.

Formal medical record education was began in 1985
at College of Health Services(Sağlık Hızmetleri
Meslek Yuksek Okulu) at Hacettepe University, Ankara.
The program consists of two years' education in this
field. Ankara University, Ankara and Trakya University,
Edirne have the same program. Beside the above program
there is a course in Medical Record Documentation in
the Post graduate program of the School of Health Care
Administration, (Saglık Idaresi Yuksek Okulu) Hacettepe
University, Ankara and a course offered in the
postgraduate program of the Faculty of Letters Department
Library Science, Hacettepe University, Ankara.

Computers have been used in the medical record de-
partment since 1986. Medical Faculty, Pediatric
Surgery Department , Ankara University, Ankara, is
a pioneer for automation. In that department Patient
information is enter into the computer to make a data base
for patient records. There are several indexes which
are prepared and used for research. This department
has used automated medical record for audit and
education of medical students. Other hospitals such

as Marmara University Hospital, Istanbul, have began
to use computers in the medical record department.

III. 4 MEDICAL RECORD IN INDIA

India has made significant progress in medical re-
cord keeping since its independence in 1947. In 1959
by the request of the Ministry of Health the Mudaliar's
Committee was formed and submitted its report in 1961.

> The committee cited scientific maintenance of
> medical records as an essential requirement for
> the nation wide health program. It urged that
> training of medical record officers be undertaken
> during the government's third five-year plan,
> scheduled to begin in the spring of 1961.
> (Mogli 1973:23).

During the years 1962-1965 the government of India
collaborating with the USA Agency for International
Development and the WHO, started setting up scientific
medical record systems in the major cities of India.

> Particular emphasis was placed on establishing
> systems at teaching institutions like Osmania
> College and Hospital, Hyderabad; Victoria Hos-
> pital, Bangalore; and Trivandrum Medical
> College and Hospital, Trivandrum. Mrs. Margaret
> M. Acker, RRA, Health Advisor on Medical Records
> at Trivandrum Medical College and Hospital,
> supervised these activities (Mogli 1973:
> 24).

In October 1964 The Central Council of Health in
its Srinagar Session passed the following resolution,

> The Central Council of Health, recognizing the
> important role played by medical records in
> efficient hospital care and teaching and
> research, recommends that the available training
> facilities in medical records may be fully
> utilised and adequate provision made in the 4th
> Five Year plan for proper medical records de-
> partment in all teaching and major hospitals
> in the country (Mogli 1978: 32).

As a result of this resolution the govenment of India
has agreed to give 50 percent of financial requirement

for establishing the medical record department in all
teaching and major hospitals. The government's effort
in working to establish modern medical record systems
in all teaching hospitals has met with a good response.
Serious consideration is being given to creating a
unified health record for the entire country.

> The emphasis is to evolve simple and adequately
> designed health records system so as to ensure
> accuracy and avoid needless duplication
> (Singh 1988:44).

To improve the quality of data, structured or
semistructured forms are being produced.

> Health Record and Report forms of standard
> format and size are being developed for collec-
> tion of meaningful and reliable information.
> (Singh 1988:44).

The personnel of the medical record departments
may be the medical record officer, the medical record
technician and a trained clerk.

The Indian Association of Medical Record Officers was
formed on July 12, 1972 in Pondicherry. Its place is
at Jawaharlal Institute of Post-Graduate Medical Edu-
cation and Research (JIMPER), Pondicherry. It changed
its name to the Indian Association of Health Record on
December 9, 1977. This association

> intends to march forward with vigour to
> strengthen the health record system in the
> country and to improve the status of health
> record professionals   (Mogli 1978: 31).

This association has been an active member of the
International Federation of Health Record Organizations
since 1976. This association has four state branches
located in Hyderabad, Bangalore, Madras and Pondicherry.
In 1982 it had 180 members on membership register.

Among the activities of this association are conducting seminars, conference and workshops on medical records and health statistics in different states.

Education in the field of medical record science began in 1962, when Mr. Depgajaray , a graduate from USA, developed the medical record department of the Christian Medical College (CMC), Vellore as one of the best organized departments. The Christian Medical College and Hospital, Vellore initiated the first training program. It was a one-year diploma course for Medical Record Officers and a 6-month certificate course of Medical Record Technicians (Mogli 1978:31). Today, the training program consists of a 6-month certificate course for medical record technicians (MRT) which is being imported by JIMPER, Pondicherry, Safdaryung Hospital, New Delhi and in other places. The one year diploma in medical record science(D.M.R,Sc) is being conducted in Safdaryung Hospital, New Delhi and,

> One year university degree leading to Bachelor of Medical Record Science (B.M.R.Sc) is being conducted in Jawaharlal Institute Of Post Graduate Medical Education and Research (JIMPER), Pondicherry and in C.M.C. Hospital, Vellore (- ʳ˙ Mogli 1982:3).

Up to the year 1982, more than 150 Medical Record Officers and 200 Medical Record Technicians have been trained in India. " Apart from this, WHO sponsored fellows from South East Asia Region were also being trained " (Mogli 1982:3). The refresher courses in record-keeping were also given to those personnel who were already working in the field.

The International Classification of Diseases is the main coding system which is used in India. Some hospitals such as Jawaharlal Institute of Post-Graduate Medical Education and Research (JIMPER) Hospital , use

ICDA for coding their records.

There is no special standard time for retention of records, no report about using microfilm or microfiche as storage media in medical record departments. Different indexes are used for retrieval of medical records. Hospitals such as JIMPER and Christian Medical College Hospital which have a comprehensive and complete medical record system (Mogli 1978:32) have the serial unit numbering system. In the above hospitals, management of the medical record department is based upon departmentalization, and the jobs are divided into; admitting, census , assembling and deficiency check, discharge analysis, incomplete record control, coding and indexing, and complete record control; each job being done by a clerk. The medical record department is often responsible for control and design of forms and maintenance of the Medical -Legal Registration, and the medical record officer is the secretary of the Medical Record Committee.

> The use of computers in Health Record System has been delyed until. recently. A computer can be a very significant aid to the health record department to achieve its unique task of maintaining and storing of ever increasing data in the good order that is essential for processing and retrieval of information for immediate and future use. A beginning has been made by introducing computers at the level of CBHI and National Institutes for the Purposes enumerated above (Singh 1988:46).

CBHI= Central Bureau of Health Intelligence

IV. MEDICAL RECORD IN IRAN

IV. 1 HISTORY

Sina Hospital which began its work about 120 years ago has kept patient histories in an inaccurate way. American and English hospitals which were established about 100 years ago also have kept medical record. Razi and Vaziri Hospitals have kept medical record for education of students. Namazi Hospital in Shiraz was a pioneer for modern medical record keeping in 1954. Another hospital in Shiraz (Shahid Faghihi, 1958) also set up a modern medical record department and send Mr. Ganjour to the Lebanon to study in medical record science.

Government's Employees Insurance Organization (Sazeman-e Bimey-e Karmandan-e Dovlat) established medical record department as of 1964. Now almost all of the hospitals which were established since 1954 have a medical record department.

IV. 2 LEGAL ASPECTS

According to the By-Law of the Hospital Establishment which was prepared by the Ministry of Health (Vezarat-e Behdary) and executed since 28 December 1955, every hospital must have a separate medical record for each inpatient is treated in that hospital. Each record should contain history, observation, temperature records, laboratory records, surgery records, a list of medicine given to the patient, and radiography records and films. Records must be arranged chronologically.

According to the same by-law each hospital must have a register of patients. This register must contain name, address, and record number of the patient as well as the dates of admission and discharge.

According to the part 20 of the same by-law each hospital has to send statistics of the inpatients and deaths, and the kind of disease of each inpatient to the Ministry of Health (Khameh 1976: 61).

Confidentiality is another subject which has been mentioned in General Punishment Law (Qanun-e Jezay-e Umumi). According to the Code 220 of this law, physicians, surgeons, midwives; and pharmacists, and those whose profession ask them to keep secrets, have to keep those secrets, otherwise they will be punished. Iranian Medical Council (Nezam-e Pezeshki) which is also a court for medical professions said in its Code 26 that a physician must not release the secret of the patient, and his disease except by the law and in the court (Khameh 1976:171). This organization has recommended that,don't let patient have their medical records.

There is an office in the Ministry of Health and Medical Education (Vezarat-e Behdasht, Darman va Amuzesh-e Pezeshki) for accreditation of the hospitals. A part of accreditation program of the hospitals is based on accreditation of medical record departments. This office based its accreditation program upon the shape of keeping medical record, record's contents, facilities, place, personnel and classification of diseases and operations.

Medical records are generally known as the property of the health care facilities.

IV. 3 STANDARDIZATION

There are standards for; form for representation of illness development (8 pages); format for admission and dismissal of patient (16 pages); standard format for illness development and physical observations (11 pages); nursing report format (8 pages); pres-

cription forms for use in hospitals (10 pages); and
vital signs record of patients (15 pages) which have
been developed in 1978.

