Part-I

INTERNSHIP REPORT

About the Institution

Shri Moolchand Kharaiti Ram Hospital and Ayurvedic Research Institute (MCKRH) was initially started in Lahore, in present day Pakistan. Following the partition of the country, the facility was shifted to Delhi in 1957. Moolchand Hospital was established with the Ayurvedic system of Medicine. In 1967, a decision was taken to induct modern medicine into the hospital & various departments were started which have today grown into 300 bedded medical facility providing both Ayurvedic & modern medicine to the public & community. It is going to be developed into 1500 bedded medcity. The vision of Moolchand continues, inspiring people to new heights with a deep rooted culture & a pride in its heritage.

Located in the heart of city in Lajpat Nagar -3, the hospital, not only caters to the needs of large population residing in nearby areas of central and south Delhi but also receives foreign patients for cure and treatment. Moolchand is India's first JCI and comprehensive NABH (Hospital & Blood bank) accredited hospital. The excellence, innovation and quality mindset of the organization have won many Accolades/Accreditations, such as:-

TABLE: 1 ACCREDITATIONS AND AWARDS

S.No.	Logo	Accreditations and awards
1		**JCI** Moolchand India's first JCI and Comprehensive NABH accredited Hospital
2		**NABH** First multi-specialty hospital in North India to receive this accreditation

3		**NABH for Blood Bank** Moolchand is one of the first 4 hospitals to receive this award
4		**ISO 9001:2000** For an effective quality management system **ISO 27001:2005** For the development and maintenance of Information Security Management System **ISO Platinum** Formulated by BSI (Bureau of Indian Standards) for the development and maintenance of an effective and efficient organization, Moolchand is the first hospital in the world to receive this certification.
5		**IMC Ramkrishna Bajaj National Quality** "Outstanding Achievements Trophy" in the Health Care Category
6		**Energy Efficiency Award** Moolchand received a commendation certificate in recognition of our efforts towards the promotion of energy efficiency and renewable energy measures from the Chief Minister of Delhi, India.

VISION

- "To be an integrated, global healthcare services provider, recognized for integrity, quality of care*, service and innovation."

MISSION

- "To consistently deliver excellent and compassionate medical care to our customers throughout their lives."

GUIDING VALUES

- Uncompromisable ethics
- A passion for excellence
- Unmatched quality
- Relentless innovation
- Leverage teamwork and partnerships
- Strive for leadership and growth
- Reward merit
- Customers and partners first
- Be responsible stewards
- Treat people well

HISTORIC MOMENTS

- First minimal access surgery in India
- First hospital to introduce streptokinase therapy for MI in India
- First knee replacement in Delhi
- First laparoscopic hysterectomy in India
- First colour Doppler echocardiography done in India

VARIOUS QUALITY INITIATIVES

- Moolchand Total Quality Management System
- New Document Request(NDR)
- Document Change Request (DCR)
- 5S
- Red Tags
- Quality Control Circle (QCC)
- Kaizen
- Failure Mode Effect Analysis (FMEA)

Physical Structure

❖ The hospital is spread on sprawling campus of 80,000 sq feet's.

- It has various separate buildings which were built overtime as the hospital expanded its scope of services in last 60 years.
- Most of the hospital building is built on ground floor () except New IPD building, Moolchand Clinic and Corporate building.

DEPARTMENTS ON GROUND FLOOR (except New IPD building, Moolchand Clinic and Corporate building)

TABLE: 2 DEPARTMENTS ON GROUND FLOOR

S. No.	Floors	Facilities
1	Ground floor	Medical administration, Time office, Facility department, Emergency department, Pharmacy department, Laboratories, Imaging, Dental, Physiotherapy, Auditorium, General OPD, Blood bank, ONH, MRD, DNS office, Bulk store, Laundry, CSSD, HES, School of nursing and Mortuary

NEW IPD BUILDING

TABLE: 3 NEW IPD BUILDING

S. No.	Floors	Facilities
1	Ground floor	Mothers nest, NICU, Labour room and Wards (Single bedded room, double bedded room, Three bedded room, Four bedded room and VIP Suite)
2	First floor	Wards (Single bedded room, double bedded room, Three bedded room, Four bedded room, VIP Suite and Presidential Suite), ICU, PICU
3	Second Floor	OT complex, CTVS, Cath lab
4	Third floor	Wards (Single bedded room, double bedded room, Three bedded room, Four bedded room, VIP Suite and Presidential Suite) and Renal transplant unit
5	Fourth floor	IT department and Medical Record Department

NEW MOOLCHAND CLINIC

TABLE: 4 NEW MOOLCHAND CLINIC

S. No.	Floors	Facilities
1	Ground Floor	Private OPD, Women and Children OPD
2	First Floor	Moolchand Renal Care Unit, Doctor's Lounge, Telemedicine centre, Library and Store

CORPORATE BUILDING

TABLE: 5 CORPORATE BUILDING

S. No.	Floors	Facilities
1	Ground Floor	Corporate office (CEO & COO)
2	First Floor	International Sales, Planning Business Division (PBD), Claims, Training & Development (T&D) and HR Department
3	Second Floor	Procurement and Project department
4	Third Floor	Legal, Finance and Accounts Department
5	Fourth Floor	Quality and Systems, Operations, Physician relationship Department, Performance management division (PMD), Corporate communications Department
6	Fifth Floor	Marketing, Bio medical Engineering, New Product Development (NPD), Corporate sales and Financial Analysis & Planning Department

COURSES OFFERED

A. DIPLOMAT NATIONAL BOARD (DNB)

Moolchand hospital is accredited to National Board of Examinations (NBE) which comes under Ministry of Human Resources Development (HRD). It provides Diplomat National Board (DNB) courses for doctors in different specialties such as Medicine, Family medicine, Surgery, Obstetrics & Gynaecology, Pediatrics and Anaesthesia. The numbers of seats allotted to the departments are two.

B. GENERAL NURSE MIDWIFERY (GNM)

The hospital runs a School of Nursing named **"Smt. Janak Rani Talwar School of Nursing"** which is affiliated to Indian Nursing Council (INC) and Delhi Nursing Council (DNC). The total annual intake of students is 30 (Thirty). Duration of this course is 3 and ½ years which includes 6 months compulsory rotatory internship. It provides the diploma of GNM (General Nurse Midwifery), registration of nurse and midwife from Delhi nursing council after satisfactorily completion of this course.

PHYSICIAN ACCOLADES

- Dr. Sheila Mehra awarded Padamashree Award (amongst the highest civilian honours given by the Government of India to recognize distinguished contribution)
- Dr. K. K. Aggarwal awarded Dr. B. C. Roy Award (highest national recognition for a medical professional given by the Government of India) and the Padamashree recently.
- Dr. S. V. Tripathi awarded Dhanwantri Award by the Health minister of India (supreme emblem of recognition for a medical professional given by the Government of India)
- Dr. J. S. Arora has been the official surgeon to the Prime minister of India, several embassies and high commissions

STRATEGIC ADVANTAGES AND CHALLENGES

- Best healthcare site in India
- History of leadership and innovation in healthcare in Delhi
- Unique legacy of serving Delhi for five decades
- Strong values and relationship

OPPORTUNITY

The best opportunity to the organization is to create India's largest city centre medical destination (6 specialty hospitals with 1000+ beds)

The **DEPARTMENTS IN MOOLCHAND HOSPITAL** is divided into Medical & Non Medical departments

MEDICAL DEPARTMENTS:

1. Ayurveda
2. Blood bank
3. Cath Lab
4. Dental
5. Dialysis
6. Emergency
7. Endoscopy
8. Cardiac ICU
9. Imaging
10. Laboratory medicine
11. NICU
12. Nursing Services
13. OT Anaesthesia
14. Pharmacy
15. Physiotherapy
16. Speech therapy
17. Labour room
18. Cardiorespiratory-Neuro
19. PICU
20. Medical administration
21. Clinical operations
22. CTVS
23. IVF

NON MEDICAL DEPARTMENTS:

1. Administration
2. Bio Medical Engineering Services
3. Financial Analysis & Planning
4. Finance & Accounts
5. FOO / A&B
6. Food & Beverages
7. Horticulture
8. Hospitality Engineering Services
9. Hospitality Services
10. Housekeeping
11. Human Resources
12. IT
13. Laundry
14. Legal
15. Library
16. Marketing
17. Operations
18. Planning & Development

19. Projects
20. Purchase
21. Quality & Systems
22. School of Nursing
23. Security
24. Stores
25. Training & Development
26. Guest Care
27. Process Excellence
28. Audit Division
29. Performance Management Division

Programmes

Moolchand provides free OPD services to the community on daily basis and organizes free health check camp in Raghunath temple every Sunday. Health Mela is also organized on regular basis i.e. in November 2009 on Cardiology at Pragati Maidan and on orthopedics at NTPC in January 2010 recently.

FUTURE PLANS- NEW FACILITIES

1. Bed Capacity Addition
    - 60+ new beds to address growing demand
    - New G+1 building being developed on old Moolchand Clinic building footprint
2. Moolchand Cancer Hospital
    - Rs 20 crores+ investment
    - 20,000+ sq. ft. center
3. Critical Care Renovations
    - New ICU (20 beds)
    - New PICU (6 beds)
4. New Lab + Blood Bank
    - 7,500 sq. ft. expansion
    - Short term shifting of current facility to accommodate Orthopedics Clinic
5. IVF Centre
    - 6,000 sq. ft. IVF Referral Center (Biggest in India)

- Focus on developing a national center of excellence

6. New Clinics
    - 21,000+ sq. ft.
    - Multiple new specialty clinics
        - Orthopedics
        - Pediatrics
        - Eye
        - Dental
7. New Hospitals at Medcity
    - 300 bed addition (South Tower)
    - 10+ operation theatres
    - 50+ critical care beds
    - 20,000+ sq. ft. of radiology
    - Healthcare retail areas (20,000 sq. ft.)
8. Car Parking
    - Capacity addition for 800+ cars

I was basically engaged in routine rounds in OPD & IPD consisting of:–

- General OPD
- Private OPD
- Women and Children OPD
- Ground floor + NICU
- First floor + ICU + PICU
- Second floor + CTVS
- Third floor
- Old Nursing Home, and
- Medical records department.

During this routine round, I am supposed to:-

- Identify/Rectify the problem patients are facing, if any
- Verify visit of doctors

- See patient case records
- Enquire about pending MRD files, if any and rectification of deficiencies in the patient case record

Apart from the above routine activities, I also presented the review of the medical records department held during the annual departmental meeting (DRM).

Part-II

DISSERTATION REPORT

Introduction

The National Capital Territory of Delhi is spread over an area of 1,484 $km^{2.}$ National Capital Territory of Delhi (NCT), is the largest metropolis by area and the second-largest metropolis by population in India. It is the eighth largest metropolis in the world by population with more than 17 million inhabitants in the territory. The healthcare in Delhi is catered mainly by Private & government hospitals, Delhi has 7 corporate hospitals. Shri Moolchand Kharaiti Ram Hospital & Ayurvedic Research Institute (MCKRH), New Delhi is a 300 bedded multispecialty hospital. Located in the heart of city in Lajpat Nagar -3, the hospital, not only caters to the needs of large population residing in nearby areas of central and south Delhi but also receives foreign patients for treatment and cure. Moolchand is India's first JCI and comprehensive NABH (Hospital & Blood bank) accredited hospital. The excellence, innovation and quality mindset of the organization have won many Accolades/Accreditations. MCKRH is among few hospitals not only of Delhi but also of India that keeps both OPD and IPD records together because medical record of the patient is an important document which helps in effective, efficient and timely management of patients. Medical Records is an important document meant basically for recording the treatment procedure for a patient. It is important both for the patient, as well as, for the doctor. To assure quality in maintenance of records and implicit quality in service provision, medical record auditing should be performed. Medical record auditing is one of the tools of auditing to assure quality and accuracy of the medical services through reviewing medical records on the basis of focused designed parameters. It is also the primary means of evaluating the quality and appropriateness of medical care rendered, as well as a source document for statistical use in research, planning, and budgeting. Finally, it is the original-source document for financial activity involving patient care and generating hospital statistics at a single point of time. The Medical Record Department is the back bone of hospital because it has the data of patients from admission to discharge from the hospital, which helps in providing continuity of care to the patients. The Medical Record Department is located at two places viz. Ground floor of ONH building & 4^{th} floor of New IPD building. The hospital has currently Manual Medical Record system and with the increase in new patients every year, the department is planning to acquire Electronic Medical Record systems.

