HMIS, PPD, MoH & Medical Record, JDWNRH
First Edition Year

2022

Bhutan Medical Record Manual and Standard Operating Procedures

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ROYAL GOVERNMENT OF BHUTAN
MINISTRY OF HEALTH
THIMPHU

FOREWORD

Medical record is essential clinical document for the continuum of patient care as it maintains the patient's present and future health care information. Without a proper medical record system, the patient may suffer due to loss of vital information required for their continuing care. Although the health facilities across the country maintain a range of medical and health records, there is a need to update and revise the existing manuals and standards for a comprehensive and systematic way of maintaining the records as per the international standards. We are pleased that the HMIS, Ministry of Health in collaboration with Medical Record Division, National Medical Services has come up with Bhutan Medical Record Manual including Standard Operating Procedures (SOP) which is adapted from WHO Medical Records Manual – A guide for developing countries.

The Medical Record Manual is intended to manage the medical record and health information service in an effective and efficient manner. It is expected that medical records are used in the management and planning of health care facilities and services, for medical research and the production of health care statistics. Further, the development of a comprehensive manual is only befitting as we gear up to digital transformation of health information systems including electronic Patient Information System (ePIS) which will be introduced in the country soon. According to WHO, a systematic and comprehensive manual medical record system is the backbone and is fundamental for adapting any health information system.

It could not have been possible without the support of many individuals at different stages of its development. We are thankful to all the officials from JDWNRH, KGUMSB, HMIS, Ministry of Health, regional referral hospitals, and district hospitals who were actively involved in providing their expertise and technical support for the manual. Our sincere appreciation goes to UNDP, without whose generous financial support for the development of this document.

Lastly, we wish for a successful implementation of the Medical Record Manual and SOP in all health facilities to build a comprehensive and systematic Medical Record System in the country.

Acting Secretary,
Dasho Pemba Wangchuck

Proprietary Statement: *The Bhutan Medical Record Manual is to guide Health centers in Clinical Information Management & Informatics Standardization by standardizing Fundamentals of Medical Record Services which is not practiced and institutionalized at present for futuristic visions of health data analytics and applications to aid in point of patient care and evidence-based decision making at all levels of health care service delivery.*

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GLOSSARY

Active medical record A medical record that is still being used for patient care.
Admission Register A register of all inpatients admitted to the hospital.
Allied Health Professional Physiotherapy (physical therapy), occupational therapy, speech therapy, social worker etc.
Clinical staff Doctors, nurses, health extension officers, nurse practitioners, midwives and allied health professions.
Coding A procedure that assigns a numeric code to diagnostic and procedural data based on a clinical classification system.
Culling The removal of medical records from the medical record file room when they are no longer active. Records may then be either destroyed or filed in inactive or secondary storage. Records in secondary storage may be culled for destruction.
Daily Admission List A daily list of all patients admitted to the hospital.
Day only Day only patients are admitted for one day, admitted in the morning and discharged in the afternoon. Patients are NOT day only patients if they stay in hospital overnight.
Discharge summary A summary of a patient's stay in hospital written by the attending doctor.
Disease index Lists diseases, conditions, and injuries by the specific code number for each disease, condition or injury based on a clinical classification system to allow for retrieval of medical records for research by each specific code.
DOB Date of Birth.
Emergency patient Attends a hospital or health care facility needing immediate attention for a disease or injury.
Front Sheet The first form in the medical record. Also called Identification and Summary Sheet
General outpatient In developing countries, a patient attending the outpatients department of the health care facility without an appointment. These patients do not include accident and emergency patients.
Health care facility Hospital, health center, aid post, etc.
Health Record A single record of all data on an individual's health status - including birth records, immunizations, reports of all physical examinations as well as all illnesses and treatments given
in any health care setting. Often used interchangeably with "medical record" but is a broader concept.
HIM Health Information Manager - the person who manages the health information service.
HIS Health Information System - a collection of data relating to patients and their care.
HRO Health Record Officer (see MEDICAL RECORD OFFICER).
Hospital number See medical record number
ICD-9 International Statistical Classification of Diseases (9th revision) published by WHO.
ICD-10 International Statistical Classification of Diseases and Related Health Problems: 10th revision published by WHO.
ICPM International Classification of Procedures in Medicine, published by WHO
Identification number See Medical Record Number

IFHRO International Federation of Health Records Organizations
Inactive medical record A medical record belonging to a patient who has not attended the hospital for a specified number of years.
Inpatient A patient who has been admitted to the health care facility. Inpatients usually occupy a bed in a health care facility.
Master Patient Index Contains identification information of all patients admitted to a health care facility and is the key to locating a patient's medical record.
Medical Record A collection of facts about a patient's health history, including past and present illness(es) and treatment(s) written by the health care professional treating the patient
MRA Medical Record Administrator - person responsible for the medical record service.
MRC Medical Record Committee
MRD Medical Record Department
MRN Medical record number- the number used to identify the patient's medical record and used to file the medical record. Also referred to as Hospital number, Identification Number or Unit Record Number
MRO Medical Record Officer - person responsible for the medical record service.
Medical Record Room Usually a small Medical Record Department in a developing country
MPI Master Patient Index
Number Register A book of numbers in strict numerical order and is the origin of the patient identification numbering system.
Operation Index Lists operations and procedures by a specific code number based on an operation or procedural classification system. The index enables the retrieval of medical records of all patients who have undergone a specific operation or procedure while in the hospital.
Outpatient A patient who attends an outpatient department, is not admitted to a health care facility, and does not occupy a bed for any length of time.
Patient held health record A record kept by the patient, or parent if a child, which covers the life of a patient from birth to death. All health professionals caring for the patient record their findings and
treatment in the record (Also referred to as a longitudinal record).
Patients' master index See Master Patient Index
Principal Diagnosis The condition established after study to be chiefly responsible for occasioning the admission of the patient to hospital for care (USA definition). The diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital or attendance at the health care facility (Australian Definition).
Procedure Index See Operation Index
Research A systematic investigation of a subject designed to expand
the knowledge and generate new ideas.
Service Analysis An analysis of the type of service under which the patient was treated while in hospital e.g. medical, surgical, orthopedic ophthalmology etc. The analysis is used to determine the
number of patients treated under each "service" for statistical purposes.
Straight numerical filing medical records filed in strict numerical sequence.

Specialist outpatient An, outpatient who attends a specialist clinician in the outpatients' department. A specialist outpatient is usually a patient with a chronic problem (hypertension, diabetes,
etc.), a pediatric patient, or a recent inpatient.

Subpoena ducus tecum A process to cause a witness to appear in court to testify and requires him or her to bring and produce to the court records described in the subpoena.
TDF Terminal Digit Filing

Tracer A card, usually the same size or slightly larger than the medical record, which replaces the medical record in the file when the record is removed for use elsewhere in the hospital.

Unit Record Number See Medical Record Number
Unique patient characteristic Something about a patient that does not change such as his or her mother's name, a national identification number, or a social security number.
MoH: Ministry of Health
HSQAD: Health Services Quality Assurance Division, previously QAD
HMIS: Health Management & Information System
PPD: Policy & Planning Division, Ministry of Health
KGUMSB: Khesar Gyalpo University of Medical Sciences of Bhutan
BMHC: Bhutan Medical and Health Council

NSB: National Statistics Bureau

ICD 10 CM: International Classification of Disease Version 10 – Clinical Modification, USA

ICD 10 PCS: International Classification of Disease Version 10 – Procedural Coding System, USA

JDWNRH: Jigme Dorji Wangchuck National Referral Hospital

ABOUT THE CONTRIBUTORS

The Bhutan Medical Record Manual and Standard Operating Procedures was first developed by Medical Record Unit of JWDNRH which later collaborated with HMIS, PPD, MoH and KGUMSB to make it a national publication. The UNDP supported project "Digitization of Health Record & Strengthening Medical Record Services" made it possible to consult Experts panel from various stakeholders such as district hospital representatives to BMHC. It was later put up for endorsement from Expert Panel at Ministry of Health and trainings given to hospitals.

Following officials were key to the development of this manual:

1) Mr. Tashi Penjor, Chief PPD, Project Director for Digitization of Health Record & Strengthening Medical Record Services.
2) Mr. Garab Dorji, Chief ICT Officer, ICT Division, MoH, Project Director for EPIS Project and Advisor for the Digitization of Health Record & Strengthening Medical Record Services.
3) Dr. Yoriko, KGUMSB and team of Expert Panels.
4) Mr. Ugyen Penjore, Officiating Chief Medical Record Officer, JDNWRH, Project Manager for Digitization of Health Record & Strengthening Medical Record Services, Competency Based Framework for Medical Record Officer & Technician with RCSC.
5) Ms. Ngawang Dema, UNDP Project Focal for Digitization of Health Record & Strengthening Medical Record Services.
6) Mr. Mongal Singh Gurung, Sr. Research Officer, HMIS, PPD, Project Advisor & Partner for Digitization of Health Record & Strengthening Medical Record Services.
7) Mr. Sonam Dorji, PPD, ICD 11 WHO Focal, MoH for PPD support and coordination.
8) Referral Hospitals and District Hospitals participants for valuable inputs.

1. Introduction

Medical/health records form an essential part of a patient's present and future health care. As a written collection of information about a patient's health and treatment, they are used essentially for the present and continuing care of the patient. In addition, medical records are used in the management and planning of health care facilities and services, for medical research and the production of health care statistics. Doctors, nurses, and other health care professionals write up medical/health records so that previous medical information is available when the patient returns to the health care facility.

The medical/health record must therefore be available. If a medical record cannot be located, the patient may suffer because information, which could be vital for their continuing care, is not available. If the health record cannot be produced when needed for patient care, the medical record system is not working properly and confidence in the overall work of the health record service is affected. Risk and inflated cost of Medico-legal lawsuits are also inevitably rising with increase in common public knowledge of patient's rights and state laws which could derail public confidence in governance of healthcare system.

Bhutan is no different to any developing country where currently we lack concrete fundamentals to Medical Record Services in a hospital. Designated unit as Medical Records is not available in some of the district hospitals due to which core functions and roles of Clinical Information Management and Informatics have been added to clinicians. Nurses, administrative staffs and even doctors are found to conduct basic to advance medical record services duties which in turn affects their production possibility curve or efficiency. RCSC has been notified and plans to restructure put in place with **Competency Based Framework for Medical Record Officer and Technician.**

Hence this Manual is developed with adaptation from WHO's "Medical Records Manual – A guide for developing countries."

It is developed to aid health centers transit through a pre-digital phase of patient care and gradually transform our service delivery once the **electronic patient information system** is fully operational. As per above WHO's Guide, in a health center where there is no systematic manual system of Medical Record Services, adaptation of any form of Hospital Information System has been difficult or merely impossible to sustain. We hope to resolve it by developing existing Medical Record Services into a fine backbone to a robust Electronic Health Records which in turn would build the overall Health Information System.

2. Aim of the Manual

The aim of this Manual is to help medical/health record workers in Bhutan to develop and manage the medical record/health information service in an effective and efficient manner. It has been written for clerical staff with a basic understanding of medical/health record procedures. It has been designed as an introductory text to medical record/health information management to aid medical record officers (MROs) and medical record technicians (MRT) & clerks by describing appropriate systems for Medical Record Departments.

Beside above main aim, this manual can also be used as Introductory Guide to Clinical Information management and Informatics in a hospital, where health workers can use it to define & practice standards of Clinical Documentations, Clinical Coding, Clinical Statistics, Clinical Data Analytics & Medico-Legal Subpoena Procedures. With institutionalized standard Clinical Information Management and Informatics, routine services provided by health workers should be enhanced with clinical decision support making procedures as per principles of Production Possibility Curve or Frontier.

Health Administrator, Managers & Policy Makers can use this manual as a guide to incept Medical Record Services where it is not available and develop where a small unit is available so that all health care settings can standardize Clinical Information Management and Informatic and prepare for futuristic age of data analytics and application innovations. It should also aid health administrators and managers alike to understand the basic concept of Medical Record Services and plan accordingly during the inception of the Health Information System and services.

Clinical Teaching Colleges may also use this guide to design clinical documentation & data analytics courses for students. Ministry of Health in collaboration with the Royal Civil Service Commission may plan to institutionalize Clinical Information Management & Informatic courses within the country as per recommendations from the Competency Based Framework for Medical Record Officers & Medical Record Technicians, 2021 publication.

For the interest of readers, a small segment on some more advanced applications such as electronic health records (EPIS), ICD 10- CM & PCS Handbook and DRGs have been included. The reference list at the end of this Manual lists some textbooks that provide detailed information on medical record management.

3. Objectives

When you have reviewed the Manual, you should be able to:

- identify the major functions of a Medical Record Department and carry out basic procedures.
- understand the multiple uses of a medical/health record and the confidential nature of medical/health record data.
- carry out patient identification and registration procedures, Admission, Discharge & Transfer.
- implement and maintain a master patient index within the Medical Record Department.
- assess the need for a new form and the role of the Medical Record Committee in implementing new forms.
- classify health care data and develop a disease and procedure index, if required.
- identify different ways of filing medical/health records and the importance of using a tracer or out guide.
- discuss the importance of developing medical/health record policies, such as the retention of medical/health records, access to patient care information, privacy, confidentiality, and the release of patient information.
- prepare a diagram of the flow of medical/health care data in your health care facility and identify possible problem areas.
- explain a hospital information system (HIS) and discuss the areas within your Medical Record Department, which could be computerized as the first step to the development of a HIS.
- understand what an electronic health record is and how it is developed.
- Understand clinical data analytics and application to improve point of patient care & service delivery
- Understand how to code inpatient and outpatient encounters
- Understand how to code procedures and surgeries and why it is important to code them
- Institutionalize standard clinical information management and informatics across the health centers
- Design plans to incept medical record services in health center where it is unavailable currently and strengthen & develop where small units are available
- Use this manual as guide to design Clinical Information Management & Informatics courses

4. National and International Support

MROs need to keep up to date with changes and developments in medical/health record systems on both a national and international level. To develop a support system within a country, MROs are encouraged to establish a national medical record/health information management association. To gain support and recognition at an international level, national associations are encouraged to apply for membership to the International Federation of Health Information Management Associations (IFHIMA) formerly known as IFHRO, International Federation of Health Records Organizations. IFHIMA is an international federation of national associations of medical record/health information managers and individual MROs. Membership of IFHRO can assist MROs to become part of an international network that includes MROs from countries with similar health systems. If there are insufficient MROs within the country to form a national association, individuals may apply to join IFHIMA as an Associate Member.

The Federation holds an international congress every three years at which the latest trends and developments in medical record /health information management practice and medical/ health record education are discussed. More detailed information about IFHIMA is included in Annex 2.

5. Name Changes and Definitions

Over the years there have been several changes in the title of the person in charge of the Medical Record Department as well as the title of the department. These changes have come about due to a greater awareness of medical record systems and an increased emphasis on computerization and the development of computerized health information systems.

- In some countries, the title of trained persons (persons who have completed a formal program) responsible for the medical record service has changed from medical record officer (MRO) and medical record administrator (MRA) to health information manager (HIM) or health information administrator (HIA). In many developing countries, the title MRO or medical record clerk is still used. To this Manual the title MEDICAL RECORD OFFICER (MRO) or MEDICAL RECORD CLERK will be used but should be substituted for the title commonly used in your country.
- Also, in many countries the Medical Record Department is often referred to by another name, such as Medical Record Room, Clinical Information Services, Patient Information Services or Health Information Department. Again, in this Manual it will be referred to as the MEDICAL RECORD DEPARTMENT. You should also substitute this with the name commonly used in your country.
- The term "health care facility" is being used more often to describe a hospital, or a health care center, or a clinic. Again, you should check the name commonly used and substitute where necessary. For this Manual, the term HEALTH CARE FACILITY or HOSPITAL will be used.
- With the many changes in health care delivery today, the medical record is often referred to as the HEALTH RECORD. This term generally refers to a broader view of health care in many countries. A health record means a single record of all data on an individual's health status from birth to death. That is, it would include birth records, immunization records and records of all illnesses and treatments given in any health care facility. Unfortunately, this type of record is not maintained in many health care facilities today. The term MEDICAL RECORD, therefore, should still be used to accurately describe the type of record currently used in most hospitals and will be used in the following pages. The HEALTH RECORD, as described above, is becoming more popular and will be used more extensively in the future.
- In many countries during the 2080s, manual medical record systems were replaced by computerized medical information systems (MIS). In an MIS, facts concerning the health or health care of individual patients are stored and processed in computers. With progress over the years, the MIS has developed further and now hospital information systems (HIS) have replaced the MIS in many countries. An HIS is defined as an information system that links basic business process functions such as registration, admission, discharge, and transfer, with patient accounting processes. That is, all information collected on individual patients while in hospital is part of a HIS. It is derived from the data recorded about a patient, commencing with the first encounter or treatment at a hospital, clinic, or primary health care center and includes medical and financial data. Clinical staff record the data about their patients' diseases/injuries in the medical record. The date, linked to the identification information collected by clerical staff, is available in the HIS.

Today, efficient health information systems are not only important to hospitals but also for the government as they provide information about the health of the people in a country. The collected information is used by governments in the planning of health facilities and programs, for the management and financing of health facilities as well as medical research. However, as computerized HIS have not been developed in many countries to date, the efficient management of manual medical record systems remains essential for the collection of complete, accurate and timely data on health. Regardless of the system, the job of the medical record staff is to make sure that the information collected on each patient is stored in the medical record. It should also be available when and where it is needed for the continuing care of that patient. We have tried to keep the language in the Manual simple, but if there is a word you do not understand you should refer to an English dictionary.

6. Overview of the Manual

The Manual begins with an overview of:

- ✓ the Medical Record – What is Medical Record?
- ✓ the Components of a medical record
- ✓ Ideal Governance for medical record services (Organogram)
- ✓ the Functions of Medical Record Office
- ✓ Flow of medical/health data from healthcare facilities to Ministry of Health and other stakeholders
- ✓ Role of Clinicians for Clinical Information Management and Informatics
- ✓ Role of Health Administrators and Managers for Clinical Information Management and Informatics
- ✓ Role of Health Teaching Centers towards Clinical Information Management and Informatics
- ✓ Role of Ministry of Health for Clinical Information Management and Informatics
- ✓ Role of Royal Civil Service Commission for Clinical Information Management & Informatics
- ✓ Health data analytics and its applications in Health

A more detailed discussion on four basic Medical Record Department procedures follows including:

- ✓ the admission procedure – including the Master Patient Index.
- ✓ the discharge procedure - including the computerized Admission, Transfer and Discharge system.
- ✓ disease classification and clinical coding.
- ✓ the medical record filing procedure.

The last sections of the Manual cover:

- ✓ the collection of Health Care Statistics.
- ✓ Medico-legal issues.
- ✓ outpatient medical records.
- ✓ the Medical Record Committee.
- ✓ quality issues for medical record services.
- ✓ case mix and DRGs; and
- ✓ Computerized medical record systems and electronic health records.

As you work through the following pages, you should review the medical record services provided in your hospital/health care facility and see where they can be improved. You should, however, plan your changes carefully and make sure that they will fit into your situation. Poor planning could result in failure of the project and lack of confidence in the proposed changes.

7. The Medical Record

Before looking at specific medical record procedures, we need to discuss the medical record, what it is, how it develops and why it is so important. As mentioned in the introduction, the medical record is an important compilation of facts about a patient's life and health. It includes documented data on past and present illnesses and treatment written by health care professionals caring for the patient. The medical record "must contain sufficient data to identify the patient, support the diagnosis or reason for attendance at the health care facility, justify the treatment and accurately document the results of that treatment" (Huffman, 2090). The main purpose of the medical record is:

- ✓ to record the facts about a patient's health with emphasis on events affecting the patient during the current admission or attendance at the health care facility,
- ✓ for the continuing care of the patient when they require health care in the future.
- ✓ as evidence for patient care encounter (medico-legal), and
- ✓ as source of data for clinical data analytics

A patient's medical record should provide accurate information on:

- ✓ who the patient is and who provided health care.
- ✓ what, when, why and how services were provided; and
- ✓ the outcome of care and treatment.

The medical record has four major sections:

- ✓ administrative, which includes demographic and socioeconomic data such as the name of the patient (identification), sex, date of birth, place of birth, patient's permanent address, and medical record number.
- ✓ legal data including a signed consent for treatment by appointed doctors and authorization for the release of information.
- ✓ financial data relating to the payment of fees for medical services and hospital accommodation; and
- ✓ Clinical data on the patient whether admitted to the hospital or treated as an outpatient or an emergency patient.

All the above will be discussed in more detail as you proceed through the Manual. It is important to note currently that accurate, timely and accessible health care data plays a vital role in the planning, development, and maintenance of health care services. The quality of data in the medical record and its availability is essential if health care authorities wish to maintain health care at optimal level. The main uses of the medical record are:

- to document the course of the patient's illness and treatment.
- to communicate between attending doctors and other health care professionals providing care to the patient.
- for the continuing care of the patient.
- source of medico-legal evidence & health statistics
- for research of specific diseases and treatment
- Clinical Data Analytics for clinicians & Managers

8. Components of a Medical Record

When a patient has been admitted to hospital, they become an INPATIENT and the FACE SHEET is the beginning of the inpatient medical record. An INPATIENT is a patient who has been admitted to the health care facility. Inpatients usually occupy a bed in a health care facility for at least four hours overnight. While in the ward, the medical record develops with many forms added as the patient is treated and cared for by health professionals. The physical medical record will eventually consist of the following:

- medical record forms.
- a clip or fastener to hold the papers together.
- dividers between each admission and outpatient notes; and
- a medical record folder.

The medical record is made up of several forms, which are all used for a specific purpose. The basic set of forms in the inpatient medical record includes:

1. face sheet or identification and summary sheet, which covers identification, final diagnoses, disease and operation codes, and the attending doctors' signature.
2. Consent for treatment is often on the back of the Front Sheet and must be signed by the patient at the time of admission. There are two parts to this form. The first half of the form is a general consent/undertaking during admission, Procedure Consent for Surgery & Invasive procedure/treatment. DNR form as and where applicable.
3. correspondence and legal documents received about the patient, e.g., referral letter, requests for information, etc.
4. discharge summary, if required by the hospital/health authority.
5. Death Certificate, if patient is expired at the end of care.
6. admission notes, including the patient's family medical history, the patient's past medical history, presenting symptoms, results of a physical examination, provisional diagnosis (the reason the patient came or was brought to hospital), proposed tests and care.
7. clinical progress notes recording the patient's daily treatment and reaction to that treatment written by the attending doctor and other health care professionals.
8. nurses' progress notes recording daily nursing care including temperature, pulse and respiration charts, blood pressure charts etc.
9. operation report if an operation or operations are performed.
10. other health care professional notes, e.g., physiotherapy, Social Workers, etc.
11. pathology reports including hematology, histology, microbiology, etc.
12. other reports – X-ray, etc.
13. orders for treatment and medication forms listing daily medications ordered and given with signatures of the doctor prescribing the treatment and the nurse administering it; and
14. special nursing forms for observation of head injuries etc.

9. The Medical Record Department/Division/Unit

The Medical Record Department is a busy department, and the work of medical record clerks is highly demanding. Although staff are not directly involved in patient care, the information recorded in the patient's medical record is an essential part of that care. The Medical Record Department staff are, therefore, required to perform an essential service within the hospital. Sometimes, the nature of this work is not understood by the medical staff, hospital administrators and other hospital personnel, and medical record clerks and MROs often feel isolated. In addition, in many countries, funding is inadequate, making the effective running of the medical record service difficult. Medical record staff, therefore, must be resourceful and dedicated to working in a busy and extremely important section of the hospital. With knowledge and experience, they will find the job both satisfying and rewarding.

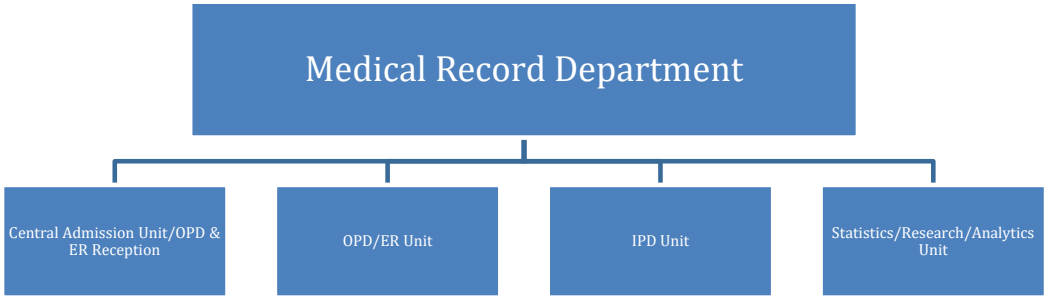

Figure 1: Ideal Infrastructure Process of Medical Record Services in a hospital

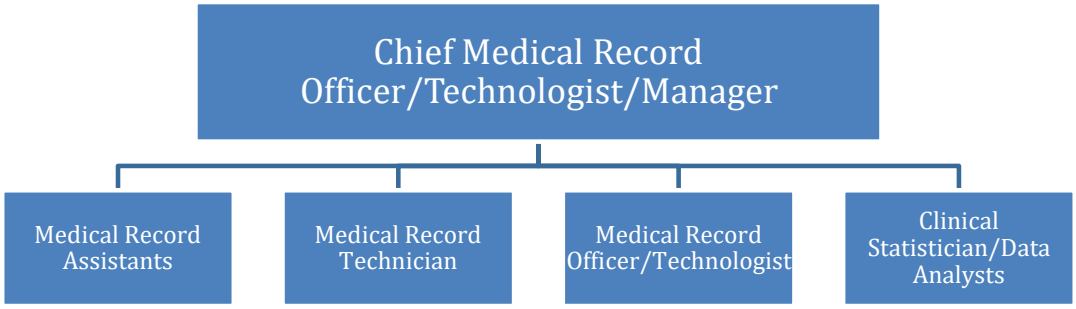

Figure 2: Ideal Organogram of Medical Record Services in a hospital

Central Admission Unit: This unit is responsible to maintain MPI in Computerized system and facilitate daily procedures of Admission, Transfer & Discharge of patient. Bed Management Procedures are also conducted by Nurses of the unit in JDWNRH. Special TOR and SOPs have been developed and implemented. Issuing of Hospital Access Cards are also

facilitated here. In district & regional referral hospitals where there are less patients, central Medical Record office can function as CAU & IPD/OPD/ER units. Medical Record Clerks are best fit to run the unit with trainings in MPI ATD, Bed Management software and procedures. Where Nurses are required, on medical emergency beds are kept in the unit to facilitate urgent medical/nursing care to patients awaiting admission when beds are not available in the ward or bed preparation is underway for patients awaiting admission.