IV. 4 MEDICAL RECORD PERSONNEL AND THEIR PROFESSIONAL

QUALIFICATIONS

There are two levels of recognized professionals
in this area in Iran. Those who are graduates in this
field and have BS degree   are a small population
of this profession. Another group are those who have
associate diploma and are graduates of two years programs
which were offered by the universities in this field.
This group make up a bigger part of the profession. The
above groups are the active participants in the de-
velopment of medical record in Iran.

The biggest part of the population of this pro-
fession are practitioners who are highschool graduates,
some of them are involved in on-the-job training. The
rest of them are those practitioners who   are not
even highschool graduates.

Medical record personnel have opportunity to work
mainly in hospitals, some of them are working in
insurance companies and the private sector. Some of the
graduates are doing other jobs because of their pre-
vious professions.

Medical record personnel have titles such as
Administrator of Admission Statistics and   Medical
Records   (Reis-e Edarey-e Paziresh, Amar va Ma-
darek-e Pezeshki); Head of the Medical Record, Ad-
mission, and Statistics (Masul-e Bayeganiy-e Pe-
zeshki, Paziresh va Amar); Admission and Information
Officer (Motesadiy-e Paziresh va Etelaat); Admission,
Information and Statistics Officer (Motesadiy-e Pazi-
resh va Etelaat va Amar); and Medical Record Archi-
vist (Bayegan-e Madarek-e Pezeshki).

IV. 5 PROFESSIONAL ASSOCIATION

Medical record profession is a relatively·young
profession in Iran. Most of the recognized personnel
in this field have graduated recently. There was no
movement for establishing a professional association.
There is no specialized regular publication in this
field. Recently there was a series of articles about
medical record published in the journal of
the Iranian Hospital Association (Bimarestan).

IV. 6 METHODS USED FOR NUMBERING, FILING AND INDEXING

MEDICAL RECORDS

Most of the hospitals used unit numbering system
for numbering their records. There are some hospitals
who used serial numbering or serial-unit numbering
adaptation for numbering their medical records. A few
hospitals use unit numbering method for outpatients and
serial numbering method for their inpatient medical
records.

Hospitals used both straight numeric and terminal
digit filing methods for filing their records. Some
hospitals used both of these methods for different
kinds of records.

All of the hospitals have register, many of them
have patient index on card. Some hospitals have arranged
patient index alphabetically, some of them used phonetic
system (prepared specially for Farsi Language)
for filing patient index cards. A part of the hospi-
tals have a register for different diseases and ope-
rations, some of them have disease index and operation
index on cards. Keeping physician index is not common
in hospitals of Iran.

IV. 7 CLASSIFICATION SYSTEMS

ICD-8th ed. is the classification system used mainly by hospitals who classify their records. Some hospitals used ICD-A. Recently ICD-9 has been used for teaching classification of diseases to the student of this field.

Mrs. Homa Agha translated the Tabular List of the ICD-8 to Farsi in 1988, which is in the form of reproduction produced by University of Medical Sciences of Shiraz (World Health Organization 1988).

IV. 8 RETENTION OF MEDICAL RECORDS

There is no legal consideration for the length of time that medical records should be kept. There are different recommendations from time to time. In 1979 the Iranian Medical Council asked hospitals to add an amendment to the Code 18 of the By-Law of the Hospital Establishment. According to that amendment , the length of keeping medical record from the time of discharge will be five years, after that time hospitals can keep or destroy the medical records; if they decided to destroy medical records, they have to keep a summary of record instead of the original record(Almasi 1987: 33).

In 1980 the Ministry of Health sent a recommendation to the hospitals as follows:
-- in the case of educational hospitals all of the medical records of inpatient and outpatient must be kept unlimitedly, in the case of lack of place to keep all of this, it is possible to change some of the records to the microfiche
-- in the case of the noneducational hospitals the inpatient records must be kept for 10 years and outpatient records must be kept for five years (Almasi 1987: 34).

There is another manual in 1981 which has said that, generally medical records must be kept for. 10 years in hospitals, 5 years must be kept in active files and 5 years in inactive files, after that time if there is no special use for them, records can be used as scrap papers.(Almasi 1987 : 35).

The most common method of retention which is used in medical record departments is keeping records in their original form. A few hospitals try to keep records on microform, but because Medical Jurisprudence of Iran accept medical record in its original form as evidence in the court, those hospitals had to keep the medical record in its original form too.(Taghizadeh 1987 : 33).

IV. 9 MANAGEMENT

The Ministry of Health made allowance for one medical archivist for each new hospital in 1964 (Haghighi 1968 : 7) .

According to the organizational chart of the medical record departments prepared by the Ministry of Health and Medical Education, the number of the personnel in those departments is according to the bed size of the hospitals. Hospitals with 100-149 beds must have the following personnel:
-- Head of the Medical Record, Admission and Statistics
-- three Admission and Information Officers
-- three Admission, Information and Statistics Officers
-- two Medical Record Archivists.
In the educational hospitals with 300 or more beds, the Administrator of Admission, Statistics and Medical Record must have BS degree in medical record science. Smaller hospitals have Head of the Medical Record, Admission and Statistics, which must have at least an associate degree in this field.

Almost all of the personnel of medical record departments directly report to the head of the department. According to the organizational chart of the hospitals which was prepared by the Ministry of Health and Medical Education, medical record departments report to the principal of the hospital. In some hospitals medical record department is a section of the Admission, Statistics and Medical Record Department.

IV. 10 EDUCATION

Ministry of Health established a technical and professional school in 1965 in that ministry. Among the duties of that school was the training of medical record technicians. That school trained 47 medical record technicians during its one year program which was repeated for three years (Beytolah 1971 : 65). Completion of highschool was prerequisite for acceptance to this program. Later on the length of this program was shortened to six months and arranged from time to time. At the same time the Red Cross Institution (Helal-e Ahmar) arranged six-month courses to train medical record technicians.

A two year program which led to the associate diploma in medical record science was begun in 1972 in the Institute of Education in Hospital Science (Institu Ulum-e Bimarestani). This institute was organized in Tehran and was attached to the Ministry of Health. A similar program began in Shiraz University at the same time. Many of the graduates after acquiring two years experience were accepted to continue their education in a two year program which led them to BS degree in medical record science. The number of graduates of this program which was continued till 1979 was about 60. The program was applied by the Institute of Education in Hospital Science.

The associate diploma in medical record science was approved for several universities in 1982. The new program has run in Tehran since the educational year 1982-1983 at the Complex of the Premedical Sciences (Mojtame-e Ulum-e Pirapezeshki). This complex was joined to the Shahid Beheshti University of Medical Sciences later on. The BS program in medical record science was approved for those who are graduated from two year programs and acquired some practical experience in a medical record department of the hospitals. This program has accepted a number of students recently in Shahid Beheshti University of Medical Sciences.

Furthermore, University of Medical Sciences of Shiraz, Shiraz and University of Medical Sciences of Iran, Tehran have graduates with associate diploma in medical record science. Recently University of Medical Sciences of Kerman, Kerman; University of Medical Sciences of Esfehan, Esfehan and University of Medical Sciences of Tabriz, Tabriz have made plans to accept students for associate diploma program in medical record science. University of Medical Sciences of Iran, Tehran is going to begin BS program in this field in the educational year 1989-1990.

There is a course on medical record science in those universities which have Master program in the field of Hospital Administration.

IV. 11 AUTOMATION

Computers were used in the accounting department of Iranian Hospitals. A few hospital such as Pars Hospital used computer in services such as laboratory, daily menu of patients, preparing list of the diet foods, pharmacy stock and so on. The only movement in the

automation of medical record was in 1971, when the
Computerize Health Services (Sherkat-e Khadamat-e
Komputeri) which had about 1000 insured members tride
to keep health record of its members on computer.
This organization was not able to continue its project
because of the financial deficiencies (Khoshnevis 1975:
37). Hafez Hospital in Shiraz tried to prepare a
master patient index in batch form, but this project
stopped after a few months.

V. PROBLEMS OF MEDICAL RECORD DEPARTMENT IN TEACHING

HOSPITALS OF IRAN

V. 1 ANALYSIS OF THE QUESTIONNAIRE'S CONCLUSIONS

As mentioned earlier, the medical record profession
is a young profession in Iran and most of the recog-
nized personnel in this field have graduated recently.
To organize and manage medical records to meet
present day and future requirements of the patient,
health care providers, medical and social researchers,
educational institutions and government agencies need
to solve many problems which already exist in the
medical record departments. The purpose of this study
was to find out the important problems of the manage-
ment of the medical record department in teaching hos-
pitals of Iran which was expressed as a hypothesis
that discusses probable answer to the problem. The
hypothesis was, medical record departments of teaching
hospitals of Iran are not able to serve researchers
and medical students sufficiently. The most important
cause of this deficiency is the lack of effective
management in those departments.