Objective of the study

1. To understand medical records department
2. To monitor and develop new processes for better management of patient records
3. To propose transformation of Manual Medical Records (MMR) to Electronic Medical Records (EMR)
4. To sustain the quality standards as per Joint Commission International (JCI) and National Accreditation Board For Hospitals And Healthcare Providers (NABH)
5. To suggest measures for improvement, if any

Review of literature

A medical record is a systematic documentation of a patient's medical history and care. The term 'Medical record' is used both for the physical folder for each individual patient and for the body of information which comprises the total of each patient's health history.

EVOLUTION OF MEDICAL RECORD DEPARTMENT

The **first** medical record unit was established in 1667 at St. Bartholomew's Hospital in England. This was followed by the practice of maintaining patient's register in Pennsylvania Hospital in the USA in 1752.

Historical Perspective:

The technique and procedures for setting up and maintaining medical records evolved during the late nineteenth and early centuries. Earlier the patient generally had one physician, in independent practice, who addressed most of his or her basic medical needs. This was the 'family' doctor who treated a group of patients over an extended period of time, literally from cradle to grave in many instances. He or she maintained the medical records in filling cabinets in his or her office. Each file served as a personal memorandum of the patient's medical history and as a business record for billing purposes.

With the advent of specialty and sub specialty medical care, physicians began to see only a select group of patients-whose condition or illness was the subject of the specialist's field and

expertise. In many instances, this increased the number of individuals seen in physicians' individual or group practice, but reduced the frequency of their visits.

In the present health care delivery system, there is a strong likelihood that a patient will be seen by several physicians (or nurse practitioners) in clinics or in group practices that gradually absorbed many independent practices. Today, both patients and the assortment of practitioners they may encounter during follow up visits can be virtual strangers to each other. When admitted to a hospital today, a patient might be admitted and attended to by a 'hospitalist' – a new breed of hospital-based physician. This physician may be obliged to review the notes of several prior providers of care before personally encountering, assessing, and treating each patient for the first, and perhaps only, time. And also nurses documented care they provide in the nurses' chart. Such notes were typically a very basic narrative of what had been done for the patient during a particular shift, including such events as feeding, medications and vital signs. With these expanded roles and responsibilities came a concomitant risk for increased legal liability. Nursing documentation, in various formats, became a critical method of risk management strategy. The concept of the health care team was established and the need to communicate essential patient-care information among all members of the team became paramount. The medical record became the primary means of such communication in the effort of continuity of patient care, quality control, cost control, and risk management.

ESSENTIALS OF AN EFFECTIVE RECORD MANAGEMENT

Medical Records related to different departments and healthcare services should be managed in an effective way. For future reference, for legal proof, for promoting quality research and for avoiding the mistakes, it is pertinent that the Medical Record Officer and Hospital Administrator / Manager are aware about the essentials so that the records can help substantially in fulfilling the organizational objectives.

The following is a comprehensive description of various aspects of an effective Medical Record Department

1. Well Planned: This first consideration that one finds significant in the very context is related to planning which focuses one's attention on knowing about the records of different

departments and making arrangements accordingly. If one is aware of the different types of records, it is easier to make necessary arrangements to protect and store them on the basis of their significance. One needs to give special attention on some of the records because they are found vital and important not only at present but even in future whereas one can also find records of temporary importance and may need to destroy them just after the fulfillment of their requirements. One needs to screen the records at a regular interval, specially to weed out the information not of future use. The most important thing in planning for the management of hospital records is to minimize the requirements of space and this makes it essential that the MRO needs to know about the importance of records. Arrangements related to cataloguing or indexing, protection cannot be made satisfactory unless one knows everything in detail.

2. Comprehensive: Another quality is related to comprehensiveness which makes it essential that the management of records should speak everything in itself. The task of locating the required records should not be difficult. While managing records, one needs to make suitable arrangements for records' scientific indexing and if computers are available, files are to be developed according to the requirements. Whatever the code, the language should be easily understandable. More simple and intelligent the coding and indexing, less time is required in the process of location and identification.

3. Accuracy: In the context of records management, one need to ensure that whatever the facts and figures, information made available is accurate and authentic. The accuracy and authenticity of medical records is required because it influences a number of policies and plans.

4. Time Management: Even in the context of records management, one needs to assign due significance to time management. It is quite natural that different persons, departments, agencies, organizations come to the records department for collecting the information and if they find it a time-consuming process, it would question the professional excellence of the organization.

5. Well-classified: For making records management ideal, effective and purposeful, it is pertinent that they are classified according to their utility. Some of the records are found

useful for all times whereas some of the records are useful for present only. Since it is inevitable that there are space constraints, thus it is essential that on the basis of the classification, necessary arrangements for their indexing, cataloguing and protection are made.

6. Economic: All the activities in the hospitals or healthcare organizations are required to be made cost-effective. It is in this context that one should focus on economy in the process of managing the hospital records. The motive is to protect them and locate them conveniently. The vital and important records require due attention but records of no use need to be destroyed. It is essential that the Medical Record Officer has an indepth idea of their usefulness.

7. Technology-driven: In an age of information technology, the records management also needs to be well supported by computers. This would minimize the functional responsibilities related to documentation because computers would make possible proper storing. The process of making the management of records technology-driven would also be cost-effective, both in short term and long term. To be more specific the task of collecting and recollecting the required documents, papers would be made easier if one takes the support of computers.

Value of medical record

A. To the patient:-

- The record serves as a useful reference for the doctor and other health care professionals who look after the patient when the patient is re-admitted in the same facility or elsewhere
- It serves as a source of information when the patient claims workman's compensation or medical insurance
- The medical record provides useful data, which may protect the legal interest of the patient

B. To the physician

- While a patient is in the hospital, the record serves as a document of the care given and is a means of communication between doctors and nurses and other healthcare professionals
- When the patient is re-admitted, the physician finds his previous records valuable as it gives him a summary of the diagnosis and treatment. It helps him to provide continuity of care
- After discharge, the record becomes a source of data for research and study, which will contribute to his professional advancement
- The record often helps a doctor who is wrongly accused of malpractice or negligence to prove his innocence in a law-suit. In this connection it should be remembered that an inadequate, incomplete or badly written medical record could do him a lot of harm in litigation

C. To other health care professionals

- Other health care providers also get valuable information from medical records. For their own professional or educational purposes they may have to review the medical records of patients for whom they have given care
- The records help them to plan continuity of care for the patient
- Not only doctors but other healthcare professionals like nurses, therapists, technicians etc. also may be involved in law suits or litigation. In such cases medical records can protect their legal interests

D. To the hospital (Health Care Facility)

- Whenever a patient is admitted to a hospital there is a understanding or agreement that the hospital will provide him health care. The best evidence of this care is written evidence and that is found in the medical record
- Significance of the Medical Record in Legal Proceedings:

  Medical Record has become an important legal document. 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.

  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 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.

Legal Criteria for Use of the Medical Record as Evidence in Litigation

In order for a medical record to be introduced as evidence in litigation, the following legal criteria must be met:

1. The record being presented to the court is, in fact that of the individual named as a party in the lawsuit-the patient, the plaintiff.
2. The various documents contained in the record were prepared concurrent with the events described in them, or as close to those times as possible.
3. The record was prepared and maintained in accordance with all statutory requirements and in accordance with the policies and procedures of the institution.
4. The record was prepared by persons who had direct knowledge of those events described in it.
5. The record was created during the regular course of business
6. The record was prepared and completed before litigation was initiated.
7. The documents contained in the record, either original or duplicate are, as far as possible, of a quality as to be readable and identifiable as to content and source.
8. The record was obtained legally.
    - The medical record is a valuable document to the hospital to evaluate the quality of care given to the patient. The records are used in all evaluation processes like "MEDICAL AUDIT"
    - It also helps the hospital management in planning the utilization of facilities and staff

- Medical records are essential for medical research, and health planning within the hospital

E. To educators, researchers, public health officers and national & world health organization
   - The records provide data regarding birth and death, and communicable diseases to government agencies and public health organizations. For example in many cities all hospitals are required to report confirmed or suspected cases of communicable diseases like dengue, malaria, cholera, etc. This will help to plan measures to prevent or control the spread of these diseases.

F. To insurance companies
   - The insurance companies responsible for payment of health care claims, scrutinize the records before they settle any payment claims

G. To accrediting agencies
   - Agencies which give accreditation to hospitals collect useful data from the medical record during their inspection of the hospital or healthcare organization. Medical records are indispensable for the evaluation of the quality of care given by the organization.

CUSTOMER RIGHTS REGARDING MEDICAL RECORDS:

Patients have the following rights regarding medical information that hospital maintains:-

A. Right to inspect and obtain a copy :

   To inspect and obtain a copy of medical information, patient needs to submit the request in writing for hospital records to medical administrator. Hospital may charge a fee for the cost of copying, mailing or other supplies associated the request

B. Right to amend :

   If the patient thinks that the medical information is incorrect or incomplete for eg age, address, he/she may ask to amend the information. This request for an amendment will become a legal part of medical record, to be sent out along with the rest of the record whenever a request for copies is received. No part of the original documentation in the medical record can be destroyed. To request an amendment of hospital record, the request

must be made in writing and submitted to medical administrator. In addition, patient must provide a reason that supports the request.

C. Right to request restrictions :

Customers have the right to request a restriction or limitation on the medical information that hospital uses or to disclose about the treatment, payment or health care operations.

In written request, patient must tell us-

- What information they want to limit, and
- To whom they want the limits to apply, for eg. Disclosures to spouse

D. Right to request confidential communications :

Patients have the right to request that we communicate with them about medical matters, in a certain way or at a certain location. For eg. Patient can ask that we contact them at work or by mail only.

/ELECTRONIC HEALTH RECORD (EHR)

A relatively and newer related concept to medical record is in health informatics, an Electronic Medical Record (EMR) or Electronic Health Record (EHR).

An **Electronic Medical Record** (EMR) is a medical record in digital format. In health informatics and most contexts, EMR and EHR (electronic health records) are used synonymously, but many people define an EMR as just the physician interface and EHR including both a physician and patient interface. EMR can be continuously updated.

The term has sometimes included other (HIT, or Health Information Technology) systems which keep track of medical information, such as the practice management system which supports the electronic medical record.

As per the Journal of usability studies, physicians reveal some critical usability aspects of their working environment and the systems they use. Finally, directions for EMR designs that better accommodate the needs of physician should be implemented.

Countries with wide-spread use of electronic medical records appear to have lower health care costs and better care. Many industrialized countries have improved patient care and controlled costs through the use of EMRs where they are more wide-spread than in the U.S.[1] There is certainly a complex relationship among EMR usage, quality of clinical care, and the implementation of nationalized medicine. A recent survey of 6,000 physicians in seven industrialized countries shows that very high percentages of physicians use EMRs, for example, 98% of physicians in the Netherlands and 89% in the U.K. "There are also strong correlations between high rates of EMR use and key indicators of clinical care, including access to after-hours care, the use of clinical teams to manage chronically ill patients, and the ability to track medical errors"[7].

However, there is also a common sense connection between EMR use and better care. If a patient falls ill after-hours, a physician is better able to help if an EMR is available to remotely view the patient's records. Computerized health records can be easily shared with other providers to facilitate improved care. And computers are infinitely tolerant at cross checking medical interactions to prevent physicians from prescribing medicines with drug-drug reactions or allergic reactions.