OPD Reception: In JDWNRH, there are individual departmental outpatient receptions to facilitate daily appointments and visit encounters ran by receptionists. Although the receptionists have been trained in various Communication & Interpersonal Relationship Skills, they are yet to be trained in MPI and ATD Skills. Since OPD visits are different from IPD admissions, special training should be given in recording short term encounters/visits and clinical coding of these short encounters can be given to Medical Record Technician of OPD unit. OPD receptionists should be institutionalized as Medical Record Clerk who can be trained in this Manual, SOPs, and Clinical Information Management & Informatics certifications. This process may also allow development of their career pathways into MRT and eventually MRO as per Competency Based Framework for MRO & MRT by RCSC.

ER Reception: ER Reception should be institutionalized in hospitals to facilitate urgent & fast track Medical Record Services at Emergency department. At current practice, such a unit is not available even at JDWNRH due to which, clinicians are burnt out with clinical information management and informatics duties on top of their pry roles. Resultants are poor medical record documentation and management in ER such as poor death certificate information, unclear or incomplete patient biodata for special cases such as brought death or unconscious patients. Authenticity of ER Hospital Statistics and data for research is also greatly undermined. Bed Management and ATD of patients from ER is also affected and slowed when Medical Record Clerk and Technicians are not available to maintain ER MPI, ATD & Bed management systems. Regional Referral Services such as seeking appointment for Radio-diagnostic Services, Chemotherapy, Dialysis and mediating between referee and referral center can also be conducted by the unit clerks & technicians. With EPIS we are hopeful that such fundamental changes will sustain and delays in patient admission and bed allocations go away to safe patient lives and enhance ER services. But if EPIS ER module of ATD & Bed Management is given to clinicians again, it shall not guarantee sustainability without much needed Clinical Information Unit and HR at ER.

OPD/ER Unit: Both OPD & ER Receptions should be connected to OPD/ER unit of Medical Record where all data and services are channeled for governance, supervision & support duties. A senior Medical Record Technician should be available to troubleshoot database and service management issues. This unit should conduct Clinical Coding and Clinical Informatics to streamline flow of clinical data from ER & OPD to mainstream Medical Record Services.

IPD Unit: As of now even in JDWNRH only this unit is available due to which there is improper management of ER and OPD data, hence incomplete routine health information entry in to DHIS2 national health database. IPD unit is overwhelmed by all sets of Medical Record Services such as opd google sheet database analysis and hospital statistics

procedures, incomplete ER database and so on. Special training on clinical coding, health data analytics and statistics should be provided for MRTs on medium to long term care encounter & procedures.

Statistics/Research/Analytics Unit: This unit is recommended for the futuristic environment when clinical data analytics and research are fully institutionalized in our country. Even now, some analytics and research are aided by IPD unit in JDWNRH. Other regional referral and district hospitals may not have equipped IPD medical record office to support clinical data analytics and research beside providing routine DHIS2 statistics. Career pathways for Clinical Data Analytics, Medical Record Specialist and Clinical Statisticians shall be available in near to far future.

Support for Medical Record Department and Staff

Because of the vital nature of the work of the department, it is important to obtain support from the hospital administration, clinical staff and sometimes even from Ministry of Health and other stakeholders. The hospital administration, medical and nursing staff, and allied health professionals should also be made aware of the work of the Medical Record Department and problems that may arise in relation to the inaccurate recording of patient care data. This can be achieved by:

- the MRO liaising with clinical staff and hospital administration about the content of medical records, and procedures required in the management of medical record services.
- having adequate stationery (medical record forms, folders, and office stationery) available to enable basic medical record functions to be carried out; and
- having sufficient trained staff to complete all basic medical record procedures.
- Seeking financial and structural support from the RCSC, Ministry of Health and other stakeholders to improve medical record services.
- Collaborate will KGUMSB & FoNPH to train students in clinical information management and informatics courses so when they graduate, they are fluent in medical record writing procedures and EPIS modules.

To maintain an effective medical record service, medical record officers also need the support of a Medical Record Committee. They need to be able to bring important issues relating to medical record services to the Committee for discussion. In doing so, they also need to ensure that the issues are carefully recorded and presented to the Committee in a clear and objective manner. The Medical Record Committee will be discussed in more detail later.

10. Functions of a Medical Record Department

The Medical Record Department staff, under the leadership of the MRO or medical record manager, is responsible for the maintenance of medical records and medical record services. The hospital administration must provide security, sufficient staff as well as sufficient storage space for medical records, and an adequate working area. The Medical Record Department staff must safeguard medical records from tampering, loss, and unauthorized use.

They are responsible for seeing that the patient's right to privacy and the confidentiality of the information stored within the medical record is always maintained. The MRO is also responsible for the development and maintenance of policies and procedures relating to the medical record services of the hospital. The major functions of a Medical Record Department include:

- Admission procedure, including patient identification and the development and maintenance of the master patient index (MPI).
- Retrieval of medical records for patient care and other authorized use.
- Discharge procedure and completion of medical records after an inpatient has been discharged or died.
- Coding diseases and operations of patients discharged or died.
- Filing & Archiving of medical records.
- Evaluation & management of the medical record service.
- Clinical Information Management & Informatics.
- Source of Vital Statistics
- Completion of monthly and annual statistics.
- Publishment of annual report & Other Statistics.
- Member sectary to Medical Record Committee, Medical Review Committee & Mortality Review Committee; and
- Medico-legal issues relating to the release of patient information and other legal matters.
- Aid Clinical research for improving point of patient care & improving clinical services for managers.
- Aid Clinical Data Analytics & Deep Machine Learning Innovations.

Associated with these functions, there is an essential group of basic medical record procedures that should be performed by the staff of a Medical Record Department. Failure to undertake any of these procedures could result in a poor medical record service. These procedures will be explained in the following sections.

Responsibility for Medical Records Office

The primary function of a hospital, clinic or other health care facility is to provide quality patient care to all patients, whether an inpatient, outpatient, or emergency patient. The hospital administration is legally responsible for the quality of care given to patients.

Responsibility for direct patient care and documentation in the patient's medical record is delegated to doctors, nurses, and other health care professionals. The accuracy and completeness of this documentation is the responsibility of those who are recording the data.

The MRO or manager of the Medical Record Department is delegated responsibility for the functions of that department and overall management of the medical record service. That is, he or she is responsible for the management of patient health care data on a daily continuing basis. A major responsibility of the MRO is seeing that the medical record is always available when needed for the continuing care of the patient. They are also responsible for:

- Seeing that all forms related to the care of a particular patient are in that patient's medical record.
- Seeing that staff are always trained and understand the value of the medical record and importance of its availability.
- Making sure that the medical record has been completed by the doctor.
- Making sure that diseases and operations are coded accurately and within a specified time; and
- Seeing that all information produced for statistics is accurate and readily available when required by the administration, Ministry of Health, or other government agency.
- Liaise with administration, clinical staff, ministry of health, RCSC & other stakeholders to improve & innovate medical record services such as Digital Health Record Transformations, Clinical Data Analytics, etc.

11. Flow of clinical data from Health care facilities to Ministry of Health and other stakeholders

It is crucial that everyone in healthcare facilities, Ministry of Health and other stakeholders understand flow of clinical data to strengthen, streamline and innovate interdependent services that require use of clinical data in their respective workflow. Following two instances explains how clinical data flow improves or hinders daily routine services delivery.

1) In Hospital (Intradepartmental Services): If a Doctor's Progress Note of another patient is carelessly mixed and included in another patient's file as in current practice there is no name written in the form, there is clear sign and high risk that mistreatment regimen may be followed such as wrong medication or diagnostic test performed on the wrong patient. This is usually observed when medical record is audited at medical records office.
2) Outside Hospital (Multisectoral Services): There are many instances where patient's basic biodata such as name and permanent addresses are not recorded correctly in birth and death certificates due to which patients and/or their parties have to revisit medical records office to correct information so they can avail insurances or census services. This practice not only adds burdens to patients in availing public services but also reduces production possibility curves of medical record personnel and clinicians.

Services complications such as medico-legal pursuits and performance negligence administrative actions may follow the concern clinicians in above two instances as seen in practices. With implementation of EPIS project, clinical data flow is expected to be streamlined and strengthened.

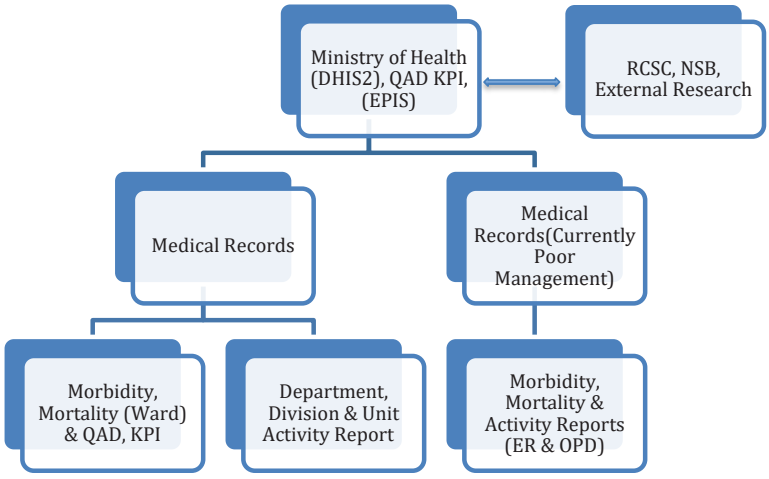

Fig 3: Flow of Clinical Data from Hospital to Ministry of Health & Other Stakeholders

12. Role of Clinicians for Clinical Information Management and Informatics

Clinicians play a very important role in Clinical Information Management and Informatics. Apart from the entry of patient biodata from outpatient and ER receptions by Medical Record Clerks/Assistants, rest of the information recorded in a medical record are mostly clinical information pertaining to patient history, examination, treatment, and care plans. Currently at JDWNRH, there is no medical record unit in ER due to which a Triage Nurse records basic patient biodata in the medical record as they conduct triaging procedures to identify in which ER color coding system of care the patient best fits.

This adds additional roles of liaising patient's non-clinical needs being carried out by the clinicians reduces efficiency of the nurse and undermines quality of clinical information in medical record such as duplicate medical record number where one or more patients have same medical/ER record number, incomplete medical record, liaising with patient/their party for insurance/medico-legal clinical information services, etc. At present, Medical Record Assistants are not available and in fact some hospitals don't even have designated medical record office due to which clinical information & informatics duties have been take up by clinicians to meet the needs.

Looking forward, clinicians should aid and support institutionalization of Medical Records Office wherever not available with standard HR and Infrastructure support. Most decisions and plans for a hospital are made by hospital administrators and superintendents who are also clinicians by trade, hence it makes them ideal personnel to understand why it is very important to institutionalize Medical Record Services in your hospital.

Clinicians always involved in direct patient care should practice recording and reporting standards learnt in their colleges. Basic error in clinical information management & informatics such as mixing wrong patient's medical record forms carries significant risk to not only patient's life but also career damaging risks to the clinicians in an event of medico-legal pursuits due to negligence of care. Ward Incharges and ER unit Incharges should also develop their own Standard Operating Procedures when dealing with Clinical Information Management and Informatics services in collaboration with Medical Record Office to protect clinicians and hence mitigate risks for the hospital from such negligence.

13. Role of Hospital Administrators/Managers for Clinical Information Management and Informatics

Planning and resource allocation for Medical Record Services in a hospital are one of core mandates of an Administrator/Manager. An Administrator should understand flow of clinical data and medical record services in a hospital. As explained above, some hospitals don't even have designated Medical Record Office due to which Administration and Management nature of Clinical Information Management and Informatics duties are carried out by the office of Administration. Some Administrative officers are seen to maintain outpatient encounter database and enter monthly morbidity and activity reports in DHIS2.

As stated above such practices not only adds risks of unqualified personnel to perform the qualified tasks, but medico-legal risks in an event of negligence, inaccurate and unauthentic hospital statistics and database which cannot be used to audit/research clinical care or management trends for policy and planning interventions. Integrity of Healthcare services delivered in the hospital is questionable when adequacy of care is questionable. Adequacy of care is questionable if there is no designated Medical Record Office and Staff to perform routine Clinical Information Management and Informatics duties. We can also avoid duplication of efforts and resources of Administration and Management personnel. Hence administrators and managers in hospitals should liaise with higher authorities to institutionalize medical record services where not available and strengthen where available.

14. Role of Health Teaching Centers towards Clinical Information Management and Informatics

KGUMSB and FoNPH are the only two medical and clinical teaching centers in the country and they both have very important roles to play if we are to achieve sustainable adoption of EPIS and embark our journey towards clinical data analytics and innovations in point of patient care with evidence-based decision making in both clinical and managerial settings. There are following ways these teaching centers can contribute towards the common goal:

1) Inclusion of Clinical Information Management & Informatics Syllabus: For existing medical and para-medical students, a subject course syllabus can be included for context of Clinical Information Management and Informatics application. It should include how to record patient care diagnosis & procedures, how to write in a medical record, death certificate and other medical reports as per their job description at practicum. Clinical Data Analytics and their applications can also be taught with practical trainings on tools of analytics applications.
2) New Course/Program: In collaboration with MoH and RCSC, these centers can research and plan for introduction of new course program for medical record officers/technologists with main syllabus such as Clinical Terminology, Clinical Care Process, Hospital Administration & Management, Clinical Coding, Clinical Documentation, Clinical Statistics, Clinical Research and Clinical Data Analytics. Since there are no trained/qualified MROs & MRTs in the country, we can look forward to strengthening medical record services by setting educative foundation for the domain.
3) QI Projects: These teaching centers have already carried out Qualitive Projects such as Death Certification, KPI and others, we can enhance further such initiatives to improve overall common goal. Such QI projects are targeted towards gaps in services delivery in the healthcare system.
4) Clinical Research: These teaching centers supervise and support various clinical research and publications currently collaborating with MoH, JDWNRH and many other stakeholders. Such clinical research can be enhanced greatly once common knowledge of the domain is institutionalized in the country.

15. Role of Ministry of Health for Clinical Information Management and Informatics

As a parent Ministry, MoH has many pivotal roles to play if we are to strengthen and innovate Medical Record Services in the country. With recent collaboration between the MoH, Ministry of Finance and UN agency UNDP's project; "Digitization of Health Record & Strengthening Medical Record Services", 47 data assistants were recruited to digitize past medical records across the selected 15 hospitals.

Health Management Information System under Policy and Planning Division of the Ministry have been playing vital roles to support health data services in the country. They maintain District Health Information System 2, a national health database website where every healthcare facility inputs routine health statistics which is used for guiding evidence-based decision making at national policy and planning level.

Heading forward, we can bring some of the following restructuring innovations at HMIS to better serve the common goal:

1) Strengthen HMIS and PPD in terms of Clinical Information Management and Informatics application targeted at evidence-based policy and planning practices at national and local levels with practical international scenarios. Trainings on Health Data Analytics and evidence-based policy and planning should be given to program officers in the ministry.
2) Human Resources and RCSC's Competency Based Framework should be developed to guide both present and futuristic career development and goals achievement of HMIS as it is the core entity looking after health data in the country.
3) HMIS should be focal point for all health data services at National level so as to reduce duplication of efforts and resources wastages. For instance, National Statistics Bureau contacts JDWNRH or District Hospital for Key Performance Indicators whereas these hospitals already send KPI to HSQAD, MoH. For same objective there are two separate tasks being carried out due to which efficiency is reduced at all levels of interactions.
4) As stated above, internal data sharing mechanisms at ministry should be strengthened and streamlined from HMIS at national level. KPI are maintained at QAD of ministry and most of their core mandates are focused on reporting and recording KPIs. If KPI reporting and recording is allocated within medical records of the hospitals and connected to DHIS2 or EPIS medical records statistics module (future), then all reports and KPI can be extracted from one authentic and accurate source so as to avoid multiple wrong data reports which is occurring at current practices. Furthermore, QAD at both hospital and ministry can focus on supervision, support, and monitoring practices of what KPIs actually indicate. For instance, *KPI; OPD waiting time* at JDWNRH's data reports can be accessed from EPIS module or google sheets at current practices, and QAD focal can visit and intervene only when there is failure in measures taken to decrease OPD waiting time and general public complaints of the service and take proactive measures to meet the targeted goal.

5) HMIS should take lead to restructure Clinical Information Management and Informatics at hospitals and Health Information Management and Informatics at Ministry in collaboration with JDWNRH, KGUMSB, RCSC, Medical & Health Council, Legal agencies and other stakeholders. HMIS should train, supervise, support, and monitor other departments, divisions and units within the ministry pertaining to the Health Information Management and Informatics domain expertise. Evidence-based decision making should be institutionalized at national level for the hospital to follow.

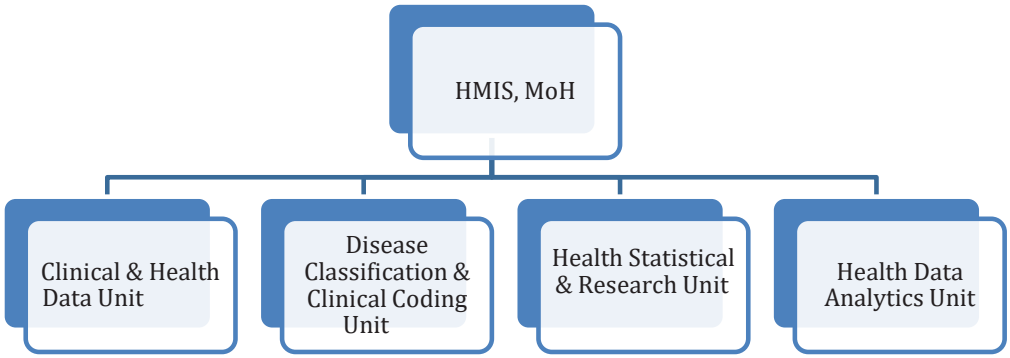

Figure 4: Ideal Organogram (Futuristic) for HMIS, MoH

16. Role of Royal Civil Service Commission for Clinical Information Management & Informatics

RCSC is our parent employer agency, and it is very important that as our parent employer understands what Clinical Information Management and Informatics in hospitals and Health Information Management and Informatics at Ministry of Health and national level are. This is mainly because, RCSC plans and intervene for all civil servants career pathways and development. With recent Competency Based Framework for Medical Record Officers and Medical Record Technicians, RCSC is well aware of recent developments in the domain, current gaps, inefficiencies and how to resolve them.

However, one or two officers at RCSC are never going to achieve nationwide restructuring processes in innovating and reforming Clinical Information Management and Informatics or Medical Records Services. For RCSC to achieve their goals of having domain experts and working field technicians, following actions are of utmost important:

1) Collaborate with Ministry of Health, UN agencies and other funding partners to regularize and recruit non-existence Medical Record personnel at the hospitals to begin with. UN agencies have been really supportive to transform healthcare services in the country and RCSC should use their Royal Chartered status to strengthen Human Resources in Medical Records Services. For instance, Digitization of Health Records & Strengthening Medical Records Services project supported by UNDP have made it possible to recruit 47 Data Assistants for about 8 months at minimum wage of BTN 13,500 per month with USD 95,000 grant among other sub-activities. RCSC can look forward to regularize these trained and experienced Data Assistants as Medical Record Clerk/Assistants and Medical Record Technicians by seeking funding support that is self-sustainable income generating in nature using grants from UN agencies and further collaboration with health teaching centers to train them as per Competency Based Framework for MRO & MRT.
2) Initiate HMIS's Competency Based Framework for Ministry of Health as the unit's core mandate is to manage health information at national level. It would help identify current gaps, issues and plan and implement the interventions needed to resolve the gaps and innovate Health Information Management and Informatics in the country.
3) Initiate District Health Officer's Competency Based Framework for Ministry of Health as DHOs are found to have similar job responsibilities to MRO at District level. For an instance, DHO looks after DHIS2 reporting of Pry Health Centers and small hospitals in their districts since there are no medical records personnel in these centers like in Paro Dzongkhag where even the district hospital has only one MRT.
4) Supervise, support, and monitor the restructuring of career pathway development for HMIS, DHO and medical records personnel by planning & implementing standard organogram, practical job-related requirement skills and knowledge trainings, continued higher education and high school scholarship in collaboration with Ministry of Education as per Competency Based Framework.
5) Futurist career position introduction plans for Clinical Record Specialist or Clinical Data Analysts/Scientists at hospitals and Health Data Analyst/Scientists at HMIS,

MoH, can be carried out in next 5 to 10 years according to domain evolution and forecasting projectiles studies carried out by teams from MoH, JDWNRH, KGUMSB, MoF, MoIC and RCSC as lead. Clinical Data Analysts have many core mandates such as to perform Data Driven Clinical Audits and studies where a holistic studies of Performance Efficiency of a health worker to Capital Allocation can be analyzed and reported to make critical national level health policy decisions.

17. Future of Health Data Analytics and its applications in Health

With increasing general public awareness as well as domain awareness and application need in our daily lives, data analytics have found ways to innovate and improve healthcare services delivery. Data Science and Data Analytics are gaining popularity across the multiple sectors of innovation and services from Fintech to Agriculture to name a few. With recent JICA's Health Data Services Project, plans to initiate establishment of Health Data Bank, Medical Data Bank and Biobank are underway lead by Department of Information Technology & Telecommunication, Ministry of Information and Communication in collaboration with JDWNRH, MoH and other stakeholders.

HMIS, PPD of MoH should take lead to restructure ministry's capacities to conduct mega-health data projects in collaboration with various stakeholders. Setting up of Health Data Analytics Unit in HMIS with qualified data analyst should help us begin with. Only time will tell how innovation and technology backed by data science can bring realistic changes in healthcare service delivery.

Institutionalization of Clinical Data Analytics Unit at Medical Records of a hospital should aid Health Data Analytics Unit of HMIS to perform routine due diligence. Support from RCSC and other stakeholders as mentioned above in their respective roles in Clinical Information Management and Informatics should be used as guidance ahead. Teamwork and collaborations between agencies are at utmost importance and sustainability nature of any implementing actions within the domain needs careful planning and smart resource allocation with efficient personnel and adequate resources that has self-sustainability nature that most Fintech companies operation models used today.

18. Computerization of Medical Record Procedures

In several countries, many of the procedures such as patient identification and admission and discharge procedures have been computerized. The automation of these procedures can improve the efficiency and effectiveness of Medical Record Departments and are discussed as we progress through the Manual. Although computerization could assist in the efficient management of the medical record services, it is important to develop a simple, effective, and efficient manual medical record service before considering computerization. Computerization will NOT solve all problems if manual systems are not properly developed and maintained.

In JDWNRH, Microsoft Access Database does most of the computerization of medical records procedures such as admission, discharge, and transfer of patients. Various queries in the database can be used to perform quick analytics to generate required information for routine or Adhoc hospital statistics. Central Admission Unit staff should be trained on basic computerized medical record procedures as currently they are given only hands on practical training in learn from senior's mode. Senior MRTs also learnt on self-pack hands on learning mode. Hospitals where there is no central admission unit, has to train as whole package of medical records procedures.

With institutionalization of EPIS project in hospitals, we expect all medical record procedures to be included in Medical Records Module of the system. Further currently existing manual archiving, filing, retrieval, clinical coding, clinical documentation, clinical statistics, and other medical records procedures work done database to be linked with the new EPIS system. Additionally, EPIS Medical Records Modules should have capacities to import and append database from existing MS Access Database. Routine Morbidity, Mortality and Activity Reports that are found in DHIS2 modules, should also be made automatically query generated database reports in EPIS so Medical Records personnel can generate authentic and accurate reports in timely or real time manner unlike the current practices.