The definition of R.D.Agarwal was accepted for this
study.

> Management is the social process of planning,
> organizing, staffing, directing, coordinating
> and controlling for the determination and
> achievement of organizational objectives in a
> dynamic environment (Agarwal 1982 : 5).

The manager of a medical record department is responsible
for managing health information in that department; to
do so he must be able to perform the basic functions
of management, in fact these functions distinguish
managers from non managers (Agarwal 1982 : 3).

Analysis of the answers to the questions of the

questionnaire which was sent to the medical record de-
partments' managers can show the , managers' capabilities
to perform these functions.

Planning is the most basic function of management;
it involves determination of the long and short range
objectives of the department. Table 1,which tabulates
the answers to question one . (Who is responsible
for determination of long and short range objectives of
your department?) shows that 61.29 % of the medical
record departments' managers are responsible for deter-
mination of long and short range objectives of their
departments.

TABLE 1
RESPONSIBILITY FOR DETERMINATION OF LONG
AND SHORT RANGE OBJECTIVES

Answers	N	%
Medical record department's manager	19	61.29
Hospital's administrator	6	19.35
I don't know	1	3.22
d	5*	16.12
Total	31	100

* 5 answers show that the manager and hospital
administrator were responsible for this job.

Formulating policies, procedures, and rules, etc.,
which provide the framework of decision making is
another part of the planning job. Table 2,which
tabulates the answers to question two (Do you
have any written policies, procedures, and rules
which provide the framework of decision making?),

shows that 54.83 % of the medical record departments',
managers do not have any written policy, procedure and
rule, and only 19.35 % of the policies, procedures and
rules have been written by the medical record depart-
ment's managers, so about 80 % of the managers did not
fulfill this function of management.

TABLE 2
AVAILABILITY OF WRITTEN POLICIES, PROCEDURES
AND RULES

Answers		N	%
No		17	54.83
Yes	Medical record department's manager	6	19.35
	Hospital Administration Officers	1	3.22
	There is a written policy, procedure and rule but I don't know who was responsible for writing it	3	9.67
	d	4*	12.90
Total		31	100

* One listed a Technical Medical Group and hospital
administrator. One listed a medical record specia-
list who was invited from Tehran. Two answers said that
the Medical Record Committee and department's manager
were responsible for this job.

Organizing aims at combining employees and inter-
related tasks in an orderly manner, as a result of which the
organizational work is performed in a coordinated manner.
In an organized medical record department all efforts
and activities pull together in the direction of the hos-
pital's goals. A manager groups the activities into
jobs and assigns jobs to different departments, sections
and employees; he creates a job description of various
positions. A good job description helps the manager
to find the successful person to perform that job.

Table 3, which tabulates the answers to question three (Do you have a written job description of various positions in your department ?), shows that 41.93 % of the medical record department's managers said that they do not have written job descriptions. Only 22.58 % of the job descriptions have been written by the manager of the medical record department.

TABLE 3
AVAILABILITY OF WRITTEN JOB DESCRIPTION IN
MEDICAL RECORD DEPARTMENT

Answers		N	%
No		13	41.93
Yes	Medical record department's manager	7	22.58
	Hospital Administration's Officers	0	0
	There is a written job descrip-tion which is uniform for the titles in every medical record department of hospitals of Iran	9	29.03
	d	2*	6.45
Total		31	100

* One answered "I don't know, maybe the Ministry." One mentioned, the medical record department's manager and Hospital Administration's Officers.

An organization chart is the outcome of the organizing process. The organization chart shows where each employee belongs in the   organization and to whom he is responsible. Table 4, which tabulates the answers to question four   (Do you have an organization chart available to all employees in your

department ?), shows that 60.71 % of the medical record
departments did not have an organization ` chart avail-
able to all employees, and only 12.90 % of the organi-
zation charts were prepared by the manager of the
medical record department. In fact only 12.90 % of the
managers fulfilled this function of management. .

TABLE 4
AVAILABILITY OF ORGANIZATIONAL CHART

Answers		N	%
No		17	60.71
Yes	Medical record department's manager	4	12.90
	Hospital Administration's Officers	3	9.67
	There is an organizational chart but I don't know who was responsible for writing it.	1	3.22
	d	3*	9.67
Total		31	100

* One manager said, medical record department's manager
and Hospital Administration Officers. Another manager
said , Ministry of Health and Medical Education. One
manager said, the previous staff of the hospital pre-
pared the organization chart.

Another vital and continuous function of the manager
is staffing. To fulfill this function the manager must
improve the quality of ' his service as well· as
his   ˙ employees by different means such as training
employees and arranging orientation. At the same time
he must try to select the most suitable

individuals for the job under consideration. Table 5, which tabulates the answers to question five (who is responsible for selecting your new employees ?), shows that 45.61 % of the managers have an active role in the selection of their personnel , 12.90 % of them have semiactive role in the selection of their personnel .

TABLE 5

SELECTION OF THE STAFF OF THE MEDICAL RECORD DEPARTMENT

Answers	N	%
Medical record department's manager with the help of Hospital Administration's Officers	14	45.16
Hospital administrator	10	32.25
Office Affairs of the hospital	3	9.67
Others (please explain)	4*	12.90
Total	31	100

* Three anagers said that, medical record department's manager with the help of the Hospital Administration's Officers and hospital administrator. One manager said medical record department's manager with the help of Hospital Administration's Officers and Office Affairs of the hospital.

Table 6, which tabulates the answers to question six (Do you have any program for training and development of employees ?), shows that 56.68 % of the managers do not have any program for training and development of their personnels. 13.33 % of them have only orientation for new staff. 10 % of them arrange vocational courses for the personnel of the medical record department, and

6.66 % of the answers shows that they send the new
personnel to other hospitals' medical record depart-
ments for training. Only 6.66 % of managers have
planned program for training and development of their
employees.

TABLE 6
PROGRAM FOR TRAINING AND DEVELOPMENT OF
EMPLOYEES

No			
		17	46.66
Yes	Only orientation for new personnel	4	13.33
	Sometimes hospital arranges voca-tional courses for personnel	3	10
	Hospital sends new personnel to other hospitals' medical record department for training	2	6.66
	There is a planned program for training and educational promotion of the personnel (which apply orderly)	2	6.66
Total		28*	93.33

* Although 13 managers said yes to the first part of
the question, only 11 of them answered the
second part. One manager explaines that he was the
only personnel of that department.

The directing function of management involves
getting all of the personnel into a working group to contri-
bute effectively and efficiently to the achievement
of the organization's objectives (Huffman 1985 : 638).
Table 7, which tabulates the answers to question
seven (Do you think that at your department the appro-
priate employees are in the right places and do the right
job ?), shows that only 33.33 % of the managers believe

that in their departments the appropriate employees are
in the right places and do the right job. Those who
said no to the first part of the question (20 answers
66.66 %) could select more than one answer;
among them 56.66 % believe that the reason is lack of
qualified personnel in this field. 30 % believe that
the reason is lack of effective plan for training
employees in or out of the hospital, 26.66 % believe
that the reason is deficiencies in selection of person-
nel, and 33.33 % of them believe that lack of effective
educational program in this field in Iran is the
reason for this situation in medical record depart-
ments.

TABLE 7

EXISTENCE OF APPROPRIATE EMPLOYEES IN RIGHT
PLACE WHO DO THE RIGHT JOB

Answers		N	%
Yes		10	33.33
No	Lack of qualified personnel in this field	17	56.66
	Lack of effective plan for train-ing employee in or out of the hospital	9	30
	Deficiencies in selection of personnel	8	26.66
	Lack of effective educational program in this field in Iran	10	33.33
Total		*	*

* Because there were choices for more than one question
the total and % not mentioned.

The medical record department's manager must not

only create and supervise the department but also
coordinate and tie, all the departmental operations,
decisions, efforts and activities in such a way as to
achieve unity of action for the accomplishment of de-
partmental objectives. Coordination is needed because
there is a need for division of labor, and allocation
of limited resources. Defining authority-responsibility
relationships in a clear way is one of the functions of the
medical record department's manager. Analysis of the
answers to question eight (In your department which
of the following phenomena can be seen ?), which are ex-
pressed in table 8, shows that in 33.33 % of the medical
record departments employees have only one boss and
receive instructions from him only, 13.33 % of them
have more than one boss, 46.66 % of them receive orders
from the manager directly and 6.66 % of the employee's
conditions differ from time to time.

Table 8
AUTHORITY-RESPONSIBILITY RELATIONSHIP

Answers	N	%
One employee has only one boss and receives instructions from him only	10	33.33
One employee has more than one boss and receives instructions from all of them	4	13.31
Every employee receive orders from you	14	46.66
It changes from time to time according to conditions	2	6.66
Total	30	100

Controlling implies that goals, objectives and
standards of performance exist and are known to employees
and their superiors (Agarwal 1982 : 8).