Many costly medical errors, including prescription errors, could be eliminated with electronic systems[2]. The American Medical Association enumerates eleven benefits of using an EMR system, including potential reduction in medical errors, reduced costs related to chart filing and transcription, and improved communication with other systems[3]. There is even a Presidential initiative in the U.S. to speed the implementation of EMRs to "avoid dangerous medical mistakes, reduce costs, and improve care" [4]

Physicians are often enthusiastic about the coming change. In summary, they believe that better information will lead to better treatment. To quote Michael Dotti, M.D., of North Country Family Practice, **"An EMR would enable us to keep better track of data. We could treat patients better because information would not fall between the cracks"[5].**

Patients' records are among the most basic of clinical tools and are involved in almost every consultation. They are there to give a clear and accurate picture of the care and treatment of patients and to assist in making sure they receive the best possible clinical care. They help

doctors to communicate with other doctors, with other healthcare professionals and with themselves, and are essential to ensure that an individual's assessed needs are met comprehensively and in good time.

Once implemented, EMR provides enormous benefits. Time is not lost searching for the patient's paper chart because all patient information is electronic. Time is also saved when looking through the patient's chart electronically, a faster process than scanning reams of paper. Also, physician notes and prescriptions are no longer difficult to read because they are typed. Point and click interfaces are a vast improvement over the older text-based 3270 screens. With ready access to the patient's chart, physicians can provide better care. Costs are also lower to the extent that transcriptionists and chart couriers are eliminated. EMRs are already arriving at larger clinics and hospitals and implementation at smaller facilities is inevitable.

Definition

Electronic Medical Records (EMR) or simply 'medical records in an electronic format' is a complex system consisting of critical clinical information. EMR systems have the following key features:

- Patient's Clinical information: medical history, prescriptions, allergies, diagnosis, reports, etc.
- Clinical decision support databases: databases which help in making decisions during prescription writing, drug-to-allergy database, etc.
- Orders Management: order entry, retrieval, result reviewing, etc.
- Work flow management: managing processes like appointment viewing, check-in patients, review, etc.
- Security features: for maintaining security and confidentiality of critical information.
- Electronic Prescription tool: for writing and managing prescriptions
- Patient's financial records: service bills, receipts etc.

EMR is an evolving technology that is being adopted by healthcare facilities as part of an ongoing trend to maximize efficiency and streamline functioning.

Pre-requisites[5]

When introducing EMR to the hospital environment, it is critical to establish a Hospital Information System (HIS) prepare and involve various stakeholders (internal and external) and define a clear implementation path for EMR. All components of EMR must be compliant to integrate with other existing information systems in the hospital. The other major factors to consider include:

- Ease of use: most critical, as EMR will be used mostly by clinicians, who are rather reluctant in adopting technology to be used in parallel along with their care services
- System Interoperability: capable enough to interface and interact with other information systems
- Standardization: standard compliance to avoid data loss/ inconsistency when interacting with other systems
- Work flow capacities: ideally only full solution systems should be adopted
- The sales team of the chosen vendor: a good fit is crucial for success since these are frequently long term relationships
- Vendor Services: good vendor after sales and maintenance support services are crucial

An Electronic Medical Record includes:

- Patient demographics.
- Medical history, examination and progress reports of health and illnesses.
- Medicine and allergy lists, and immunization status.
- Laboratory test results.
- Radiology images (X-rays, CTs, MRIs, etc.)
- Photographs, from endoscopy or laparoscopy or clinical photographs.
- Medication information, including side-effects and interactions.
- Evidence-based recommendations for specific medical conditions
- A record of appointments and other reminders.
- Billing records.

Advantages of EHR over MMR

- EHR provides online entry of patient records, thus the average delay of 28 days through can be minimized.
- Safe in terms of:-
    i. Termites
    ii. Misplaced/ lost files
- Supports clinical research, which allows clinical data concerning patients to be collected easily.
- Reminders about patient at point of care;
- Improves utilization of resources (i.e. lab, drugs);
- Allows remote and timely access to records such as laboratory data.
- Helps to find and organize patient records, make decisions, review past medical history quickly and can be viewed by multiple users at multiple sites.
- Electronic health records provide easy access to test results,
- Increases accuracy, quality of care, and legibility.
- EHR system will reduce frustration since records are easily accessible and paper documentation is minimized. This will reduce documentation workload which increases productivity and revenue.
- EHR systems can reduce medical errors.
- EHR systems are believed to increase physician's efficiency and reduce costs, as well as promote standardization of care. Physical storage of documents is problematic, as not all document types fit in the same size folders or storage spaces.
- EHR reduces the problem of space for storing the records. Physical records usually require significant amounts of space to store them. Paper, film, and other expensive physical media usage (and therefore cost) is also reduced with electronic record storage.
- When paper records are stored in different locations, furthermore, collecting and transporting them to a single location for review by a healthcare provider is time-consuming. When paper (or other types of) records are required in multiple locations, copying, faxing, and transporting costs are significant. Through EHR records can be viewed by multiple users at multiple sites.

In 2004, an estimate was made that 1 in 7 hospitalizations occurred when medical records were not available. Additionally, 1 in 5 lab tests were repeated because results were not available at the point of care.

Transformation from manual to electronic system: [6]

A. To be more precise, the entire hospital system that is being practiced with the manual or hybrid system has to be completely transformed into electronic by using the latest information technology for example; HIS which contains the domain functionality; flowcharts, screens, database that are developed, tested and produced as application software for implementation in order to convert a hospital into a computerized format.
B. Application Domain: The application layer to include: Patient management, Medical care, Nursing, Medical support, Administrative, Ancillary services. The information Bus deals with services. The middleware layer should include: Authorization component, Patient component, Activity component, Resource component, and Healthcare record and Knowledge component. The persistent layer related to Images, Bio-signals, alphanumeric data, Web pages.
C. While developing the electronic hospital information system, in order to achieve interoperability, portability and data exchange health care information system must apply standards. Some of the standards are as follows:HL7;HIPAA; ICD; PACS; DICOM;SNOMED; etc

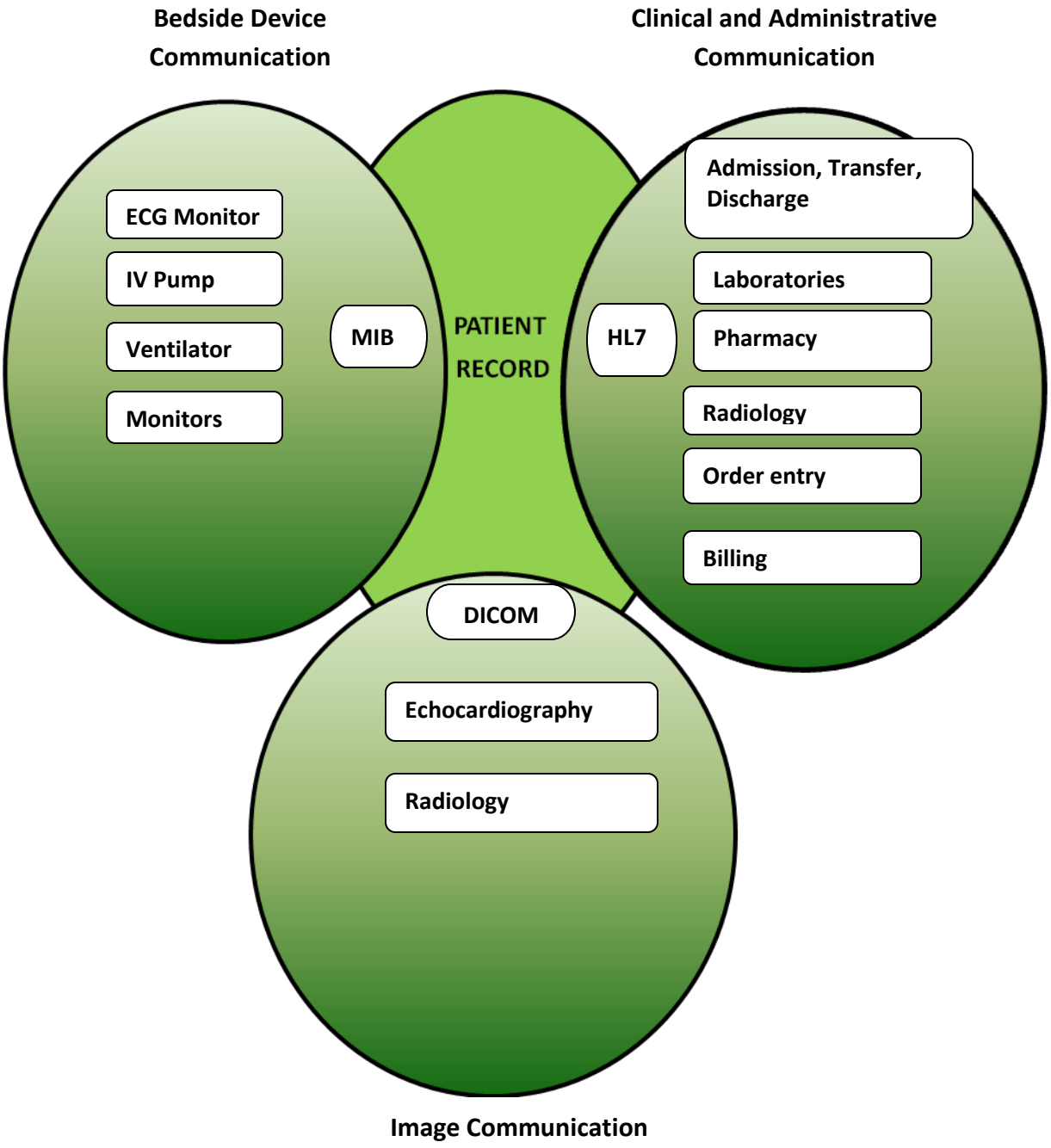


FIGURE: 1 Standards dealing with data exchange in a healthcare setting: HL7, DICOM and MIB [6]

Clinical alerts reminding system.

Drug - Drug; Drug -- Laboratory; Drug - Pregnancy

Drug - Condition; Drug - pediatric; Drug – Duplication

D. Signal processing (EEG, EMG, and ECG): Computers are useful devices for processing electrical signals from various sources, such as ECG for detection of heart dysrhythmias and EEG for analysis and detection of spike and sharp waves that can sometimes be missed by the neurologist.
E. Image Processing: Image processing (radiography, US, CT scanning, MRI SPECT/PET scanning, cerebral angiography)
F. Decision Support System: Decision support systems are real-time computerized algorithms that help physicians in their clinical practice. -specific information.
G. Provider Order Entry Systems: Computer -based provider order entry (CPOE) systems are potential benefits in terms of a improving the quality of patient care and reducing the costs.