Digitization of Health Records & Strengthening Medical Records Services project supported by UNDP, should create Digital Health Record Library of the past physical medical records where clinicians and managers can review past history of patients that are not available in the new EPIS system. District hospitals that are included in the UNDP supported project have been issued customized MS Access Database of JDWNRH where they have begun to entry their local medical records information and creating database.

19. Development of Medical Record Policies and Procedures

Before discussing specific Medical Record Department procedures, we should look at defining a policy and developing a procedure with some specific examples. Each country should have national policies for medical records. The Ministry of Health in most countries is responsible for developing many hospital and health center policies. The policies will be different for each country, depending on legal and cultural issues. Once the policies are determined, procedures then need to be written to ensure that the policies are followed.

In Bhutan, Health Information Management Unit under Policy and Planning Division should lead Clinical & Health Information Management & Informatics Services in collaboration with various departments, divisions, and units both within and outside the Ministry of Health. As stated above, organograms both within the ministry and in hospitals for Clinical & Health Information Management & Informatics Services need to be redefined and restructured as per emerging global trends in the domain. A strong teamwork and understanding of the domain should be built with Division of Information and Communication Technology in the ministry and with DITT, MoIC aligning with latest reforms in the MoIC.

Policies

A Policy is a definite course of action adopted by the health care facility/government within which objectives may be set and decisions made. MROs may develop policies specific to their department, but the policies must be limited to the activities of the department and not conflict with hospital organizational policies. It is usually the responsibility of the senior hospital management in conjunction with the Medical Record Committee, with input from the MRO, to approve the policies relating to the medical record services. Many procedures in the Medical Record Department are based on medical record policy.

For Bhutan, MRO should collaborate with HMIS, MoH and various multisectoral units such as RCSC, BMHC, KGUMSB, FoNPH, ICT, QAD, Legal, NSB, CRVS divisions and so on when developing Medical Record Policies in holistic team approach understanding as all these multisectoral divisions rely on the information generated from medical record offices. When developing a policy, several questions need to be answered before setting a course of action to ensure all issues are addressed. Following are the reasons why holistic team approach is recommended for restructuring Medical Record Services in the country:

1) RCSC: Being the Royal Chartered Agency for National Employment Services, all medical records human resource positions need to be standardized as per Competency Based Framework for MRO & MRTs. Medical Records policies need to be designed and developed with consideration of available Human Resources and plans for the country.
2) BMHC: As National Licensing Agency for Medical & Health professionals, medical record policies need to be designed and developed with close consideration of BMHC National Standards such as *"Guidelines for Issuing Medical Certificates and Medical Reports-2020*" for health worker's clinical documentation, negligence of care and other clinical data protocols.

3) KGUMSB & FoNPH: These teaching hospitals have standard teaching curriculums and practicum which is crucial for medical record policy developers to consider if next generation clinical students inherit standard medical recording practices when they graduate.
4) ICT, MoH: ICT Division has been pivotal and legendary in taking the lead for EPIS project where we achieved various targets such as Reception, HR, Laboratory, Radio-diagnostic and Doctor's modules so far in the project timeline. They provide ICT technical support for *Digitization of Health Records and Strengthening Medical Records Project* and issued desktops, laptops & tablets wherever needed. EPIS being mega health information project for Bhutan, we need to work closely with ICT Division when developing medical record policies.
5) QAD: QAD of both JDWNRH and MoH are vital divisions when the quality of clinical services is on the line. Hospital Accreditation and quality KPIs uses various data sets generated from Medical Records Office due to which it is very important to consider clinical quality perspectives while developing medical records policies as per Bhutan Healthcare Standard for Quality Assurances' Chapter: 10 Information Management.
6) Legal Division: Legal Division in MoH is the only available legal advice unit when it comes to medico-legal issues and Medico-legal standards. For an instance Policy on Retention of Medical Records is developed considering legal practices in the country.
7) NSB & CRVS: These departments need to be collaborated with when developing medical records policies as national KPIs and vital statistics used are generated from Medical Records offices in the hospitals.

Policy on Retention of Medical Records

When developing a retention policy, it is important to remember that medical records should be kept by the hospital if required under the Statute of Limitations (retention for legal requirements) or the country's record retention regulation. Before determining a retention policy, the hospital administrator should review the record usage after discharge. This manual shall provide basic guidelines for hospitals and ministry of health to consider when developing the Policy on Retention of Medical Records. Some questions that need to be answered include:

• *How long should medical records be kept in physical or digital format?*
1) Medico-legal cases: Life Long
2) Vital Statistics cases (Birth/Death/MCH Record): Life Long
3) Pediatric cases: 21 Years of age
4) Others: 10 years

• *Are there separate rules for children's records?*

For an instance in Europe, Pediatric cases are kept until they are 21 Years of age so that after borderline 18 years adult life, they are given until 3 more years in case, they have to review their past medical records.

• *If medical records are not kept, how are records to be destroyed?*

For Bhutan we can recycle with local paper manufacturing companies in a greener way to generate some financial resources for medical records office.

• *Are there specific diseases for which the medical record must be kept for the life of the patient?*
When developing the Retention Policy, experts should debate and come to a common understanding of diseases list that need to be kept for the life of the patient with rational scientific evidence for practices.

• *What penalties are provided for breaking the rules?*
Before imposing any penalties, we must first provide support, supervision, and sensitization of various policies in a hospital so as to have common understanding and knowledge of the services. Penalties need to be defined based on the personnel or agency/hospital who could potentially break retention and other medical record policies.

• *Who approves the destruction of medical records?*
As per NABH Accreditation Standards following procedures need to be adapted prior to destruction of medical records.

1) Notification of destruction to public in media by hospital administration whereby any patient can come forward and take their medical records especially on fronts of Vital Statistical requirements (Birth/Death)
2) Approves by Hospital Administration/Medical Record Committee

In general, the retention of medical records in an active file depends on:
• the amount of filing space available; and
• the yearly expansion rate of current files.

There is NO general retention policy and individual hospitals/health care facilities or governments should determine how long medical records will be kept. When considering such a policy, the hospital/government must consider:
• The readmission rate of inpatients.
• The volume of medical research undertaken by hospital staff.
• The Statute of Limitation (legal requirement).
• Cost involved in finding inactive filing space.
• Cost of alternative storage e.g., microfilming, optical disk, or other computerized system; and
• cost of destruction of medical records.

Once the retention policy has been determined and the decision to destroy inactive medical records is made, the next step would be to develop a policy on how they are to be destroyed and what needs to be retained. These Standards are based on 24th September 2080 WHO Guidelines for Medical Record Practices.

In Bhutan, "Digitization of Health Records & Strengthening Medical Records Services Project" supported by UNDP takes certain care of Retention Procedures whereby, physical medical records are scanned into portable document format (PDF) files and archived in

computers to form Digital Health Record Library. Selected hospitals where the project is carried out have achieved on an average of past 5 years data digitization.

Policy of the Destruction of Medical Records

In many countries, when medical records are destroyed after the required retention period, basic information is retained permanently. This information includes the:

- patient's full name and date of birth.
- admission and discharge dates.
- name of the attending doctor.
- diseases treated and operations performed; and
- a discharge summary for each admission if more than one.

In addition, to leave a permanent record of the patient on file, a note should be included with the retained documents stating that the records have been destroyed according to the retention policy. Medical Record Destruction Procedures should be developed and implemented periodically until EPIS project is fully institutionalized in hospitals.

- If it is the policy to destroy inactive medical records, they should be destroyed by burning.
- To ensure that the medical records are destroyed, the MRO should supervise their destruction.

20. Medical Record Procedures (SOP)

There are several essential medical record procedures that need to be undertaken to ensure an effective and efficient medical record service. With support from "Digitization of Health Records & Strengthening Medical Record Services Project", experts have brainstormed & developed version 1 of following Medical Records Procedures as Standard Operating Procedures to best fit our current status quo and futuristic environment of fully operational and sustainable EPIS:

1) Clinical Documentation Standard Operating Procedure
2) Disease Classification and Clinical Coding Standard Operating Procedure
3) Hospital Statistics Standard Operating Procedures
4) Medico-Legal Medical Record Standard Operating Procedures
5) Clinical Data Analytics Standard Operating Procedures (Futuristic)

What is Standard Operating Procedure?

A procedure is a particular course or mode of action. Procedures are developed for repetitive work to define the task to be performed, achieve uniformity of practice, and assist with training staff.

How is Standard Operating Procedure Developed?

In most countries, the MRO is responsible for developing the department's procedures and keeping them up to date. Steps to be taken when developing a procedure include:

a. determining the minimum number of steps needed for carrying out the procedure.
b. deciding on the best sequence for the performance of these steps. Similar or closely related steps to each other should be grouped together.
c. reviewing steps within the planned procedure that might be affected by changes in other procedures.
d. testing the procedure before putting it into everyday use and try to discover any problems; and
e. reviewing and evaluating the procedure after it has been used for several weeks.
f. Consulting with various stakeholders within hospital and at Ministry of Health for endorsement of SOPs and implementation of SOPs in district and other hospitals in Bhutan.

All procedures should be put in writing, describing each of the stages in a step-by-step detail. Correctly completed samples should be included when appropriate. Employees should be given a written copy of the procedure for which they are responsible. A copy of all procedures should be filed in a PROCEDURE MANUAL, which is a detailed list of all procedures kept in a loose-leaf binder in the Medical Record Department for easy up-dating and reference. All procedures should be reviewed against actual performance on a regular basis.

20.1 Clinical Documentation SOP

In this section, six essential basic Medical Record procedures are discussed that are core to provide medical record services in a hospital. These are

1. Admission, Transfer & Discharge (ATD) Procedure
2. Master Patient Index procedure
3. Medical Record Completion Procedure
4. Medical Record Filing or Archiving procedure
5. Medical Record Storage Procedure
6. Medical Record Retrieval Procedure

20.1.1 Admission, Transfer & Discharge (ATD) Procedure

20.1.1.0 Identification of patient and Admission Process

During the admission procedure, biodata is collected as per CID or government issued documents and recorded on the FRONT SHEET, which is the first form in the medical record. The information is also recorded on an ADMISSION SLIP or NOTIFICATION. In the past, this task was performed at the same time using carbon paper to save duplication and subsequent errors. Today in many countries, the Front Sheet is generated via a word processor or MS Access database and a second copy of the top section produced as the Admission Slip/notification. If a word processor is not available, a written copy should be made.

The FRONT SHEET goes with the patient to the ward (with the old medical record, if any) and the admission slip/notification is sent to the Medical Record Department to enable the preparation of the MASTER PATIENT INDEX CARD. The business/accounts office where the patient's accounts are prepared may also require this information and the ADMISSION SLIP/NOTIFICATION may be sent there, first for processing before being sent to the Medical Record Department.

During the admission of a patient in a ward or ER, the staff members in the Medical Record Unit/Central Admission/Reception/Ward are responsible for patient identification and the **MPI** for repeat admission and authentication of MPI. Staff will modify admission records for repeat admission without changing the original registry database. The patient is sent to the ward with the FACE/Admission SHEET. That is the beginning of the medical record. At the end of each day the Medical Record Office must update the CENSUS daily. Inpatients usually occupy a bed in a health care facility for at least four hours or overnight. Inpatients may be admitted through the Emergency room, general outpatient clinics or through specialist outpatient clinics. In Bhutan, doctors in Outpatient department & ER may refer patients to a ward/central admission unit or ER for admission.

The ADMISSION of a patient to hospital is ORDERED BY A DOCTOR and carried out by an admission clerk/medical record assistant.

20.1.1.1 Admission Register

At the time of admission, a patient may already have a medical record number and Discharge Summary of past visits, thus a new number is **NOT** issued. The hospital, however, needs to keep a daily list of **ALL** admissions. ALL patients admitted, whether admitted for the first time or the second, third or fourth time, are listed in the **ADMISSION REGISTER**. From this register a daily list of **ALL** admissions is made. The admission register is kept in the Admission Office and as mentioned, is a list of all admissions to the hospital/health care center in date order. In some countries, the discharge date is also included in the admission register. It is better to have one register that has all admission and discharge details in one place. In this case a separate discharge register is NOT required.

DO NOT CONFUSE THE ADMISSION REGISTER WITH THE NUMBER REGISTER

Contents of the Admission Register

a. Family name and given name,
b. sex, date of birth/age, ward
c. Reason for admission (presenting disease/illness).
d. Date of admission.
e. Transfer of patient details such as date of transfer, transferred to and from.
f. Date of discharge. *
g. Discharge alive/dead. *
h. Other details may include doctor's name

*Include date of discharge and alive/dead if admission and discharge register are combined.

Daily Admission List/Census

The Admission Office should also prepare a DAILY ADMISSION LIST containing the patient's full name, patient's MRN, and the ward where the patient has been sent. A copy of the ADMISSION LIST is sent to the Medical Record Department to check that a Master Patient Index card has been made for all new patients. Therefore, it is best that the Medical Record Department staff control the NUMBER REGISTER. A copy of this list is also sent to the Accounts Office and Inquiry Desk. Digital format such as Google sheet information to be shared across wards via Nursing Desk by central admission or ward where CAU is not available.

You must not mistake the NUMBER REGISTER with the ADMISSION REGISTER.

• The NUMBER REGISTER is where a number is given to each patient on his or her FIRST admission to the hospital to IDENTIFY THE PATIENT, and to IDENTIFY HIS OR HER MEDICAL RECORD and to FILE THE MEDICAL RECORD.
• The ADMISSION REGISTER is a register listing ALL admissions - readmissions as well as new admissions. The ADMISSION REGISTER is used to produce the admission statistics.

On receipt of the Admission List, the clerk responsible for the Admission Procedure checks for new admissions and readmissions. For a re-admission the patient's previous medical record must be located and sent to the ward on request, making sure that a tracer or out-guide (both will be discussed later) is placed in the space from where the record has been removed. The next step for new patients in the patient identification process is the preparation of the **MPI card**. The development and maintenance of the **MPI**, also called the **PATIENTS' MASTER INDEX** is one of the most important procedures in the Medical Record Department, as errors at this stage could completely undermine the efficiency of the department.

Where Does the Medical Record Begin?

The medical record begins with the patient's first admission as an inpatient or attendance as an outpatient (if a combined medical record) to the health care facility. This begins with the collection of identification information, which is recorded on the **FACE SHEET** or **IDENTIFICATION AND SUMMARY SHEET**. The name of the first form in the medical record varies from hospital to hospital and country to country. In Bhutan we use FACE SHEET but once EPIS is fully implemented, it may begin with patient demographic details as per EPIS registration module or whatever is accepted by Technical Working Group & authorities of EPIS Project of Ministry of Health.

Face-Sheet

Sample Identification form

The top section of the FRONT SHEET contains details about the patient (this is the section which is used for the ADMISSION CARD) Family name and First name: Medical Record Number: Permanent address: Sex: Date of birth (and age): MRN/UHID: Local Address: Source of referral:
The bottom section of the FRONT SHEET contains clinical details about the patient, documented by a DOCTOR when the patient is discharged Principal diagnosis …… ICD code Comorbidities diagnosis …… ICD code Procedures performed …… ICPM code External cause of injury …… ICD code Discharged Status: alive/dead/LAMA/RF/RC/AB…… Attending Doctor's signature/Seal/BHMC No……

20.1.1.2 Patient Identification and Medical Record Numbering

Before discussing specific Medical Record Department functions and procedures, we should look at how a patient and his or her medical record are identified. Accurate identification of a patient is the backbone of an effective and efficient medical record system. Correct identification is needed to positively identify the patient and ensure that each patient has one medical record number and one medical record.

Responsibility for Patient Identification

The responsibility for correctly identifying a patient rest with the Medical Record Clerk/Receptionist/Assistants who interviews the patient in the admission unit or reception at outpatient & emergency department. The clerk must carefully question the patient or a person accompanying the patient if in case the patient is unable to give the necessary information (e.g., child, elderly relative, etc.). It should be made sure that the questions asked are clear and understood by the person being interviewed. Many people who come to a hospital or clinic are nervous and may have difficulty with some simple questions. They should be put at ease and be given time to respond. The data collected must be written clearly on the correct form. Correct patient identification enables hospital staff:

- to find a particular patient's medical record whenever they come to the health care facility.
- to link a patient's previous admission or outpatient attendance to the current admission using his or her medical record number.
- to find the correct medical record of patients when there is more than one patient with the same name.

Patient identification is a key issue for medical record services. Ideally, the staff in the Admission Office should be responsible to the MRO to enable them to be trained in identification procedures. It would also enable the MRO to monitor their performance and re-train if required.

20.1.1.3 Unique Patient Characteristic

To identify patients, we need a UNIQUE PATIENT CHARACTERISTIC. The type and number of unique patient characteristics used will change from country to country, and are defined as: **SOMETHING ABOUT A PATIENT THAT DOES NOT CHANGE**

In some countries, the unique patient characteristic often used is the patient's mother's maiden name, (the mother's name before she was married). This is something that does not change. In many countries, however, patients attending a health care facility do not know their mother's maiden name, or their own date of birth, and are often unsure of their exact age. Each country will need to decide on a unique patient characteristic that will assist with the identification of a particular patient. There is no limit to the number of unique patient characteristics that can be used. Some useful unique patient characteristics are:

- a national identification numbers.

- a social security numbers.
- date of birth.
- health insurance number.
- mother's maiden name.
- mother's first name.
- father's first name; and
- in the case of a new-born infant a biological characteristic, e.g., fingerprint or footprint.

The following are NOT considered unique characteristics:

- Where a person lives is NOT a unique patient characteristic because it can change.
- A person's age is NOT a unique patient characteristic because it DOES change.
- Although it should not change, it is important that a patient's birthplace is NOT used, as it is often identified by most people as being the place where they "come from" as opposed to the place where they were actually born.

All these principles have been considered in Registration Module of EPIS with Unique Hospital Identification Number so the medical record assistants performing admission of patient just need to understand scientific rational behind issuing UHIN to a patient. At current practice, MS Access database takes care of this process too but the staff performing the procedure should understand the scientific rationale behind the process.

EFFECTIVE PATIENT IDENTIFICATION IS THE BEGINNING OF AN EFFICIENT MEDICAL RECORD SYSTEM.

20.1.1.4 Medical Record Numbering

Once a patient has been identified the next step is to be able to identify their medical record. The collection of patient identification data and the assignment of a medical record number or verification of an existing medical record number should be the first step in every admission procedure. In the system we are discussing, that is, WHERE THE PATIENT HAS ONE MEDICAL RECORD AND ALL ADMISSIONS ARE FILED IN THE ONE FOLDER, the patient is given a medical record number at the time of the first attendance at the hospital. This number is then used during the current admission and in the future to identify a patient and his or her medical record.

- The term used for this number varies from hospital to hospital and country to country. It can be referred to as the hospital number, patient identification number, unit record number or medical record number. We will call it the **MEDICAL RECORD NUMBER (MRN)**.
- The MRN is a permanent identification number assigned in STRAIGHT NUMERICAL SEQUENCE by the admission staff and is recorded on all medical record forms relating to that patient. An important point is that THIS NUMBER IS THEN USED TO FILE THE MEDICAL RECORD. Thus, it is important to make

sure that the number is correctly assigned and recorded on **all forms in the patient's medical record.**

Note that **MEDICAL RECORD NUMBERING SYSTEMS** are HOW WE GIVE A NUMBER to medical records. **FILING SYSTEMS** are HOW WE FILE THE RECORD after a number has been given. In some hospitals, every time a patient comes to the hospital, a new medical record number is given, and a new medical record is started. With this system, a patient could have many medical records scattered throughout the file room. This is NOT RECOMMENDED. For good patient care, the patient should have one medical record with all admissions filed in the one record and kept in the one place. To this Manual, we will be referring to this method of medical record keeping.

20.1.1.5 Procedure for Issuing Medical Record Numbers

1. The MRN should be issued in straight numerical order from the NUMBER REGISTER commencing with the number 1. For example, if the last number given to a patient were 342, the number issued to the next patient would be 343 and the next 344 and so on.
2. If the patient has been an inpatient previously, the admission clerk must look for and find the old number in the MASTER PATIENT INDEX (See Basic Medical Record Procedures). If the patient has not been an inpatient previously, the next number in the NUMBER REGISTER is allocated.
3. Once a patient has been identified and the next unused number in the number register has been given to that patient, this number is how the patient and his or her medical record will be identified for this admission and in the future. That is, this number should belong to the patient for the rest of his or her life and should never be given to another patient. Even if a patient has died, the number should NOT be given to another patient.
4. If an error has occurred and a patient is found to have two medical record numbers and subsequently two medical records the DUPLICATE number should be canceled and NOT used again, and the medical records combined under the FIRST number. As will be discussed under the Master Patient Index, a cross-reference must be made to the duplicated number and medical record.

20.1.1.6 Number Register

As mentioned above, MRNs are issued from the NUMBER REGISTER, which is the origin of the patient identification numbering system and is a numerical list of numbers issued to patients. That is, it is a book of numbers in numerical order. This method of issuing numbers is simple, easy to assign and easy to control.

- A NUMBER REGISTER could be a bound book or a loose-leaf book where the sheets are bound at the end of each year to prevent loss.
- The use of a NUMBER REGISTER is important for patient identification NUMBER CONTROL. As a number is issued, the name of the patient is

immediately entered beside that number. The date of issue is also recorded along with the place of issue.

For example:

Number	Name	Date	Where issued
342	Pema Dorji	01.01.2017	Central Admission Unit
343	Wangchuk	02.01.2017	Central Admission Unit
344	Sonam Dorji	02.1.2017	OPD Reception
345	Samten Wangchuk	03.01.2017	Emergency Triage

- Numbers SHOULD NOT be pre-assigned. That is, a medical record number should be given to a patient when he or she comes to the hospital for the first time and NOT before.
- In some hospitals/countries, the Medical Record Department takes full responsibility for issuing MRNs and other departments must call the department for a new number.
- The NUMBER REGISTER should be routinely monitored for accuracy and completion.
- if no, the admission clerk assigns the next unused number from the NUMBER REGISTER.

More Important Points about Patient Numbering

Some countries use a national identification number to identify the patient and the medical record. Such as an Identification Card number which is also used to file the medical record. **THIS IS NOT RECOMMENDED.**

- The Identification Card Number or National Identification Number should be used as a unique identifier **BUT NOT TO FILE THE MEDICAL RECORD**. A medical record number should be issued on the first attendance and retained for future admissions or attendance at the hospital or clinic.
- With Digitization of Medical Records & HIS, using CID number as MRN only increases chances of Digital Identity Theft and unnecessary system hack for monetary reward intent where hospital information systems are hacked and rendered unusable until ransom is paid off.

The way a number is presented can also add to the efficiency of the system. For example, when the numbers reach four to six digits such as 12345, the number could be written as 1-23-45. Many hospitals start with a six-digit number by adding a series of “0’s”. For example, the number 1 could be shown as 00-00-01. Clerical staff often finds it easier to remember numbers when they are broken down into sets of two.

20.1.1.7 Transfer of Patient Procedure

Transfer of patient occurs when special care of certain specialty is needed during the course of treatment from one department to another. For instance, during the patient's admission with medical complaints patient was admitted to Medical Ward and treatment initiated. However once medical conditions were treated or during the workup phase of the treatment, inner ear infection was observed. The treating physician then decides and finds it is better for the patient to be in ENT ward to treat inner ear infection as medical conditions are progressing well as per treatment interventions. Hence the patient is then transferred to ENT ward upon consultation with the ENT specialist as it is better and convenient for the patient and the ENT team.

During the transfer of the patient, the nurse on duty or care of the patient writes transfer-out slip with patient information and send to Central Admission Unit or Medical Record Department where the status of the patient is updated in ADMISSION REGISTER or MPI Database. The ADMISSION REGISTER can have information of admission, discharge and transfer with patient care outcomes mentioned above. If the hospital uses MS Access MPI database, it can be computed in the database. EPIS project shall computerize these processes in Admission & Medical Record Module.

20.1.1.8 Discharge Procedure

While in hospital, the patient's medical record develops with the recording of clinical information by doctors and other health professionals. Results of pathology tests etc., are added as they are received. Nurses record daily progress notes and special observations. If a patient has any special tests and/or surgical procedures, relevant information is included.

Once the treating physician and team finds it is suitable for the patient to be discharged and go home as the prognosis of the patient has improved during the course of treatment, discharge procedures are initiated. On discharge/death of the patient medical record, including ALL forms relating to admission plus any previous records, should be sent to Medical Record Department as soon as possible or within 24 hours of the outcome and end of discharge procedure by the Incharge of the respective wards. Nurses on duty should be precise and accurate not to mix medical record forms of different patients which has very high risk of negligence and error in clinical care process which may even lead to death of the patient. During the compliance & regulatory check of untoward events, such cases are hard to come of defiance to clinicians involved in patient care.

Medical record staff responsible for the discharge procedure should be trained to ensure that the medical records are completed promptly and correctly if it is incomplete. We shall discuss in more detail of Incomplete Medical Record Procedure later in this manual. During manual process, discharged medical records are taken to Medical Record Department by support staff once discharge procedures are completed in the ward. It is then received by the medical record staff and the information and status of patient's admission is updated as discharged in MS Access database or ADMISSION REGISTER in case of manual process.