Control is a function of *the* manager which arises out of the
need to ensure that all the activities and decisions
are contributing to the achievement of departmental
goals. The manager must compare actual performance
with standards, identify and analyze the deviations and
find out causes of deviations and take corrective
action.

Table 9, which tabulates the answers to ques-
tion nine (Do you have a planned program for measure-
ment of the performance against predetermined goals
periodically ?), shows that 51.72 % of the medical
record departments' managers have planned programs for
controlling and fulfill this function of the management.

TABLE 9

MEASUREMENT OF THE PERFORMANCE AGAINST PRE-
DETERMINED GOALS

Answers	N	%
Yes	15	51.72
No	14	47.27
Total	29	100

If we categorize the answers of the nine questions
which were answered by the manager of the medical re-
cord department completely successful ; semisuccess-
ful and unsuccessful in Table 10, , Table 11, shows that
only question one and nine have more than 50 % success-
ful answers. Questions two, four, six, and seven have
more than 50 % unsuccessful answers. Question eight
has more than 50 % semisuccessful answers.

TABLE 10
CATEGORIZED ANSWERS

Question No.	Successful answers	Semisuccessful answers	Unsuccessful answers
1	a	b , c	d (d,b)
2	a	c	b, d, no
3	a	c	b, d, no
4	a	b, c, d	no
5	a	(a+b),(a+c)	b, c, d
6	d	a, b, c	no
7	yes	____	no
8	a	b, d	c
9	yes	____	no

TABLE 11
SUCCESSFUL TO FULFILL MANAGEMENT JOB

Question no.	Successful		Semisuccessful		Unsuccessful		Total	
	N	%	N	%	N	%	N	%
1	19	61.29	5	16.12	7	22.58	31	100
2	6	19.35	3	9.67	22	70.96	31	100
3	7	22.58	9	29.03	15	48.38	31	100
4	4	14.72	7	25	17	60.71	28	100
5	14	45.16	4	12.90	13	41.93	31	100
6	2	7.14	9	32.14	17	60.71	28	100
7	10	33.33		____	20	66.66	30	100
8	10	33.33	16	53.33	4	13.33	30	100
9	15	51.72		____	14	48.27	29	100

. As mentioned earlier a questionnaire was sent
to the hospital's administrators because of their role
in the development of the medical record department.
Educational background has an important role in this
profession, and experience is one of the factors which
make personnel more professional and acquainted with
the jobs of this department. Table 12, which tabulates
the answers to question one . (What is the
educational background of the manager of your hospital's
medical record department ?), shows that 66.66 % of
the managers are highschool graduates. 16.66 % have
an associate diploma, 13.33 % of them have, a bachelor's
degree, and 3.33 % have a doctorate degree.

TABLE 12

EDUCATIONAL DEGREE OF MEDICAL RECORD DEPARTMENT'S
MANAGER

Answers	N	%
HighSchool Diploma	20	66.66
Associate Diploma	5	16.66'
Bachelor's Degree	4	13.33
Master Degree	0	0
Doctorate Degree	1	3.33
Total	30	100

Table 13, which tabulates the answers to question
two (How many years he/she has experience in medical
record department ?), shows that 91.31 % of the mana-
gers have more than five years experience. 68.75 % of
them have working experience as employee of that de-
partment for more than five years. 76.19 % of them
have more than five years experience as manager of the

medical record department.

TABLE 13
EXPERIENCE IN MEDICAL RECORD DEPARTMENT

Experience	1-5 years		More than 5 years		Total	
	N	%	N	%	N	%
Total experience	2	8.69	21	91.31	23	100
As an employee	5	31.23	11	68.75	16	100
As a manager	5	23.80	16	76.19	21	100

Table 14, which tabulates the answers to ques-
tions three and four (Do you think that he/she is
successful in his/her job ? If yes how much ?) shows
that only 6.66 % of the hospitals' administrators think
that their medical record department's manager is not
successful in his/her job. 70 % of administrators
believe that the medical record department's manager
is successful more than 71 % in his/her job.

TABLE 14
DEGREE OF SUCCESS OF THE MEDICAL RECORD DEPARTMENTS' MANAGERS

Answers		N	%
No		2	6.66
Yes	51-60 %	2	6.66
	61-70 %	4	13.33
	71-80 %	9	30
	81-90 %	10	33.33
	91-100 %	2	6.66
	more than 71 %	21	70

Among those who said that their medical record departmrnt's manager is not successful (question five) the answers which show. that the reason for that are, lack of sufficient . professional knowledge, lack of sufficient experience in their jobs and lack of enough time because he/she has another job in the hospital at the same time.

Table 15, which tabulates the answers to question six (In your opinion, what is the necessary educational qualification of manager for successful management of the medical record department ?), shows that 76.66 % of hospitals' administrators believe that the medical record department needs a manager with a bachelor's degree in this field to be successful at managing that department. Nobody said that the department needs one with high-. school diploma. 10 % believed that the manager must have an associate diploma in this field. 10 % believe that he must have a master degree with some experience in this field. 3.33 % believe that he must be a physician.

TABLE 15
NECESSARY EDUCATIONAL QUALIFICATION FOR
MEDICAL RECORD DEPARTMENT'S MANAGER

Answers	N	%
High school Diploma	0	0
Associate Diploma in this field	3	10
Bachelor's Degree in this field	23	76.66
Master Degree with some experience in this field	3	10
Physician	1	3.33
Total	30	100

Table 16, compares the educational background of medical record depatment's managers with what the hospital's administrators expectations.

TABLE 16
EXISTING AND EXPECTED EDUCATIONAL BACKGROUND

Degree	Existing		Expected	
	N	%	N	%
Hig h school Diploma	20	66.66	0	0
Associate Diploma	5	16.66	3	10
Bachelor . Degree	4	13.33	23	76.66
Master Degree	0	0	3	10
Physician	1	3.33	1	3.33

It seems that Iran's Government has paid attention to the medical record departments recently, and accepted the important role of this department for treatment of patients, planning, research and education of medical students. As an example, Iran's Government established medical record departments for temporary hospitals serving Iranian Pilgrims in Saudi Arabia since 1984. Those departments prepared medical records for each patient and coded records according to the patient's disease by using ICD. Iran's Government uses patient statistics and medical data specially for the following years and for other purposes such as research. Although Iran's Government pays attention to this field, still there are many problems in medical record departments of teaching hospitals of Iran.

V. 2 LEGAL PROBLEMS

Managers of medical record departments are res-
ponsible for establishing and maintaining effective
methods in providing patient information for individual
care. They must understand, inform, and establish
procedures for monitoring legal issues and processing of
medical and health records. Understanding the legal
aspects of medical records also needs a knowledge of
standards produced by other sources such as those set
by the hospitals' association or Ministry of Health and
Medical Education, because the law does not and can not
provide answers to all of the questions which arise in
the medical record department or hospitals. Although
medical records would be maintained even if no law or
regulation imposed their requirement,because we need re-
cord for providing the best health care possible, it is
better to have laws and regulations in their most de-
veloped form for :
-- ownership of the record
-- requirement for keeping medical record
-- maintaining medical record.
-- handling of medical record
-- disclosure of medical record
-- confidentiality of medical record
-- patient access to his record
-- admissibility of medical record as evidence in courts
-- admissibility of reproduced document in courts.
Some of these laws and regulations already exist. Some
need changes and some of them are generally accepted
but they are not in written forms (e.g. it is
generally accepted that a patient's medical record is
the property of the hospitals). Here those legal
aspects of medical records which need some changes or
do not yet exist will be discussed.

The requirement for keeping medical records is mentioned in the By-Laws of the Hospital Establishment, but the minimum requirement for the information to be contained in the record is not enough; there are deficiencies such requirement for physical examination, progress note, reports on consultations, copy of transfer form, final discharge summary and final diagnosis. In the By-Law there is no requirement for the signature of the physicians.

Confidentiality of the medical record is protected in the General Punishment Law but along with that law there is no manual for release of the medical record . Some medical record departments give records to the students to take them home for study while it is said that the record should be completed at the hospital, and should never be removed from there, not even for purposes of completion.

The manager of the medical record department has the responsibility to maintain medical records, to ensure they are accurate,and to handle the information in accordance with laws and standards. If patient care data is not documented accurately and appropriately by the physicians, nurses, allied health practitioners, and others who provide accurate information, the medical record departments' managers have to ask them to complete their work. This task should be guided by written policies understood by all contributors to the medical record. This type of guidence is not available in Iran so the manager has not enough authority to ask for proper completion of records within the proper time.

All hospitals should adopt definite policies and regulations governing the release of information from medical records for outside interests as well as use of information for hospital purposes. Such policies and

regulations which should be disseminated in the hospital are not produced in hospitals of Iran.