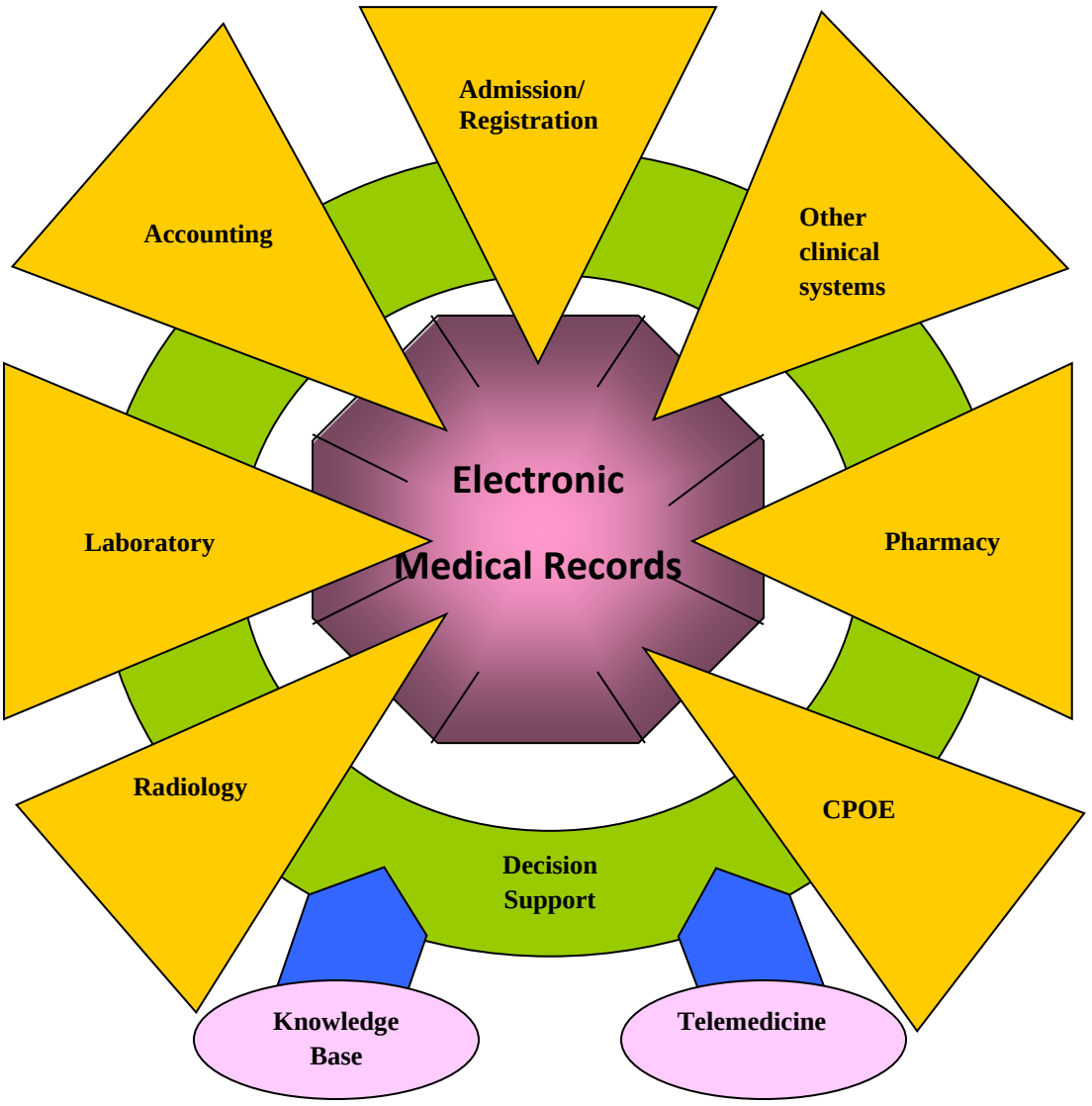


FIGURE: 2 **EMR: THE HUB OF CLINICAL INFORMATION SYSTEM**

REQUIREMENTS FOR THE IMPLEMENTATION OF EHR SYSTEMS:

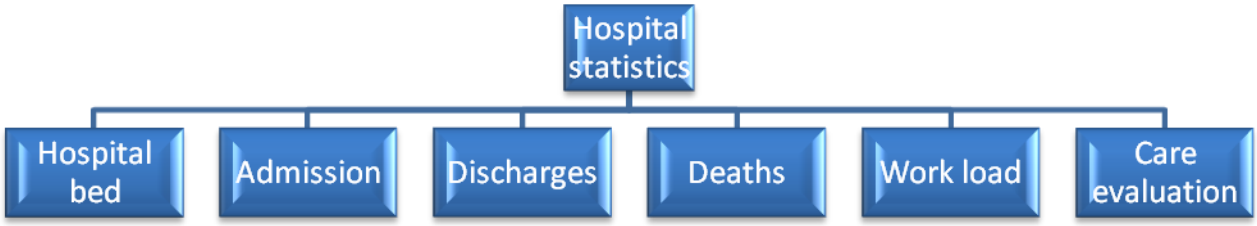
The transition from handwritten paper medical records to electronic health records is essentially linked to the following challenging issues.

- The development of a (standard) healthcare record structure within healthcare organization merging the EHR component with other health information system components
- A common medical terminology; to avoid incompatibilities and to guarantee the consistency, reusability, and sharability of the different components of a larger system.

- The increased availability of communication facilities to internal and external healthcare providers (e.g., GPs, other healthcare organizations).
- An adequate formalization of medical knowledge to accommodate users with more intelligent features.
- The availability of an audit train to facilitate the detection of data alteration and to address potential security violations
- Scalability: Multidisciplinary institutions require systems that can readily scale as the institution grows while maintaining local ownership of data.

The automatic availability of a central comprehensive information responsibility for healthcare policymakers (providers, hospital managers) to define future policies by analyzing the past on several levels.

SOME OF HOSPITAL STATISTICS GENERATED THROUGH EMR



- Average length of stay (ALOS)
- Daily census
- Maximum patients on anyone day
- Minimum patients on anyone day
- Daily Average
- Bed Occupancy Rate
- Total patient Day Care
- Bed Turnover Interval

SOME OF THE MAJOR EMR PROVIDERS IN INDIA INCLUDE:

- GE Healthcare
- IBA Health
- VEPRO
- Siemens
- Karishma Software
- Sobha Renaissance IT Pvt. Ltd.
- 21st Century Healthcare solutions
- Softlink International
- Prognosis
- Srishti Software
- CDAC
- Televital

Today, EMR is being largely used in big hospital set-ups to share information within hospital(s). This eases the burden of a physical record file and helps patients share their medical records easily with other clinicians. But it is still not easy to share EMR with other healthcare service providers due to lack of standardization and integration capabilities amongst two different EMR applications at hospitals. Format of one EMR may not be readily acceptable by the other hospital's EMR application. Despite these challenges, various corporate / large hospitals are still making stand-alone efforts to implement and use their own EMR applications. Technologies like hand-held devices, wireless connectivity are being widely used across hospitals. The management of these hospitals is all geared up to make best use of the technologies available in order to improve quality and efficiency and thus are allocating separate IT budgets. All these technological investments may not show direct cost savings or return on investments in monetary terms but they do add up to many indirect cost savings, which reflect in streamlined and efficient processes. Drivers, Restraints and Challenges

Market Drivers

For the Indian EMR market the key market drivers are:

- Cost Saving. Benefits in terms of cost savings result from space, manpower and time required to maintain paper-based records
- Process efficiency. Reduced time; as in waiting time, reporting time, administrative functions, etc. make processes more efficient
- Better work flow through accessibility and availability. The records are available anywhere, any time through the use of hand-held devices, wireless technologies and are accessible remotely
- Increase in Medical tourism. Efficient and quality processes of a hospital encourage more foreign patients to access these healthcare facilities at low costs thus promoting medical tourism
- Increasing competition amongst hospitals. With the increasing number of state-of-art healthcare facilities coming up, the competition is increasingly motivating hospitals to provide better quality to stay in business
- Increasing awareness and demand for quality healthcare. With increased healthcare awareness and changing lifestyles, a demand for quality services is compelling hospitals to provide better facilities and services

Market Restraints

- High application cost: high cost of implementing EMR is affecting hospitals' move due to budget restraints.
- Work flow Interruption: the transition to EMR systems is slow and requires a lot of dedication from all the stakeholders involved - from management (key decision makers) to end users (clinicians, nurses etc.), which could ultimately affect the normal work flow drastically.

Challenges in adoption of Electronic Medical Record (EMR)

- Attitude towards IT adoption: there are often some people in any given hospital, who show reluctance in adoption of new technologies and are against system changes.
- Security and privacy issues: the patient information flowing across the system is not controlled centrally and many system users have access to it, which makes it critical to address issues of privacy, confidentiality and misuse or mishandling. These issues are challenging and critical for the key decision makers while adopting EMR.
- Transferring paper based information into electronic (EMR) format: the transition of paper-based records into electronic format is a manual and tedious process as it takes a lot of time converting each record, keeping in mind the high-level of accuracy and authenticity required.
- Long implementation time: the implementation of EMR takes a lot of time as the system is based on the key information flowing across the hospital system and involves various levels of users.
- Employing the right team: EMR implementation usually takes a very long time so it's important to have the right team of people with the right skills required to implement the system. This is to avoid any delays in implementation, which may be caused due to lack of commitment, communication issues, infrastructure issues, time management issues, etc.

Benefits gained by implementing EMR

- Improved access to patient information, and faster, more informed decision making, since disparate data and applications are now connected across the organization.
- Improved staff productivity and better allocation of human resources, resulting in higher levels of patient service.
- Improved information accuracy due to the elimination of misfiled or misplaced documents.
- Reduction in operational and administrative costs and recovery of filing space.
- Seamless integration with external medical records and hospital registration systems.

- Electronic folder of the patient can be accessed by various departments, without having to duplicate the documents.
- Confidentiality of the reports can be maintained by giving access to only required information to authenticated users.
- Tight version control of the documents can be maintained.
- Electronic workflows can be implemented to improve the efficiency of the employees.

Some of the hospitals in India using EMR are:

- Amrita Institute of Medical Sciences, Coimbatore
- Apollo Hospital, Chennai
- Artemis Healthsciences, Gurgaon
- Christian Medical College, Vellore
- Fortis Hospital, Mohali and Delhi
- Manipal Hospital, Bangalore
- Max Devki Devi Hospital, Delhi
- P D Hinduja Hospital, Mumbai
- Ruby Hall Clinic, Pune
- Sahyadari Hospital, Pune
- Sri Sathya Institute Of Higher Medical Sciences, Puttaparthi
- Sri Sathya Institute Of Higher Medical Sciences, Bangalore
- PGIMER, Chandigarh

Methodology

1. Study of departmental manual to understand functioning and processes of the department
2. Discussion with Medical Administrator regarding functioning of Medical Records Department.
3. Discussion with the personnel in different departments i.e. Admission & Billing department, Nurses, House boy and MRD technician.

4. Development of interventional strategies and discussion with medical administrator for implementation of new process.
5. Implementations of the new process with time frame and analysed after 15 days.
6. Audit of new process of MRD.

Observations

The Medical Record Department of Shri Moolchand Kharaiti Ram Hospital & Ayurvedic Research Institute (MCKRH), New Delhi, is located at two places viz.Ground floor of ONH building & 4^{th} floor of New IPD building.

MCKRH is the India's first JCI & comprehensive NABH accredited hospital which is among few hospitals not only of Delhi but also of India that keeps both OPD and IPD records together because medical record of the patient is an important document which helps in effective, efficient and timely management of patients. There are around 2, 08,288 medical record files from 2005 to 2010 in the department which are properly stored and maintained. With the increase in new patients every year, the department is planning to acquire Electronic Medical Record systems. The files in MRD are arranged according to bill no.

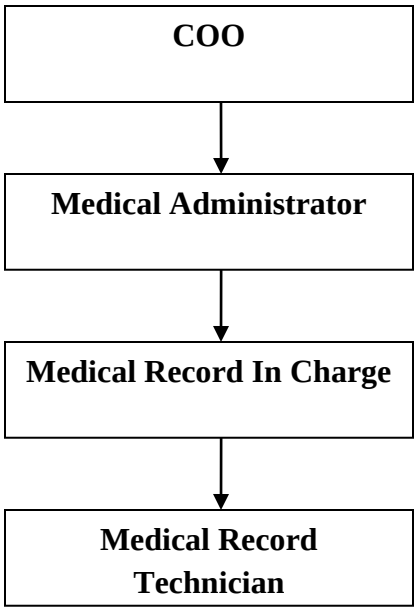


FIGURE: **3 ORGANOGRAM - MEDICAL RECORDS DEPARTMENT**

Departmental Mission

- To maintain a modern and scientific record system that is complete, adequate and accurate data storage system.
- To outline and implement the system of record keeping for safe storage and quick retrieval.
- To train the concerned staff about the importance and uses of medical record in efficient patient care.