Following types of various outcome of patient care are records in medical record and database which later can be used for statistical and research purposes:

1) Recovered: Prognosis is best and underlying condition is treated and patient recovered. NO readmission is required.
2) Recovering: Prognosis is good and healing in process but may take time or readmission or outpatient visit to check on the condition later.
3) Not Recovered: Prognosis is not good and underlying condition couldn't be treated which may need further referral to specialist or higher treatment center/hospital. But not referred during the discharge event as it is not urgent. Patient can also go as outpatient basis to the referral center.
4) Referred: Prognosis could be achieved as patient need urgent services and care of higher level of specialty and hence referred to that referral center.
5) Dead: Patient expired during the course of treatment.
6) Absconded: Patient is not present and absconded without information of the clinical team without end of treatment plans.
7) LAMA: Leave against medical advice when patient/patient party is no longer interested in treatment in the hospital. This may be due to religious or spiritual beliefs that they want to conduct rituals instead of medical treatment.

20.1.1.9 Role of Clinical Team in ATD & Identification of Patient Procedure

While the admission process in ward, clinical staff has to complete strict patient identification and correct biodata must be recorded to avoid duplication or incomplete medical record. Ensuring the completeness of medical records prior to sending to the MR office should be done by Nurse Incharge.

20.1.1.10 Role of Administrators & Managers in ATD & Identification of Patient Procedure

Supervision and support such as Human Resource & Infrastructures to be provided as and when required. If there are public complaints during routine service delivery at any units of admission process, administration office representative officer such as Public Relation Officer should come to scene and resolve it. They should also be aware of routine KPIs of services in these units for evidence-based decision-making processes while planning and implementing actions.

20.1.1.11 Role of Medical Record Department in ATD & Identification of Procedure

Main office of the Medical Record Department should always support, supervise, and monitor daily activities of ATD. MRO should train staff in these units in ATD procedures and computerized MPI Access Database to streamline and strengthen medical record services in the hospital in collaboration with hospital administration and ministry of health.

MRO or the Manager of Medical Record Department should answer and resolve critical issues in these services delivery.

20.1.1.12 Computerized Admission, Transfer and Discharge (ATD) System

Like the MPI, the ATD system is one of the most computerized systems involving medical records. The introduction of this type of system enables staff to maintain a file on all patients currently in hospital, awaiting admission and recently discharged. It also enables authorized users around the hospital to have direct access (via a computer terminal) to the file and automatically generate bed census and other daily statistics required by the hospital administration.

The objectives of such a system are to:

- provide an inpatient booking service for patients awaiting admission.
- keep records of the bed state and bed allocation.
- trace patients for inquiries.
- provide daily patient census reports and related statistics.
- provide information for the MPI (linked to the MPI system); and
- provide a complete data base for all authorized users of patient identification and location information.

Within such a system, a data file is maintained on all patients:

- currently in hospital.
- awaiting admission; and
- recently discharged.

In a computerized admission (transfer and discharge system) all admissions are entered at the time of admission and the discharge details are entered for all discharged /died patients at the time of discharge or death.

Important Points of a Computerized ATD System

- All admissions must have an entry in the MPI.
- There must be a linkage between the MPI and the ATD System to enable a name to be added to the MPI as part of the admission procedure.
- Daily reports are generated including:
  - an admission lists.
  - a discharge lists.
  - a list of all inpatients at a given time; and
  - a list of inpatients for longer than 90 days.

In addition, other important reports include:

Condition and Nursing Dependency

• Each afternoon, the computer operator should print a ward list for each ward. These can then be distributed to the wards, where errors or any change of condition will be noted. The nursing dependency for each patient can also be noted at this time. This printout can then be used for the daily bed census and then returned to the central admission area at a designated time each day to enable the keyboard operator to amend the files accordingly.

Service Analysis Statistics

• This enables a breakdown of clinical services to be prepared for the administration.
On receipt of the medical record, the medical record staff can check the service under which the patient was treated and record it on the discharge list, if not already recorded. The details on the list are then keyed into the system to produce the required statistics.

Other statistical information

• Information regarding post-operative deaths and autopsies, plus obstetric information such as deliveries, maternal deaths, multiple births, fetal deaths, and infant deaths are also keyed in at this time, if not already recorded on file.

With computerized medical record system, we can also use relational database such as Microsoft Access to create NUMBER REGISTER which is a part of module in **MASTER PATIENT INDEX or ADMISSION/REGISTRATION module in EPIS. JDWNRH has been using MS Access Database since the year 2005 where data since the year 2000 are available. The software has been shared with some of the district hospitals.**

20.1.2 Master Patient Index Procedure

Master Patient Index is the link between Medical Record Department and Central Admission Office/Ward/ER

All the above are usually carried out in the Admission Office and ideally there should be a formal link between the Medical Record Department and the admission office if they are separate. The admission clerk must be able to access the information about a patient's previous admission and this is done through the MASTER PATIENT INDEX which can be register for manual system and MS Access Database for computerized system, which is kept in the Medical Record Department.

- As a general principle, the MRO should be responsible for the numbering system used for patient identification as it is also used for filing the medical record.
- If numbers are issued from the Admission Office, Emergency Department or Outpatient Department, the MRO relies on the clerks from those offices to maintain a correct and efficient medical record numbering system.

How do we find a patient's medical record again?
THE KEY IS THE MASTER PATIENT INDEX

20.1.2.0 Master Patient Index Card

- The MPI card is prepared by the medical record staff responsible for the admission procedure in the Medical Record Department and is the key to locating the medical record. In manual systems it is a card index. It can also be computerized, which will be discussed later.
- The **MPI** card contains only information necessary to identify the patient and locate that patient's medical record. It **SHOULD NOT CONTAIN ANY MEDICAL INFORMATION.**

Information should include:

- the patient's full name - family name and given names.
- the patient's full address.
- the hospital's identification number - that is, the medical record number.
- patient's date of birth and sex; and
- the patient's mother's name and/or another unique patient characteristic.

THE PATIENT'S AGE IS NOT RECORDED ON THE MPI CARD AS THE PATIENT'S AGE CHANGES.

All information must be written carefully and legibly with the Patient's name in CAPITAL LETTERS. Cards can be either hand-written or typed.

MPI card (basic outline):

Full name: Family name first	Medical Record Number
Home Address/village	Date of Birth: Sex:
Unique Patient Characteristic 1	Unique Patient Characteristic 2
Unique Patient Characteristic 3	Unique Patient Characteristic 4

MPI card (example)

Karma Dema	12-34-56
Chubachu, Thimthrom, Thimphu	Date of Birth: 17-10-58 Sex: Female
Mother's maiden name: Pema Seldon	National Identification number: 11 200 500 3456
Father's name: Dorji Penjore	Phone number: 17 91 11 00

As shown in the following example, some countries record admission and discharge dates on the MPI card (on both sides if necessary).

MPI card (including admission details):

Karma	Dema	12-34-56
Chubachu, Thimthrom, Thimphu		Date of Birth: 17-10- 58 Sex: Female
Mother's maiden name: Pema Seldon	National Identification number:11 200 500 3456	Phone number: 17 91 11 00
Admission	Discharge	
15/1/2007	18/1/2007	

20/5/2009	22/5/2009	
2/11/2019	12/11/2019	

ALL MPI CARDS MUST BE FILED IMMEDIATELY. THEY ARE WRITTEN OR TYPED. THERE SHOULD BE NO EXCEPTIONS TO THIS RULE. MRN written on the medical record file & digital archiving should take care of the MPI card.

20.1.2.1 Important Points about MPI Cards held in a manual index

- MPI cards should be 7.5 x 12.5 cm (ruled or plain).
- There should be a separate card for each patient.
- MPI cards should be filed in a card drawer in strict alphabetical order. It is best if the card drawer is part of a cabinet.
- MPI card drawers can be made of wood or metal, and should be no longer than 50 cm.
- It is important that the drawers are not too full. If they are too full, it is difficult to find or file a card, making errors possible.
- The order of names used in the local telephone book should be used as a guide in determining the order of names in the MPI.

20.1.2.2 Guidelines for Alphabetical Filing of MPI Cards

a. Place family name first, then given name followed by the middle name or initial and file in **STRICT ALPHABETICAL ORDER**.
b. If there is more than one patient with the same surname and given name the middle initial is then used, and the cards are filed in alphabetical order by first initial of the second given name. If there is no middle name or initial the cards should be filed by date of birth, filing the oldest first.
c. If unsure, you should follow the guidelines used in your country for entries in the telephone directory. For example, normally in telephone directories a person with the name St. John would be filed as S-A-I-N-T J-O-H-N.
d. If names are hyphenated such as Pema-Dorji they are filed in alphabetical order letter by letter e.g., PEMADORJI.
e. Names with religious titles such as Father, Sister, Reverend etc., are filed under the patient's family name - the title is NOT used. For example, Sister Mary Agnes Brown would be filed under BROWN, Mary Agnes.
f. As general rules remember that NOTHING COMES BEFORE SOMETHING. For example, M. Agnes Brown would come before Mary Agnes Brown; J. Jones would come before John Jones; A. Lee would come before Ann Lee; and Ann Lee would come before Anna Lee.

20.1.2.3 Guides for the MPI

- There should be sufficient guides placed in the index to ensure speedy reference. As a rule, a guide should be used every 10 cm.
- Each drawer should contain a minimum of 10 guides. Guides are used to show sub-sections within a drawer. Guides are cards with a tab protruding above the other cards.

For Example:

Ba

• Guidelines in the B section or the drawer may be used for names starting with the following:

Ba	Bo
Be	Bu
Bi	By

A Master Patient Index Cross-reference or "see also" cards in the MPI

- If a patient's name has changed since a previous admission, a CROSS-REFERENCE card should be made to the former name. For example, if Chhimi Dechen Choden was admitted and she had been in hospital before under a different name, e.g., Ellen Marie Jones, a cross-reference should be made to her previous admission as Ellen Marie Jones. The information recorded on her original card is checked and entered on the new card and the original card is cross-referenced to the new card under Ellen Marie Smith. *For example:* JONES, Mary Ellen - *See* - SMITH Mary Ellen
- When looking for a patient's previous MPI card, the clerk should remember that there can be different spellings of patients' names. A search must be made under every possible spelling of the name. For example, there are many ways of spelling Chimi. They include Chhimi, Geofrey, Geoffrey, etc. In such an instance a SEE ALSO, card should be used to indicate the different spelling. Again, the telephone directory is a good guide.

IF THE CORRECT CARD IS NOT LOCATED, THIS COULD CAUSE A MAJOR PROBLEM AS THE WRONG RECORD COULD BE USED BY MISTAKE. THEREFORE, CAREFUL CHECKING IS ESSENTIAL.

20.1.2.4 Computerization of the Master Patient Index (MPI)

As hospitals move to automation, many have already computerized their MASTER PATIENT INDEX. When considering an automated medical record system, the MASTER PATIENT INDEX should be the first procedure to be computerized. The information in a computerized MPI is the same as that recorded in a manual one. As for a manual system, the objective of a computerized MPI is patient identification. The main function is the entry, storage, and retrieval of the patient's name and MRN.

- ✓ This system would require a group of programs that would be accessed by users via computer terminals and/or printing terminals. The programs would be designed to enable access to the information held on the MPI file, and to build or modify the file information, as required by the hospital.
- ✓ As discussed, the MPI holds information on all patients who have attended or have been admitted to a hospital. Clinical details are NOT held on this file, only basic information required to IDENTIFY the patient.
- ✓ As with a manual file, a computerized file would be cumulative. That is, new patients would be continually added to the file. Previous patients are NOT deleted, as their details are kept available for future attendance or admission, or for any other need to retrieve a patient's medical record.

Implementation of a computerized MPI

Computerization of the MPI would be spread over a period through

- o entry of information already held on index cards from the manual MPI card system including all patients in hospital at the time of implementation.
- o inpatient registration; and
- o outpatient registration.
- o JDWNRH has shared MS Access Database as MPI to district hospitals.

The entry of data on new patients should be completed at the time they are admitted as inpatients or registered as outpatients, that is, in the Admission office for inpatients and the outpatient department registration desk for outpatients.

Search program

As for the manual system, in a computerized MPI, the search program should enable the operator to locate a particular patient to determine if that patient has been in hospital previously and has a medical record number. Limited information on several patients (one patient per line) may be displayed on a screen for review or further action. These can be displayed by:

• patient name giving hospital number; and
• hospital number giving patient name.

When the person is identified, the full index file information for that selected patient may be displayed on the screen. If there are changes to a patient's identification details, they should be made at the time of admission.

- When retrieving information, strict security codes should be used to prevent unauthorized access and alterations. Each user should have his/her own username as well as a password, which is assigned by the computer manager and changed periodically.
- Only an authorized user should be able to access information relating to a patient and to change, add to or delete records on the master file.

AS IN THE MANUAL SYSTEM, NO NAME MAY BE ENTERED INTO THE MPI WITHOUT FIRST CHECKING IF THE PATIENT ALREADY HAS AN ENTRY IN THE INDEX.

The MPI should force a name search before a name can be entered, unless the name is being entered with a pre-existing medical record number.

20.1.2.5 Important Points for the Operation of a Computerized MPI

- All name searches should use the name and at least one unique patient characteristic (See PATIENT IDENTIFICATION).
- As in a manual system, correct spelling of names is vital to minimize duplicate registration of a patient.
- Entry of at least one unique patient characteristic is compulsory when adding a patient to the MPI.
- Entry of the medical record number is compulsory when adding a patient to the MPI.
- The computer automatically issues medical record numbers in strict numerical order.
- The MPI should enable the manual entry of pre-existing medical record numbers.

Reports generated from the MPI should include:

- a daily printout of numbers issued, in number order, creating the NUMBER REGISTER; and
- regular printouts in alphabetical order of all names by family name or by first name depending on the naming conventions of the country.

Before planning such a system, however, many administrative decisions must be made. Some important ones include:

- sufficient funds are available for its development and implementation.
- the type and size of computer required, and that sufficient computer terminals are available to meet the needs within the funds available.

- trained staff are available to install and maintain the system.
- the hospital has a computer support team available to assist if hardware or software problems arise.
- all clerks have keyboard and mouse training and are also trained in the use of the relevant software.
- a computer terminal is available to the clerical staff and should not be locked away in the manager's office.
- appropriate furniture is made available (power points, electric cables, chairs, and desks). Furniture provided for computers in Medical Record Departments is often taken away by managers for other offices. This should not be permitted.
- security procedures should be arranged to avoid the use of the computer for games and other non-medical record functions, and to protect the computer from viruses; and
- authorized staff should be issued with passwords, which are changed regularly to prevent unauthorized access.

Although this system would be self-contained it would also be part of the full set of systems relating to patient administration and health information services.

IF A DECISION IS MADE TO INSTALL A COMPUTERIZED MEDICAL INFORMATION SYSTEM, THE MASTER PATIENT INDEX SHOULD BE THE FIRST PROGRAM. EPIS project shall take care of Computerized MPI for Bhutan.

20.1.3 Medical Record Completion Procedure

After patient is completely discharged or died from or in the ward and the occupied bed made available for new admission via bed management system in collaboration with Central Admission Unit or ER or Medical Record Office where there is no CAU, the nurse in-charge and/or treating nurse checks for accurate, authentic, and complete medical records of the discharged patient.

A copy of discharge summary or death certificate is sent along with the patient as their copy. Rest of the documents are all send along with all other discharged patient's medical records to the Medical Record Office via supporting staff on duty as soon as possible or within 24 hours, or the next morning. Failure to do so may result in a missing medical record as once the patient is no longer in the ward, their medical record can easily be misplaced or sometimes given to the patient upon discharge which results in negligence by ward staff.

20.1.3.0 Receipt of Medical Records

The discharge procedure begins with the receipt of the medical records of discharged/dead patients. In some countries, a staff member from the Medical Record Department collects the medical records of discharged/dead patients from the wards at a specific time every day. This is time-consuming for the Medical Record Department so a central collection point should be designated. If this is done, the ward staff can take all medical records of discharged/dead patients to this point by a certain time each day where they are collected by the Medical Record Department staff.

In many countries, Admission Office staff or the Business Office are responsible for the daily bed census, which they receive from each ward at the beginning of the day. From the bed census forms, staffs can record details of discharges and deaths and prepare a DAILY DISCHARGE LIST. This list is important and should be duplicated and sent to several sections in the hospital including the Accounts, Catering, Inquiries, and the Medical Record Department.

Discharge lists should be kept in date order in the Medical Record Department. The list should contain the patient's name, age, treating doctor, ward, and service, that is, whether medical, surgical, obstetric, orthopedic, etc., and whether the patient is alive or dead. Discharge lists are usually used to prepare the hospital inpatient statistics.

By using the discharge list, the staff responsible for the discharge procedure in the Medical Record Department can check to see if they have all the medical records of discharged/dead patients from the previous day. If any are missing, they should contact the ward to find them. Once a patient has been discharged, the medical record should be returned promptly to the Medical Record Department. Failure to do so may result in a missing medical record. Once the patient is no longer in the ward, their medical record can easily be misplaced.

20.1.3.1 Death Register

Some hospitals maintain a death register, which is a list in date order of all inpatients that died in the hospital/health care center. The death register DOES NOT INCLUDE persons who are DEAD ON ARRIVAL (DOA) at the hospital as they are not formally admitted. It also does not include patients who die in outpatients or emergency. The death register ONLY includes inpatients that die during their stay in a hospital or other health care facility. Emergency department should maintain death register as it is one area where most of the DEAD ON ARRIVAL events happen. If MS Access Database is used, NO NEED TO MAINTAIN DEATH REGISTER. EPIS project shall consider such statistical requirements in Statistical Module of Medical Record.

Contents of the death register include the patient's:

- family name and given name
- age and sex
- home address
- treating doctor and ward; and
- underlying cause of death as recorded by the attending doctor on the death certificate (see definitions in collection of inpatient statistics).

20.1.3.2 Discharge Summary

A discharge summary is a summary of the patient's stay in hospital written by the attending doctor. The minimum detail provided in a discharge summary is:

- patient identification
- reason for admission
- examinations and findings
- treatment while in hospital; and
- proposed follow up.

A discharge summary may be written on a pre-printed form or on plain paper and typed or word-processed in the Medical Record Department. In many countries, the attending doctor writes a discharge summary in duplicate when the patient is discharged. The original is kept in the medical record and the copy given to the patient to take to their local doctor to enable continuing care.

20.1.3.3 Daily Discharge List

From Admission, Discharge & Death Register or computerized ATD system such as MS Access Database, daily discharge list can be generated and shared in google sheet as one of the KPIs so that all wards and administration can make informed evidence-based decisions such as bed management, patient admission issues and so on.

JDWNRH uses Daily Census google sheet shared across the units in the hospital with important auto generated KPI such as Bed Occupancy Rate of each ward to aid in Bed

Management. Central admission unit also keep their database consisting of following information:

- Patient name
- Age/date of birth
- Admitting department & doctor
- The admitted ward or unit
- Admission Outcome such as awaiting admission or admitted

20.1.3.4 Medical Record Completion Procedure

The discharge clerk or Medical Record Assistant in the Medical Record Department needs to:

• check to ensure that all the forms are in the medical record. This procedure is often called the DISCHARGE ANALYSIS. For example, the record is checked to ensure that if the patient has had an operation, an Operation Report is in the record. In addition, the clerk needs to check that all progress notes, pathology and x-ray forms, nursing notes etc. are included. There should also be a final discharge note made by the attending doctor indicating to where the patient has been discharged and arrangements for follow-up.

• sort the forms into the correct order (if they are not already correctly sorted - see Order of Forms). In the case of a new patient, the forms are attached to a medical record folder with a clip or fastener and the patient's name and MRN are clearly written in the correct place on the folder. If the patient has been in hospital before, the old records are retrieved, and the latest admission forms are added by placing them behind the appropriate admission divider.

• check if the doctor has completed the lower part of the FRONT SHEET. That is, the main condition has been recorded along with any other condition treated while in hospital. The MAIN CONDITION is defined in the section on disease classification. In some countries, it is referred to as the PRINCIPAL DIAGNOSIS, which is defined as "the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital (or attendance at the health care facility)" (Huffman, 2090). The definition used varies from country to country and it is important that you know the definition used in your country.

• check that if an operation or other surgical procedures were performed that they are recorded, and the doctor has signed the FRONT SHEET. The signature of the doctor is important as it shows that the doctor has completed the medical record and takes responsibility for the content.

In some hospitals/countries, a discharge summary is required. If this is the case in your hospital, and there is no discharge summary, the medical record should be assigned to the doctor to write one.

The medical record should remain in the Medical Record Department and the doctor is asked to come to the department to complete the FRONT SHEET and write a discharge summary (if required).

MEDICAL RECORDS SHOULD NOT BE LEFT IN THE WARD FOR COMPLETION AS THEY COULD BE MISPLACED ONCE THE PATIENT HAS BEEN DISCHARGED.

When the medical record has been completed by the doctor, the staff member (Clinical Coder) responsible for coding should code the diseases/injuries/operations listed on the FRONT SHEET of the medical record (see Disease Classification and Clinical Coding section).

If the medical record officer is responsible for the collection of health care statistics, they should be collected as soon as the medical record is completed. This should be done in the format required by your hospital (see Section on Collection of Health Care Statistics).

Hospitals and health authorities usually require details relating to the main condition, sex, and age of patient plus the outcome, alive or dead.

20.1.3.5 Order of Forms in the Medical Record

Medical Record Assistants should follow standard order of forms using the *Medical Record Completion Checklist Annexure1.* There should be a specific order in which all forms are placed within the medical record after discharge or death of the patient.

Samples of X-ray, pathology, and other investigation forms.

The hospital administration or the Medical Record Committee (if there is one) should determine the order in which forms should be filed in the medical record. The list should be printed and available to medical record clerks and other personnel working with or using the medical record. This will make it easy for the medical record staff to assemble the medical record and for health care personnel to locate specific information.

It is important to note that the order of forms as listed in Annexure is NOT the order used on the ward. It is the order in which forms are filed within the medical record after the patient has been discharged and the medical record has been returned to the Medical Record Department. While on the ward the clinical progress notes and nursing notes are usually kept in the front for easy access with all forms kept in a loose-leaf binder.

In many countries, it is the responsibility of the ward staff to sort the medical record forms into the correct order before returning them to the Medical Record Department. If they are not in order when received by the Medical Record Department, the medical record staff responsible for discharges must sort them into the correct order as part of the discharge procedure.

Some Important Points about Forms in the Medical Record

- Forms should all be the same size, usually A4.
- The patient's name and medical record number, and the name of the form should be in the same place on EVERY form.
- Only official forms approved by the administration or Medical Record Committee (if there is one) should be included in the medical record.

The following is a sample medical record form. Sections A, B, C, D and E of the sample form (see below) remain the same on all forms. Section F is different for every form, as it is where the content of each form is written.

<table>
<tr><td rowspan="3">A

M
A
R
G
I
N

2cm</td><td colspan="3">B Top Margin 1cm</td></tr>
<tr><td>C Name & Logo of Hospital

Patient Names
Other patient Details</td><td>D
Medical Record Number.

Ward:</td><td rowspan="2">E

N
A
M
E

Of

F
R
O
R
M
2cm</td></tr>
<tr><td colspan="2">F

Sections A, B, C, D, and E remain the same for all forms

Contents of each different form recorded in this section</td></tr>
</table>

20.1.4 Medical Record Filing or Archiving Procedure

Once Medical Record Completion Procedure is completed and MRA or MRT receive completed medical records, the qualified or trained MRA or MRT or MRO in Clinical Coding will code daily discharged and death files using WHO ICD 10 Coding System. With ICD 11 coding system training completion, Bhutan shall migrate to ICD 11 coding system. In most instances, Clinicians who are trained in clinical coding also carry out coding duties as there is no qualified or trained medical record coders available in the country.

After completion of clinical coding, medical records are then returned to computerized ATD system where clinical codes and discharge outcomes mentioned above are entered for statistical and research purposes. Clinical Coding and Hospital Statistics Procedures shall be covered later in this manual. Medical records are then filed and archived either manually or digitally based on available staff and resources in Medical Record Department.

20.1.4.0 Clip or Fastener

Forms should be held in the medical record either by a clip or fastener. Staples should NOT be used as they tend to rust and additional forms cannot be easily added. Some countries use a large fastener, which is secured in the top left-hand corner of the medical record. A two-pronged clip can be threaded through clip holes in the folder or can be attached to the folder by the adhesive backing.

It is best to use plastic rather than metal clips. Metal clips can cut fingers or rust.
Medical Record Dividers

It is good practice to separate each admission by a divider; the divider will be slightly wider than the forms in the medical record and have a tab on which to write "1st Admission", "2nd Admission", etc. In addition, if combined with the inpatient notes, all outpatient notes can be stored behind an outpatient divider. For specialist outpatient records, a separate divider could be used for the clinic, e.g., "hypertension clinic", "heart clinic", etc.

20.1.4.1 Medical Record Folder

All medical record forms should be kept in a medical record folder and if possible, stronger cardboard folders should be purchased. JDWNRH uses yellow colored Folder. If medical record staff can digitize medical records and archive it in their computer, there is no need to purchase and waste resources.