Patient access to his record is legally accepted in many developed countries; some countries have not accepted the patient's right access to his record. In Iran there is no law or regulation for this problem. The Iranian Medical Council recommended that, the patient not be allowed to carry his record from the medical record department to clinics, but it is just a recommendation so the medical record department uses patients or their relatives as carriers of medical records.

The presentation of information from medical record if prepared properly as evidence in court is quite proper, so any information from the record can be admitted into evidence. In Iran there is no law which expresses this fact and also predict different formats of the records such as paper form, microfilm, microfiche and computerized records; as a result if a medical record department decided to microfilm its records it would have to keep the original record too.

V. 3 STANDARDIZATION PROBLEMS

Standards are developed for a particular task by measuring all aspects of that work; standardization should be an essential feature of the record and record keeping. Setting standards is extremely important for developing countries because of their deficiencies of labor and financial resources. Standardization can happen on two different levels:
-- standards set by sources such as Hospital Association, Iranian Medical Council or Ministry of Health and Medical Education which are national standards
-- standards set in the planning function of management which must be set by the manager of the medical record departments; they are departmental standards.

In the case of national standards we need the following:

-- Adequate medical records are not prepared for patients in all of the hospitals, the content of the medical record depends upon other factors such as how the administrator thinks and where he trained, not on a standard which must be applied.

-- Sufficient information to identify the patient to support the diagnosis, to justify the treatment, to document the results e.g., as in many countries used a Problem Oriented Medical record (POMR); but non of the hospitals visited had heard about it.

-- Using a common language for writing medical records. Some hospitals used Farsi and some used English language for writing their records and some used both of the above languages.

-- Educational and professional qualification of medical record department's manager. There is no relation' between bedsize of the hospitals and qualification of manager. It is possible to see two highschool graduates as managers of two different hospitals, one with 650 beds and one with 15 beds in the two educational hospitals of the same university.

-- Medical record department's staff size and qualifications. It is possible to see different staff size in two hospitals with approximately the same bedsize e.g., one hospital with 412 beds has 14 employees at the same time another hospital with 420 beds has 31 employees. Table 17. shows the number and educational qualification of the personnel of the medical record department of two educational hospitals, one in Shiraz and one in Tehran.

-- Presence of medical record committee in hospitals. Many hospitals did not have medical record committees; some have and some of the universities have one medical record committee for all of their educational hospitals.

-- Length of time necessary for retention and shape
of the retained record. In three hospitals which had
existed for more than 30 years, one of them kept all
of the records, one only kept inpatient records and
destroyed the outpatient records after six months,
the third one destroyed all of the records dated
before the revolution.

TABLE 17

NUMBER AND EDUCATIONAL BACKGROUND OF THE
EMPLOYEES

Educational background	Bed size	
	412	420
BS in medical record science	4	0
BS in other subjects	3	0
Associate Diploma in medical record science	0	4
Master Degree	1	0
High school graduates	4	7
Below High-school	2	3
Total	14	14

-- Type of classification systems which must be used.
Hospitals which classify their records use ICD-8th ed.,
ICD-9th ed., ICD-9th ed. (French revision) , ICD-A
and even SNDO.

-- Necessity for classification of records. Most of the
teaching hospitals of Iran did not classify their
records.

-- Necessary facilities needed for medical record
department, such as files, cabinets, out-guides,
shelves and heaters.

-- Place of medical record department. One hospital's administrator sent a guide with the visitor to find the medical record department which was in the roof of the building. Some departments were in the basement near kitchen, some had pipes in their ceiling which were leaking water.

-- Working hours of the medical record department. The range of the working hours varies from 7 to 16 hours per day. Many hospitals did not give records out when the department was closed.

-- Heading and size of the records, even in those hospitals which used English language, used different names for the same record, e.g., discharge summary and summary sheet or doctor's orders and order sheet.

-- Filing methods.

-- Numbering methods.

-- Assembling order of the inside of the records.

-- The length of time in which medical record shall be completed.

-- Abbreviations and symbols permitted in medical record.

In the case of the departmental standards which managers must set, standards are needed for the following processes:

-- Reviewing policies and procedures periodically.

-- Reviewing department's organization chart periodically.

-- Preparing position descriptions for all department's staff, and reviewing them periodically.

-- Standards for continuing education of himself and department's staff.

-- Policies for selection of new staff.

V. 4 EDUCATIONAL PROBLEMS

Medical record personnel should be involved in educational programs related to their activities. Orientation, on-the-job training, regular inservice

education, participation in outside workshops of the
related professional associations such as hospitals .
association and organizational meetings, joining the
meetings of the national medical record association of
other countries or international association will help
the personnel to improve their education about medical
record. It is predicted that the greatest change in
the environment of medical record in Iran is due to
the impact of the computer. Medical science has ad-
vanced greatly in Iran while basic record keeping
techniques have not changed alongside it.
Organ transplantation and replacement have brought
new legal dimensions and statistical, diagnostic and
research demands,while progress in medical record
techniques in Iran has been evolutionary rather than
the result of a research study. Indications are that
the importance of the medical record departments will
grow in the hospitals because the demand for medical
data will increase, so there is an urgent need for
advanced medical record education. Medical record
department's manager must be expert in all phases of
medical information control and have enough skill to
administer the medical record department. Unfortunately
there are a very few educated persons in this field
who graduated about ten years ago and since that time
have had no opportunity to continue their education.
there is no professional publication to improve their
knowledge and introduce changes in this field. As a
union index of periodicals in Iran shows, no library
subscribes to the professional journals published in
the world. There is not even one published Farsi book
in this field. Recently there was a section about
medical record in the journal of the Iranian Hospital
Association (Bimarestan).

V. 5 TECHNOLOGICAL PROBLEMS

The approach of new technological facilities and
computers in health care is expected to affect medical
record department activities too, in the near future in
Iran. Handling of information by computers will change
the requirements needed for personnel who are involved
in medical record departments' activities. The cap-
able manager has to recognize the requirements and
standards needed for using computers in their pro-
cedures.

> computers are only tools for data handling
> The information that is produced by these
> systems is only as valid as the data entered
> into the system (Huffman 1985 : 533).

If medical record departments are going to use new
technology to increase productivity and quality of their
services, medical record professionals must be concerned
with the quality of data used. The manager has to
monitor and verify developing methods, and at the same
time he has to stay in control of the existing record
developments . Unfortunately there is no realisation
of requirements needed for using computers in this
field; a few managers have realised the need of
approaching computers and have proposed to the hospital
administrator, but were not accepted. Most of the
managers are not familiar with the advantages that
computers can create in working atmosphere.

V. 6 MANAGEMENT PROBLEMS

> A manager is one who monitors an organizational
> environment to anticipate change and to bring
> about the necessary adaptive responses to
> ensure that the organization's objectives are
> met (Huffman 1985 : 620).

The process of management is a mixture of inter-related conceptual, human, and technical components. To become a good manager one must develop not only through study and experience but through cultivation of one's own innate talents.

> To an ever-mounting degree, hospitals and other health care institutions, along with individuals interested in this area, increasingly are recognizing that the accomplishments, as well as the efficiency of the health care system, are significantly dependent upon the quality of management (Hickery 1970: 32).

The most directly involved person in management of the medical record department must be educated and skilled in the areas of management, health and biological science with a talent emphasis on management of health information in its various forms. Most of the managers of the medical record department are not educated in this area (Table 12) to be able to fulfill the required qualification of a manager. Although most of them have working experience for more than five years (Table 13) , this experience is not useful to help them in managing medical record department in an efficient way because of the lack of primary training in this area.

Most of the administrators of the hospitals said that their managers were successful in their job (Table 14); the answer of the hospital's administrators to another question which said that there is need for having a manager with bachelor degree in this area (Table 15) shows that their satisfaction was due to capabilities of the managers, not a fundamental satisfaction. Therefore, according to the standards and real needs of this job requirement, one of the important problems of the medical record department is lack of effective management which must be enforced by qualified managers.

Lack of enough qualified staff is another impor-
tant problem in medical record departments. The result
of a survey done in 1976 shows that the need for specia-
lists in this area for that year was at least 736
associate diploma holders in medical record science
and 186 bachlor degree holders in this area while the
number of hospitals was 498 (Mohsenin 1976 : 108-119).
At the present time there are not as many specialists
as were needed in 1976, although the number of the
hospitals has growth to above 700.

Medical record departments not only have problems
of specialized personnel in this field but also they
generally lack ordinary staff too. The lack of
personnel of some hospitals *is* about 50 % .

Among other problems which medical record depart-
ments have is lack of adequate and appropriate space
and lack of sufficient budget. Managers are not power-
ful enough to obtain what they need. Usually because
of their lack of awareness of this field of knowledge they
are not able to recognize the real requirement; which
are needed for this job.