TABLE: 6 OPD & IPD

FINANCIAL YEAR	No. OF PATIENTS	
	OPD	IPD
2005-2006	36654	7076
2006-2008	161463	7241
2007-2008	187270	7648
2008-2009	234168	8686
2009-2010	250961	10330

FIGURE: 4 OPD GRAPH

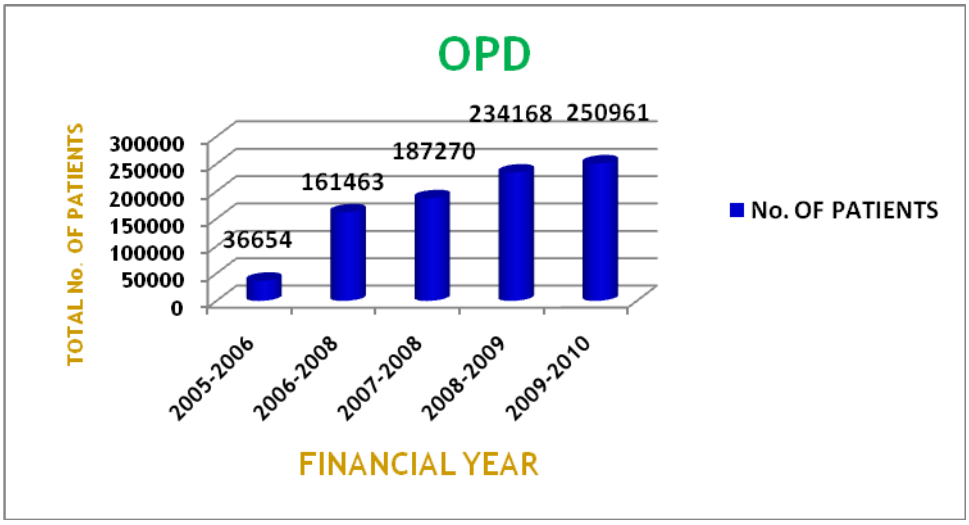
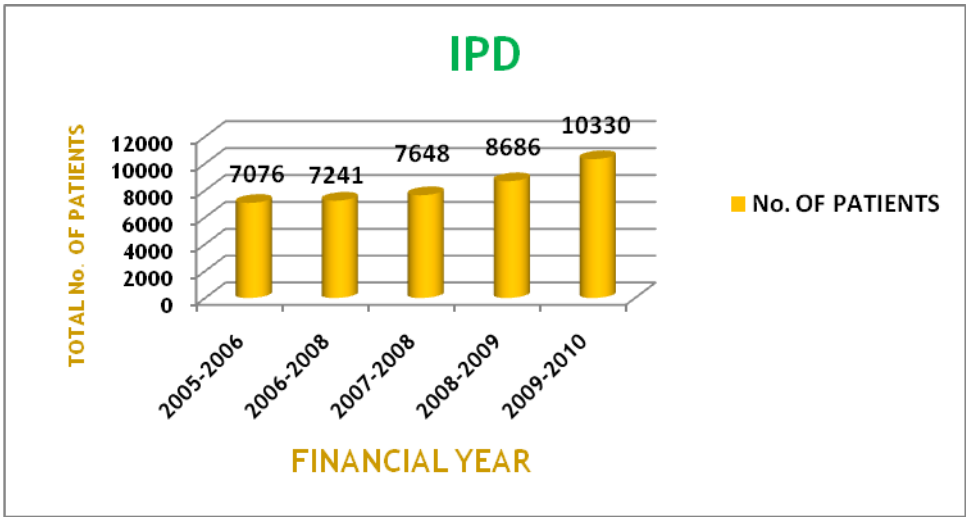


FIGURE: 5 IPD GRAPH



MAIN PURPOSE OF MEDICAL RECORD

"The main purpose of medical record is to accurately and adequately document a patient's life and health history, including past and present illnesses and treatment with emphasis on the events affecting the patient during the current episode of care." (Edna Huffman)

Patient case record

Currently, the dimensions of Patient case record in MRD are:-

- Length- 27 cms.
- Breadth- 21 cms.

The size of the documents which are to be kept in the patient case records are bigger (i.e. Length-30 cms. & Breadth- 21 cms.) than the size of the file. The hospital maintains the record of OPD and IPD for five years, and death & MLC records forever. So in order to maintain and sustain the standard of care provided to the patients it requires modification, so that the documents in the file does not come out and get torned. Though the files in MRD are stored safely but still the hospital cannot take chance of misplacing the document as each and every document of the patient case record is vital. The diagnosis, provisional diagnosis & ICD coding are written on a piece of paper and stapled on the cover page of file and the bill no. is written on inner part of front cover page but it should be on the front of cover page because the files in MRD are arranged according to Bill No. So, it will be easier to retrieve the patient case record and the time taken to retrieve can also be minimized.

PATIENT CASE RECORD

Hospital Number……..

Particulars of	Date	Time	Initials

MLC No.:

Allergic to:

Blood Group:

Any Other Precaution:

Status of Discharge :

Ward No…… Bed No…….. Category…….

Patient's Name……..

S/o, D/o, W/o……

Age: ..…… Sex: ……

Address: ……

Doctor's Name:…… Doctor's Unit Code: …….

Contact Person:…… Phone No…… Relationship with Patient …….

Shifting Details :

Note No.	From	To	Date	Time

File Movement	In	Out	Initials
Ward			
Pharmacy			
Billing			

Patient Type :

Credit / Cash / Staff :

Direct / Consultant :

Need Conveyance at the time of Discharge

FIGURE: 6 FORMAT OF PATIENT CASE RECORD (COVER PAGE)

Processes in MRD:

At present there are 6 processes in the department.

1. Access to medical records
2. Issue of Medical Records
3. Medical record of Inpatients
4. Record of continuity of care
5. Maintaining confidentiality, integrity and security of information
6. Inpatient file issue policy

I. Access to medical records: -

During Inpatient Care: Access to patient case record is as follows

- Treating Consultants
- Resident Doctor
- Floor Nurse
- Floor Nurse In Charge
- Dietician
- Physiotherapist
- Floor Coordinator
- Medical Administrator
- Deputy Nursing Superintendent

During Outpatient Visits

- Treating Consultants
- OPD Nurse
- OPD Nurse In Charge
- Patient Concierge
- Medical Administrator
- Deputy Nursing Superintendent

In MRD

- Medical Administrator
- Treating Consultants
- Resident Doctor
- For TPA cases
- Insurance company representative

II. Issue of Patient Case Records

The patient case record can be issued after getting approval from approved authority i.e. Medical Administrator or MRD Head after filling the loan slip.

III. Medical Record of In Patients

The patient case records are given a HUID No. at the time of admission at OPD, IPD and Emergency Department. Every entry is dated, timed and signed. The documents in the file are arranged according to IPD checklist. After discharge of patients, the patient case record is sent to Admission and Billing Department for submission of remaining amount to be paid and then again the files are sent back to the respective floors or area to complete if any deficiency is there in order to complete the file. Afterwards, the completed patient case records are sent to MRD. Then the MRD technician scrutinizes the patient case record. The technician fills the deficiency toolkit and the concerned person is asked to come to the department and complete the file on their part. After this ICD coding is done according to ICD-10 and then the completed patient case records are arranged on racks according to bill number.

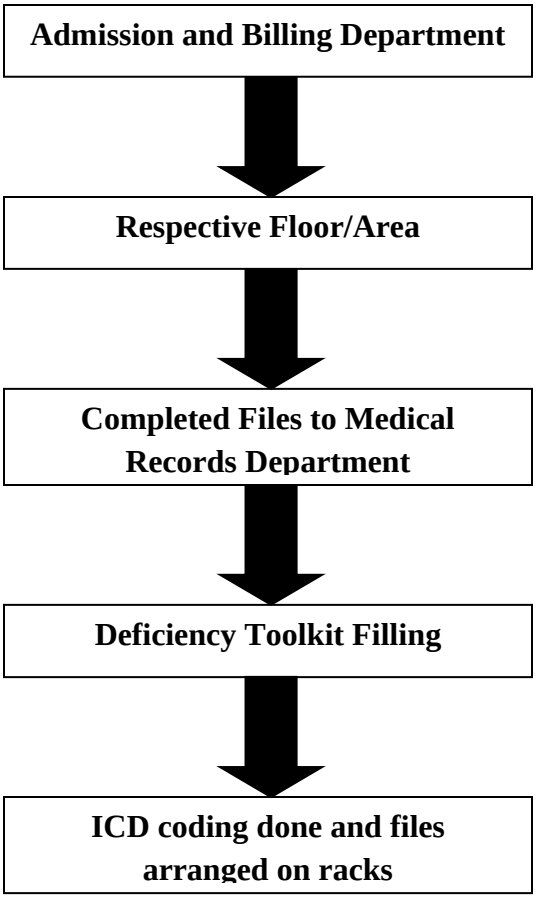


FIGURE: **7 PROCESS OF FLOW OF PATIENT RECORDS**

IV. Record of continuity of care

I. MRD receives computer generated report from Admission and Billing department and patient case record from different floors/area after making entries in MRD register. The birth and death registrations are done online at the MCD site.

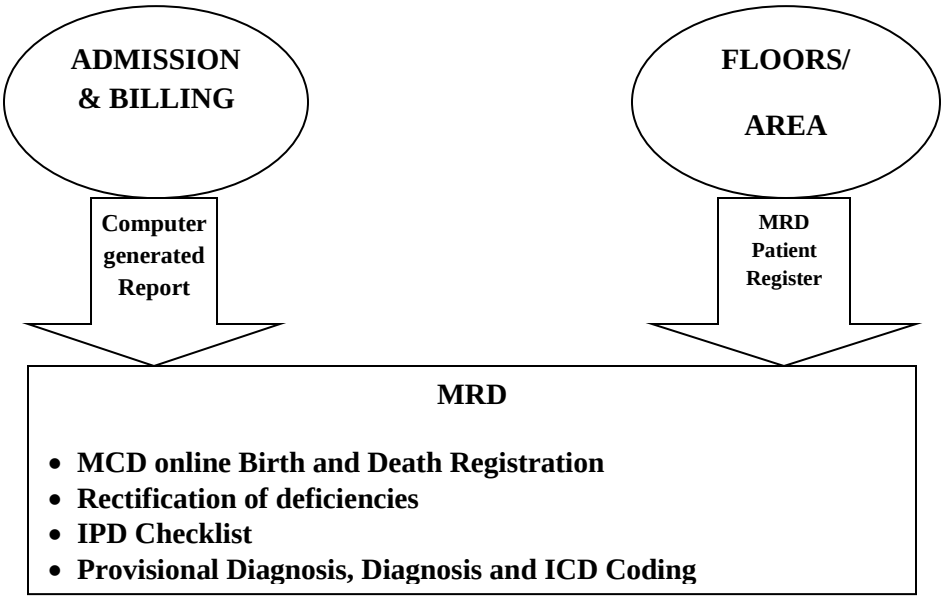


FIGURE: 8 RECORD OF CONTINUITY OF CARE

II. For transfer of patient to other hospital, the patient record should contain

- Date of transfer
- Time of transfer
- Reason of transfer
- Name of receiving hospital

V. Maintaining confidentiality, integrity and security of information

1. Medical records:-

- Are always under lock and key
- Issued to authorized persons only
- Issued after obtaining written permission of medical administrator
- Issued after obtaining receiving persons signature

2. Keys of MRD are submitted to security at emergency gate after closing the department
3. Pesticide control is done
4. Fire extinguisher is checked periodically

5. Access to MRD is limited
6. **Patient**: – Patient himself/herself can request for photocopies of his/her records.
7. **Legal authorized persons**: - Only on written authorization from patient or from legal authority in case of patient's absence/death.
8. **Media/Police: -** Only Medical Administrator or authorized person for the same can release the selected information on written request.
9. **Insurance companies**: - Only on written consent from patient and written permission from Medical administrator.
10. **Court of law: -** The court can ask patient case record through a summon, as medical record is admissible as document of evidence as per Indian evidence act.
11. **Government agencies**: - Required data eg. Regarding communicable and modifiable diseases through notification.
12. **Education and Research**: - The contents of patient case record can be used for education and research where no reference is made to any particular individual and patient identity and confidentiality is maintained.

RETENTION PERIOD OF PATIENT CASE RECORDS IN MRD AT MOOLCHAND HOSPITAL

Table: 7 RETENTION PERIOD OF PATIENT CASE RECORDS

S. No.	Patient Case Records	Duration
1	OPD	5 years
2	IPD	5 years
3	MLC	Forever
4	Death	Forever

DISPOSAL OF PATIENT CASE RECORDS

A public notice is given in the national newspaper stating the patient case record of specific time period which will be destroyed after the notification of 30 days from the date of publication in the newspaper. Then the patient himself/herself or the representative of patient can contact MRD within 30 days after publication in national newspaper for retrieval of data of stipulated time period. The medico legal case records and death case records are not

disposed, and are kept forever. The patient case records are submitted to the general store and then disposed as per the hospital policy.

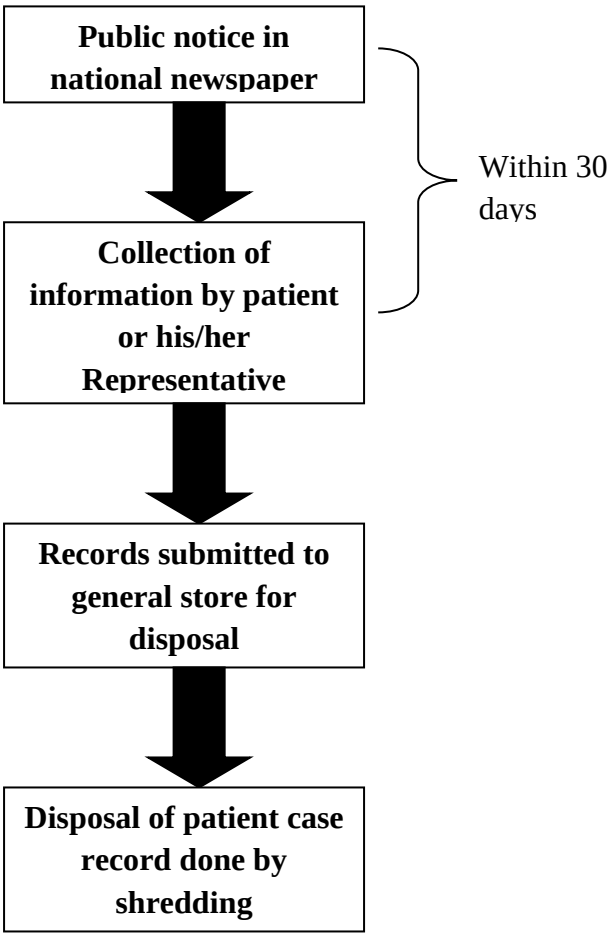


FIGURE: 9 PROCESS OF DISPOSAL OF PATIENT CASE RECORDS

VI. Inpatient file issue policy

The patient case records are issued to doctor-in-charge in cases when the same patient gets admitted or requires medical certificate.

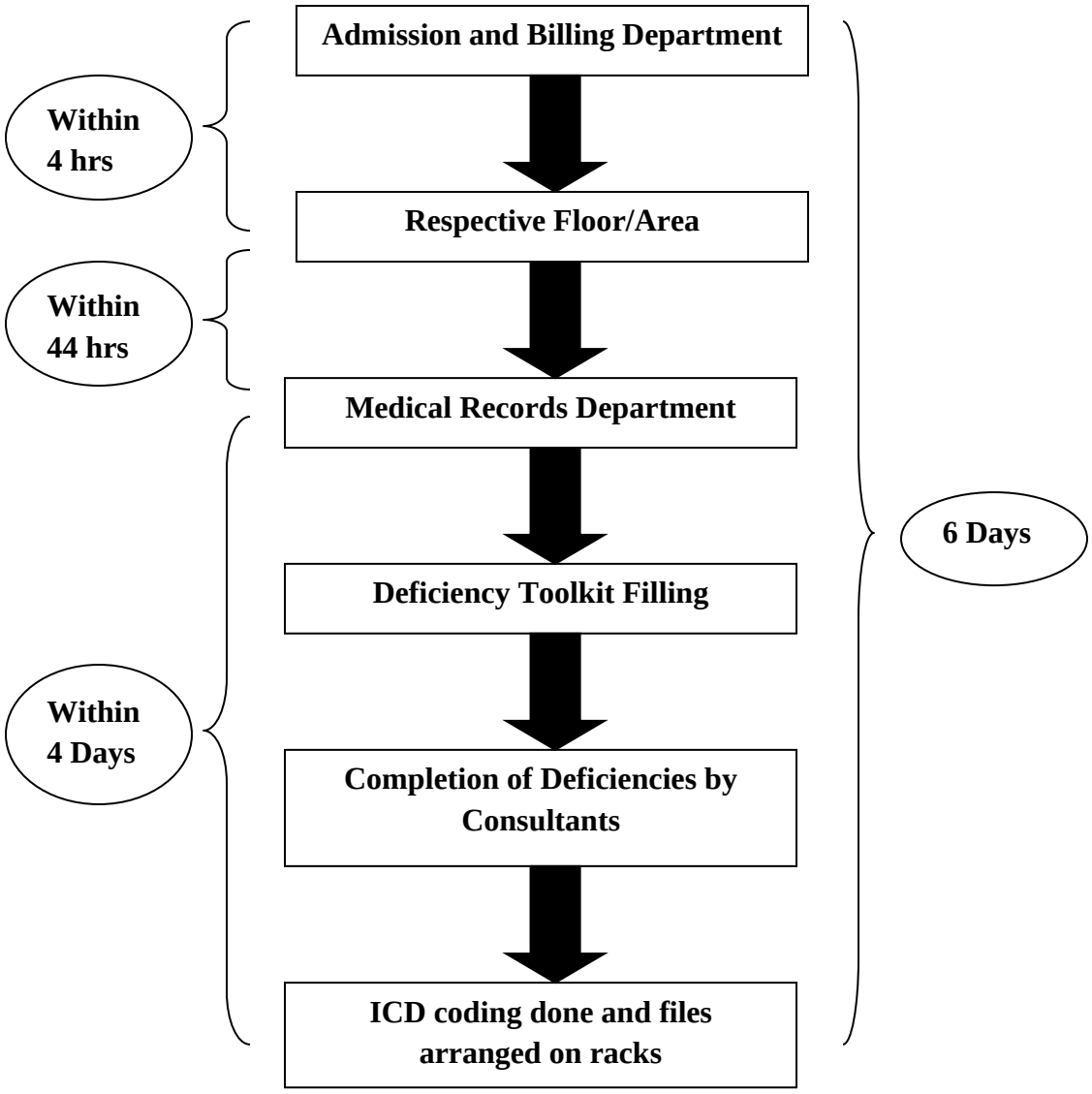


FIGURE: **10 NEW PROCESS OF FLOW OF PATIENT RECORDS**

PROBLEM:-

The average number of days taken for movement of files from Admission & Billing department to Medical Records Department is more time consuming (28 days).

Objective

To reduce patients file movement time from A&B to MRD department by 64%

1. IDENTIFICATION OF PROBLEM:

Brainstorming was done to understand the various problems occurring in the organization:

- ❖ Lack of coordination between departments
- ❖ Delay from A&B department
- ❖ Delay from floors
- ❖ Responsibility not defined
- ❖ Negligence of staff
- ❖ Man power shortage

2. SELECTION OF PROBLEM

The identified problems are classified in A, B, C types:

Type A

•Lack of coordination between departments

Type B

•Delay from A&B department

•Delay from floors/areas

• Responsibility not defined

•Negligence of staff

Type C

•Shortage of manpower.

3. DEFINE THE PROBLEM:

1. What (activity to be done) : To reduce patients file movement time from A&B to MRD department by 64%
2. By how much (reduction or increase by %): by 64%.
3. Data Collection Using : Check Sheet

   Fifty samples of patient case record were taken randomly from MRD register of different floors/area between the months of December & March and were analyzed.

4. ANALYSIS OF THE PROBLEM:

The theme has been selected on the following basis:

a. Lack of coordination between departments

- Monitoring not done.
- Responsibility was not defined.
- Negligence of staff.
- Staff was not trained.

b. Delay from A&B department.

- Non-availability of HK boy.
- Responsibility was not defined.
- Negligence of staff.
- Staff was not trained.

c. Delay from floors/areas

- Non-availability of HK boy.
- Responsibility was not defined.
- Negligence of staff.
- Staff was not trained.

d. Negligence of staff

- Staff was not trained.

5. IDENTIFYING CAUSES:

This step entails analyzing causes by means of a:

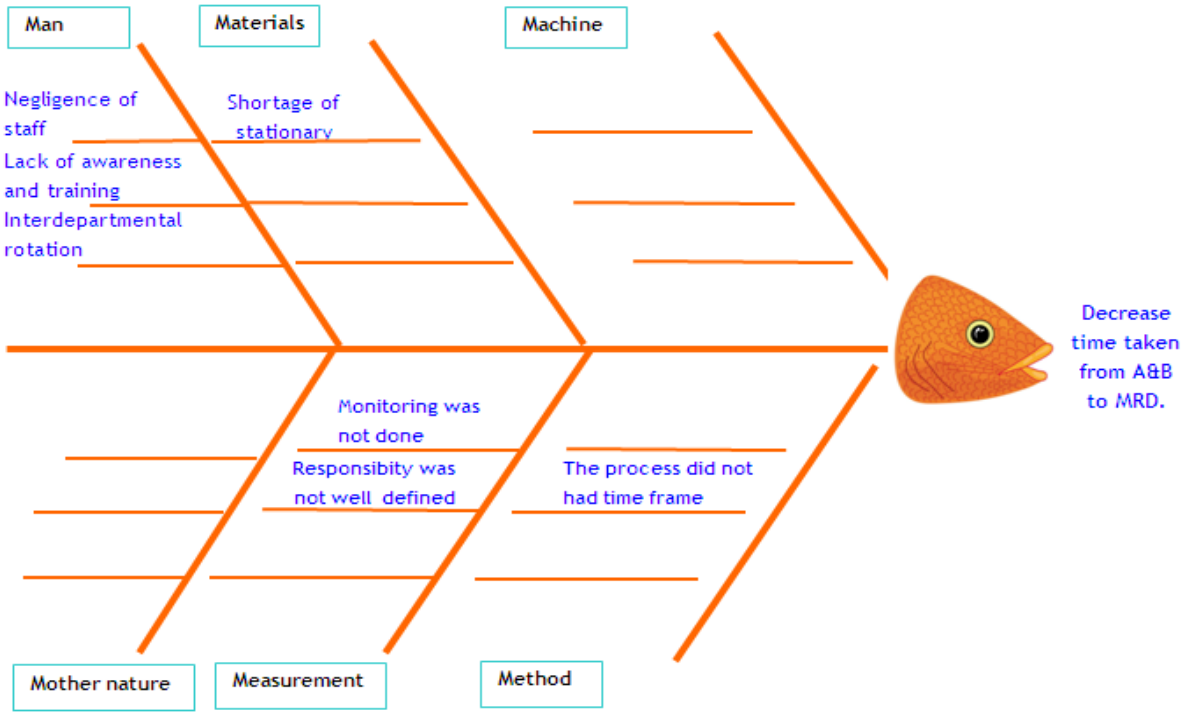
A. Histogram

TABLE: 8

DEFECTS	FREQUENCY
Delay from A&B department	**50%**
Delay from floors	**30%**
Negligence of staff	**20%**

B. **Fish bone diagram or a cause & effect diagram**

FIGURE: 11

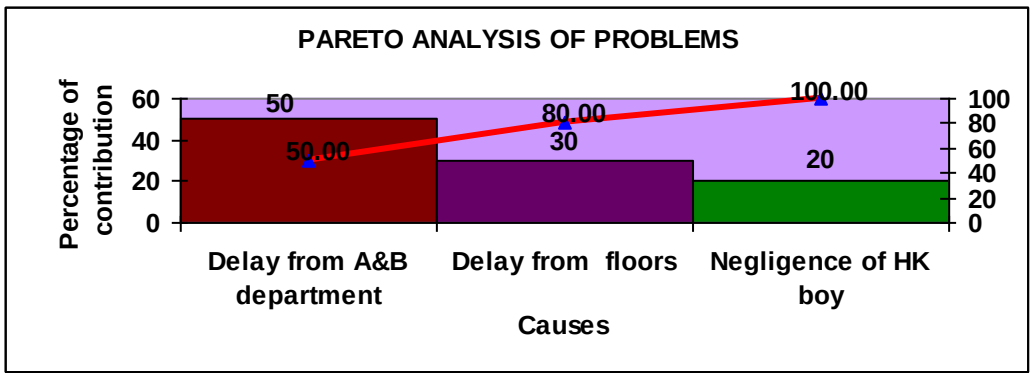


C: Pareto Diagram:

TABLE: 9

DATA TABLE		
CAUSES	**FREQUENCY**	**CUMULATIVE %**
Delay from A&B department	**50**	**50.00**
Delay from floors	**30**	**80.00**
Negligence of HK boy	**20**	**100.00**

FIGURE: 12 PARETO ANALYSIS OF PROBLEM



6. FINDING ROOT CAUSES ANALYSIS (4W 1H TOOL)

FIGURE: 13 ROOT CAUSE ANALYSIS

6. FINDING OUT THE ROOT CAUSES:						
DESCRIPTION						
		Why ? (4 whys)	What ?	Who ?	By When ?	How?
S. No.	Problem	Why did the problem arise?	What can be done to solve the problem?	Who will be responsible for execution?	suggested solution to be implemented?	How will the problem be solved?
1	Lack of coordination between departments	• Monitoring not done. • Responsibility was not defined. • Negligence of staff . • Staff was not trained.	1)Toolkit Patient Case Recore Tracker is made. 2)On job training provided.	Dr. Dhirendra Kumar	15 April'10	1)Toolkit Patient Case Recore Tracker is made. 2)On job training provided.
2	Delay from A&B department.	• Non-availability of HK boy. • Responsibility was not defined. • Negligence of staff . • Staff was not trained.	1)On job training provided. 2) Responsibility defined.	Dr. Dhirendra Kumar	16 April'10	1)On job training provided. 2) Responsibility defined.
3	Delay from floors/areas.	• Non-availability of HK boy. • Responsibility was not defined. • Negligence of staff . • Staff was not trained.	1)On job training provided. 2) Responsibility defined.	Dr. Dhirendra Kumar	15 April'10	1)On job training provided. 2) Responsibility defined.
4	Negligence of staff.	• Staff was not trained.	1)On job training provided.	Dr. Dhirendra Kumar	16 April'10	1)On job training provided.

Page 1

7. DEVELOPING SOLUTIONS

The following implementations were done:

• Toolkit for Patient Case Record Tracker is made.

FIGURE: 14 PATIENT CASE RECORD TRACKER

Patient Case Record Tracker

Target: Time taken from admission and Billing to MRD should be within 48 hrs(A-E)				Target: Time taken from admission and Billing to Floor should be within 4 hrs (A-C)					Target: Time taken from Floor to MRD should be within 44 hrs (D-E)									
									Floors									
S.No.	HUID No.	Patient name	Room No/ Bed No.	Floor / Area	Discharge of Patient (A)		File left from the Admission and billing department (B)		In (File received from A&B) (C)		Gap between (C-A)	Out(File left) from floor to MRD (D)		Medical Records Department (File received) (E)		Gap between (E-D)	Gap between (E-A)
					Date	Time	Date	Time	Date	Time		Date	Time	Date	Time		

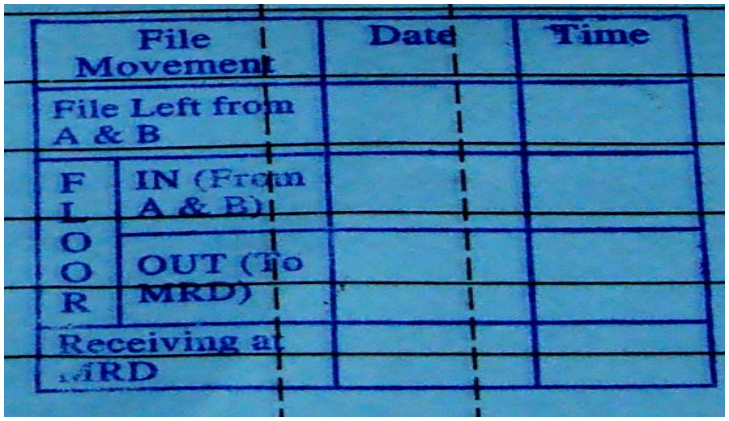
Page 1

• On job training provided

• Responsibility defined

• New rubber stamp is introduced

FIGURE: 15 RUBBER STAMP



8. FORESEEING POSSIBLE RESISTANCE

Possible resistance was anticipated from the A&B Department, nursing staff and MRD technicians on duty as their work has increased

9. TRIAL IMPLEMENTATION AND CHECKING

TABLE: 10

DATA TABLE FOR TOTAL FACTORS			
S. No	Time duration	11 Dec'09- 12 Mar'10	11 Apr'10-30 Apr'10
1	Delay from A&B department	50%	30%
2	Delay from floors	30%	10%
3	Negligence of HK boy	20%	6%

FIGURE: 16

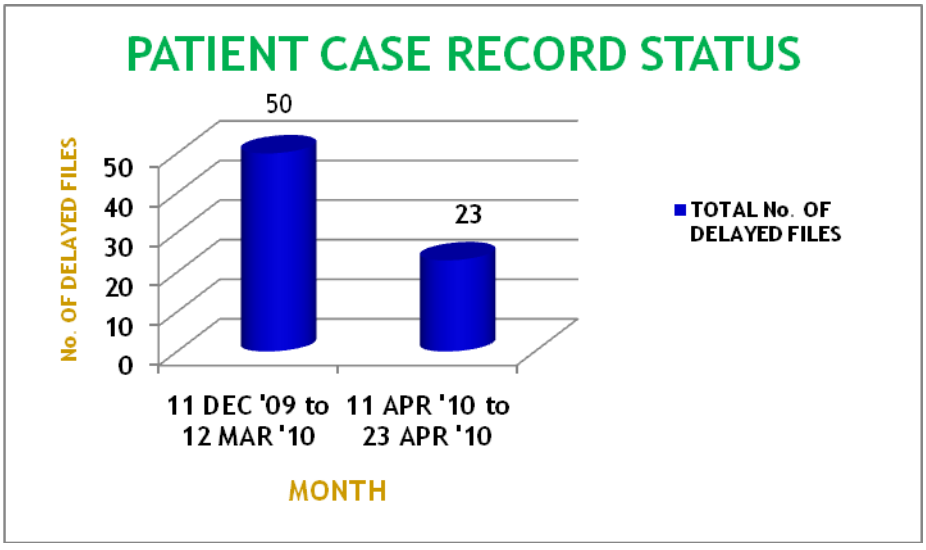
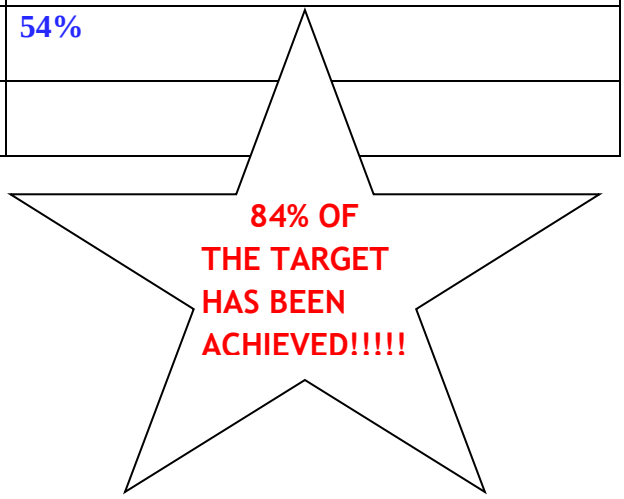


TABLE: 11

	Target	After implementation of countermeasures
What?	**To reduce patients file movement time from Admission & Billing to Medical Records Department by 64%**	**• Toolkit for Patient Care Record Tracker** **• On job training provided** **• Responsibility defined** **• New stamp is introduced**
By How much?	**64 %**	**54%**
By When?	**By 30 Apr'2010**	



10. REGULAR IMPLEMENTATION

The following countermeasures discussed were successfully implemented through formulation of appropriate policies.

11. STANDARDIZATION

1) The Medical record department - Technician is responsible for monitoring the details of movement the files from A&B to MRD.

2) To fill the data in toolkit by 5:00PM daily

12. FOLLOW UP/REVIEW

Periodic audits to ensure the above given details is done.

TABLE: 12 AUDIT FORMAT

(Data to be filled by Process Excellence division)

MQC Circle Report Number: **51** **Registration Date** 29/03/2010

To reduce the patients files movement time from A&B to MRD department by 64%.	**AUDIT PERIOD**	**DEPT**	**LEADER**	**MANAGER**
	May'2010	Medical Admin.	Dr. Dhirendra kumar	Dr.Madhu Handa

PROJECT MANAGEMENT CODE: ☐ AOM □ TPM ☐ SDM □ HRDM □ SHEM ☐ QSM □ QAM □ IT & OM ☐ FM √ MM □ CRM ☐ PM

PROJECT MONITORING CODE: ☐ Quality√ ☐ Cost ☐ Delivery time√ ☐ Safety □ Morale

Score 1 - No compliance - Major Non-conformity,

2 - Sketchy compliance. Not effective - Major Non-conformity

3 - Single observed lapse / discipline not observed - Minor Non-conformity

9 - Very high compliance - Observation may be given.

Criticality: 1 - Very Low, 2 - Moderate, 3 - Very High

Specific Points for

S.N	**Checkpoints**	**C**	**Auditors Comments**	**Project score**
1	Patient case record toolkit must be monitored			**1 2 3 4**
2	Awareness must be required to all A&B, Nursing staff as well as MRD technician about Patient case record process			**1 2 3 4**
3	CAPA must be done for same problem.			**1 2 3 4**

Common Points:-

S.N	Checkpoints	C	Auditors Comments	Project score
4	Does project maintain its objective?			**1 2 3 4**
5	Does project defined all procedures are followed? (Check the documentation)			**1 2 3 4**
6	Does all the control points are reviewed and implemented effectively as per time limit?			**1 2 3 4**
7	Do all users have proper understanding of different procedures and control points defined in the project?			**1 2 3 4**
8.1	Theme selection			**1 2 3 4**
8.2	Activity Planning			**1 2 3 4**
8.3	Understanding situation and setting targets			**1 2 3 4**
8.4	Analyzing cause			**1 2 3 4**
8.5	Considering countermeasure			**1 2 3 4**
8.6	Implementation of countermeasures			**1 2 3 4**
8.7	Checking results			**1 2 3 4**
8.8	Standardization and establishing control			**1 2 3 4**
9	Does Control measure documentation is under QMS control?			**1 2 3 4**
10	Are effected people aware of new procedure / documentation?			**1 2 3 4**
11	What is overall %age of team attendance (Min 70%) in review meetings?			**1 2 3 4**

Project Effectives % = $\frac{\sum (a) \times (c)}{\sum (c) \times 4} \times 100 =$

Name of Auditor: _____ Signature of Auditor_____

REPORTS SENT FROM MRD TO GOVERNMENT AGENCIES ON MONTHLY BASIS

a. Information regarding snake bite
b. Report of MTP cases
c. Monitoring of sex ratio at birth
d. Report of Cholera/Plague cases
e. Report of Malaria cases
f. Report of Dengue cases
g. Information regarding Maternal & Child welfare
h. Reports regarding institutional delivery
i. Report of IOL cataract surgery
j. Morbidity report

QUALITY STANDARDS IN MRD AT MOOLCHAND

Moolchand is India's first JCI and comprehensive NABH (Hospital & Blood bank) accredited hospital. NABH is accredited by ISQua: International society for quality in healthcare. Our excellence, innovation and quality mindset have won us many accolades / accreditation including ISO 9001: 2000, ISO 27001 and ISO platinum. In order to sustain the Quality standards in medical records department, the measurable elements in the table- 13 are in accordance with JCI/NABH standards. These measurable elements are followed with given responsibilities in the departmental manual of MRD.