Sample medical record folder:

Number tab ↓

12-34-56 MR Number Patient's full name Year of last attendance 2004 2005 2006 Etc. 0 0
Spine
↑ 0 0 0---Clip hole---0

Medical record folders should be filed on their spine so that the medical record number is clearly visible for filing purposes. Every hospital, health center and Department of Health should BUDGET ANNUALLY for medical record stationery.

The following should be written on the medical record folder:

- Patient's name.
- Patient's medical record number; and
- Year of last attendance.

MEDICAL INFORMATION SHOULD NOT BE RECORDED ON THE FOLDER.

20.1.4.2 Medical Record Filing System and Methods

There are two types of medical record systems: A DECENTRALISED MEDICAL RECORD SYSTEM and CENTRALISED MEDICAL RECORD SYSTEM.

a. Under a **DECENTRALISED MEDICAL RECORD SYSTEM**, inpatient and outpatient departments have their own individual medical records and should file them independently. Inpatient medical records are filed in the Medical Record Department and outpatient medical records are filed in the Outpatient Department. There is usually NO connection between the services. If a patient has two medical records, they are NOT combined. As discussed earlier, this system is not recommended as all data concerning a patient are always not instantly available. District hospitals where there is no designated Medical Record Office uses this type of medica record system.

b. Under a **CENTRALISED MEDICAL RECORD SYSTEM**, all medical records about a patient, whether inpatient or outpatient, are filed together in the one folder and kept in the Medical Record Department. That is, a patient has one medical record regardless of the number of times he or she has been admitted or attended the Outpatient Department. To illustrate – Dorji Penjore is admitted to hospital for the first time and is issued the medical record number 34567. He keeps this number for future admissions and attendances. All medical information about Dorji Penjore is kept in one record and filed by his MRN 34567 in the Medical Record Department. The number assigned identifies him in any department of the hospital in which he may be treated. That is, the record of this patient's medical care is continuous with all data concerning the patient immediately available at all times. JDWNRH and district hospitals where there are designated medical record offices uses this type of medical record system.

Medical Record Departments in most countries today use a CENTRALISED MEDICAL RECORD SYSTEM where the MRN is allocated at the first admission or attendance of a patient to hospital and is used for all subsequent admissions or attendances. The text above described the types of systems used for keeping medical records. We should now look at HOW MEDICAL RECORDS ARE FILED. Filing is one of the most important procedures in a Medical Record Department. If medical records are not correctly filed, the record may not be found when needed. Whether using a centralized or decentralized medical record system, there are three types of filing methods used in hospitals:

- alphabetical filing.
- straight numeric filing; and
- terminal Digit Filing.

As medical records should NOT be filed alphabetically, we will discuss the other two.

MEDICAL RECORDS SHOULD NOT BE FILED IN ALPHABETICAL ORDER.

The best filing method for developing countries is STRAIGHT NUMERIC FILING. In this method, medical records are filed in strict number order according to the MRN starting with the lowest number and ending with the highest number. For example, 542 is followed by 543 which is followed by 544, etc. New medical records are always added at the end of the number series, concentrating most of the filing activity in one area of the file. With this method of filing, the training time for staff is short.

Remember

IT IS EASY TO TRAIN MEDICAL RECORD STAFF TO FILE IN STRAIGHT NUMERICAL ORDER.

With straight numeric filing, it is a good idea to have one medical record clerk responsible for the filing procedure (depending on the volume of work). If it is too much filing for one person, it could be shared between the medical record clerks. They should file at different times of the day to prevent congestion in the filing area. Examples of Straight numeric filing:

- 345 7650 91234 105997 234879
- 346 7651 91235 105998 234880
- 347 7652 91236 105999 234881
- 348 7653 91237 106000 234882
- 349 7654 91238 106001 234883
- 350 7655 91239 106002 234884

20.1.4.3 Terminal Digit Filing

A filing method used in many developed countries in Medical Record Departments with a large volume of medical records is TERMINAL DIGIT FILING. This method is NOT RECOMMENDED in countries where the number of records is small. It is also NOT RECOMMENDED when clerks are not trained in its implementation and use.

Incorrect implementation could cause problems and confidence in the staff of the Medical Record Department will be affected. It is mentioned here for your interest in case you have heard about it

- Terminal digit filing is a simple and accurate filing method that makes it easier for clerks to file. They may also file faster and sometimes more accurately. This method of filing is designed for large acute care facilities and is not appropriate for medical record systems in small developing countries where the volume of medical records to be filed is low.
- Terminal digit filing is used to spread medical records evenly throughout the filing room. It is used in facilities where the volume of medical records is large and enables the distribution of work between several clerical staffs.

The following is a brief description of Terminal Digit Filing. In this method, numbers are allocated in the same way as for straight numeric filing.

- The difference is HOW they are filed. A six-digit number is generally used and divided into three parts e.g., the number 345678 is divided as 34-56-78 with each part containing two numbers. The last two numbers on the right-hand side (78) are called the PRIMARY DIGITS (that is, the first two digits considered when filing). The middle two digits (56) are called the SECONDARY DIGITS (the second set of digits to be considered when filing). The two digits on the left-hand (34) are the TERTIARY DIGITS (the third and last set of digits to be considered when filing).

- 34 56 78

Tertiary secondary Primary

- With this method, the filing area can be divided into 100 sections for the primary digits 00 - 99. This then allows the filing to be distributed among several clerical staffs.
- Within each primary section, medical records are grouped by the secondary digits and, again, this ranges from 00 - 99.
- Within each secondary section, medical records are grouped by the tertiary digits and, again, this ranges from 00 - 99.
- To file a medical record, after locating the primary and then the secondary section, the clerk files the medical records by the tertiary digits. For example, to file the number 34- 56-78, the "78" primary section needs to be located then the "56" secondary section. The record 34-56-78 is then filed before 35-56-78 and after 33-56-78. A series of numbers would run as follows:
  - 32-56-78
  - 33-56-78
  - 34-56-78
  - 35-56-78

Some hospitals also use a color code on the folder to assist with identifying the medical record quickly and to improve the efficiency of the filing clerks.

THIS METHOD IS NOT RECOMMENDED FOR SMALL HOSPITALS OR HEALTH CARE CENTRES AND ALSO NOT IN COUNTRIES WHERE THE TRAINING OF PERSONNEL IN THIS METHOD IS NOT AVAILABLE.

A Sorter or pre-file system

- Each file room should have a set of shelves for records waiting to be filed. This is usually called a SORTER.
- Medical records that are returned from outpatient clinics (if the medical records are combined i.e., a centralized system is used) or completed after discharge of an inpatient and ready to be filed, should be "sorted" in a manner which will enable them to be found, if required, while waiting to be filed.
- The shelves should be numbered, perhaps in sections of 10s or 20s and the records placed on the correct numbered shelf. This makes it easier to find a record which is waiting to be filed.

MRA and MRT can file medical records as mentioned above and chose following two practices based on resources and staff availability:

1) **Manual Filing**: As described above, it is where there is no computerized medical record system or where there is no designated Medical Record Office with staff.

District Hospitals such as Trongsa and Yebilaptsa can use manual filing system first to organize and restructure foundation of medical record system in their hospitals.

2) **Digital Filing**: With *Digitization of Health Record & Strengthening Medical Record Services Project*, supported by UNDP & carried out by Medical Records JDWNRH in collaboration with BHMIS, PPD, MoH, Physical Medical Records are digitized and archived in computers to form Digital Medical Record Library which will be linked with EPIS. Here we file medical records as per their MRN in chronological order.

ONE PATIENT→ ONE MEDICAL RECORD NUMBER = ONE MEDICAL RECORD

20.1.5 Medical Record Storage Procedure

When the medical record has been assembled after discharge, completed by the medical officer, coded, the relevant statistics collected & filed the final procedure is storage. Before looking at the storage procedure, we should take time to consider where the medical records will be stored physically for manual system and where in computer it will be stored for digital storage. It is important that careful planning be given to the storage area for medical records.

District hospitals where there is no designated Medical Record Department, ward stores medical records in very limited spaces with poor lighting, rodent and other security facilities. Outpatient units are seen to store outpatient encounter registers and community health clinic their own registers and so on. This reduces efficacy and Production Possibility Curve of these units and hence it is highly recommended that these hospitals get designated Medical Record Department or unit.

For digital storage desktop computers with high performance & storage capacities are recommended. It is important to note that digital medical records are to be stored in computer drives other than the operating system drive "C". With EPIS project, servers and cloud storage systems shall be deployed to store the electronic medical records data.

20.1.5.0 Medical Record Storage Area

Plenty of space must be available for storing medical records and that the area is clean, tidy and has good light. The file area should have desks for the medical record clerks to sort medical records and make out tracers; and space for records awaiting filing or completion.

How much space is needed?

It is easy to calculate the amount of space required for medical record files.

- Measure one full shelf.
- Count the number of files on the shelf.
- Calculate the number of files per linear meter.
- Count the number of new files created last year.

- Calculate the number of linear meters required per year.
- You can then calculate the number of linear meters required for one, five or 10 years.

In many developing countries, where medical records tend to be a health record from birth to death, a lot of space will be required to store medical records.

20.1.5.1 Filing Shelves or Cabinets

Filing shelves should be used, NOT filing cabinets.
• Wood filing shelves are particularly good and can be built by the hospital carpenter. Metal filing shelves are also exceptionally good, EXCEPT in coastal/damp areas because of rust problems. Metal filing shelves must be purchased and can be expensive.

• If possible, compactus filing shelves should NOT be used to file active medical records but can be used in the secondary (inactive) file room. An ACTIVE medical record is one that is still being actively used for patient care. An INACTIVE medical record is one where the patient has not attended the hospital for a specific number of years.

• Enough space should be left between the filing shelves - the general standard is
900 mm, to allow space for a trolley and a person to walk between the shelves to file and retrieve records.

• Filing shelves should be no higher than the average person can reach, and steps should be made available for access to the top shelf. Records should NOT be filed on the bottom shelf. The bottom shelf tends to attract more dust. Also, some people find it hard to file and retrieve records accurately from the bottom shelf.

• A 'bay' is a bank of filing shelves and filing bays should be no longer than 60 cm.
If filing bays are longer than 60 cm, upright file supports should be available to keep the medical records standing upright.

• Medical record folders and the filing shelves should be designed to enable the records to be filed lying on their spines so that the MRN is clearly visible for ease of retrieval and filing.
• Each filing bay should be labelled with the MRNs of the medical records filed in that filing bay.

• Each filing shelf should be labelled with the range of numbers of medical records filed on that shelf. Number guides should be placed at regular intervals.

20.1.5.2 Digital Storage

For digital storage there should be enough space to keep desktops on table fitting all computer parts such as keyboards, mouse, and monitor. Latest technology with cyber security and internet facilities should be given in these computers. EPIS project of MOH has

been kind enough to support Digital Storage of Medical Records for "*Digitization of Health Records and Strengthening Medical Record Services Project*" in 2022. Hospital Administration should provide with adequate furniture such as tables and chairs for clinicians and medical record personnel to conduct due diligence.

20.1.5.3 Lighting

Before setting up the filing shelves, check the position of the lights. It is best to use long fluorescent lights which run in between filing shelves giving light into each section. Secure and stable power source should be given for digital storage facilities.

20.1.5.4 Security

There should be procedures to protect medical records from fire, water damage, pest damage, and unauthorized access for both physical and digital files.

a. The file room should have a lock on all doors.
b. Access should be restricted to the medical record clerks/officers and to clinical staff out of hours.
c. There should be one open entrance to the medical record file room and a fire exit.
d. There should be a strict no smoking policy in the file room.
e. There should be fire equipment and written procedures on what to do in case of fire in the file room.
f. There should be regular pest control in the file room.

20.1.5.5 Procedure to Store Medical Records

Standard procedures should be followed by MRA and MRTs while storing both physical and digital medical records in storage facilities or area. Policy on Retention of Medical Record and Destruction of Medical Records should be drafted and endorsed by Medical Record Committee with support from Hospital Administration and Ministry of Health. All of the above technical specification and guidelines should be followed strictly to ensure standard storage of medical records.

Following are some important duties to be carried out by Medical Record Personnel pertaining to the storage of medical records:

1) No unauthorized personnel to be given access to the store.
2) Keep record of medical record requested by clinicians such as MRN, date of issue, purpose for which it was issued, expected date of return & actual date of return.
3) Store files in systematic approach and design for easy retrieval.
4) Use standard MPI card or digital system.
5) Be aware of Medico-legal standards.
6) Routine supervision and monitoring of the storage area.
7) Routine cleaning of the storage area by supporting staff.

8) Collaborate for support from hospital administration if maintenance is required.

20.1.6 Medical Record Retrieval Procedure

Medical records need to be retrieved for some of the following reasons once after completion of filing and storage procedures:

1) Clinical Audits by clinicians and hospital administration.
2) Clinical Research by researchers.
3) Medico-legal purposes.
4) Vital statistics purposes.
5) Past history of patient care

20.1.6.0 Removing Medical Records from File and Record Control

To ensure proper record control, whenever a medical record is removed from file for any purpose, it should be replaced by a TRACER, which indicates where the medical record has been sent. A tracer is also called an OUTGUIDE in many countries. TRACERS or OUTGUIDES enable medical records to be TRACED when not on file.

USING A TRACER SYSTEM IMPROVES THE WORK OF THE MEDICAL RECORD DEPARTMENT AND THE CONTROL OF MEDICAL RECORDS.

The best type of tracer is a card, usually the same size or slightly larger than the medical record, on which should be written:

- the patient's name.
- the patient's MRN.
- where the medical record is going; and
- the date the record was removed from file.

A tracer can be as simple as a blank piece of A4 cardboard where the information is recorded in pencil. On the return of the medical record, the information is erased, and the tracer used again. Or it can be a printed card with the information recorded in the space provided and crossed out after use. The next section is then used until the tracer is full and then discarded. Using a tracer makes it easier to find a medical record when it is not on file.

Important Points on Filing

All medical records should be filed as soon as possible when returned to the Medical Record Department or completed following the discharge of the patient.

THE BEST WAY TO LOCATE A MEDICAL RECORD WHEN NOT IN USE IS IN ITS CORRECT PLACE ON THE SHELF IN THE MEDICAL RECORD DEPARTMENT.

• At the end of every day, there should be NO MEDICAL RECORDS WAITING FOR FILING. That is, at the end of every day, all completed and returned medical records should be filed.
• Medical records that are too big should be separated into two or more volumes and clearly marked as VOL. I or VOL. 2 etc. and filed together in the correct place.

• When filing medical records, torn or damaged folders should be replaced, and any loose forms should be secured.

20.1.6.1 Locating Misfiled Medical Records

Regular checks should be in place to ensure that the file has no missing medical records or medical records filed in the wrong place. To check for a misfiled, the staff should:

- Look for the transposition of digits in a number. For example, 131234 may be filed as 131243 or 121334.
- Look for missing files under similar looking numbers such as "3" under "5" or "8" or vice versa. Or "7" or "8" under "9".
- Check for a certain number such as 584 under 583 or 585 or under a similar combination.
- Check the transpositions of first and last numbers.
- Check the medical record just before and just after the one needed.
- Check the shelf immediately above and below where the record should be filed.

In addition, once a month, the file room should be checked to ensure that:

- all records are standing straight on the shelves.
- there is no dust on the shelves (including the very top shelf) and
- the floor is clean.

20.1.6.2 Culling Medical Records

Culling medical records that have NOT been used for a specified number of years is the removal of medical records from the active file room. In some countries, this is also called “PURGING”. But we will use the term “CULLING”. Policies on Retention and Destruction of Medical Records should be used as guidance to decide active and inactive medical records needing culling.

An ACTIVE MEDICAL RECORD is one that is still being actively used for patient care. An INACTIVE MEDICAL RECORD is one where the patient has not attended the hospital for a specific number of years.

If you recall when we discussed the medical record, we said that the year of attendance should be on the medical record folder. This is used to indicate whether the medical record is ACTIVE or INACTIVE.

• Each New Year a patient attends; the year printed on the folder is crossed. For example, if a patient attended in 2003, a line is drawn through the number. If he has not been since that date, (and the policy states that medical records will be kept in active files for five years) in the year 2008, the file can be culled and removed to secondary storage.

• The date on the outside enables the medical record staff to see when the patient was last at the hospital. This means that they do not have to search through the medical record to find the date of the last attendance.

• The aim of culling is to remove INACTIVE medical records from file to make more filing space.

• There should be a hospital policy stating how long medical records should be kept in the ACTIVE filing area. This is referred to as the RETENTION POLICY (see MEDICAL RECORD POLICIES).

• The medical records that are removed from the file are records of patients who have not been to the hospital within the last two, five, seven or 10 years, depending on the RETENTION POLICY of the hospital/ health authority and/or space available for active filing. The culled records can then be stored in secondary storage or destroyed.

• Culling should be done every year. Either culling is carried out in the same month each year, or a regular program of culling is carried out throughout the year as part of normal duties.

20.1.6.3 Computerized Record Location/Tracking System

Many types of computerized file location/tracking systems are available. With such a system, the location of a medical record can be readily found. In addition, a list of previous places where the medical record was sent can be printed, e.g., clinics including the date when the record was sent to that location. Some hospitals use a bar code system as seen in department stores and supermarkets while other enter details via a computer terminal in the Medical Record Department. EPIS project should have automatic medical record tracking system in Medical Record Module.

20.2 Disease Classification and Clinical Coding Standard Operating Procedure

With the completion of the discharge procedure (before the medical record is ready to be filed) two important procedures need to be undertaken: They are clinical coding and the collection of health care statistics. Clinical coding, one of the most important procedures, should also be carried out in the Medical Record Department. Clinical coding is the translation of diseases, health related problems and procedural concepts from text to alphabetic/numeric codes for storage, retrieval, and analysis of health care data. Staff responsible for coding should be formally trained by attending clinical coding courses offered at a local, regional, national, and international level.

In Bhutan as there is no standard human and infrastructure resources for Medical Record Department in all the hospitals, Clinicians in ward and community health units have been carrying out Disease Classification and Clinical Coding Procedures. As mentioned before in this manual in the near future we expect that collaboration between the hospitals, ministry of health, teaching centers, RCSC and other stakeholders should bring much required structural reforms in Clinical & Health Information Management & Informatics.

ICD version 11 is soon to be rolled out by HMIS of ministry of health with support from WHO and as we prepare for EPIS project implementation in the hospitals.

As foundation to ICD version 11, it is recommended that ICD 10 Clinical Modification by USA is ideal for practice as it provides precise, clear, and greater details to clinical coding in practice. JDWNRH has been following ICD 10 CM-USA and ICD 10 PCS-USA for procedural coding since there is no clinical coder in the country and MRO is also self-trained beside small workshop in ICD 10.

20.2.0 Why code medical records?

Medical records are coded to enable the retrieval of information on diseases and injuries. In most countries, coded data are used to collect statistics on the types and incidence of diseases and injuries. This information is used at a national level for planning health care facilities, for determining the number of health care personnel required, and for educating the population on health risks within their country. It is used at an international level to compare the health status of countries in a region or globally.

At present the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (or an adaptation) is used in many countries to code diseases, injuries, and external causes of injuries. Prior to 2000 ICD-9 or ICD-9-CM was used in most countries and one or the other is still being used in some. Surgical procedures are coded using the International Classification of Procedures in Medicine (ICPM) or the classification system currently being used in each country. Before discussing the clinical coding procedure, we should take time for a brief look at disease classification and the

International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10).

A classification is a system of categories to which diseases, injuries, conditions, and procedures are assigned according to established criteria. Disease classifications are used to enable the storage, retrieval, and analysis of data. It also allows for the comparison of data between hospitals, provinces, and countries. ICD10 is a statistical classification. That is, it contains a limited number of mutually exclusive code categories which describes disease concepts. It uses an alphanumeric coding scheme of one letter followed by three numbers, at the four-character level. The classification system is made up of three volumes:

1. Vol. 1 the Tabular list.
2. Vol. 2 an introduction to and instructions on how to use volume 1 and 3, together with guidelines for certification and rules in Mortality coding; and
3. Vol. 3 the Alphabetical index of the diseases and conditions found in the Tabular list.

A detailed discussion of ICD 10 has not been included and readers of the Manual, if responsible for coding in a hospital, should understand the system. To do so, they should study the rules and regulations published in Vol. 2. and attend an ICD 10 training course. Data collected by coding using a classification system such as ICD 10 gives the hospital and government authorities (e.g., Ministry of Health) information required to not only review the services of all hospitals under their control, but also to plan for the future.

In addition, it enables the government to collect data on the health status of the community and provide detailed national health statistics. In some countries the Ministry of Health determines whether they require hospitals to supply information on all diagnoses treated or only on the MAIN CONDITION. The 'MAIN CONDITION' as defined by WHO is:

The condition, diagnosis at the end of the episode of healthcare, primarily responsible for the patient's need for treatment or investigation. If there is more than one such condition, the one held most responsible for the greatest use of resources should be selected.
If no diagnosis was made the main symptom, abnormal finding or problem should be selected as the main condition (WHO).

In some countries the term PRINCIPAL DIAGNOSIS is used, with variations in definition, instead of MAIN CONDITION. To this Manual we will use the term MAIN CONDITION.

You need to be aware of the term and definition used in your hospital and also whether your staffs are required to code other conditions/diseases. That is, conditions for which the patient received treatment while in hospital.

The definitions for other conditions are:
Those conditions that coexist or develop during the episode of healthcare and affect the management of the patient (WHO, 2093).

THE DEFINITION OF MAIN CONDITION/PRINCIPAL DIAGNOSIS VARIES FROM COUNTRY TO COUNTRY AND YOU SHOULD CHECK TO ENSURE YOU ARE USING THE CORRECT DEFINITION.

In addition, a decision is made in each country whether to code using either three-digit or four-digit codes from ICD-10. This decision should be made by a health statistician or epidemiologist in consultation with the Ministry/Department of Health and will be based on the level of specificity needed. Again, you need to know what is required in your country. This manual recommends using ICD 10 CM & ICD 10 PCS USA version for Clinical coding in Bhutan as stated above.

20.2.1 Clinical Coding Procedure

Only professionally trained staff should undertake coding.

Before proceeding to code, the MRO or clinical coder should check the medical record to ensure all forms are present and the doctor has completed the record. That is, they should take the following steps:

1. review the front sheet for completeness and accuracy, i.e., the main condition has been recorded on the FRONT SHEET and the doctor has signed in the space provided.
2. read the discharge summary (if one has been written) for information relating to the diagnosis.
3. check that the diagnosis is supported by evidence in the medical record such as pathology report, X-ray, etc.
4. review the progress notes.
5. check the medical record to determine what items should be coded.
6. if it has been determined that only the main condition is to be coded, the coder should find the code number for that condition and record it on the FRONT SHEET in the correct place.
7. if your hospital/country has decided to code the external causes of injuries. You need to know if this is the case and code accordingly.
8. if surgical procedures are to be coded, the ICPM is often used, but some countries now have a local procedure classification. If this is the case in your country, you should use the local system and follow the guidelines for use; and
9. if all diagnoses/injuries are to be coded, the MRO follows the same procedure by identifying associated conditions and other diagnoses and allocating the correct codes.
10. follow ICD 10 CM & ICD 10 PCS coding guidelines to code as it will provide foundation to smooth ICD 11 version transition. ICD 10 CM & ICD 10 PCS coding handbook 2020 is attached as Annexure2.

The MRO should make sure that all medical records of discharged patients are coded and the names on the discharge list are ticked when coding is finished. For any names that are not ticked at the end of the month, the medical record should be located and coded. When the

medical record has been coded, the statistical data required by your hospital or Ministry of Health should be collected. Usually, data relating to the main condition on all discharged/died patients is required and recorded in a monthly statistical analysis report or format prescribed by the hospital/Ministry.

The collection of health care statistics is discussed in the next section of the Manual. In some countries, computerized encoding software is available to assist the coder in allocating correct codes. However, a detailed knowledge of the classification system being used, and coding rules is still needed by the coder. When completed, the medical record should be filed by the MRN in its correct place in the Medical Record Department filing area.

20.2.2 Role of Treating Physician while writing diagnosis of patient in medical records

The treating physician should write accurate main diagnosis and other diagnosis of the patient in both outpatient and inpatient encounters. For those conditions present as comorbidities, if clinical team does not give clinical cares, it is very important NOT TO mention in DISCHARGE SUMMARY and FACE-SHEET upon discharge or dead of the patient.

KGUMSB team on QI for Death Certification has developed Standard operating procedure for Death Certificate writing for doctors and it is highly recommended to follow the SOP in line with WHO MCCD.

Following are best practices to list out diagnosis of patient upon discharge:

1) **Pry Diagnosis**: As stated above the main or pry reason for admission of patient to seek treatment.
2) **Surgery or Procedure**: Mention surgery or procedure carried out during the course of treatment so ICD PCS codes can be given.
3) **Accidents or Adverse events**: Mention diagnosis for adverse events or accidents such as fall from bed that happened to patient so precise ICD codes can be coded.
4) **Comorbidities:** Mention comorbidities and clarity if care was given or not for these conditions.
5) **Rule or Ruled out Events:** If there is any condition for which clinical workup has been initiated for conditions that was not clear or definite during the course of treatment, RULED OUT OR RULE OUT should be mentioned in place of principal or main diagnosis. Clinical coders will assign code for RULE OUT but not for RULED OUT conditions.
6) **Initial, Subsequent or Sequelae Condition:** Clearly mention if it is initial, subsequent or sequelae encounter of identified principal or main diagnosis as there are guidelines to code these conditions separately. For instance, fracture of right hip referred case from Bajo hospital falls under initial encounter at JDWNRH and not subsequent.