V. 7 COOPERATION PROBLEMS

Cooperation between medical record managers and their
departments is very important specially in those
countries which have deficiencies in financial and
labor resources. It is possible to decrease the above
deficiencies at least by having an effective written
cooperation plan for preparing forms, providing a
common place for inactive records, training new staff. ,
using consultative assistance of qualified managers
and personnel, using over-time services of qualified
personnel for departments which have shortage of
staff. There is no cooperation between medical record
departments and their managers in Iran. There is no

cooperation between medical record departments of those
hospitals which are related to the same university
of medical sciences. Each hospital, has, its own
forms, and while there were |three graduates working in
this field in a hospital with bedsize 420, there were
no graduates in this area in another hospital with
bedsize 350 which was the educational hospital of
the same university.

V. 8 PROFESSIONAL PROBLEMS

Any young profession such as the medical record pro-
fession in Iran encounters many professional problems.
The most important professional problems of medical
record personnel in Iran are as follow:

-- This profession is not known to even many educated
people.

-- Lack of enough qualified personnel causes   this
profession to remain unknown

-- Deficiencies in the number of employees in each
department causes the existing employee to be
busy with many simple problems without having enough
time to improve and introduce this profession.

-- The importance of the good medical record is not
accepted properly even by those who are working in the
medical record departments.

-- The nature of the job is harder than it seem
from outside, while in the same educational and ex-
perimental condition there is no extra salary for this
hard job and some times the condition is completely
the reverse.

-- Working conditions attractive; there is no motivation
for doing a better job.

-- Lack of a professional association to try to introduce
this profession properly.

VI. CONCLUSION AND RECOMMENDATIONS

VI. 1 <u>CONCLUSION</u>

     Analysis of replies related to nine questions which
were distributed among the managers of the medical
record departments shows that they are not sufficiently
successful to fulfill the management activities in
their departments. This deficiency causes the insuf-
ficient services of those departments to the researchers
and medical students, which proves the hypothesis which
was expressed as " medical record departments of teaching
hospitals of Iran are not able to serve researchers and
medical students sufficiently. The most important cause
of this is the lack of effective management in those
departments".

     Analysis of the replies related to six questions
which were distributed among the administrators of the
teaching hospitals shows that the managers of the
medical record departments have not enough skill to
manage those departments. Hospital's administrators
believe that they need a manager who is university
graduated in this field, while most of the managers
are highschool graduates. This analysis proves the
subhypothesis which is " there is not enough skilled
personnel in this field " in Iran.

     The results of observations from medical record
departments and interviews with the manager of those
departments have been discussed as the " Problems of
Medical Record Department in Teaching Hospitals of
Iran " in the preceding chapter. Study of the standardi-
zation problems indicates that the standard of medical
records is generally poor, and their content is usually
inadequate and it is difficult to extract information
from them, which was proposed at the beginning of this
study.

VI. 2 RECOMMENDATIONS

The organization and management of medical record
departments in such a way to meet the present day and
future requirements of the patient health care insti-
tutions, medical and social researchers, government
agencies, and educational institutions need to solve
the legal aspects, standardization, educational,
technological, management, cooperation and professional
problems which already exist in the medical record .
department of hospitals of Iran.

VI. 2. 1 RECOMMENDATIONS TO SOLVE LEGAL PROBLEMS

In order to prepare solution for legal problems of
medical records, the Vice Minister for Research,
Ministry of Health and Medical Education must establish
a council for legal aspects of medical record in that
Ministry. The members of this council must be selected
among specialists in the field of medical record science,
one of the administrators of the educational program
in this field, one representative of Iranian Medical
Council and one representative of the Iranian Hospital
Association. The council must use the consultation
service of a lawyer and have authority to invite
capable individuals for consultation in this field.

The function of the council for legal aspects of
medical record is to review and prepare necessary
laws, regulations, by-laws and procedures and keep them
updated. The council must have an executive committee
to submit prepared laws to the Ministry of Health and
Medical Education to pass them through Congress, the
by-laws to the Ministry to enforce and submit regu-
lations and procedures to the Iranian Medical Council
and Iranian Hospital Association for anouncement to
their members.

VI. 2. 2 <u>RECOMMENDATIONS TO SOLVE STANDARDIZATION</u>

<u>PROBLEMS</u>

In order to overcome the problems of standardization of medical record, it is recommended that, the Vice Minister for Research, Ministry of Health and Medical Education establish a council for standardization of medical record in that Ministry. The members of this council must be selected among specialists in the field of medical record science, one administrator of the educational program in this field, one representative of the Iranian Medical Council and one representative of the Iranian Hospital Association. This council must have authority to invite informed professors of medical science and specialists for consultation in this field.

The function of the above council is to prepare different standards for medical record keeping in Iran and review the existing standards and keep them updated. The executive committee of this council will examine standards in one hospital and prepare the final standards and ask to be executed.

Alongside that the above council it is recommended to establish another council for preparing the Farsi version of the ICD to let physicians and allied health professionals document the content of the medical record in Farsi. Among the duties of this council, the study of methods for writing the contents of the medical record can be considered.

VI. 2. 3 <u>RECOMMENDATIONS TO SOLVE EDUCATIONAL PROBLEMS</u>

Educational problems can be solved on two different levels.

VI. 2. 3. 1 <u>FORMAL EDUCATION</u>

In this case there are two different levels, the associate degree which is the goal of the major part of students

in this field. The graduates of this programs are expected
to manage medical record department of hospitals which
have less than 300 beds, but since there is a great lack
of university graduates in this field of knowledge,
most management positions of medical record depart-
ment are occupied by associate degree holders even in
hospitals with more than 300 beds. The neophyte depart-
ment head does not have enough skill and experience
to make necessary changes, because the educational
programs have not prepared him for this job. Adding
courses such as management of medical record department,
a course which familiarizes students with application
of new technology in medical record department and
having in-depth knowledge of codifications is completely
necessary to prepare graduates for management of the
medical record departments.

In the case of the BS program, it is also necessary
to review the educational program and improve its level
the standard which is exists elsewhere in the world
because the present educational program does not prepare
the graduates to make decisions beyond the scope of the
medical record keeping system.

The most important problem in the education of
medical record science is the deficiencies in the qua-
lification of teachers in this field. Recent teachers
are mainly gradutes of BS programs about 12 years ago who
are able to conduct courses at associate degree level;
it is hard to accept that they will be able to conduct
courses at BS level. It is recommended to establish a
program for training teachers for medical record science
at post graduate level. This program must improve the
knowledge of the student to the standards known in de-
veloped countries and prepare them for teaching in the
university and planning educational programs for this
science and conduct research.

VI. 2. 3. 2 INFORMAL EDUCATION

There is no plan for formal education of those who are working now and those who are expected to work in medical record department in health care institutions of rural areas and institutions which have only out-patients so these groups must also have informal education to be able to work in medical record departments.

It is recommended that a data bank of personnel of the medical record departments be established in the Ministry of Health and Medical Education, Vice Minister for Education, and categorize personnel for different forms of informal and continued education.

It is recommended that the Iranian Medical Record Association be established as soon as possible and as a part of its educational program help the informal education of medical record personnel.

It is recommended that, the Ministry of Health and Medical Education prepare opportunities for at least teachers of this field to join meetings of the national professional associations in other countries which have developed medical record systems and international meetings of IFHRO to see what their colleagues have done in other countries and how they can share in the development of the medical record science.

It is recommended that the Ministry of Health and Medical Education, Vice Minister for Education select a group to prepare a package of learning resources in the form of self instruction to overcome the lack of appropriate course material for informal education.

It is recommended that the Medical Documentation and Information Center purchase some key books in this field and subscribe to the scientific journals in this field.

VI. 2. 4 <u>RECOMMENDATIONS TO SOLVE TECHNOLOGICAL PROBLEMS</u>

The computer is affirmed as a tool for hospital and
clinical practice, diagnosis, research and medical
education in developed countries; it is predicted that the
computer will enter medical record departments of hos-
pitals in the near future in Iran. To overcome the prob-
lems which this technology creates by improper
use it is recommended that the Vice Minister
for Research, Ministry of Health and Medical Education
establish a research group to study the existing auto-
mated medical record systems and select the most con-
venient systems for Iran, maintain the necessary hard-
ware and with the help of specialists establish
a bank of software for medical record departments.
This group or a similar group can do consultative
services for hospitals which are interested in auto-
mation of medical record department. This group can
start setting up a setting national computerized
medical record system too.

It is recommended that the educational program
be reviewed because rapid development of computerized
health information systems demands the changing role of
the medical record department's personnel to a medical
information specialist. This personnel should be
expert in all phases of medical information control as
well as skilled in administration and personnel
management, so a sound educational program is needed
to prepare graduates for this changing role.

VI. 2. 5 <u>RECOMMENDATIONS TO SOLVE MANAGEMENT PROBLEMS</u>

To overcome the main problem of management, which
is lack of skilled, educated and qualified managers and
staffs in the medical record departments, it is recom-
mended that this problem be solved by two different
planning programs.
-- Long term planning to train educated and qualified

managers. Establishment of a post graduate program for training teachers for associate degree and BS programs, reviewing existed educational programs, collection of one copy of the educational resources in English language available in the world and preparing text books and reading materials in medical record science in Farsi language are included in this type of planning.
-- Short range planning includes rational distribution of specialized personnel; using at least consultation help of skilled and qualified managers in those departments which have deficiencies ; and using overtime help of qualified managers in other hospitals.

Using the personnel data bank recommended earlier for selecting untrain. managers with 5-10 years experience for joining the short courses. Preparing a list of those who studied in this field and are doing other work, and set up a program to convince them to join medical record departments. Coordination of efforts to attract new graduates to hospitals' medical record departments after finishing their compulsory work.

Other problems of management depend upon the standardization factors , so the recommendation for establishing a standardization council is emphasized again.

VI. 2. 6 RECOMENDATIONS TO SOLVE COOPERATION PROBLEMS

It is recommended that the Vice Chancellors for Treatment, Universities of Medical Sciences ask the manager of the medical record departments to establish a council to prepare a written cooperation plan for medical record departments of the hospitals of those universities. The topics which will be discussed in their meetings can be, rational distribution of specialists and ordinary staff ; plan for inservice training of employees; sharing resources and places ; and orientation in different hospitals.

It is recommended that the Vice Minister for research, Ministry of Health and Medical Education select a group to conduct research about the ways for maximum use of human resources and facilities in medical record departments which do not belong to any university of medical sciences and follow recommendations.

VI. 2. 7 RECOMMENDATIONS TO SOLVE PROFESSIONAL PROBLEMS

It is recommended that the Iranian Medical Record Association be established by teachers, students, and personnel of this field as soon as possible. A professional association can solve many educational and professional problems, and introduce the important role of this profession by several means, such as publications, seminars, meetings and even by using public communication media such as radio and television.

Establishment of a standardization council is also emphesized here because setting of standards will also solve some of the professional problems.

VI. 2. 8 GENERAL RECOMMENDATIONS

It is recommended that a short course about medical records be included in the educational program of the students of medicine; this course will help them to find out the important role of a complete medical record in research and their education and the responsibility of their profession in relation to completeness of the records.

It is recommended that at least a three credite hour compulsory course of medical record science be included in the educational program of hospital administration program.

VI. 3 SUGGESTION FOR OTHER RESEARCH TOPICS

It seems that it is necessary to conduct further research in the following subjests in the field of medical record in Iran.

-- A survey of causes for lack of interest of graduates of medical record science to this profession in recent years and recommended solutions for future.

-- A survey of the distribution of medical record specialists in medical record departments of hospitals of Iran and methods which we can use for rational distribution of them.

-- A survey of needs and methods which can be used for training untrained personnel in medical record departments and their continued education.

-- A survey on problems of application of computers in medical record departments in hospitals of Iran, with practical recommendations for solution of problems.

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APPENDIX 1

<div style="display: flex;">
<div>

USERS OF MEDICAL RECORDS

A. Health Care Providers, In-
   stitutional and Individual
   (Primary Users)

</div>
<div>

USES OF INFORMATION IN MEDICAL RECORDS

1. as a medium of communication among health care providers during the current episode of illness
2. as a reference for treatment of future illnesses
3. for training of physicians and other personnel—to assist students to relate theory with medical practice
4. for prospective and retrospective evaluation of the quality of patient care through review and analysis of patterns of care as documented in the medical record
5. for promotion of effective and efficient use of facilities, equipment, services, personnel and financial resources through statistical analysis of information abstracted from the medical record
6. for documentation of voluntary compliance with standards for accreditation of the institution
7. for research aimed at the improvement of treatment, assessment of disease detection methods, assessment of the effectiveness of medication and other treatments through study of appropriate cases
8. for documentation which demonstrates conformity to government regulations
9. follow-up care of patients with long-term illnesses and assessment of the efficacy of the care given

</div>
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B. Payors for Services, pri-
   vate insurance plans, gov-
   ernment insurance plans
   and programs
   (Secondary Users)

</div>
<div>

1. for substantiation of patient claims for payment of health care services
2. for audits of claims for health care services and professional fees
3. to monitor the quality and equity of care and services rendered to those insured
4. to assess and control the cost of health care services to those insured

</div>
</div>

C. Social Users

1.	Public Health Agencies	1.	in surveillance of diseases of epidemiologic significance through statistical analysis of information abstracted from medical records
2.	Medical and Social Researchers, institutional and extra-institutional	1.	for investigations of disease patterns, effects of disease on functions of daily living, including occupational health and safety
3.	Rehabilitation and Social Welfare Programs	1.	in determination of need for specific types of rehabilitation programs through analysis of incidence data
		2.	in development of individual rehabilitation and training plans for participants in programs for the handicapped, retarded and drug and alcohol abusers
4.	Employers	*1.	for administration of employer-provided health insurance plans
		*2.	for determination of employment suitability
		3.	in treatment and analysis of job related injuries and correction of occupational hazards
		4.	to determine disability
5.	Insurance Companies	*1.	in determination of risks in writing insurance
		2.	in determination of liability for claims
6.	Government Agencies: federal, state and local	1.	for allocation of government resources for schools, health care facilities, education institutions, etc. based on vital statistics submitted from medical records
7.	Education Institutions	*1.	for assessment of suitability for admission to selected education programs
		2.	for maintenance of student and employee health programs
8.	Judicial process	1.	in adjudication of civil and criminal matters through use of the medical record as evidence through the legal process
		2.	in judicial process for involuntary admission of mentally ill
9	Law enforcement and investigation	*1.	in criminal investigation
		*2.	for security clearance programs
10.	Credit investigation agencies	*1.	for determination of credit eligibility
11.	Accrediting, Licensing and Certifying Agencies	1.	for demonstration of individual fulfillment of criteria for professional licensing by a state government agency
		2.	to ascertain competence of practitioners
		3.	for determination of compliance with criteria for hospital based education programs
		4.	as documentation of compliance with standards for institutional accreditation
12.	Media: press, radio, TV	1.	for announcements of developments in medical research
		2.	for reporting of health hazards, diseases affecting the public health and newsworthy events

* May in some instance be improper use.

APPENDIX 2

Medical Record Administrator

The medical record administrator is the professional responsible for the management of health information systems consistent with the medical, administrative, ethical, and legal requirements of the health care delivery system.

The common functions of the medical record administrator include, but are not limited to, the following:

1. Plan and develop a system of medical records to attain the institutional goals and meet standards of accrediting and regulatory agencies.
2. Develop, analyze, and technically evaluate medical records and indexes.
3. Assist the medical staff in evaluating the quality of patient care and in developing criteria and methods for such evaluation.
4. Participate in committee functions relative to medical records and patient information systems.
5. Collect and analyze patient and institutional data for health care and health related programs.
6. Develop in-service education materials and offer instructional programs for health care personnel.
7. Design health information systems appropriate for varying sizes and types of health care facilities.
8. Design and direct a health record abstracting system for regional health data systems.
9. Engage in basic and applied research in the health care field.
10. Provide consultant services to various types of health care facilities, health data systems, health related organizations, and governmental agencies.
11. Direct a total health record program for an individual health care facility or a system of health care institutions.
12. Design facilities in which medical record services may be offered efficiently.
13. Prepare and manage departmental budgets.
14. Select and order equipment and supplies.
15. Participate in development of institutional policies and procedures.
16. Initiate, conduct, or participate in research and development of systems, services, and equipment.

17. Coordinate and integrate the efforts of the medical record department with those of other departments to achieve institutional goals.
18. Manage the human resources of the medical information service.
19. Evaluate the organization and operation of medical record services in relation to established standards and new technology and make appropriate revisions.
20. Evaluate and improve the systems, forms, procedures, methods, and motions used in accomplishing departmental work.
21. Select and utilize management tools appropriate for achieving specified objectives in the health care setting.
22. Develop and implement policies and procedures for processing medico-legal documents, insurance and correspondence requests in accordance with professional ethics and in conformity with federal, state, and local statutes.

Medical Record Technician

The medical record technician possesses the technical skills necessary to maintain components of health information systems consistent with the medical, administrative, ethical, legal, accreditation, and regulatory requirements of the health care delivery system.

The functions of the medical record technician include, but are not limited to, the following:

1. Technically analyze and evaluate health records according to standards established by current law, regulations, and accrediting agencies.
2. Compile and utilize various types of administrative and health statistics, e.g., patient census, daily discharge analysis, monthly patient data reports, and vital statistics.
3. Code symptoms, diseases, operations, procedures, and other therapies according to recognized classification systems.
4. Release health information (medico-legal, insurance, and correspondence requests) in accordance with professional ethics and in conformity with institutional policy and legal provisions.
5. Maintain and utilize a variety of health record indexes, storage, and retrieval systems.