TABLE: 13 JCI/ NABH CLAUSES[8,9]

S. No.	CLAUSE OF JCI / NABH	MEASURABLE ELEMENT
1.	**Management of communication and information (MCI)** **A. MCI 7** :- The Patient (s) record is available to the care providers to facilitate the communication of essential information **B. MC19.2**:-Organization policy identifies those authorized to make entries in the patient clinical record and determines the record's content and format.	• Access during In-patient care • Access for Out-patient visits
2.	**Access to care and Continuity of care (ACC)** **ACC.3.2**:-Patient records contain a copy of the discharge summary.	The organization has a complete and accurate medical record for every patient
3.	**PRE.2.j** (Patient rights and education) Patient and family have a right to have an access to his/her clinical records. **IMS.1.a** (Information Management System) The information needs of organization are identified and are appropriate to the scope of the services being provided by the organization and the complexity of the organization. **IMS.1.b** Policies and procedures to meet the information needs are documented.	Access of patient case records
4.	**IMS.3.a**	The organization has a complete

	Every medical record has a unique identifier.	and accurate medical record for every patient
5.	**IMS.3.b** Organization policy identifies those authorized to make entries in medical records.	Only authorized persons are allowed to make entries in medical record. This is applicable in all concerned departments eg. Admission & Billing, Nursing, Hospital Diet Services, Diagnostic services, Physiotherapy Department, Resident Doctors, Consultants.
6.	**IMS.3.c** Every medical record entry is dated and timed	The organization has a complete and accurate medical record for every patient
7.	**IMS.3.d** The author of the entry can be identified.	The author of the entry can be identified by his/her name below the signature
8.	**IMS.3.e** The contents of medical record are identified and documented	The organization has a complete and accurate medical record for every patient
9.	**IMS.3.f** The record provides an up-to-date and chronological account of patient care.	The organization has a complete and accurate medical record for every patient
10.	**IMS.1.b** Policies and procedures to meet the information needs are documented. **IMS.4.e** In case of death, the medical record contains a copy of the death certificate indicating the cause, date and time of death	The contents of patient case record are arranged according to the IPD file checklist

11.	**IMS.4.b** Operative and other procedures performed are incorporated in the medical record.	MRD technician will recheck the contents of the patient case record according to IPD checklist and update the MRD patient register
12.	**IMS.4.a** The medical record contains information regarding reasons for admission, diagnosis and plan of care.	The patient case record should contain all information as per IPD checklist concern with the case
13.	**IMS.4.d** The medical record contains a copy of discharge note duly signed by appropriate and qualified personnel.	If any deficiency is found on the part of consultant then MRD technician will call the concerned consultant and ask him/her to complete patient case record within 48 hrs
14.	**IMS.4.c** When patient is transferred to another hospital, the medical record contains the date of transfer, reason for the transfer and the name of receiving hospital.	In case patient is transferred to another hospital ensure that the date of transfer, time of transfer, the reason for the transfer and the name of receiving hospital are mentioned in patient case record
15.	**IMS.4.f** Whenever a clinical autopsy is carried out, the medical record contains a copy of the report of the same.	In case when there is a legal requirement of post mortem, dead body is handed over to the police who transfer it to designated center for post mortem. The copy of the post mortem is kept by the designated center and one copy is with police.
16.	**IMS.5.a** Documented policies and procedures exist for maintaining confidentiality, security	Ensure that the documented policies and procedures exist for maintaining confidentiality,

	and integrity of information.	security and integrity of information.
17.	**IMS.5.b** Policies and procedures are in consonance with the applicable laws. **IMS.1.c** These policies and procedures are in compliance with the prevailing laws and regulations.	Policies and procedures for maintaining confidentiality, security and integrity of information are in consonance with the applicable laws.
18.	**IMS.5.f** Privileged health information is used for the purposes identified or as required by law and not disclosed without the patient's authorization.	No other person other than the patient himself/herself or legally authorized person will be allowed to review the medical records of the patient.
19.	**IMS.5.g** A documented procedure exists on how to respond to patients/physicians and other public agencies requests for access for information in the medical record in accordance with the local and national law. **IMS.1.d** All information management and technology acquisitions are in accordance with the policies and procedures.	Only authorized persons will be allowed to access the medical record of the patient
20.	**IMS.1.e** The organization contributes to external data bases in accordance with the law and regulations.	**Court of law: -** The court can ask patient case record through a summon, as medical record is admissible as document of evidence as per Indian evidence act.

		Government agencies: - Required data eg. Regarding communicable and modifiable diseases through notification.
21.	**IMS.4.g** Care providers have access to current and past medical records.	The contents of patient case record can be used for education, research where no reference is made to any particular individual and patient identity and confidentiality is maintained
22.	**IMS.6.b** The policies and procedures are in consonance with the local and national laws and regulations **IMS.1.c** The policies and procedures are in compliance with the prevailing laws and regulations	The policies and procedures for retention of patient case records are in consonance with the local and national laws and regulations
23.	**IMS.1.d** All information management and technology acquisitions are in accordance with the policies and procedures. **IMS.5.c** The policies and procedures incorporate safeguarding of data/record against loss, destruction and tampering. **IMS.6.a** Documented policies and procedures are in place on retaining the patient's clinical records, data and information.	Retention period of patient case records:- OPD- 5 years IPD- 5 Years MLC- Forever Death- Forever

	IMS.6.c The retention process provides expected confidentiality and security.	
24.	**IMS.6.d** The destruction of medical records, data and information is in accordance with the laid down policy.	Disposal of patient case record

To sustain the quality standards in the Medical records department (MRD) – Firstly, the targets are defined on annual basis and are reflected through 'A' indicators which comprises of deficiency toolkit, ICD coding toolkit etc. These toolkits are updated by Medical records department (MRD) on daily basis and are reviewed/monitored by the performance management division (PMD) department. The same is reflected/reviewed through power point presentation in Department review meeting (DRM) on monthly basis. If the defined targets are achieved then the new targets are given to the department in the next financial year. If the defined targets are not achieved then CAPA (Corrective Action Preventive Action) analysis of the same is done on monthly basis and is reviewed in the DRM.

Apart from this, Departmental annual audit is conducted in order to sustain quality standards as per JCI/NABH clauses.

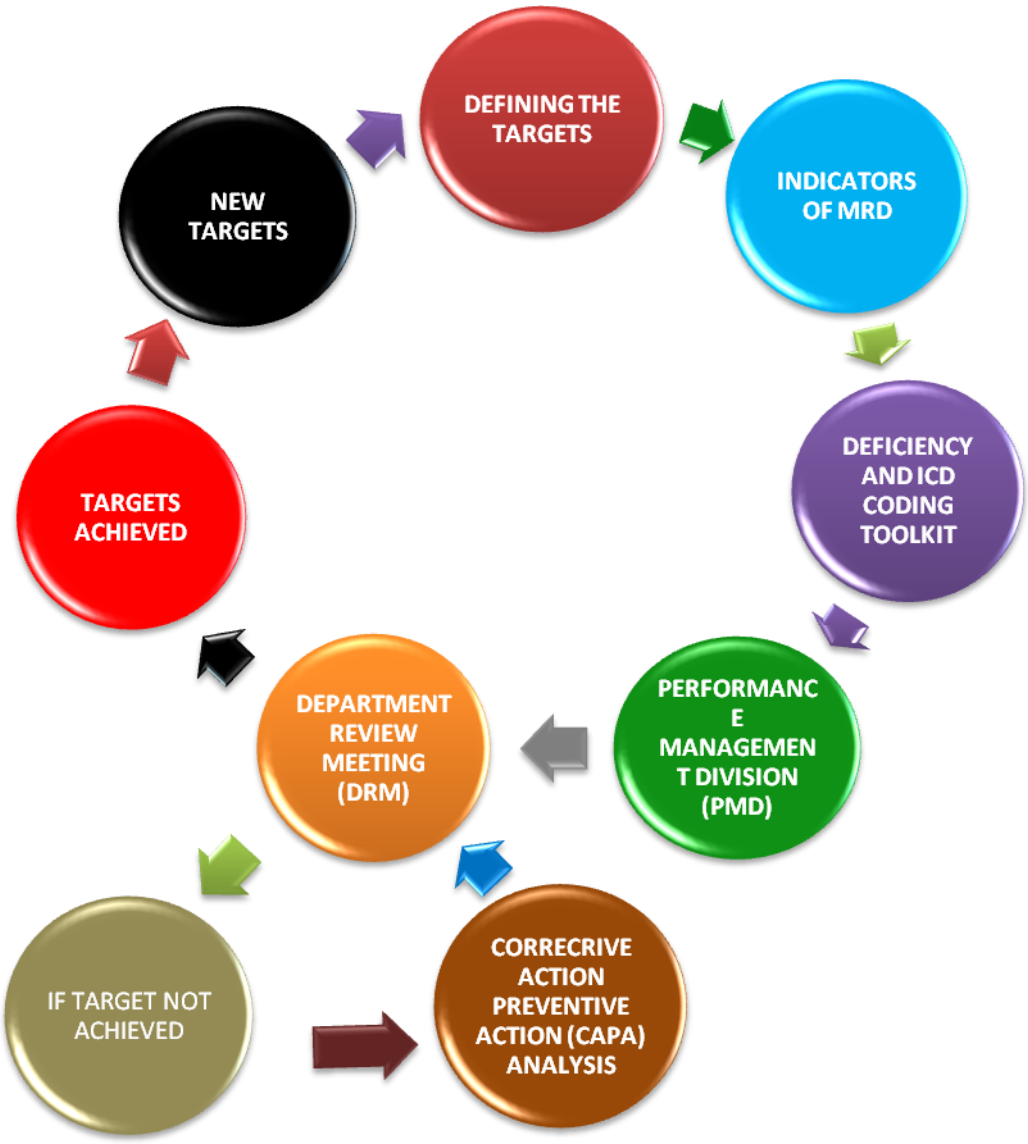


FIGURE: 17 MONITORING/ REVIEW/ CAPA ANALYSIS OF PROCESSES TO SUSTAIN QUALITY STANDARDS IN MRD

CONCLUSION AND RECOMMENDATIONS

1. The front cover page of patient case record does not have space for writing:-
    - Diagnosis
    - Provisional Diagnosis
    - ICD Coding
    - Bill No.
2. The sizes of the documents which are to be kept in the patient case records are bigger (i.e. Length-30 cms. & Breadth- 21 cms.) than the size of the file (i.e. Length- 27 cms Breadth- 21 cms). If the organization stores the record in office file then the records can me maintained with better care.
3. As the organization stores the patient case record of IPD, MLC and Death cases within the same coloured file. In order to have clear identification and easy retrieval of the files different colour of files can be used for IPD, MLC and Death cases.
4. Feasibility of converting from MMR to EMR should be explored.

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