7) **Sex of Delivered babies:** LCSC and normal deliveries should be mentioned with SEX of the BABY OR BABIES born clearly for VITAL STATISTICS IMPORTANCE.

The codes in Chapter 20 of the ICD10 book are for injury, poisoning, and other consequences of external causes (S00-T88). Many of them require a 7th character to identify the correct ICD10 code for the episode of care: initial, subsequent, or sequela. Below are helpful reminders to ensure you're selecting the correct code for the patient visit.

Initial Encounter

An initial encounter uses the letter A. This code indicates visits where the injury/condition is diagnosed for the first time and has nothing to do with whether the provider has seen the patient in the past. It also applies to visits by any provider during the "active" treatment of the injury/condition.

Example 1: The use of T21.23XA, burn of 2nd degree of upper back, is correct for the patient's first visit. The new condition is the reason for the visit. Examples of initial encounters include an Emergency Department or office visit, surgery, or a new course of medication.

The ICD10 guidelines don't specify when "active treatment" becomes "routine care." This is a clinical decision by the provider and is based on the patient's course of treatment. Rhonda Buckholtz, AAPC VP of Strategic Development, explains, "When the doctor sees the patient and develops a plan of care—that is active treatment. When the patient is following the plan—that is subsequent. If the doctor needs to adjust the plan of care—for example, if the patient has a setback or returns to the OR—the care becomes active, again."

Active treatment can be performed in stages. It may involve multiple episodes of care for fracture/injury or complications of medical/surgical care, and it may involve more than one physician treating the patient. However, in many cases, the patient doesn't need active treatment after the first visit, such as a laceration that received stitches and the patient returns for suture removal or a fracture that gets treated by surgery or a cast/splint. The patient returning for follow up of the laceration or fracture during the healing stage would support the *subsequent* code.

Subsequent Encounter

A subsequent encounter uses the letter D and is used appropriately during the recovery phase, no matter how many times the patient has seen the provider for this problem previously. A subsequent encounter is defined as "**encounters after the patient has received active treatment of the condition** and is receiving routine care for the condition during the healing or recovery phase." Examples cited include a cast change, removal of a fixation device, or medication adjustment.

Example 2: The use of T21.23XD, burn of 2nd degree of upper back, subsequent, is for a patient's follow-up visit to determine whether the treatment plan is being followed and the patient is healing or recovering as expected. Examples include cast change or removal, medication adjustment, and other follow-up visits for treatment of the injury or condition.

Sequela Encounter

A sequela encounter uses the letter S and indicates a late effect that occurs after the acute phase of the injury or illness has passed. When reporting sequela(e), you *usually* will need to report two codes. The first describes the condition or nature of the sequela(e), and the second describes the sequela(e) or "late effect." If a late effect code describes all the relevant details, you should report that one code, only (e.g., I69.201 *Dysphagia following nontraumatic intracerebral haemorrhage*).

Example 3: Use of T21.23XS, burn of 2nd degree of upper back, sequela, should be billed with the new condition, such as L90.5, scar conditions and fibrosis of skin. A sequela code is for complications or conditions that arise as a direct result of a condition or injury. Examples include joint contracture after a tendon injury, hemiplegia after a stroke or scar formation following a burn. The sequela code should be primary and followed by the injury/condition code.

There are very few examples of reporting both a code for the acute illness and a code for the late effect at the same encounter, for the same patient. These only occur if both conditions exist, such as a patient who has a current cerebrovascular condition *and* deficits from an old cerebrovascular condition.

20.2.3 Disease and Procedure Index

In some countries, data are also collected at hospital and State/Province level for medical research. This is done by hospitals developing and maintaining a Disease and Procedure Index.

• A **DISEASE INDEX** lists diseases, conditions, and injuries by the specific code number for each disease, condition, or injury according to the coding system used in a hospital.

• A **PROCEDURE INDEX** lists operations and procedures performed in a hospital by the specific code number for each operation or procedure. Both are simple indexes usually maintained by the code number of the disease, injury, or operation on a card system (except when computerized).

• Each patient's MRN is listed on the correct disease index card. For example: using ICD 10, the MRN of patients with a main condition of acute perforated appendicitis would be listed on a card headed K35.0 (Acute Appendicitis with perforation). Also included on the card would be the name of the treating doctor, service under which the patient was treated (medical, surgical, orthopedic etc.), age and sex of the patient, and end results of treatment (alive or dead).

• To enable health personnel undertaking research to find the medical records of all persons with a particular disease, such as acute appendicitis with perforation, or an injury or who have had a particular operation, the cards are filed by code number for that particular disease, injury, operation etc. With computerized ATD MS Access Database it can be generated via various queries to get excel sheet of these indexes for analysis and statistics. EPIS Project should add these functionalities in Medical Record Module.

Example of a Simple Disease Index

Acute Appendicitis with perforation						K35.0
Hospital number	Age	Sex	Result	Year	Doctor	Service
06-56-98	32	F		2004	Dr. Dorji	Surg.
I4-56-76	63	M	D	2005	Dr. Chencho	Surg.

Decisions to set up a disease index should be based on:
• How often and for what purpose the information is required?
• Who needs the information?
• Who will use it?

The disease index information could be used:

- for review of medical records of patients with a particular disease.
- for research into a particular disease or to write a scientific paper.
- to obtain information on the use of the hospital's facilities.
- for the evaluation of the quality of health care.
- to conduct epidemiological and infection-control studies; and
- to provide educational material for health professional students and for medical staff meetings.

20.2.4 Computerization of the Disease and Procedure Index

A computerized disease and procedure index have been developed in many hospitals to enhance the retrieval of medical information for research. As with a manual system, it would contain information relating to diagnoses and procedures, in coded form, to enable the retrieval of individual cases for medical research. It could use the ATD system as the base records to which disease and procedure codes are added following the completion of the medical record at discharge or death of a patient.

• Such a system could also accommodate information relating to tests performed during hospitalization for later review of the utilization of hospital services.

• The program would process the "discharge" area of the ATD master file. In such a system, relevant records in the discharge area are accessed. A specific time limit, however, should be determined regarding transfer from the discharge area to the disease/procedure index. Seven days is the suggested minimum transfer time.

Coding

The main condition/principal diagnosis and procedure is coded by the MRO or person given this responsibility. The diagnosis/procedure and code numbers are entered into each individual patient's admission record via a computer terminal.

Retrieval

The system would be designed to enable the retrieval and report generation of information on the types of diseases/ procedures treated within the hospital. It should enable retrieval by disease/procedure and sex/age/doctor/associated diseases and hospital number. Reports from a computerized Disease/Procedure Index could include:

• a list of all discharges not coded.
• a list of all patients with a particular code or range of codes.
• a list of last month's discharges by ICD code; and
• a list of discharges by notifiable disease code.

The ATD system writes into the MPI and disease and procedure systems. It is a temporary database of patients and kept for about two to five years. It is then archived. The MPI is permanent.

20.3 Hospital Statistics Standard Operating Procedure

Another important procedure required by the medical record staff is the collection of health care statistics. At hospital/health care facility level, statistics collected from medical records are used to review the incidence and type of diseases treated and procedures performed. Also, at hospital level, statistics derived from the daily bed census and medical records are used to assess the utilization of services (Activity Report) and enable the hospital to make appropriate financial and administrative plans, and to conduct vital research.

At the State or Province level, the ministries of health use health statistics for planning health care services and for allocating resources where they are needed most. The accuracy and relevance of the information processed is vital to the smooth running of the facility and in assisting governments with decisions on the provision of health care services locally and nationally.

As medical records are the primary source of data about a patient's stay in hospital, the MRO is in the best position to collect and prepare the statistical data on health care. It is important to note that statistics are only as accurate as the original document from which they are obtained. Therefore, the MRO should accept the responsibility for seeing that medical records and other source documents are complete and readily available to meet the requirements to produce accurate and meaningful statistics. The type and extent of data collected, and the use made of that data varies from country to country.

The administration of each hospital determines the hospital policy on the collection of statistics relating to the services offered by medical staff and the overall work of the hospital. There must be mutual understanding, however, of all terms used and the statistics collected must be relevant and reliable.

It is important to collect data nationally as health care statistics mean something if they can be compared to statistics from previous years and with other facilities. The government determines what is required on a national level. On an international level, the World Health Organization (WHO) requires health care statistics from member nations to obtain a picture of the incidence of specific diseases within a region and globally.

MEANINGFUL COMPARISONS CAN BE MADE AND DIFFERENCES EXPLAINED ONLY IF DEFINITIONS OF ITEMS COMPARED AND COUNTED ARE IDENTICAL.

Inpatient statistics are used for:

1. comparison of present and past performance of the hospital or clinic.
2. guide for planning future development of the hospital or clinic.
3. appraisal of work performed by the medical, nursing, and other staff.
4. hospital or clinic funding if sponsored by the government; and
5. clinical research by clinical data analytics.
6. Automatization of clinical services via clinical data analytics and applications.

When deciding to collect statistical data or if reviewing existing data collections, the hospital administrator and MRO should ask:

• Why are the data being compiled?
• What reports do the administration, medical staff, and Ministry of Health need?
• What use is being made or will be made of the information?

Hospital Statistics inclusive of QAD KPIs standards with definitions and methodology of collection and reporting should be decided by expert panel in the country lead by HMIS. International Standards and practices with scientific rationale and local context applications should be consider when developing Policy on Hospital Statistics. A review of statistics collected should be conducted regularly and a review of reports generated should be conducted annually. We sometimes continue to collect data that are no longer used or needed. Therefore, regular reviews are important to save unnecessary work.

20.3.0 Statistical Definitions

Before progressing further, we should look at some statistical definitions. Remember that definitions vary from country to country. To enable you to recognize the terms used in your hospital, the following is a list of definitions used in some countries. As mentioned, it is important that the terms used mean the same to all persons accessing the data. If your country has a different definition for an item, or if the item is known by a different term, change it to the one used by your hospital/country.

Bed Day

• A unit of measure denoting the presence of an inpatient bed (occupied or unoccupied) set-up and staffed for use in one 24-hour period.

Census (Daily Inpatient Census)

• A count of inpatients at a given time. That is, the number of inpatients present at the census taking time each day, plus any inpatients who were both admitted and discharged after the census taking time the previous day. The census is always taken in a hospital at the same time each day, usually midnight.

Fetal Death

• A Fetal death is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

Inpatient Service Day

• A unit of measure denoting the services received by an inpatient during one 24- hour period (also known as Patient Day, Patient Service Day, Occupied Bed Day).

Length of Stay

• The number of days of care rendered to an inpatient from admission to discharge.
The duration of an inpatient's hospitalization is one day if he is admitted and discharged on the same day and if he is admitted on one day and discharged the next day. The day of admission should be counted but not the day of discharge.

Live birth

• The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.

Neonatal Death

• The neonatal period commences at birth and ends 28 completed days after birth.
Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into EARLY NEONATAL DEATHS, occurring during the first seven days of life, and LATE NEONATAL DEATHS, occurring after the seventh day but before 28 completed days of life.

Total Inpatient Service Days

• The sum of all inpatient service days for each of the days in the period, e.g., for a month or a year.

Underlying Cause of Death

• The disease or injury which initiated the train of morbid events leading directly to death or the circumstances of the accident or violence which produced the fatal injury.

20.3.1 Hospital Inpatient Monthly/Annual Statistical Collection

Collecting data for no obvious reason is a waste of time and should be avoided. The statistics collected in each hospital should be reviewed regularly to make sure that they are still needed and are still used. In addition to the DAILY INPATIENT CENSUS (also called the DAILY BED CENSUS), statistical information routinely collected on inpatients on a monthly and annual basis include:

1. total no. of admissions - total in hospital and by service, e.g., medical, surgical, etc.
2. total no. of discharges (including deaths) – total in hospital and by service.
3. total no. of deaths - total in hospital and by service.
4. total no. of deliveries (obstetric patients).
5. total no. of live births.
6. total no. of fetal deaths.
7. total no. of obstetric patients (discharged including deaths);
8. total no. of maternal deaths; and
9. total no. of patient days.

This information is used to calculate patient-related rates and percentages. Some rates and percentages collected include:

1. average daily census.
2. average length of stay of discharged patients.
3. percentage of occupancy of hospital beds.
4. hospital perinatal death rate.
5. hospital maternal death rate.
6. fetal death rate.
7. IUFD rate; and
8. hospital death rate.

TO CALCULATE THE RATE, YOU NEED TO DETERMINE THE NUMBER OF TIMES OF SOMETHING THAT DID HAPPEN AND DIVIDE BY THE NUMBER OF TIMES OF SOMETHING THAT COULD HAVE HAPPENED.

For example, the death rate in hospital is calculated by:

Hospital Death Rate

The hospital death rate is the proportion of inpatients that die in hospital. This is usually expressed in a percentage, which is computed as follows:

$$\frac{\text{Number of deaths of inpatients in a period}}{\text{Number of discharges (including deaths) in the same period}} \times 100$$

Example:

In May there were 21 deaths. A total of 650 patients were discharged (including deaths) 21/650 X100 = 3.23%
The hospital death rate for May was 3.23%. Some hospitals would round the result to 3%.

Most inpatient statistics are based on inpatient service days as collected by the daily inpatient census.

• The nurses for each ward collect the inpatient census at midnight and record the data on the daily/midnight census form.

• Each day, the census figures are entered into a bed-day book, which is usually kept in the Admission Office, which lists the number of patients in each ward each day.
• At the end of the month the patient-related statistics can be calculated.

Month:	Medical Ward	Surgical Ward	ENT Ward	Total
1				
2				
3				
4				
□ □				
28				
29				
30				
31				
Total				

Daily Inpatient Census

• Inpatient census = the total number of inpatients at a given time. The census is calculated by determining the number of patients in hospital at midnight the previous night and adding all admissions for next day and subtracting the total discharges/deaths for the same day. This should equal the number of remaining inpatients at to the next midnight.

Example:
The census taking time is midnight:
Number of patients in hospital at midnight on May 20 140 Plus
Number of patients admitted on May 21 +21/161

Minus
Patients discharged (including deaths) May 21 −18/
Patients in hospital at Midnight May 21 143

PLUS, Patients both admitted and discharged (including deaths) on May 21 + 2
INPATIENT SERVICE DAYS FOR MAY 21 145

To obtain the full inpatient census, the number of patients admitted and discharged the same day must be added.

How are Some Rates and Percentages calculated?

Average Daily Census

The average number of inpatients present each day for a given time period. This figure is attained by dividing the number of inpatient service days for a period by the number of days in the same period.

$$\frac{\text{Total number of inpatient service days for a period (except newborn)}}{\text{Total number of days in the same period}}$$

Example:
In May, there were 4,280 inpatient service days (excluding newborn babies) recorded. May has 31 days. Using the above formula, the average daily census is calculated as follows: 4280/31 = 138.06 or 138.1

This would be rounded to give the average daily inpatient census during May of 138 patients. That is the average number of patients in hospital each day during May.

NEWBORNS ARE CALCULATED SEPARATELY AND NOT INCLUDED IN THESE CALCULATIONS.

Average Length of Stay of Discharged Patients
The average length of stay is the average number of days that inpatient (excluding newborn) stayed in hospital.
This is calculated by

$$\frac{\text{Total inpatient service days of discharged (including deaths) patients for a given period}}{\text{Total number of discharges and deaths in the same period}}$$

Example:
In June, a hospital discharged 2,086 patients (including deaths, but excluding newborns).

Their combined inpatient service days were 13 654 days. Using the above formula, the average length of stay of these patients was:
13654/2086 = 6.54 or 6.5 days

That is, the average stay on inpatients during June was 6.5 days.
These are just a few examples of rates and percentages generally collected by hospitals. You need to know what is required in your hospital and how they are calculated. If you require further information, your Ministry of Health or local WHO Regional Office should be consulted.

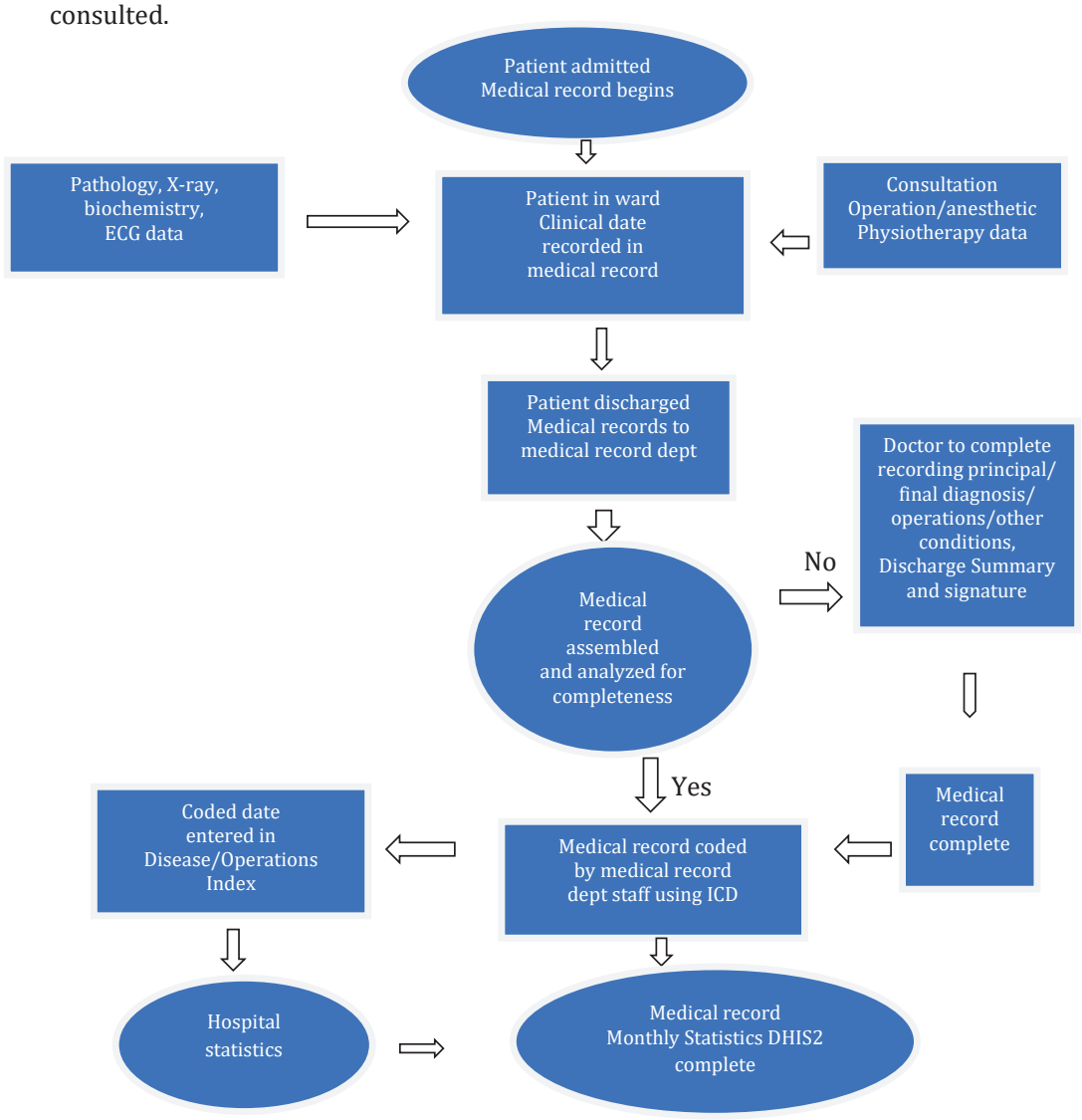

Figure 5: Medical Record Procedural Workflow

20.4 Medico-Legal Medical Record Standard Operating Procedure

In many countries today, the medical record has become an important legal document. This may not be the case in your country, but you should be aware that good medical records are essential not only for the present and future care of the patient but also as a legal document to protect the patient and the hospital. For both purposes, they must be complete, accurate, and available when needed. Legal Division of Ministry of Health should use this manual and standard operating procedure as guidance in additional to other standards when making legal policies and decisions in health services.

20.4.0 The Medical Record as a Legal Document

As well as being used for patient care, a medical record is also a legal document and should be treated accordingly.

Who Owns the Medical Record?

When a hospital admits a patient, it enters into an explicit contract to render services necessary in the care and treatment of that patient. This necessitates keeping a chronological record of the care and treatment rendered by hospital personnel so that the results may be available for continuing care.

In addition to being kept for patient care, medical records are also kept as a guide for doctors, and for the education of nurses and other health care personnel. Legally, they are used to support the patient's claim in case of injury, for the protection of the attending doctor against claims of malpractice, and for the protection of the hospital against criticism and claims for injuries and damages.

• MEDICAL RECORDS are considered the PROPERTY OF THE HOSPITAL and are compiled and kept primarily for the benefit of the patient.

• The PERSONAL DATA contained in the medical record is considered a CONFIDENTIAL COMMUNICATION and the PROPERTY OF THE PATIENT. That is, the information contained in a medical record belongs to the patient and is a confidential communication between the doctor or other health professional and the patient.

Although the physical medical record is considered to be the PROPERTY OF THE HOSPITAL and the information in the medical record is the PROPERTY OF THE PATIENT, information cannot be released without the consent of the patient. Exceptions to this rule include the use of the information:

- by doctors and other health professionals for the continuing care of the patient.
- for medical research where the patient is NOT identified; and

- for the collection of health care statistics when the individual patient is NOT identified.

20.4.1 Privacy, Confidentiality, and the Release of Patient Information

The recorded information in a medical record is a privileged communication. A privileged communication is one that contains certain confidential information given by a patient to his or her doctor. Unless the patient has given written consent to release information from his or her medical record, the information contained in it can only be released to court by subpoena or a court order.

THE MEDICAL RECORD IS A CONFIDENTIAL DOCUMENT AND THE PATIENT'S RIGHT TO PRIVACY MUST BE CONSIDERED AT ALL TIMES.

It is important that the MRO is aware of the need to maintain confidentiality and the patient's right to privacy. As the person in charge of the Medical Record Department, they are responsible for seeing that UNAUTHORIZED PERSONS DO NOT have access to the medical record and that information is not given out without the patient's written consent.
Medical records should be stored in a secure area and there should be detailed policies regarding confidentiality and the release of patient information

As discussed in earlier sections of the manual, notes of the patient's condition on admission and complete findings upon physical examination should be recorded along with the progress of the patient while in hospital. The attending doctor or other health professional must sign all entries at the time of recording the data. It is important for medical record staff to check the medical record on discharge of the patient to ensure its completeness and accuracy. Entries that have been erased and not initialed or signed should be returned to the doctor for his or her signature, as without such a signature, the legal value of the medical record will be decreased.

MROs must be familiar with the legal requirements regarding medical records in his or her country to be able to cope with medico-legal problems when called on to do so. MROs must also be able to identify legitimate and illegitimate requests for information.

20.4.2 Release of Patient Information

The MRO should develop a policy for approval by the Medical Record Committee for the release of patient information. It is important to ensure that all staff, not only in the Medical The Record Department, but also in all other sections of the hospital, are aware of the policy and that it is followed.
There are four methods of releasing information:

- direct access to the medical record.
- supply of an abstract giving details requested.
- verbal release; and
- photocopying.

The department should have specific policies governing each type of release.

NO UNAUTHORIZED PERSON CAN TAKE ANY OR PART OF A MEDICAL RECORD OUT OF FILE, OR READ, COPY, OR OTHERWISE TAMPER WITH IT.

If a request is made for the release of information, the request should contain the following:

- full name of patient, address, and date of birth.
- name of person/persons or institution requesting information.
- purpose and need of the information.
- extent and nature of information to be released, including dates; and
- a recently dated authorization, signed by the patient or authorized representative (e.g., parent of a child).

When developing a policy of patient privacy and the release of information, questions that should be answered include:

1. Is there a consent form for the patient to sign to permit release of personal information?
2. Is anyone outside the hospital/health center allowed access to medical records?
3. Are there special provisions for the police and law enforcement agencies to view medical records?
4. What are the rules for the secure locking of the Medical Record Department outside working hours?
5. What special rules apply to the release of patient information to other people (relatives, friends, insurance companies, lawyers, etc.)?
6. Can patient information be released to other people for research?
7. Are there separate rules for children?
8. Are there separate rules for patients who have died?
9. What forms and registers are used to record requests for personal information from the medical record?
10. What penalties are provided for breaking the rules?

In general, it is best to have written policies relating to the release of patient information and all staff must be familiar with these policies.

20.4.3 Patient Access to their Medical Records

Patient access to the information in their medical record will vary from country to country and hospital to hospital if there is no national policy on this issue. You need to find out if your hospital and country has a current policy. If patients are allowed access to their medical record in your hospital, you should make sure that a policy based on the regulations has been prepared and a procedure for patient access is available and is followed by the clerical staff in your department.