6. Perform patient registration activities.
7. Transcribe medical reports.
8. Complete and/or verify discharge data abstracts.
9. Prepare health data input for computer processing, storage, and retrieval.
10. Maintain specialized registries, such as cancer, trauma, stroke.
11. Abstract and retrieve health information used for evaluating and planning in health care and health related programs.
12. Participate in committee functions relative to health records and patient information systems.
13. Provide data to the health care facility staff in patient care evaluation, utilization review, planning, and research activities.
14. Supervise one or more health record service activities such as: transcription, word processing, filing, coding and indexing, statistics, and correspondence.
    This function may include:
    — Planning and assigning work loads
    — Communicating work priorities to appropriate personnel
    — Assisting in planning and implementing short- and long-range departmental objectives
    — Assisting personnel under their supervision in their work
    — Preparing appropriate reports on activities in units under their supervision
    — Assisting in in-service education and the training of personnel
    — Assisting in evaluating and improving the systems, forms, procedures, methods, and motions used in accomplishing work in units under their supervision
    — Assisting in the preparation of departmental budgets
    — Assisting in research and selection of systems, services, supplies, and equipment.

QUESTIONNAIRE NO. 1

Dear ....

  I am preparing a thesis concerning subject " Problems of Medical Record Department in Teaching Hospitals of Iran ". .Your answer to the following questionnaire will help me to find out important problems and their probable solutions.

  Please fill this questionnaire as soon as possible and post it to the following address.

  Your cooperation will be appreciated.

Address:

              Fatemeh Sabokrooh

Name of the hospital..

related to the........................... University

Name and the job of the person who fill questionnaire

.... date.......... signature........

1. Who is responsible for determination of long and short range objectives of your department?
  a. Medical record department's manager.
  b. Hospital's administrator.
  c. I don't know.
  d. ....

2. Do you have any written policies, procedures and rules which provide the framework of decision making?
   Yes   No
If yes, who was responsible for writing that?
  a. Medical record department's manager.
  b. Hospital Administration's Officers.
  c. There is a written policy, procedure and rule but I don't know who was responsible for writing it.
  d. ....

3. Do you have a written job description of various positions in your department?

Yes   No

If yes, who was responsible for writing that?

    a. Medical record department's manager.

    b. Hospital Administration's Officers.

    c. There is a written job description which is uniform for the titles in every medical record department of hospitals of Iran.

    d. ....

4. Do you have an organization chart available to all employees in your department?

Yes   No

If yes , who was responsible for making that?

    a. Medical record department's manager.

    b. Hospital Administration's Officers.

    c. There is an organizational chart, but I don't know who was responcible for writing it.

    d. ....

5. Who is responsible for selecting your new employees?

    a. Medical record department's manager with the help of Hospital Administration's Officers.

    b. Hospital's administrator.

    c. Office affairs of the hospital.

    d. Others (please explain).

6. Do you have any program for training and development of employees?

Yes   No

If yes, at what level?

    a. Only orientation for new personnel.

    b. Sometimes hospital arranges vocational courses for personnel.

    c. Hospital sends new personnel to other hospitals' medical record department for training.

    d. There is a planned program for training and educational promotion of the personnel (which apply orderly).

7. Do you think that at your department the appropriet
   employees are in the right places and do the right job?

   Yes   No

If no what is the most important reason for that?

   a. Lack of qualified personnel in this field.
   b. Lack of effective plan for training employee
      in or out of the hospital.
   c. Deficiencies in selection of personnel.
   d. Lack of effective educational program in this
      field in Iran.

8. In your department which of the following phenomena
   can be seen?

   a. One employee has only one boss and receive
      instructions from him only.
   b. One employee has more than one boss and
      receives instructions from all of them.
   c. Every employee recieve orders from you.
   d. It changes from time to time according to
      conditions.

9. Do you have a planned program for measurement of the
   performance against predetermined goals periodically?

   Yes   No

QUESTIONNAIRE NO. 2

Dear ....

     I am preparing a thesis concerning subject" Prob-- lems of medical Record Department in Teaching Hospitals of Iran ". Your answer to the following questionnaire will help me to find out important problems and their probable solutions.

     Please fill this questionnaire as soon as possible and post it to the following address.

     Your cooperation will be appreciated.

Address:

                               Fatemeh Sabokrooh

Name of the hospital ....

related to the .... University

Name and the job of the person who fill questionnaire

.... date .... signature ....

1. What is the educational background of the manager of your hospital's medical record department?

   Degree   Subject
      a. Highschool diploma.
      b. Associate diploma.
      c. Bachelor degree.
      d. Master degree.
      e. Doctorate degree.

2. How many years he/she has working experience in medical record department?
      a. As an employee.
      b. As a manager.

3. Do you think that he/she is successful in his/her job?
        Yes   No

4. If yes , how much?
      a. 51-60% .
      b. 61-70% .

    c. 71-80% .

    d. 81-90% .

    e. 91-100% .

5. If no, what is the reason for his/her unsuccessfulness? (You can choose more than one answer).

    a. Lack of the sufficient professional knowledge.

    b. Lack of sufficient experience in this job.

    c. Lack of enough time because he/she has another job in the hospital at the same time.

6. In your opinion, what is the necessary educational qualification of manager for successful management of the medical record department?

    a. Highschool diploma.

    b. Technician in this field.

    c. Bachelor; degree in this field.

    d. Master degree with some experience: in this field.

    e. Physician.

INTERVIEW FORM

1. Name of the hospital .... related to
.... University. Complete address ....
.... Telephone ......
Established in ....

2. Total number of the personnel?

   Number of the personnel according to their educational
   degree?

   Medical record specialists·

   Doctors ..... Masters ..... Bachelors ..... Technicians ...

   Medical secretaries ...... Stenographers .....

   Non medical record specialists·

   Doctors ..... Masters .... Bachelors ..... Technicians ...

   Highschool diploma .... 9 years education ......

3. Number of beds?

4. Total number of records?

   Number of inpatient records?

   Number of out patient records ?

5. Number of records added per year?

   Total? .... Inpatients? .... Outpatients? .....

6. What is the language used for writing medical records?

   English   Farsi   Other.

7. Which of the following methods used for numbering
   records?

   a. Serial number.

   b. Unit number.

   c. Serial unit number.

8. Do you use terminal digit filing system?

9. Do you classify your record according to the diag-
   nosis and operation?   Yes   No

   If yes what is the classification system which you
   use?

   Please write the bibliography of the classification
   scheme.

   ....

   ....

10. Do you .use any special method for reducing miss-
    filing ?   Yes   No
    If yes which type? Please explain.

11. Do you had any program for microfilming?   Yes   NO
    If yes, how wide? Please explain.

12. Do you had any program for automation of medical
    record?   Yes   No
    If yes how wide? Please explain.

13. Do you have any medical record committee? Yes   No
14. How many hour per day medical record depart-
    ment is open?
    In working days :..........In week end ......In holidays
15. Are you satisfy from the plan of your department?
              Yes   No
16. Is your storage space for medical record enough
    to satisfy your next five years requirement?
       Yes   No   If no, please explain.

17. Is your staff adequate for the volume of work?
          Yes   No ·   If no how many personnel do
    you lack?
18. Which type of shelves used for shelving?
19. Which type of cabinet used for filing cards?
20. Which facilities used to easy the job and saving
    space?

21. What is the system used for circulation of the
    record?

22. Do you have any facilities for researchers and
    doctors to finish their work?   Yes   No

23. Is there any departmentalization with in your
    department?   Yes   No   If yes, in what level?

LIST OF THE VISITED HOSPITALS

Akbar-Abadi, Tehran, Iran,
Amin, Esfehan, Iran,
Amir-Al- Momenin, Tehran, Iran,
Beheshti, Esfehan, Iran,
Beheshti, Shiraz, Iran
Edmond Memorial Hospital, Edmond, Oklahoma, USA,
Faghihi, Shiraz, Iran,
Feiz, Esfehan, Iran,
Ghotbedin Shirazi, Shiraz, Iran,
Hacettepe Hospital, Ankara, Turkey,
Hafiz , Shiraz, Iran,
Hasheminejad, Tehran, Iran,
Imam Hosein, Tehran, Iran,
K ashani, Esfehan, Iran,
Khalili, Shiraz, Iran,
Khorshid, Esfehan, Iran,
Loghman-e Hakim, Tehran, Iran,
Medical Faculty Hospital, Ankara University, Ankara,
    Turkey,
Methodist Hospital, Houston, Texas, USA,
The Middle Sex Hospital, London, England,
Mobasher Kashani, Esfehan, Iran,
Modares, Tehran, Iran,
Namazi, Shiraz, Iran,
Oklahoma Memorial Hospital, Oklahoma City, Oklahoma, USA,
Rahnemun, Tehran, Iran,
Rajayi, Tehran, Iran,
Shohada, Tehran, Iran,
Stillwater Medical Center, Stillwater, Oklahoma, USA,
Taleghani, Tehran, Iran,
University College Hospital, London, England,