Some questions you need to answer are:

- Are patients allowed to see their medical record?
  Yes, as per RTI Act. Hospitals have the right to review and release as per Evident Act of 2005 and hospital policy.
- If yes, what procedures are to be followed when patients view their medical records?
  Access and Correction of Medical Record Form.
- What medical information may be released to patients?
  As per Evident Act of 2005, Communications to doctor or medical personnel 112. No doctor or medical personnel shall be compelled to disclose any conversation between the doctor or medical personnel and a patient about the patient's physical or mental health.

For Medico-legal cases, Only the Court of Royal Government of Bhutan can issue orders to get Medical Record or Information of medical care.

In many countries, patients have the right to inspect, copy, and amend their medical records. Patients can also correct data that they believe is incorrect, NOT by changing what is written, but by writing an amendment (or correction) which is clearly identified as an amendment entered by the patient.

20.4.4 General Medico-Legal Principles

• As a general rule, NO information concerning a patient should be released to another person without the written consent of the patient or the patient's legal guardian.

• If a patient is under the age of 14 years or otherwise subject to a guardianship order, any consent for access to information should be given in writing by the patient's parents or legal guardian.

• In the case of a patient who has died, the written consent to access information from the patient's medical record should be provided by the next of kin shown on the medical records or by the administrator of the patient's estate.

• If the patient lacks the capacity to provide genuine consent, then the written consent must be obtained from the person's legal guardian.

• Medical records should be kept under adequate security and only removed from the hospital or health care center upon receipt of a subpoena, statutory authority, search warrant, or court order.

• In many countries, when an original medical record leaves the hospital for legal purposes, a photocopy of the medical record is made beforehand and kept in the hospital until the original is returned. The copy is subsequently destroyed.

• As a general rule, a doctor or a health professional should supervise access to a patient's medical record by non-medical persons.

20.4.5 Instances in which Medical Records are used as Legal Evidence

Medical records are generally used in court for the following:

• Insurance Cases: Used by the patient for proof of injury and/or disability in personal accident cases or by the insurance company to disclaim responsibility.

• Worker's Compensation: In most countries, a person injured in the course of his or her duties and while acting in the scope of his or her employment is entitled to compensation for bodily injury and disability. The medical record is used as evidence to show the date of injury, the type and severity of injury, and the patient's expected recovery.

• Personal Injury Claims: A person may claim to have been injured through the fault or neglect of another and sues to recover damages for injuries sustained. The medical record would be used to show how the injury happened as recorded in the patient's words on admission to the hospital. The medical record would also be used to show the extent of the injuries, treatment given, duration of care and expected recovery or disability.

Medical records are used more frequently in this type of case than in all other cases combined.

• Malpractice Claims: In this type of case the Plaintiff (person suing) claims damages from a doctor, a hospital, nurse, or other health professional for negligence in rendering care or giving improper treatment. The medical record would be used to show that there was no negligence and that treatments rendered were adequate and proper.

• Will Cases: A patient may have made a will during his or her hospital stay. After the death of the patient, an attempt may be made to set aside the will by seeking to prove the patient mentally incompetent. The medical record would be used to show the mental state of the patient at the time of making the will.

• Criminal Cases: Medical records have been used in many criminal cases; the most frequent use includes:
  - Assault cases: to prove the assault and extent of injuries.
  - Violent or unexplained death: to prove death resulted from natural causes, accident, misadventure, or murder.
  - Sexual assault cases: to prove the condition of a patient on admission or attendance at a hospital and the history of the assault related by the patient; and
  - Mental competency: hospital medical records may also be used as evidence in proving the mental condition of a patient.

20.4.6 Procedure for the Release of Medical Information in a Legal Case

The hospital may permit a patient's lawyer to view the medical record, in the presence of a doctor, upon the written authorization of the patient. It is rare for this to happen, however, and in most medico-legal cases. The lawyer must include the patient's written authority giving the hospital permission for the release of the requested information. The hospital is NOT legally bound, however, to release information if it affects the hospital or the attending doctor or other staff.

The procedure when handling this request is as follows:

• Requests from lawyers are usually registered and date of receipt of request recorded by the hospital administration and forwarded to the MRO for processing.

• The medical record is located, and the patient's signature checked against the signature on the consent form in the medical record.

• In some countries, a charge is made for the production of medico-legal reports. The amount varies from hospital to hospital and country to country. MROs must be familiar with the charges and regulations in their hospital. If there is a charge, a lawyer requesting specific information about a particular patient sends a letter to the hospital requesting the information should be made out by the MRO (or hospital administration) and included with the report. In some countries, lawyers already know this cost, and in many cases, a cheque is included with the letter of request.

• The information requested is identified and the attending doctor is asked to write a report. A pre-designed form may be used (see example) or if a discharge summary is already in the medical record, it is checked and if it includes all the requested information, a copy is made. This will save the doctor having to write a new report.

• The MRO may write a brief letter acknowledging the request and enclosing the doctor's report. In some hospitals, a "With Compliments" slip is used instead of a letter from the MRO.

• The letter (or "With Compliments" slip), report and account (if required) are sent to the lawyer and a copy of each document is filed in the correspondence section of the medical record.

• The MRO notifies the hospital administration that the report has been sent.
In most cases, the report is all that is required. If the actual medical record is needed, the lawyer must produce a court order of subpoena to enable the release of the medical record.

Example of format for a summary of medical record information for medico-legal case:

Date:
To: (name of lawyer or law firm requesting information)
_____
_____
_____

Dear _____

The following is a summary of the medical record of (patient's name) _____
Age: ____ living at (address) _____
_____
who was admitted to this hospital on (date of admission) _____
and who was discharged (or died) on (date of discharge or death) _____

HISTORY: _____
_____
_____
_____
PHYSICAL EXAMINATION: _____
_____
_____
_____
LABORATORY REPORTS: _____
_____
_____
X-RAY REPORTS: _____
_____
OPERATION/PROCEDURE: _____Findings: _____
_____
_____Pathological Report: _____
_____
FINAL DIAGNOSIS: _____
RESULT ON DISCHARGE: _____
SIGNED: _____(Attending doctor)

20.4.7 Subpoena or Court Order

A *subpoena duces tecum* is the term used in most English-speaking countries for a legal order to produce records to a court. It is usually addressed to "the custodian of medical records" directing that person to appear in a given court, on a date and at a time specified on the subpoena, and to bring on that date the records designated for the patient named in the subpoena.

After accepting the subpoena, all medical records specifically mentioned in it MUST be produced in court at the time and place designated, or the person subpoenaed is liable for contempt of court.

20.4.8 Procedure for Preparing a Medical Record for Court

• If a subpoena or court order is served, it MUST BE OBEYED.

• On receipt of a subpoena, the MRO records the date and time the subpoena was received and records in a diary the date and time the medical record is due in court.

• The MRO should notify the attending doctor and hospital administration that a subpoena has been received for the release of the medical record to court.

• In many countries, if the patient is NOT involved in the court case, he or she is also notified by the health care facility that the subpoena has been received. They are also advised of the place, date, and time of the court hearing, in sufficient time to allow the patient to arrange to attend the court if he or she so wishes.

• The MRO should locate the medical record. If the medical record is not on file, the MRO should find it and keep it in a safe place awaiting preparation for court. A tracer is made out showing that the medical record is with the MRO for medico-legal purposes.

• The MRO should check that all necessary information, as specified in the subpoena, is in the medical record and that it is complete.

• All correspondence not written at the time the patient was in hospital should be removed as it is considered "hearsay" and not permissible as evidence. The correspondence is placed in a temporary folder made out with the patient's name and MRN and kept in the medico-legal file.

• All pages (forms) should be numbered in ink and the total number of pages recorded on the folder, and a record of the number of pages (forms) kept with the removed correspondence.

• In some countries, the original medical record is not sent to court. If a photocopy is permissible as evidence in court, all forms are photocopied, numbered and the photocopy sent in place of the original. If a copy is made, a note needs to be recorded in the medical record indicating that a copy exists and will need to be destroyed on return from court. Some hospitals send the original and keep a photocopy on file. When the original medical record is returned to file, the copy is removed from file and destroyed. To protect the privacy of the patient, it is important that if a medical record is copied, the copy MUST be treated with the same respect as the original and MUST be destroyed on return from court. These steps apply to original and photocopied medical records.

• A form of receipt should be prepared for signature of the receiving officer of the court. This may have a limited amount of information such as the number of the subpoena, date received, name of the lawyer requesting the medical record, name and MRN of the patient, number of pages (forms) and date the medical record is sent to Court. The hospital may wish to use a more structured form as shown in the following example:

Example of structured receipt for original medical records:

RECEIPT FOR ORIGINAL MEDICAL RECORD

Date: _____

Received from (name of hospital) _____

Address (of hospital) _____

_____

of (name of patient) _____MRN: _____

a total of _____pages (forms).

___Summary Sheet — Other forms:

___Personal Identification Sheet _____

___Admission history form _____

___Physical examination form _____

___Doctors progress notes _____

___Nurses progress notes _____

___Graphic forms - blood pressure, respiration, pulse

___Fluid balance forms

___Pathology reports

___X-ray reports

___Operation/procedure reports

___Anesthetic reports

___Medication forms

This record should be returned to (name of hospital) _____

On (date specified for return if known) _____

Marked to the attention of (name of MRO) _____

Signed: _____ (Clerk of Court)

• The medical record is placed in a large envelope addressed to the Clerk of the Court (or specified person) with the receipt attached to the front. The tracer on file is changed to indicate that the medical record was sent to the court and the date it was sent.

• The medical record should be forwarded under adequate security to the Clerk of the Court named in the Subpoena and the signed receipt is obtained from the person accepting delivery.

• Adequate security should involve hand delivery of the medical record from the hospital or health center direct to the Clerk of the Court by an employee of the hospital or health center or by a courier service.

• In some countries, the MRO is required to take the medical record to court on the prescribed day and time. They may be required to testify that the medical record has been kept in the normal business of the hospital and to the best of his or her knowledge has not been tampered with by unauthorized persons.

• If the medical record has not been returned to the hospital by the specified date, the MRO must check with the court to find out if the court case is over. If it is, they will request the prompt return of the medical record or, if not, ask the probable date of completion.

• On return from court, the medical record is checked to ensure that all pages (forms) are present. The removed correspondence is returned to the medical record and the record returned to the file and the tracer removed.

20.4.9 Other Important Medico-Legal Issues

• Remember that the laws in each country vary and you must be familiar with your country's laws for dealing with medico-legal requests. In the absence of specific Statutes and Regulations, certain practices should be determined by the hospital administration and MUST be followed by the medical record staff.

• Requests for information by the police or a government department where the patient has NOT authorized access to information from their medical records should be dealt with by the attending doctor or senior health care professional. Except in circumstances where the police can confirm that they seek information essential to the execution of the police officer's duty, the information supplied should be limited to confirmation of identity and address. Any other information may only be divulged on production of a search warrant.

• The attending doctor or other health care professional should be responsible for checking legal requests and release of information to ensure that only information relevant to the request is released.

• Except for providing ongoing care and treatment for the patient, all photocopying of the patient's medical records requested by the patient or the patient's authorized nominee should be at the expense of the patient and not the hospital.

• Medical records may be used for research and statistics without the patient's consent as long as the patient is NOT identified.

• As a general rule, access to medical records should be restricted to health professionals currently involved in the continuing care of the patient.

NO INFORMATION MAY BE RELEASED WITHOUT THE PATIENT'S CONSENT, INCLUDING THE FACT THAT THE PERSON IS A PATIENT. WHERE A PATIENT REQUESTS THAT NO INFORMATION BE RELEASED AT ALL, OR INFORMATION BE RELEASED IN LIMITED CIRCUMSTANCES, HIS OR HER WISHES MUST BE RESPECTED.

Medico-legal issues bring out the necessity for accurate and adequate medical records. That is, medical records that will clearly show the treatment given the patient, by whom it is given, and when given. For the protection of the hospital, doctor and all health care professionals, they must show that the care and service given were consistent with good health care practice.

21. Outpatient and Emergency Medical Records

When a person attends and receives health care services in the hospital without being admitted, he or she is referred to as an OUTPATIENT or an EMERGENCY PATIENT. We will begin by discussing outpatients. As for inpatients, the first task for outpatient staff is to CORRECTLY IDENTIFY THE PATIENT AND GIVE THEM AN MRN if they do not already have one. The procedure is the same as for inpatients.

THE COLLECTION OF ACCURATE PATIENT IDENTIFICATION IS THE FIRST STEP IN THE DEVELOPMENT OF THE MEDICAL RECORD.

21.0 Outpatient Identification Sheet

The three ways of keeping outpatient medical records are:

- outpatient visits are documented in the same medical record as inpatient notes. Some hospitals prefer to file outpatient notes at the end of the inpatient notes while others at the front for easier access. In both cases, they are usually filed behind an outpatient divider.
- outpatient visits are documented in a separate outpatient record/ card; or
- outpatient visits are documented in a patient's health record.

If a combined inpatient and outpatient record is not possible, the hospital should at least use the same number even if they are filed in different areas. This would enable quick retrieval of inpatient and outpatient medical records when needed. To assist with continuity of care, when separate inpatient and outpatient medical records are kept, a copy of the inpatient discharge summary should be included in the outpatient medical record.

Since EPIS project has already completed Registration, Appointment, HR and Doctors Desk models in outpatient system, designing forms and sheets here are not really required and can be practiced status quo until EPIS is fully operational and sustainable.

In many countries, the outpatient medical record is separate from the inpatient medical record. The ideal situation, however, is when both are filed in the one folder under the one number. This system is of benefit to the patient, as all their health information at that hospital is in one place for their continuing care. It also benefits the doctor, who is able to refer to previous notes when treating the patient for a new episode of a previous illness or for a new illness.

In many developing countries, it is difficult to know in advance the names and MRNs of patients attending an outpatient clinic as they do not, and in many cases cannot, have an appointment system for general outpatients. Without an appointment system, it is impossible to retrieve the medical records prior to patients arriving at the hospital. In

addition, the number of outpatients is usually extremely high. This often also precludes the hospital from combining the inpatient and outpatient records.

If a combined inpatient and outpatient record is not possible, the hospital should at least use the same number even if they are filed in different areas. This would enable quick retrieval of inpatient and outpatient medical records when needed. To assist with continuity of care, when separate inpatient and outpatient medical records are kept, a copy of the inpatient discharge summary should be included in the outpatient medical record.

Given the many problems associated with combining the medical records in many countries, we will assume for this section that the inpatient and outpatient medical records are filed separately but that they have the same medical record number.

In most countries, there are two types of outpatient clinics:

1. general outpatient clinic; and
2. specialist outpatient clinic

21.1 General Outpatient Clinic

In most countries, general outpatient clinics are for patients who attend the hospital for treatment of a minor disease or problem, for example, mild acute respiratory infections, minor injuries (cut/bruise/sprain), cough, cold, flu, headache, etc. In some countries, a nurse often sees general outpatients. General outpatients usually do not need an appointment. In many countries, general outpatient clinics are often held at the hospital or health center in the mornings.

21.2 Types of General Outpatient Medical Records

The decision on the type of medical record to use for general outpatients should be determined by:

- the number of daily outpatient attendances.
- the number of staff available to file and retrieve outpatient records; and
- advice from doctors about their need for previous information on general outpatient visits.

In some countries, outpatient medical records are not kept by the hospital. In these situations, the doctor writes in a PATIENT-HELD HEALTH RECORD. The patient-held health record can consist of the maternal/baby health record, or patients can be asked to purchase an exercise book (sold by the hospital). The use of patient-held health records reduces the huge daily filing problem for general outpatient records. Problems associated with using PATIENT-HELD HEALTH RECORDS, however, often outweigh their usefulness.

Some of these problems include:

- the patient does not bring the health record to the outpatients.
- the health record has been lost; or
- the health record has been tampered with.

If PATIENT-HELD HEALTH RECORDS are not used and the hospital/health center wishes to keep the medical/health record for general outpatient visits, the general outpatient visit must be documented, and a medical record system maintained

- in one medical record for inpatient admissions and outpatient visits together; or
- on a separate outpatient card or paper record filed separately. A paper record is preferred as cards are generally too small and a patient ends up with a number of cards stapled together, which tend to get shabby and difficult to file and retrieve.

In both cases the amount of filing and retrieving of records must be considered.

IF GENERAL OUTPATIENT RECORDS ARE NOT FILED BY THE END OF EACH DAY, THEY MAY BE DIFFICULT TO LOCATE.

The data collected in an outpatient medical record should include:

- patient identification as for inpatients.
- family health history, relevant history of presenting illness and physical findings.
- clinical observations.
- reports of tests and procedures performed.
- the outcome of the visit. For example, follow-up for further treatment, admission to hospital, no further treatment etc.
- growth chart for children.
- referral information such as correspondence from a local doctor or community nurse; and
- the doctor/nurse seeing the patient should sign the medical record to indicate

The same information would be collected if the patient visited a separate health center or clinic. The arrangement of the information should be convenient for those who must refer to it on a daily basis.

21.3 Specialist Outpatient Clinics

In many countries, outpatient clinics are held for patients who need to see a specialist for a specific condition.

A specialist outpatient is often a patient with a chronic problem (hypertension, diabetes, etc.), a pediatric patient, or a recent inpatient. There should be an appointment book for making appointments for each specialist. On the day of the clinic, the appointments should be noted as:

- attended or did not attend. This information is needed to measure the workload of each clinic and determine the number of appointments that are made and not kept.
- at the end of the month, the number of patients who ATTENDED and DID NOT ATTEND should be counted for each clinic and included in the monthly report; or
- other statistics would be collected in the same way as for the general outpatients as outlined below.

In many countries where outpatient appointments are made, particularly for Specialist clinics, a computerized appointment scheduling system has been developed with a link to the MPI. The Outpatient Department would be able to readily produce a typed list of daily appointments for each clinic for the Medical Record Department to retrieve the medical record.

21.4 Counting Outpatients

What information the hospital authorities require will determine the information that will be collected on outpatients. The person responsible for this collection must make sure that the definition used in the collection of outpatient statistics is the same for all outpatients.

• The routine collection of patient information assists the hospital or the health care center in analyzing the pattern of care and the demographics of its patient population.

• Some hospitals keep an outpatient register, but unless the data in the register are regularly used and there is no other way of getting the data, an outpatient register SHOULD NOT BE KEPT. A lot of clerical time is wasted in keeping such a register.

21.5 Some Definitions Used for Outpatient Department statistics

There is a difference between the number of outpatient visits and the number of outpatient services given to an outpatient on a given day.

• OUTPATIENT VISITS: All services provided as an outpatient during ONE single visit to an outpatient department.

• OCCASIONS OF SERVICE: Specific identifiable acts of service provided to a patient, such as performance of a test, medical examination, treatment, or procedure. This includes telephone counseling in some countries.

THE DIFFERENCES IN THE ABOVE SHOW HOW IMPORTANT IT IS TO COLLECT THE CORRECT DATA.

• If a hospital only wants to know the NUMBER OF OUTPATIENTS attending each day, the definition for an OUTPATIENT VISIT should be used. Remember, an outpatient may have a number of tests or see one or more health care professionals during the one visit. These are OCCASIONS OF SERVICE and are NOT counted when counting the NUMBER OF OUTPATIENTS. To correctly count the ACTUAL NUMBER OF OUTPATIENTS who have attended for a given period e.g., for a month, the definition for OUTPATIENT VISIT must be used.

• If a hospital wants to know the number of OCCASIONS OF SERVICE that is, the number of services given to a patient during a hospital visit, that definition is then used. That is, to count the number of services given by all sections of the outpatient department to each outpatient, all OCCASIONS OF SERVICE are counted.

21.6 Outpatient Statistics

Most of the above are collected to assess the workload of each clinic and to plan for future needs. It may be found that the surgical clinic staff sees twice as many patients than other clinics. If this is the case, more staff will be required in the clinic area on the surgical clinic days. Patient waiting time may be too long and the administration decides to look at the statistics for each clinic to see if it is because too many patients are given appointments when insufficient medical staffs are available. Data that should be collected for outpatients includes:

- total number of outpatient visits - first visit AND revisits, each grouped by age and sex.
- total number of occasions of service, grouped by age and sex; and
- type of disease/problem. If no disease noted, the reason for the visit is usually used.

One way to count outpatients is an outpatient tally sheet, which is summarized daily and recorded in an outpatient statistics book. The clinical staff in the outpatient department should fill in the tally sheet. *Sample of a general outpatient tally sheet:*

Cross off a “0” for each visit. It is important to separate the first visits from the revisits. The time should be listed as morning, afternoon, evening, or night.

Day: Date:	**Time:**		**Hosp/HCentre name:**			
	0 –12 Months		**1 – 14 years**		**60+ years**	
First visit for: ⇩	Male	Female	Male	Female	Male	Female
Acute Respiratory infection	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Malaria	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0
Etc.	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0
Revisits/ REATTENDACES	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0

- At the end of each day, the completed outpatient tally sheets should be collected from the clinics and summarized into a daily outpatient statistical summary form.

- At the end of each month, the outpatient statistics in the daily outpatient statistical summary forms should be added up to provide the total figures for the month and reported in the monthly report.

- For yearly outpatient statistics, the data in the monthly reports are calculated.

21.7 Emergency Patients

Emergency patients come to the hospital/health care center's emergency department needing immediate attention for a disease or injury. The collection of emergency medical information must be easy to carry out while focusing maximum attention on the patient.

If a patient is brought to the hospital by ambulance, the data collection starts with the ambulance service transporting the patient to the hospital. At this time, a record is made of vital signs, condition during transportation, the nature of the illness or injury, and any procedures performed. Upon arrival at the emergency department, a copy of the ambulance record may be included in the hospital emergency service record.

21.7.0 Emergency Records

Emergency patients are identified in the same manner as inpatients and outpatients. If the patient has been an inpatient or outpatient, previous records must be made available for emergency care if needed.

Identification information may need to be obtained from the patient within the emergency treatment room or from a relative or person accompanying the patient. The information recorded in an emergency record should include:

- the time and means of arrival in the emergency department, e.g., by ambulance, etc.
- pertinent history relating to the reason for attending the emergency department.
- emergency care given prior to arrival.
- diagnostic and therapeutic orders.
- clinical observations.
- reports of procedures, tests, etc.
- diagnostic impression; and
- conclusion and disposal of the patient, i.e., sent home following treatment with no further care required, referral to the general or specialist outpatients, admission to the hospital, died in the emergency room.

The contents of an emergency record, how they are to be kept, and for how long are often decided by the hospital administration or by government regulation.

IF A PATIENT IS ADMITTED TO HOSPITAL FROM THE EMERGENCY DEPARTMENT, THE EMERGENCY RECORD SHOULD BE INCLUDED IN THE INPATIENT MEDICAL RECORD.

If kept separately, emergency department records need only be kept for the duration of the STATUTE OF LIMITATIONS. That is, the legal time required in a country in which a person can bring a lawsuit.

It is recommended that for SPECIALIST and EMERGENCY visits, the visit be documented in the medical record held by the hospital and not in a patient held health record. A SUMMARY OF THE VISIT or ADMISSION, however, should be included in the PATIENTHELD HEALTH RECORD.

21.7.1 Counting of Emergency Patients

In some countries, where emergency patients are not admitted, they are counted as general outpatients, and where emergency patients are admitted, they are counted as an admission. Some hospitals/health centers count emergency patients separately, and a tally sheet can be used to count emergency patients as for general outpatients. For admitted emergency patients, it is important to remember to NOT count emergency patients twice, once as an emergency case and once as an admission.

A PERSON WHO IS DEAD ON ARRIVAL AT THE HOSPITAL'S EMERGENCY DEPARTMENT SHOULD NOT BE ADMITTED AND SHOULD NOT BE COUNTED AS AN INPATIENT.

EPIS project must consider Outpatient generated Statistics inclusive of QAD KPI to be included in Hospital Statistics Module of Medical Records so that timely, accurate and authentic outpatient Statistics are generated and reported.

22. Medical Record Committee

Each hospital should have a Medical Record Committee. This Committee makes decisions on medical record policy, medical record procedures, medical record forms, and procedures in other departments/wards relevant to the management of medical records and patient information.

An active Medical Record Committee should act as a liaison between the MRO and other departments. Members should be representatives of the various clinical services of the hospital, rotating on a yearly basis so that all services will eventually be represented. Such a committee, with a strong Chairperson, can do much to stimulate interest in developing and maintaining a high standard of medical records and medical record services. The Committee should support the MRO and assist with the implementation of regulations regarding the completion of medical records.

22.0 Terms of Reference

The Medical Record Committee is responsible for all matters relating to the content of medical records and the provision of medical record services in the hospital. The Medical Record Committee in large hospitals meets every month and less frequently in smaller hospitals. It should meet at least four times per year.

The Committee should be made up of people who are interested in good medical records and who are prepared, by their own example, to provide an incentive to others, particularly junior doctors. The Committee should consist of not less than three members and not more than six. Too large a committee could be unwieldy.

For example, membership of the Medical Record Committee should consist of:

- a representative of doctors from both medicine and surgery.
- a representative of nursing administration.
- a representative of the hospital administration (management).
- a representative from allied health staff - physiotherapy, social work etc.; and
- the MRO.

Other members may be invited onto the committee if their input is required, such as orthopedic, pediatric, and obstetric doctors. In a larger health care facility, representatives from nurses on the ward may also be included.

22.1 Functions and Responsibilities

The Medical Record Committee cannot perform efficiently without rules and regulations. These need to be clearly defined and recorded and understood by all medical staff. Functions and responsibilities of the Medical Record Committee include:

a. review of medical records to ensure that they are accurate, clinically pertinent, complete and readily available for continuing patient care, medico-legal requirements, and medical research.

b. ensure that medical staff complete all the medical records of patients under their care by recording a discharge diagnosis and writing a discharge summary (where required) for each discharged patient within a specified period of time.

c. determine the standards and policies for the medical record and the medical record services of the health care facility.

d. recommend action when problems arise in relation to medical records and the medical record service.

e. determine the format of the medical record and approve and control the introduction of new medical record forms used in the health care facility (all forms should be cleared by the Medical Record Committee before being put into use); and

f. assist and support the MRO in liaising with other staff/departments in the health care facility.

It is important that rules and regulations for the completion of medical records are developed and approved by medical staff and adhered to by all. With the support of the Medical Record Committee and Medical Administration, the MRO should be able to address quality issues such as poor documentation and incomplete medical records.

The MRO should prepare a summary report for each Medical Record Committee meeting. This summary should include the number of medical records awaiting completion by doctors.

23. Quality Issues for Medical Record Services

Over recent years, the quality of documentation in the medical record has become an important issue, not only with the need to promote better health care, but also, the need by governments to reduce health care costs. In some countries, when funding began to be based on medical record data, it was found that more attention should be paid to the quality of the medical record and documentation of the original health care data.

In many countries, some problems facing administrators and government authorities include:

- poor medical record documentation.
- large backlogs of medical records waiting to be coded.
- poor coding quality; and
- poor access to, and utilization of, morbidity data.

To address these problems and improve the quality of data collected, and the information generated from that data, quality control measures need to be implemented.

The Medical Record Department is often the first department in a hospital to introduce quality assurance. As the Medical Record Department has connections with most other departments within the facility, the medical record is the best place to check the medical care and treatment of the patient. It should be noted that quality checking of the medical record often results in action being required by staff outside the Medical Record Department.

One approach to quality checking is for the MRO to ask staff from other departments to check the services of the Medical Record Department using a checklist. The results of these quality checks (or audits) are kept on a chart (or graph) in the Medical Record Department. They should also be presented to the Medical Record Committee for review. As the results improve, the figures on the chart are a source of pride for the Medical Record Department staff. This process is often the beginning of a reciprocal quality-checking program with other departments, which could result in an improvement in the quality of procedures throughout the health care facility.

23.0 Areas in Which the MRO can Evaluate Medical Record Procedures

There are many procedures in the Medical Record Department that can and should be evaluated. Some study questions that could be used to evaluate the work of the Medical Record Department staff could include:

- Are medical records filed promptly?
- Is the file room clean and tidy?
- Are Master Patient Index cards filed promptly?
- Are all discharges returned to the Medical Record Department the day after discharge?
- Are medical record forms filed in the correct order?

• Are all medical records completed within a specified time after discharge?
• Are medical records coded correctly?
• Are all discharges for last month coded by the middle of the next month?
• Are the monthly and yearly statistics collected within a specified time?

To conduct an evaluation study, the MRO should select a time for the study (e.g., one-month), prepare a questionnaire, and determine the standard or acceptable level of compliance considered appropriate for the work to be studied. The results can be used to improve the services in areas below the required standard of performance.

23.1 Evaluating the Content of the Medical Record

The content of the medical record can be evaluated by reviewing to see if the following has been done:

- the consent form for treatment has been signed by the patient.
- patient identification details (name and medical record number) are correct and entered on all forms.
- doctors have recorded all essential information.
- doctors have signed and dated all clinical entries.
- the front sheet has been completed and signed by the attending doctor.
- nurses have recorded and signed all daily notes regarding the condition and care of the patient.
- all the orders for treatment have been recorded in the medication form and signed.
- medication administration has been recorded and signed.
- the anesthetic form (if any) has been completed and signed.
- the operation form (if any) has been completed and signed.
- the main condition/condition/principal diagnosis has been recorded on the front sheet.
- operations and/or procedures have been recorded on the front sheet; and
- the MRO or staff member responsible for coding has accurately coded the main condition/condition/principal diagnosis and any other condition listed (if required).

Again, a study questionnaire should be prepared, and a standard determined, e.g., 100% compliance.

Sample checklist or audit form:

	Yes	No	N/A*	Comments
1. Patient's first name present				
2. Patient's family name present				
3. Patient's medical record number written				
4. Patient's address written				
5. Etc.				
TOTAL				

*N/A = not applicable

24. Mortality Review Committee

With ever changing needs to audit clinical services in a hospital, many Qualitive Initiatives have started by collaborating between KGUMSB, JDWNRH and MoH to begin with. MRO is secretariates Mortality Review Committee in JDWNRH where expert panel sits to review death cases according to standard operating procedure. Although there is long way to go for proper institutionalization of these ***Clinical Compliance and Regulatory Check Interventions*** where QAD in hospitals and Ministry of Health could lead. Some interventions are as follows:

1) Weekly Mortality Review at JDWNRH
2) Monthly Mortality Conference (KGUMSB & JDWNRH)
3) Departmental Mortality Review (Within Departments)
4) QI on Death Certification (KGUMSB & JDWNRH)
5) How to Write Death Certification (KGUMSB, QI)

After death cases are reviewed by experts in the hospitals, it is ideal for the hospital administration from the office of Medical Superintendent to issue feedback and action plans to bring out the desired changes in clinical service delivery. Action plan and recommendation following the review can be divided into following three categories:

1) **Clinical:** Where the treating physician and team are recommended on point of patient care clinical interventions that is ideal to follow in the identified reviewed case. It is sent in the review report from the office of MRO.
2) **Hospital Management:** For any managerial and administrative support, recommendations and requests are sought from the administration and management. It is very vital that such supports are discussed and explored to resolve further in Hospital Management Committee presented by QAD as quality perspective of the clinical care.
3) **Ministry of Health:** Macro or major reforms or intervention requiring bringing qualitative changes should be consulted with HSQAD, MoH and necessary resolutions brought.

Once Standard Operating Procedures of above mention interventions are properly developed, endorsed, and institutionalized, the other regional referral and district hospitals can adapt and implement the same under the leadership of HSQAD, MoH. Draft SOPs of above intervention are included as Annexure in this manual.

25. Case Mix Measurements and DRGs

With greater emphasis on cost containment in health care and the need to rationalize health care resources, many countries have been looking to the introduction of some form of **case-mix measurement system to give a better indication of the cost of services offered by their hospitals and other health care facilities**. Case-mix and DRGs are associated with clinical coding and used by many health care facilities in the USA, Australia, and many European countries. The following brief description has been added to give you an idea as to what Case-mix is and how DRGs are used.

25.0 What is Case-mix and How Did it Develop?

In the late 2070s, a team of physicians in the United States of America set about investigating a way to facilitate hospital management and financing by providing a system for classifying acute care patients to allow hospital performance to be measured and evaluated. The basic concept or idea was to identify the output of hospitals, i.e., patients treated, as classes of patients, with each "class" receiving a similar amount of goods and services associated with their diagnosis and treatment.

The ultimate goal being to include flexible budgeting, cost, and quality control. The term which evolved was Diagnosis Related Groups or DRGs. For each DRG, a rate was determined which was a fair payment to the hospital to cover the cost associated with the diagnosis and treatment of a given illness. In other words, DRGs are a patient classification scheme which provides a means of comparing the type of inpatients a hospital treats (i.e., its case-mix) to the costs incurred by the hospital.

Although the DRG system was originally created as a tool in managing hospital the potential for prospective payment schemes to better understand and restrain health care costs was recognized. Research based on the need to develop a system for paying hospitals for patient care was carried out by a team of researchers in the United States of America. The first step was to define the need, and the second was to determine how to measure hospital services as a means of evaluating health care in a specific setting.

Research was carried out and the team of researchers was able to develop a DRG system with the ability to predict variability. That is, as all patients are unique, it is fundamental to good patient care that they all be treated as individuals. They also recognized that there were also similarities between groups of patients. They identified stable patterns of resource utilization of hospital services. They wanted to ensure that patients in a given category comprised a clinically coherent group, otherwise the classification would be rejected by doctors.

Therefore, in developing the DRGs, the following characteristics were used:

1. category definitions based on information routinely collected by hospitals.
2. a manageable number of categories.
3. similar patterns of resource intensity within a given category; and
4. similar types of patients in each category from a clinical perspective.

Over the years, the original DRGs have been revised in response to changes in disease and procedure coding schemes, to differences in the utilization of health services, and to feedback from the health care community. Bhutan can develop Case-mix and DRGs in local context or use US version as and when it is appropriate once services start to develop where use of cash and monetary systems are integrated in EPIS.

25.1 What Makes up a DRG?

DRGs are made up of the following variables:

1. principal diagnosis (ICD-10) in coming EPIS (ICD-11)
2. operating room procedure (CPT/PCS).
3. other conditions present - such as co-morbidities and complications.
4. Age of patient.
5. Discharge status (i.e., alive, deceased, transferred, etc.); and
6. Birthweight (neonates only).

25.2 The Formation of DRGs

Diagnosis Related Groups form a case-mix classification system. Each class of DRG describes a group of patients with related diagnoses requiring similar investigations and incurring similar treatment costs. These can therefore be regarded as similar products of acute inpatient hospital care. DRGs are the elements of a classification scheme which provide a common language for relating the number and type of patients treated in a hospital to the resources used by the hospital. The same language enables issues such as quality and performance to be compared between hospitals and can be used as a tool to enable more objective organizational, budgeting, and financial plans to be enacted. DRGs form part of a case-mix methodology that allows hospitals to be funded according to output, i.e., patients treated.

The grouping into DRGs is made on the basis of the discharge summary which currently uses the International Classification of Diseases, 10th Revision, Clinical Modification (ICD- 9-CM) in the USA but different classifications in some other countries. The DRG system, with only around 700 groups, represents an attempt to reduce the complexity associated with the volume of ICD-10-CM codes, while attempting more directly to take resource use implications into account. In drawing any comparison between diseases treated, it is recognized that other factors such as the age of the patient, and the presence of other diseases, are important.

Complications arising from the treatment of the primary illness, as well as the severity of disease, also influences the outcome.

It is inevitable that reactions of any individual patient to the same disease may vary. In addition, treatment options for some diseases also may vary. For example, surgery may be performed on some patients while it may not be appropriate for others, even though both have the same primary diagnosis. The performance of an operation can makes a considerable difference to the average length of stay and thus needs separate consideration. Treatment may also be associated with complications that require further procedures and add to the total cost incurred.

The assignment of a DRG relies on information gained at discharge, such as relevant diagnoses, investigations, and procedures. For this reason, accurate descriptions of the patient's condition and accounting of procedures are essential as is accurate coding.

Errors in coding can heavily influence the outcome especially when comparisons and payments are being made.

25.3 How Can DRGs be Used?

As mentioned previously, DRGs were originally developed for use in quality assurance, but were subsequently adapted for comparing the management of groups of patients in financial and service terms. By using DRGs, hospitals are motivated to examine how to utilize resources more efficiently and effectively. There is a need, however, to ensure that patients are not discharged too quickly, and that quality is not jeopardized. Parameters such as costs of various investigations, operating theater time, and length of stay of patients, can be compared with other hospitals doing similar cases, or the same institution in looking for variability over time.

DRGs can be used for analyzing and understanding the differences between, and comparing the performance of services, within hospitals and between hospitals. A hospital's actual length of stay is adjusted to take account of case-mix. Thus, the key comparison is the hospital's length of stay for a particular case type (such as a DRG) relative to the mean length of stay for that same DRG at other hospitals, either in the same state or province or country.

25.4 How are Patients Allocated to a DRG?

The information required to allocate the DRG is usually obtained from each patient's medical records via the Medical Record Department after discharge. Before classifying a patient, it is important that all diagnoses, pre-existing conditions, and surgical procedures are fully documented, or the patient may be placed in an incorrect DRG category. This means that the data items must be present at discharge to ensure that the episode of hospitalization is correctly assigned. Since the introduction of DRGs in 2079, countries have recognized their

potential as a tool in hospital management and the rationalization and cost containment of their services.

The introduction of DRGs in a number of countries has placed a greater emphasis on the medical record and the accuracy of documentation, as well as the accuracy of coding. This in turn has led to greater interest in the medical record, and more support for the staff of the Medical Record Department. The use of DRGs, however, is not yet widespread and the above discussion has been added for your interest only.

26. Computerized Health Record & Electronic Patient Information System

Many countries now have a number of computerized applications as part of a Health Information System (HIS) within the health care facility. The aim of health care authorities around the world is for the development of an automated patient information service that will increase the efficient retrieval of information for patient care, statistics, research, and teaching. Health Information Systems are designed to integrate data collection, processing, reporting, and the use of information necessary for improving the effectiveness and efficiency of the health service through better management at all levels of health care (WHO, 2000). An important point to remember, however, is that the use of a fully computerized system may improve the effectiveness and efficiency of a Medical Record Department, but ONLY where the basic manual procedures are already in place and well organized.

The development and implementation of computer applications require detailed planning and cooperation between the medical record officer, computer staff and the hospital administration. The first step in such an undertaking would be to review the existing manual system to define the data needs and determine the proposed data flow. Once this has been accomplished, the next step would be to design the data collection and reporting tools and develop procedures. These would be followed with a detailed program of education for all staff, particularly the persons who will use the system.

Medical record procedures commonly computerized in many countries include the

- master patient index (MPI).
- admission, transfer, and discharge/death (ATD) system.
- disease and procedure index; and
- an automated record tracking system.

All the above have been discussed in earlier sections of this Manual. In addition, some other computerized medical record applications include:

- medical record completion system; and
- discharge summary abstracting system.
- automated Hospital Statistics System
- clinical data analytic system (futuristic)

It is important to note that the following are suggestions for discussion and not a definitive outline of specifications. Final specifications for any computer system should be developed in conjunction with the computer programmer, systems analyst, hospital administrator, and MRO at a time when the actual type of computer has been determined.

26.0 Medical Record Completion System

• A computerized medical record completion system provides an efficient tool for tracking incomplete medical records and provides a list of the number of incomplete records awaiting completion by individual doctors.

• Such a program would be linked to the ATD system on discharge of the patient. With this system, staff can call up by doctor and by patient name all medical records awaiting completion. Deficiencies would be entered and stored in the computer memory. The system would then generate a number of reports, listing the number of records awaiting completion by the doctor, grouped by service, and the number of records waiting to be coded.

26.1 Discharge Summary Abstracting System

• With the establishment of a central database of patient information linked to an ATD System, a summary of the patient's stay in hospital can be produced. The summary would include identifying information about the patient, admission and discharge dates, final diagnosis, treatment on discharge, and follow-up details.

Linked to the ATD system, health care statistics are also collected and processed via the computer thus enabling the hospital/health care facility to produce them in a more efficient and timely manner. This gives only a brief indication of some of the available computer applications relating to medical record procedures of a hospital. Specifications for any computerized system should be developed following discussions with the computer planning team at a time when a decision has been made as to type and capacity of the computer to be installed. In addition to a number of computerized applications and the development of a comprehensive Health Information System (HIS) many hospitals/governments are also looking at the possibility of a fully electronic health/medical record.

26.2 Electronic Health Records

The introduction of an EHR would drastically change the work of the Medical Record Department, particularly the basic procedures such as the admission, discharge and filing procedures. With a number of problems associated with maintaining manual medical records, particularly medical record storage space, some health care professionals and administrators want to move from a paper to a paperless environment. They should not, however, focus on going paperless.

The focus should be on the possibility of developing an EHR as a means of encouraging departments and providers of health care to share data and improve everyone's access to that data by having it readily available at all times for patient care. There is also a tendency to expect that with the introduction of an electronic health record, many of the problems currently experienced in maintaining patients' health records will be eliminated. This is not the case.

An electronic health record is not a simple replacement of the paper record.

If there are problems associated with a manual medical record system which are not resolved, automating health record content and procedures will only perpetuate the

problem. Before an EHR can be introduced, detailed discussion is required to address a number of perceived problems such as: the cost involved, available funding for health care, which is limited in most countries; lack of computer skills and expertise of medical and clerical staff; and resistance by some medical practitioners and health professionals generally to a change from manual to electronic documentation.

The move to a fully electronic health record is a major undertaking and cannot be entered into lightly. Over the years, a number of countries have made attempts to introduce some form of electronic medical record. Some have been successful, and others have not yet reached their goal. In addition, some countries are planning the introduction of a nation-wide electronic health record while a small number have actually implemented what they describe as a national EHR. Definitions, however, vary and what one country means by an electronic health record may not be the same as defined by another country.

The computerization of a number of hospital applications such as pathology, biochemistry etc., have been most successful as have the computerization of the MPI, ATD, etc. Also, in some hospital departments such as hematology, cardiology, and intensive care, computerized clinical systems have been introduced and have been most successful. The computerization of all clinical data in a medical/health record, however, is not yet widespread.

Some of the early attempts at automation referred to an automated medical record, which was a collection of computer-stored images of traditional health record documents. Typically, these documents were scanned into a computer, and images stored on optical disks. This type of system depends on input from paper-based documents and consists mainly of administrative and clinical support systems such as laboratory tests, X-ray reports, etc. This form of automation addressed aspects such as access to, space for, and control of problems related to the current paper-based records but did not address data input/output deficiencies.

Titles such as automated medical record; computer-based patient record; electronic medical record, and electronic health record have been used by hospitals/countries over recent years with varying definitions. For instance, in some countries, the term Electronic Medical Record or EMR is used to describe a system based on document imaging or an electronic record system developed within a general medical practice or community health center. It has also been referred to as an electronic version of the traditional paper record. In a number of countries, however, the term EMR also refers to a fully automated electronic medical record, including all clinical data. The ultimate goal in the development of health information systems, however, is one that has not been fully reached in most countries to date. It is a longitudinal health record with entries by multiple providers of health care in multiple sites where care is provided. That is:
A health record that reflects the entire health history of an individual across his or her lifetime including data from multiple providers in a range of contexts.

If considering an EHR, it is important to understand the definitions used by organizations/countries and to define, if required, what your institution/country would like to implement. The questions which need to be answered are:

- Is a fully integrated health record, including all clinical data, the ultimate goal? That is, will data be entered by all health professionals at the time the patient is seen in a hospital, health center or clinic, with all data held in the one electronic record and accessed by multiple providers at multiple sites?
- Or will it be limited to a fully electronic health record within one hospital or health care facility setting? Will it be called an 'electronic health record'? An 'electronic medical record', or by another name?

When people refer to what they have been using as an electronic health record, it may not be the same as other electronic health records developed in different institutions/countries.

The point to remember is that the term Electronic Health record is widely used in many countries with some variation in definition. Ideally an electronic health record should be able to:

- collect clinical, administrative, and financial data at the point of care.
- exchange data more easily between health professionals to facilitate continuing care.
- measure clinical services improvement and health outcomes, compare the outcomes against benchmarks and facilitate research and clinical trials.
- provide valuable statistical data in a timely and efficient manner to public health and government ministries (such reporting of health data is important in the detection and monitoring of disease outbreaks, as well as providing meaningful and accurate statistics to measure the health status of the population); and
- support management in administrative and financial reporting and other processes. (Mon, 2004)

The introduction of an electronic health record in an *institution/country* must be carefully planned, have complete backing and support of the administration, medical and nursing staff, and clerical personnel. Current problems identified in healthcare documentation in the patient's health record and health record services, as well as privacy and confidentiality issues, must be addressed and quality control measures introduced before a successful change can be implemented. As for a manual system, an electronic health record must also meet legal, confidentiality, and retention requirements of the patient, the attending health professional, and the health care institution/country.

Whether a manual or electronic health record is maintained, there is still the need to ensure that the information generated by health care data is accurate, timely, and available when needed.

Database technology has proven to be extremely valuable in the development of the EHR. Although document imaging will remain a valuable part of the EHR, it will play a reduced role and decisions will need to be made as to whether previous health records will be included in the EHR. Before planning an electronic health record system, other administrative questions must be addressed, such as:

- What type of system would be required to meet perceived needs of an electronic health record for your health care facility/country.
- Is there available funding?
- What type and size of computers would be required to meet the needs within the funds available?
- Does the hospital/country have an adequate and reliable electricity supply?
- Does the hospital/country have sufficient trained staff and the provision for training new staff?

The introduction of an EHR can be a mammoth undertaking. It is important that MROs develop and maintain an effective and efficient manual medical record system to ensure that a future move to an EHR will go smoothly. Bhutan is proud to have started EPIS with leadership of ICT Division, MoH.

27. Conclusions

This manual has been prepared as a guide for manual medical record practices in developing countries. It should be used by medical record clerks and MROs to enable them to gain knowledge of current medical record practices and help in the improvement of medical record services for which they are responsible. Questions have been included to encourage users to review their current medical record procedures and plan changes, if necessary, to improve the service provided by the Medical Record department. However, any change must be CAREFULLY PLANNED and RECORDED beforehand. Poorly planned changes could undermine their success and confidence in the services provided.

Health care information starts with data and the collection of data whether maintained manually or electronically. Demographic and clinical information stored in a patient's medical record is the major source of health information and it is of no value to medical science or health care management if it is not accurate, reliable, and accessible. The comparison of healthcare data between facilities, States or Provinces, within a country or between countries is vital to the growth and dissemination of health information throughout the world. This possible sharing is meaningless, however, without the use of standardized systems for data collection, disease classification and health care statistics.

PRE-EMPLOYMENT TEST FOR MEDICAL RECORD CLERKS/OFFICERS

(1) The clerk should be given 10 medical records and asked to file them in the file room. The supervisor should have pre-recorded the numbers and must check the accuracy of the filing of each record.
(2) The clerk should be given 10 MPI cards and asked to file them into the MPI in alphabetical order. The supervisor should have pre-recorded the names and must check the accuracy of the filing of each card.
(3) A list of names should be dictated to the clerk, who must write them down neatly and legibly. The supervisor will check the list written by the clerk for accuracy of spelling and for legibility.

INTERNATIONAL FEDERATION OF HEALTH RECORDS ORGANIZATIONS

The International Federation of Health Records Organizations (IFHRO) supports national associations and health records professionals to implement and improve health records and the systems which support them. IFHRO was established in 2068 as a forum to bring together national organizations committed to improvement in the use of health records in their countries. The founding organizations recognized the need for an international organization to serve as a forum for the exchange of information relating to health records and information technology.

Contact details: www.ifhro.org
Email: info@ifhro.org

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29. Annexure

Annexure 1: Medical Record Completion Checklist

Sl. No	Details of Case File	Remarks (Complete/Incomplete)
1	Face sheet (Front Page of Case file)	
2	Death Certificate	
3	ER Note if any	
4	Admission Form	
5	Physician's Progress Note	
6	Nurse's Note	
7	Diagnostic Tests Forms & Results if any	
8	TPR & Vitals Chart	
9	Intake – output Chart	
10	Medication or Drug Chart	
11	Medico-legal Undertakings/Consents	
12	Inter-departmental Consultation Form	
13	Pre-anesthesia Assessment Notes	
14	Operation/Surgical Notes	
15	OT Checklist	
16	ICU Progress Notes	
17	Birth & Maternity Notes	
18	Inpatient Incident Notes	
19	Referral Form	
20	ER Progress Note	
21	Intensive Care Notes	
22	Paramedical Care notes	
23	Radio-diagnostic Forms & Results if any	

Form:HouseVisit

1. **Visit/Destination**

Name of Patient:
Present Address:
Permanent Address:
CID/Passport/Work Permit No.:
Attendant:
Relationship to Patient:
Contact Number:
Signature:
Date of Signature:

2) Health care worker Details:

Name:
Designation:
Date of Visit:
Time of Visit:
Place of Visit:
Purpose of Visit:
BMHC No.:
Signature:
Intervention:

Name of Supervisor
BMHC No.:
Signature:
Seal:

ROYAL GOVERNMENT OF BHUTAN
Ministry of Health
Form: Access & Correction of Medical Records

Form no. Medical Records/ACMR

Part I: Access of Medical Record

By signing this form, I authorize you to release confidential health information by releasing:

1) A copy of my medical records
2) A summary or narrative of my protected medical records
3) Treatment record
4) Laboratory reports
5) Progress Notes
6) Radio diagnostic reports
7) Medication Record
8) Operation/Surgery records
9) Health Examination records
10) Nurse's or Allied health records

Patient Thumb Print:

Patient Representative Thumb Print:
Address:
Name:
CID/Passport/Work Permit:
Relationship to Patient:
Contact Number:

To myself/physician/person/facility/entity (Tick relevant) and/or those directly associated in my medical care.

Name:
Address:
Designation/Profession:
CID/Passport/Work Permit:
Contact No:
Email:
For Purpose:

Part II: Correction of Information in Medical Records

I request to change following information in my medical records as evidenced by supporting documents attached:

Patient Name:
Date of Birth:
Medical Record Number:
Information to be Changed:TL is done
Supporting documentation: CID
Verified by Treating Doctor/Clinician (If it is related to Clinical information Change)
Name:
BMHC No.:
Signature:
Date of Release/Change:
Verified & recorded by: