Summer Internship Report

at

Fortis Memorial Research Institute

(April 4th to June 17th, 2022)

A Report

By

Dr. Sharbari Dutta

PGDM (Hospital and Health Management)

2021-2023

Fortis MEMORIAL
RESEARCH INSTITUTE
GURUGRAM

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Sharbari Dutta** has undergone an internship in the **"Department of Quality"** from **April 04, 2022 to June 17, 2022** at **Fortis Memorial Research Institute, Gurgaon**.

During this period, she exhibited a high level of professionalism and a tremendous zest for learning.

We wish **Dr. Sharbari Dutta** all the best in her future endeavors.

With Best Wishes,

Shivani Dhir
SBU Head-Learning & Development

Fortis Hospitals Ltd. Gurgaon

DR SAYITAA

Head of Department
QUALITY

CERTIFICATE OF APPROVAL

The Summer Internship Project of titled **PATIENT ADMISSION AND REGISTRATION TURN AROUND TIME** at **FORTIS MEMORIAL RESEARCH INSTITUTE** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

DR. NIKITA SABHERWAL

Name of the Mentor
Designation
IIHMR, Delhi

ACKNOWLEDGEMENTS

The completion of this summer internship report would mark the successful completion of the summer internship program. This would not have been possible without the timely assistance and guidance of so many people for whom all I have is gratitude in my heart. I would like to thank each and everyone of them, who were associated with the successful assimilation of this report, who supported me, provided constructive feedback and boosted me all through the way.

The universe gives us everything we envision. The gratitude in me for being able to witness this day is immense so above all I would like to thank the almighty for all the blessings I have been showered with.

Family is the support we will never have to pay for because come rain, or shine, they will be there to cheer you on in every one of our life goals. I would like to take this opportunity to dedicate this piece of my hard work to my beloved mother; ***Mrs. Sharmistha Dutta*** *and my ever supporting and doting father;* ***Mr. Uttam Kumar Dutta****. Without their unconditional love and relentless appreciation, I would not have been where I am today.*

Teachers can change lives with just the right mix of chalk and challenges. Some teachers I have been fortunate enough to meet in my lifetime and be inspired by and guided by ***Dr. Savitaa Sharma*** *(Head - FMRI Quality And Patient Safety) without whose guidance this report would not have seen the light of the day. I would like to express my sincerest heartfelt gratitude to* ***Mr. George Thomas*** *(FMRI Quality And Patient Safety) for his constant guidance at each and every step. I am highly obliged to* ***Dr Nikki Soman***

(Clinical Pharmacologist), ***Mr. Jemmy Bhan*** *(Operations Manager)* ***Mr. Neeteesh Shrivastava (****Operations Manager) for their valuable inputs.*

I will forever be indebted to ***Dr. Sutapa B Neogi*** *(Director-IIHMR) for having faith in me. I am extremely grateful to* ***Dr. Nikita Sabherwal*** *(Associate Dean -IIHMR) for her guidance and for this amazing opportunity. I am extremely thankful to* ***Dr Siddharth Sekhar Mishra*** *for his relentless support and guidance. I owe special thanks to* ***Dr. Rupsa Bannerjee*** *(Assistant Professor-IIHMR) for imparting knowledge and understanding.I owe my sincere thanks and indebtedness to* ***Dr. Anandhi Ramachandran*** *(Associate professor-IIHMR and Mentor) for her words of encouragement. My sincere gratitude to* ***Mrs. Divya Agarwal*** *(Associate dean-IIHMR) for always encouraging and instilling enthusiasm. This report would not have been possible without the guidance of my teachers.*

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ACRONYMS/ABBREVIATIONS	
IP	In-Patient
RCA	Root Cause Analysis
FOA	Front Office Assistant
IPD	In-Patient Department
OT	Operation Theatre
ICU	Intensive Care Unit
ARF	Admission request forms
TPA	Third Party Assurance
HIS	Hospital information system
FOA	front office assistant
FOS	Fortis operating system
SOP	Standard Operating procedure(
EHR	Electronic health record
FOS	Fortis operating system

OBSERVATIONAL LEARNING

SECTION - 1:

ORGANIZATION PROFILE

Fortis Health-care Limited is a pan Asia-Pacific, integrated healthcare delivery provider. The healthcare verticals of Fortis includes primary care, diagnostics, day care speciality and hospitals with an asset base in eleven countries, many of which are the quickest growing healthcare delivery markets in the world. Presently the company operates its healthcare delivery services in India, Dubai, Mauritius and Sri Lanka with 45 healthcare facilities (including projects under development), approximately 10,000 potential beds and over 330 diagnostic centres.

ILLUSTRATION 1 : FORTIS LOGO

The “Healing Hands” logo - two hands fusing seamlessly with a human form expresses a reassuring approach to healthcare and serves as a constant reminder of the patient-centricity. The logo reflects a commitment to achieving excellence in healthcare delivery by bringing together the best of technology, medical expertise and patient care. The colour Green represents the health and well being they seek to achieve for all those under their care while the red indicates the dynamism with which they strive to make it a reality.

ILLUSTRATION 2: FORTIS MEMORIAL RESEARCH INSTITUTE (FULL VIEW)

Fortis Memorial Research Institute (FMRI), established in 2001, is set on a spacious 11 acre campus, 1000 bedded multi-super-speciality hospital for quaternary care with 298 ICU Beds, 15 Operation theaters and over 400 diagnostics centres and day care facilities is considered as one of the best hospitals in Gurugram. Fortis Hospital, Gurugram has undergone a thorough on-site review of the quality and safety of care being provided and is committed to continuously meeting rigorous international standards, it endeavours to be the 'Mecca of Healthcare'. Fortis Memorial Research institute is a flagship hospital of Fortis Healthcare, only 17 kilometers from the Delhi international airport is a hub for national as well as international patients and one of the top healthcare providers in the country. Fortis hospitals across the country treat lakhs of patients every year, with its reputed clinicians, infrastructure and world-class technology such as the Da Vinci robot, to ensure patient care. FMRI with its top-notch infrastructure, advanced equipment, provides customized preventive health checks to quaternary care from a dedicated team of 200 highly qualified and experienced medical professionals and super sub-specialists. FMRI is an advanced centre of excellence in various specialities, JCI & NABH Accredited Hospital, NABL Accredited Laboratories, NABH Certified Nursing speciality, NABH Accredited Blood Bank. This Next Generation Hospital™ rests on four strong pillars: Talent, Technology, Service and Infrastructure.

TALENT

Fortis Memorial Research Institute's comprehensive medical programme is driven by reputed doctors, super- sub- specialists and speciality nurses committed to combining their medical expertise, technology and innovation to offer the best treatments.

TECHNOLOGY

Fortis Memorial Research Institute is equipped with a wide array of diagnostic and therapeutic technology, including several technologies that are among the first in India, in Asia and the world.

INFRASTRUCTURE

With landscaped greens, tranquil water bodies, sculptures, sunlit interiors, Fortis Memorial Research Institute adapts a design philosophy aimed at soothing and curing. The hospital has been built in view of all round wellness of soul , mind and body.

SERVICE

The hospital provides innovative services, with patient care and special attention. Angel: A friendly person at the hospitality desk so as to make visitors feel welcome. Genie: A helpful companion to assist patients find way within the hospital. Concierge: A facilitation desk to assist patients needs in and outside the hospital."

The vision of the organisation is to be the ultimate healthcare destination, the Mecca of Medicine. The mission of the organisation is to provide quaternary care to the community in a dignified, compassionate and a distinctive manner. The motto of FMRI is best is the least we can do.

PATIENT SAFETY AND QUALITY AT FMRI

At FMRI it is ensured that high-quality, compassionate care is delivered to all patients across the health system. By providing privilege and confidentiality, the quality & patient safety department create a secure environment for both clinicians and health care organizations to use common formats to collect, aggregate and analyze data that can help in improving quality by identifying and reducing the risks and challenges associated with patient care.

OUR COMMITMENT TO TRANSPARENCY

Patients and their family deserve to be informed about the quality of their health care. FMRI is dedicated to sharing its performance and how it works to provide the best care with past,

present and future patients. It coordinates safety and quality improvement efforts and training across our health system.

QUALITY POLICY

FMRI treats all patients and their caregivers with compassion, integrity, and honesty. They endeavour to achieve high standards of medical care through a quality improvement system. They continuously strive to improve and to sustain patient satisfaction, patient safety and desired clinical outcomes.

QUALITY OBJECTIVES:

- To practice with patient centric approach
- To ensure not only safety of patients, but also employees and other service providers.
- To monitor, assess and improve service and clinical excellence and patient satisfaction.
- To improve learning continuously at all levels of the organization.
- To empower all employees and improve continuous quality improvement

PATIENT SAFETY AND QUALITY MEASURES

Fortis Memorial Research Institute (FMRI) has been accredited by NABH in June 2015. They measure, monitor and analyze clinical and non clinical indicators. Besides they have defined Process Audits for Service and Clinical Parameters under Fortis operating.

Data Collection Method

- Direct observations
- Interviews
- Surveys
- Questionnaires
- Documents and records

General findings on learning:

The department of quality and patient safety of FMRI runs numerous surveys and questionairres or interviews of patients or staff to ensure better patient safety and health care. During our two and half month posting at the Quality and Patient Safety department participation in the following programmes were encouraged by the department apart from our respective Quality Improvement Projects.

1. **INTERNATIONAL PATIENT SAFETY GOAL 4 AUDIT:**

   During the process of the Audit, one specific goal was allotted to each and audit of goal 4 related to preoperative and surgical safety was done.

   a. Presentation was prepared related to the allotted goal.
   b. Audit tool was prepared in line with the pre-operative checklist and surgical safety checklist and direct observation of the patients during pre-OT preparation was done to collect relevant data.

- It was observed that part preparation was mostly done in the ward.
- Surgical site and side marking was done only in specific patients like orthopaedic in the ward or pre-op area.
- Patients were asked to remain empty stomach for atleast 6-8 hours, take chlorhexidine bath prior to OT, consent for surgery/procedure/anesthesia are signed by patient attendants invariably.

2. **RESTRICTED ANTIBIOTICS CHECKLIST FOR COMPLIANCE**

   Restricted antibiotics like Meropenem, Teicoplanin, Caspofungin, Amphotericin, Vancomycin and others could only be administered in patients if the compliance form has been sent to the pharmacy after being filled by the respective doctor. The completed form is checked by the Department of Quality and Patient Safety before the medicine could be dispatched from the pharmacy to the patient. Weekly meetings

are held and the justification for these antibiotics are provided by the doctors as to why those high dose antibiotics are necessary for administration.

- Unfilled or Underfilled forms were sent back to the doctors to be refilled
- None of the restricted antibiotics are dispatched if the Restricted Antibiotics Checklist is not sent to the pharmacy.

3. AUDIT OF MEDICAL RECORDS

Medical records were audited regularly for 2.5 months, 50 each month to check the completion status of all the documents, progress notes, consent forms, checklists, prescriptions, patient flow-sheets, reports, patient history, handover documents, forms, records. Audit tool was provided to mark “10” for all completed forms, “5” for all partially filled forms and “0” for all unfilled forms. The data was updated into Microsoft excel and analysis was done followed by presentations for april and may were done and the comparative analysis of both months was also prepared in presentation slides.

- Mostly the consents, the patient flowsheets, checklists were completely filled while the prescriptions and progress notes and patient handover documents were partially filled. Some documents rarely remained unfilled

4. PATIENT SAFETY SURVEY

A survey of 500 employees was conducted to understand the employees feedback on the patient safety protocols followed by the hospital and the staff communication related to in house transfer of patients.

5. QUALITY IMPROVEMENT PROJECT - PATIENT ADMISSION AND REGISTRATION TURN AROUND TIME

The turn around time for patient admission was estimated using Lean method and gaps in the process was analyzed to make the entire process less time consuming. Quality indicator tools were used and Root cause analysis was done and suggestions were given .

CONCLUSION

It was possible to learn auditing medical records, audit international patient safety goals, trace the gaps in patient admission turn around time using lean method, conduct root cause analysis of the same, tracking administration of restricted antibiotics like Meropenem, Teicoplanin, Caspofungin, Amphotericin, Vancomycin and others that could only be administered in patients if the compliance form has been sent to the pharmacy after being filled by the respective doctor and patient safety survey was conducted.

LIMITATIONS

1. Department size is small and space crunch for interns.

2. Physical medical records are cumbersome to maintain and can be lost with time

3. More well trained staff is required in the quality and patient safety department.

4. Most of the work is still done using pen and paper, electronic media usage is limited

SUGGESTIONS

1. Quality department needs more well trained staff and a bigger department space.
2. Electronic health records and electronic medical records should be maintained instead of hard bound copies
3. Most treatment procedures could be recorded using digital medium and e-prescriptions can be incorporated it could save a lot of time especially in the case of tracking restricted antibiotics.

II PROJECT REPORT

SECTION - 1:

INTRODUCTION

The healthcare industry is under increased pressure from the competitive marketplace, to manage patients services more efficiently. Traditionally, the objective of hospitals has been to stress high occupancy, growth in admissions and increased cases load as the most critical challenge for hospitals will be to provide quality health care services in the most structured and cost - efficient manner. This includes getting patients well soon and increase hospital's Turn around time.[1] Turn around time is considered an important quality indicator in hospital services. It is a tangible aspect by which the patient judges the quality of care provided at the hospital. Turn Around Time in admission process if prolonged can affect patient satisfaction adversely.[2] The viability of hospitals will depend on their success in responding to changing payer demands.[1] There are many indicators of quality assurance. In the out-patient department, the main indicator of quality assurance for patients is 'waiting' itself, patients should be attended within an acceptable time. Lengthy waiting time is one consistent feature of dissatisfaction which has been expressed [3]

An Out-Patient is a patient who is not hospitalized for 24 hours or more but who visits a hospital , clinic or associated facility for diagnosis or treatment. Treatment provided in this way is called ambulatory care.[4] Out-Patient Department (OPD) is a very important wing of the hospital serving as the first contact between the patient and the hospital staff. The public relation skill is of utmost importance. OPD staff should be polite, cheerful, cooperative and efficient. [5]

OPD Reception Management System, which is the first point of interaction for any patient coming to the hospital. It has all the information of the patient, doctors, departments and activities of the hospital. All inquiries and appointments including OPD billing, complete patient details, services like ultrasound, radiography, surgery etc are scheduled through this module. [6]

Management Problem

FMRI is one of the prominent multi-speciality hospitals in Gurugram and has a huge flow of national and international patients. As the OPD reception desk is the main window of the hospital where new patient meet the hospital staff. There are issues that lead to overcrowding and patient long queue during registration and billing process for consultation and investigation .

- Front office staff shortage specifically in the morning hours when there is a huge rush
- Patients are not clear about the admission process and the OPD workflow
- To provide services in a more effective manner and without delay two/three front office staff personnel should always be at the reception especially in the mornings
- A proper identification sign - board to identify billing counter, bed manager or counselling rooms and the proper flow should be defined to the patients.
- More than one bed manager required so that atleast one should be available at all times.

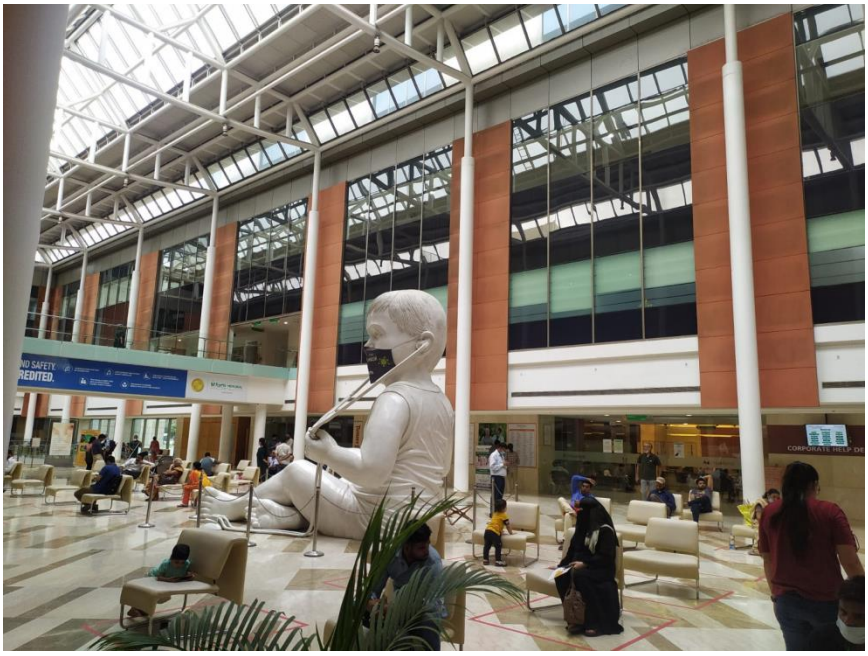


ILLUSTRATION 3: PATIENT WAITING AREA IN FMRI

RATIONALE OF THE STUDY

Patient coming to a hospital is already is grief and pain. Unnecessarily prolonged waiting times at the reception add to their grievances. Patient satisfaction depends largely on the efficiency and quality of healthcare provided. Thus, the aim of the hospital should be to ensure a smooth flow of the patients with minimal waiting time. Reduction of waits and turnover time will improve efficiency of hospital as more number of patients would be treated in the same period of time. Also it will improve the patient satisfaction and eventually revenue and profit of hospital.

AIMS AND OBJECTIVES

1. To estimate the turn around time of admission of new patients
2. To understand the gaps in admission process and improve the process flow

SPECIFIC OBJECTIVES

- To measure average time taken by a patient during each step of OPD registration
- Identify instances during each step where a delay is encountered
- Analyze root cause of delays and label it with issue code
- Analyze the frequency of occurrence of each issues and its impact on time delay
- Suggest corrective actions to reduce time delay

REVIEW OF LITERATURE

1. *Salleh MN et al.* conducted a study using simulation to reduce out-patient waiting time. This project presents a model of the out-patient flow. Focuses of this project are to determine the bottlenecks factors factor outpatient at the center, and reflect of number of doctors and patient on the waiting time. This research identify main problem that caused long waiting time. The problem is due to the unbalanced the number patient arrives with number of doctor available in morning hours, the most impressive solution of problem is by introducing system that can estimate patient treatment time.

2. *Breil B et al.* conducted a study assessing turnaround times can help to analyse workflows in hospital information systems. Review was based on Pubmed searches and manual reviews of the bibliographies of articles that were retrieved . Studies were included if the definitions of turnaround times available were precise. More than 1000 articles were searched and resulted in 122 papers. Of those, 162 definitions of turnaround time in different clinical domains were identified. To illustrate turnaround time definitions, a generic timeline was constructed using preferred terms derived from the identified definitions. Using turnaround times to benchmark the clinical workflows is still not easy, because even within the same clinical field many different definitions of turn around exist. Mapping of turnaround time definitions to a timeline is feasible.

3. *Hart M et al.* conducted the study to reduce the amount of time typically spent waiting for treatment in out-patient clinics. The quality improvement programme discusses some of the techniques and problems encountered in the measurement exercise. The results of the monitoring exercise showed that waiting times were being reduced. There is a risk that measurement systems have concentrated on that which is measured rather than that which is significant. It discusses several approaches to the measurement of overall quality and the problems in adopting a league table approach to quality assessment.

4. Tabish SA conducted a study illustrating that hospitals are very distinctly divided into a well defined hierarchy of spaces. A functional design can improve skill, economy, conveniences, and comforts; a non-functional design can impede quality of care, and raise costs to intolerable levels. Hospitals are complex building types. Each hospital has a wide array of services and departmental units. These are diagnostic and treatment functions, such

as clinical laboratories, emergency rooms, imaging and surgery; hospitality functions and the fundamental inpatient care or bed-related function. This diversity in the breadth and specificity of regulations and codes that govern hospital operations. Each of the wide-ranging and continuously evolving functions of a hospital, including mechanical, electrical, and telecommunications systems which require specialized knowledge and expertise.

5. Sharma SK conducted a descriptive study to determine various sequential movements and time taken for each movement in the OPD through checklist. The Out Patient Department is essential for any hospital. Short waiting times and a positive experience represent important factors of patient satisfaction. Meanwhile, unstructured and inefficient processes can cause loss in revenue and poor image and concern over patient safety. Since Out Patient Department (OPD) is often a patient's first point of contact with the hospital, improving the efficiencies is of utmost importance in both customer satisfaction and operating a hospital. This study helps to understand the unnecessary and delayed movements in the department so that with this knowledge the management will take adequate measures to improve the functioning of the department. This study helps Outpatient department helps to identify and eliminate unnecessary movements and benchmark the time and thus to provide efficient and effective patient care in OPD.

METHODOLOGY

- Place of Study: Fortis Memorial Research Institute, Gurugram
- Study Area: Admission desk at in–patient department.
- Sample size : 70 patients
- Sampling method : Simple random sampling
- Study period: April- May 2022
- Data collection method used: Lean method
- Statistical software used : MS Excel 2010
- Quality tools used: Fish bone analysis, histogram, pie chart, flowchart
- Study Type: Cross-sectional descriptive
- Inclusion criteria: Patient at In-patient OPD registration
- Exclusion criteria: Ambulatory patients

Lean method

Lean is a set of operating philosophies and methods that help to create a maximum value for patients by reducing waste and waits

Lean can create improved efficiency, productivity, reduce costs and scraps.

It is not limited to manufacturing , it can improve how a team works together, inventory management and even client interaction.

STUDY OUTLINE

To analyse the gaps in procedure, patients were randomly selected and they were studied from their entry at the admission desk(T1) to the time they reached the ward (T2).

Every detail of the patient's journey from admission desk to ward was recorded using Lean method

Patients were also asked about their experience during admission.

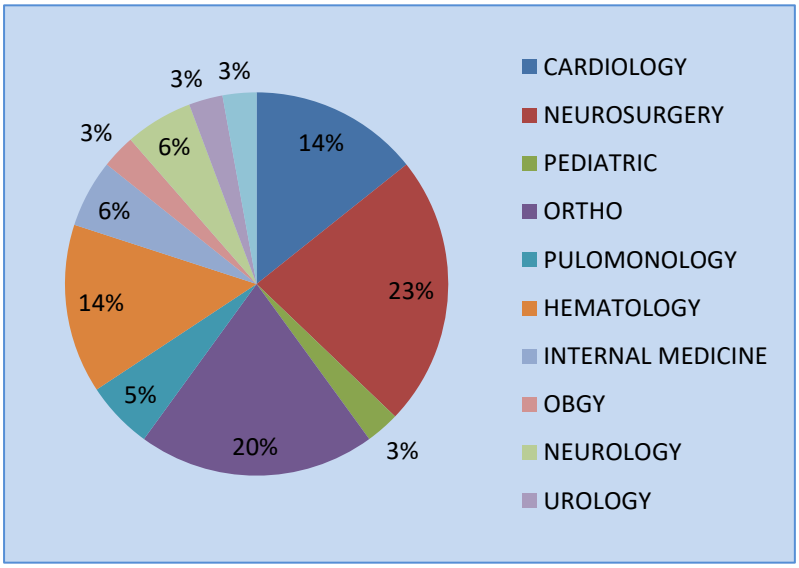
AUDIT TOOL

CONSULTATION	ADMISSION DESK			GENERAL OBSERVATIONS
Dr.	Whether details properly filled in the facesheet	BILLINGTime taken	BED ALLOTMENT Time taken	
Admitting privileges:		Third party insurance: Time taken		
Admission request form	COUNSELLING(by FOA counselor)Patient rights Room stay Package Time taken	Consent forms for admission : Properly explained or not: Time taken at registration desk	TIME TAKEN TO REACH WARD	
Planned or unplanned:				

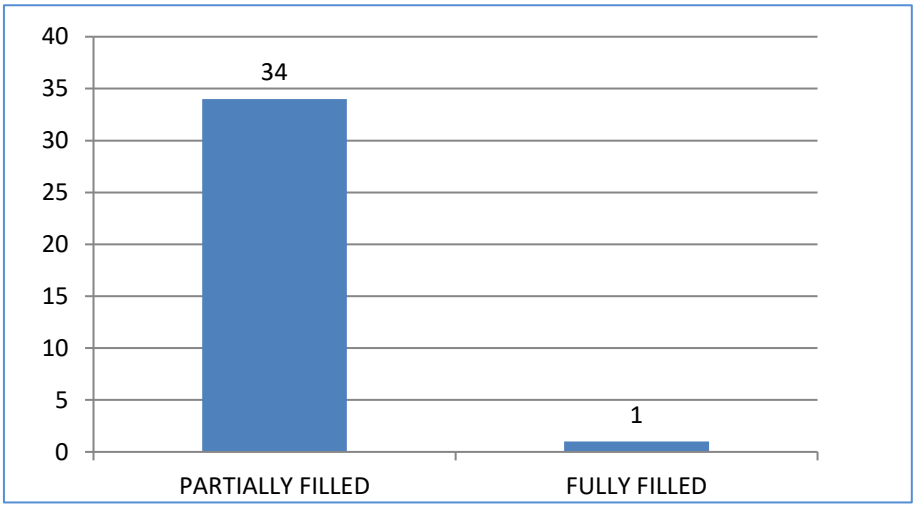
ILLUSTRATION 4: AUDIT TOOL

SECTION- 3:

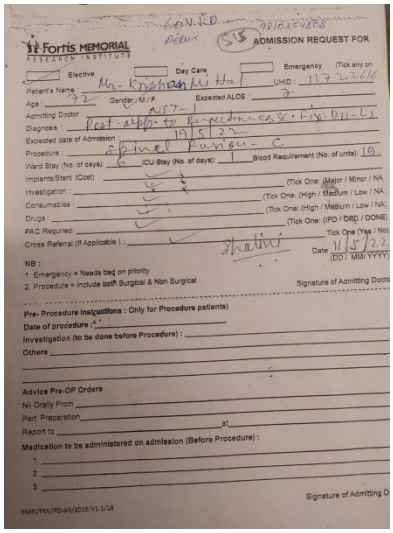
DATA COMPILATION

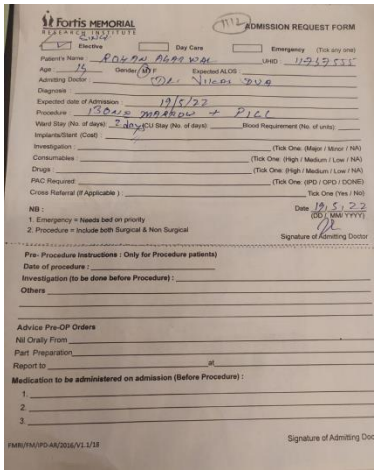


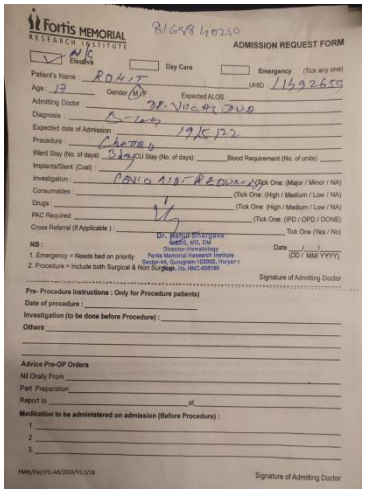
GRAPH 1: ADMITTING SPECIALITIES



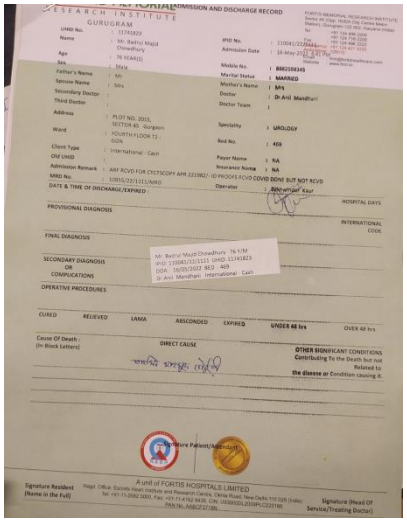
GRAPH 2: ADMISSION REQUEST FORMS



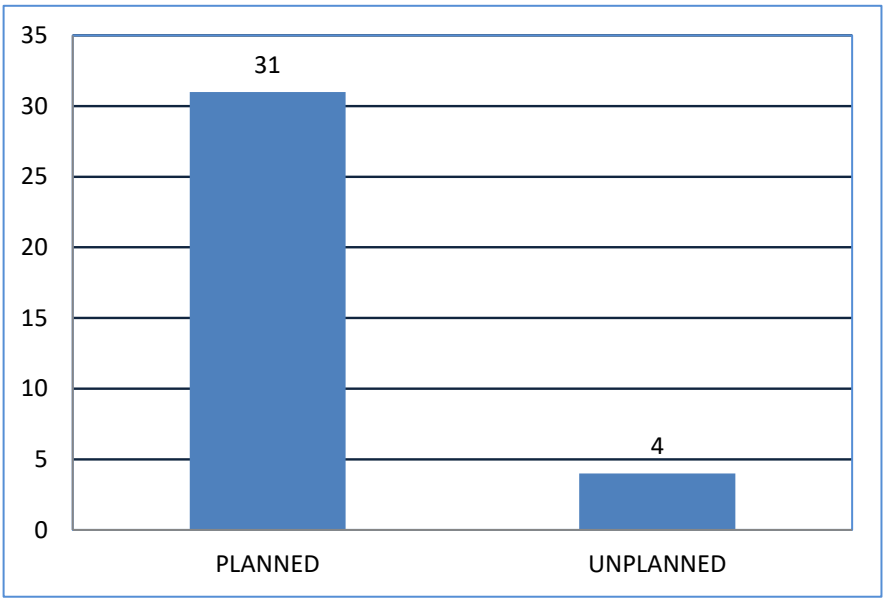




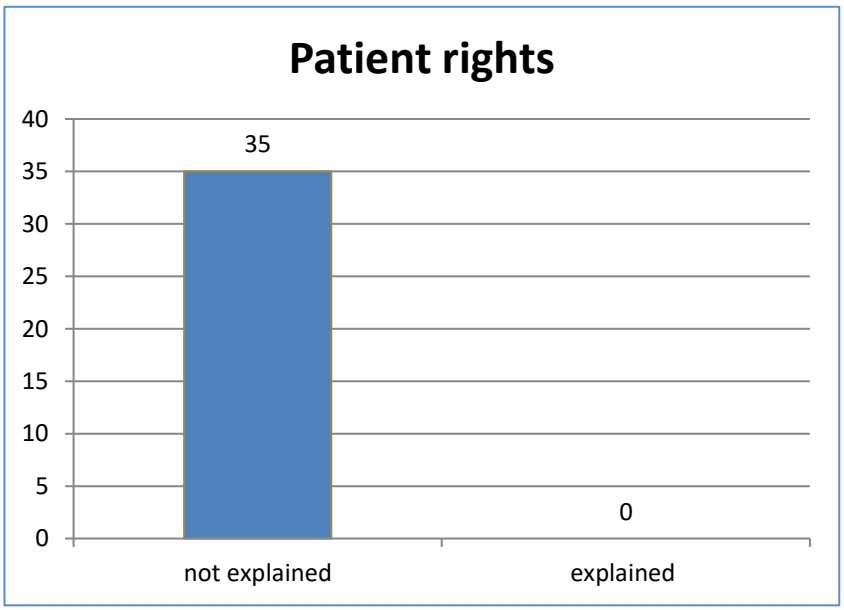
ILLUSTRATIONS 5: PARTIALLY FILLED ADMISSION REQUEST FORMS



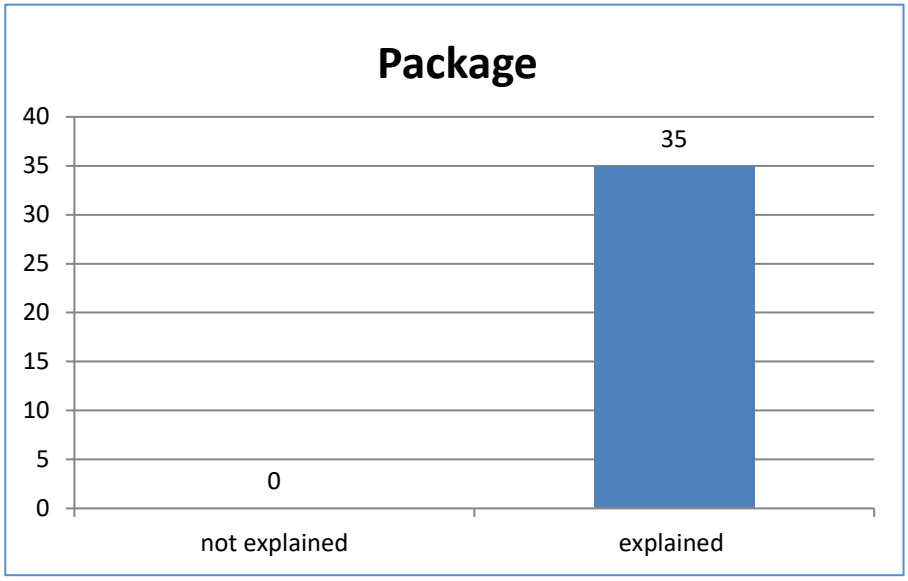
ILLUSTRATIONS 6: PATIENT FACESHEET



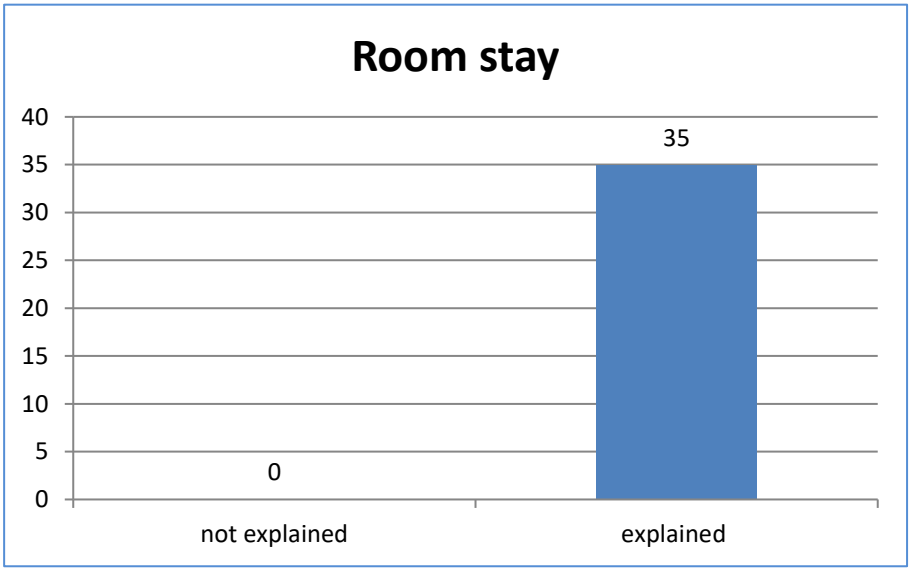
GRAPH 3: PLANNED AND UNPLANNED ADMISSIONS



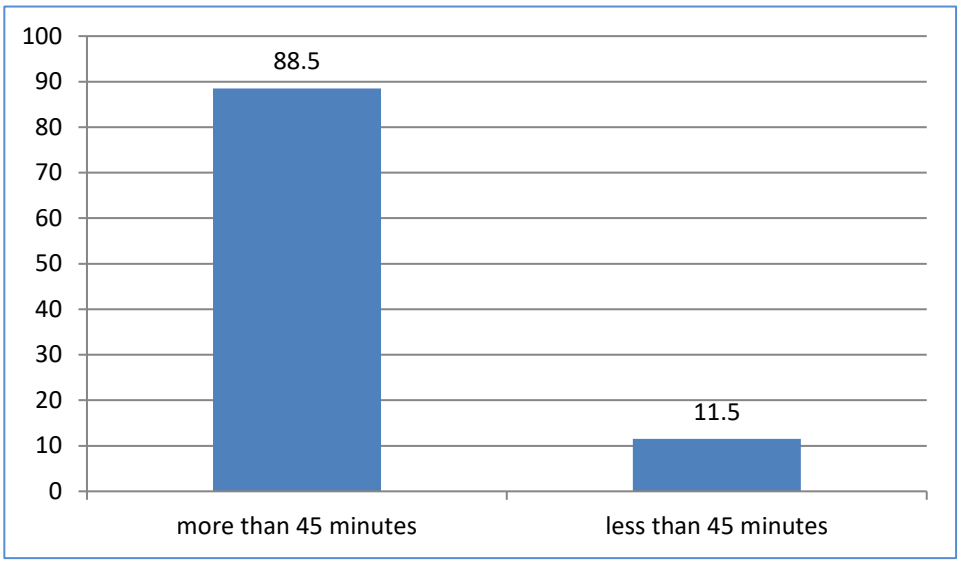
GRAPH 4: PATIENT RIGHTS COUNSELING DONE BY FRONT OFFICE ASSISTANT



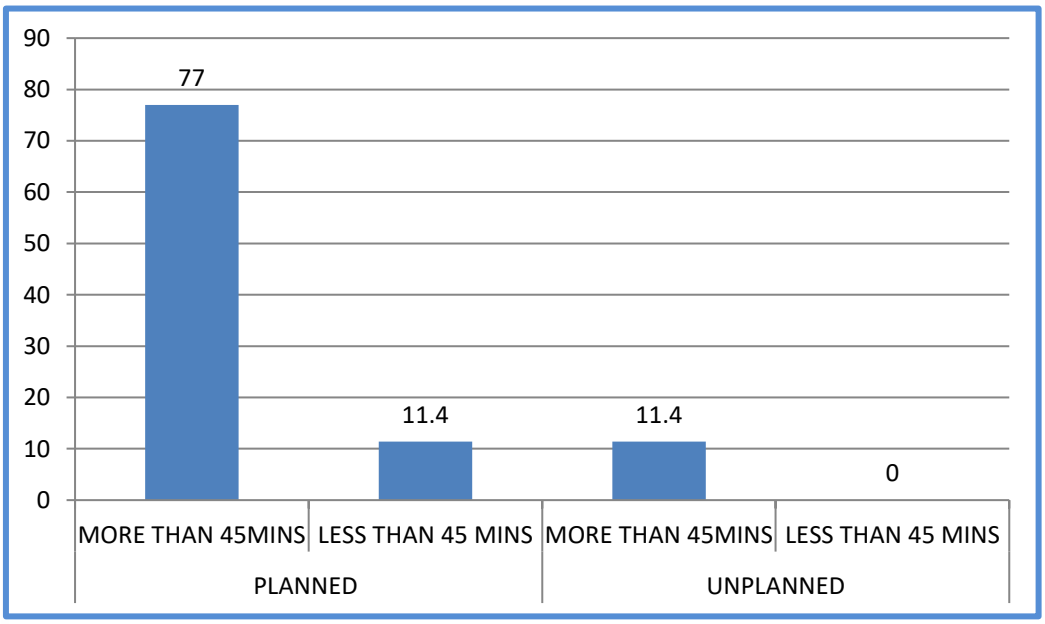
GRAPH 5: PACKAGE COUNSELING DONE BY FRONT OFFICE ASSISTANT



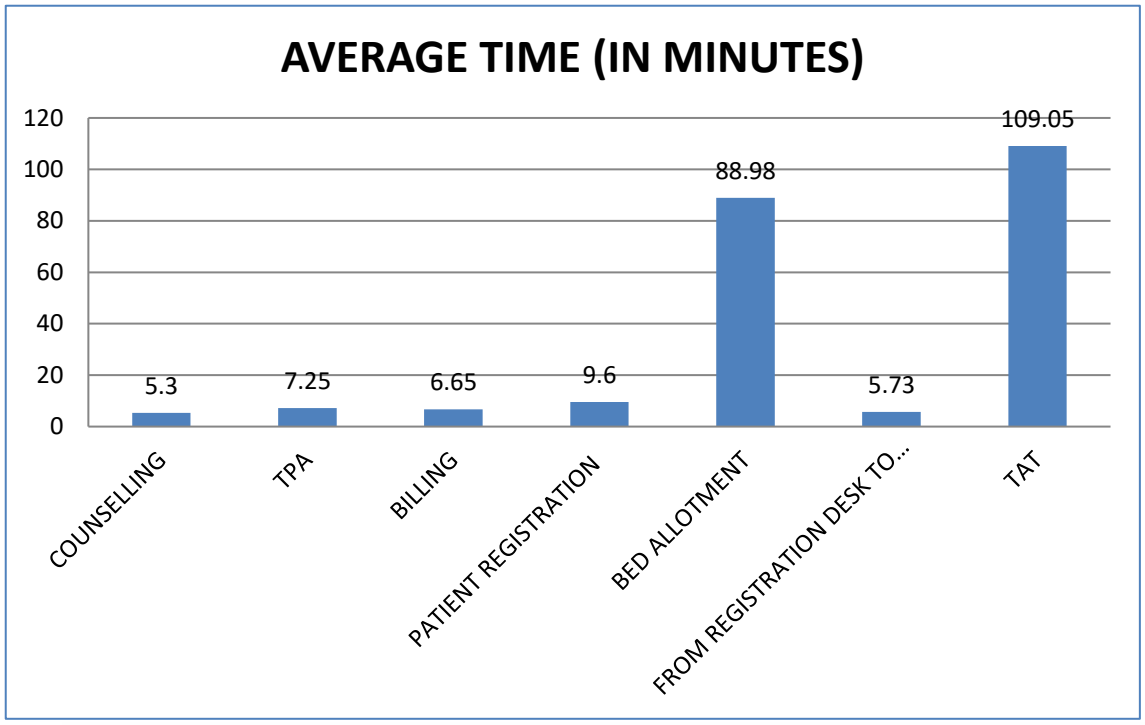
GRAPH 6: ROOM STAY COUNSELING DONE BY FRONT OFFICE ASSISTANT



GRAPH 7: PERCENTAGE OF NEW ADMISSION DONE WITHIN 45 MINS OF PATIENT REACHING ADMISSION DESK (Benchmark = 45minutes)



GRAPH 8: PERCENTAGE OF NEW ADMISSION DONE WITHIN 45 MINS OF PATIENT REACHING ADMISSION DESK (Benchmark = 45minutes)



GRAPH 9: AVERAGE TIME TAKEN IN EACH PROCEDURE

DATA ANALYSIS AND INTERPRETATION

The patients included in the study were admitted in different specialities represented in Graph 1. 24 patients were admitted in the neurosurgery department. 21 patients were admitted in the orthopaedic department. 15 patients were admitted in the cardiology and hematology departments. 6 patients were admitted in the internal medicine, pulmonology and neurology departments. 3 patients each were admitted in the urology, oncosurgery, pediatric and obstetrics and gynaecology departments.

The graph 2 represents admission request forms(ARF) whether completely filled or partially filled : 0ut of 105 , in 102 forms drugs, consumables, PAC required , investigations, implants/stents were not mentioned.

The graph 3 represents the planned and unplanned admissions of the patients considered for the study. 93 patients were planned admissions while 12 were unplanned admissions

The graph 4 represents patient rights counseling done by front office assistant(FOA). None of the patients or their attendants were explained their rights by the FOA only signatures are recorded on documents

The graph 5 represents package counseling done by FOA. All of the patients or their attendants were explained the payment package when they are given an estimate of charges and rents

The graph 6 represents room stay counseling done by FOA. All of the patients or their attendants were explained their stay in the hospital when they are given an estimate of charges and rents

The graph 7 represents percentage of new admission done within 45 mins of patient reaching admission desk; 45minutes being the benchmark. 88.5% of the admissions required more than 45minutes while 11.5% required less than 45 minutes.

The graph 8 represents percentage of planned and unplanned admissions done within 45 minutes of patient reaching admission desk. 77% of the admissions were planned yet required more than 45 minutes. 11.4% of the admissions were planned and required less than 45 minutes. While 11.4% of the admissions were unplanned and required more than 45 minutes. And none of the unplanned admissions required less than 45 minutes.

The graph 9 represents average time taken in each procedure. On an average, 9.6minutes is required for counselling, 7.25 minutes for Third Party Assurance(TPA), 6.65minutes in billing, 5.3minutes for patient registration into the hospital information system(HIS), 89.58 minutes for allotment of beds, and 5.73 minutes for the patients to reach the ward from the registration desk. Thus, the average turn around time for the patient admission and registration being 108.94 minutes.

SECTION- 4:

DISCUSSION AND RECOMMENDATION

GAPS AND CONCERNS

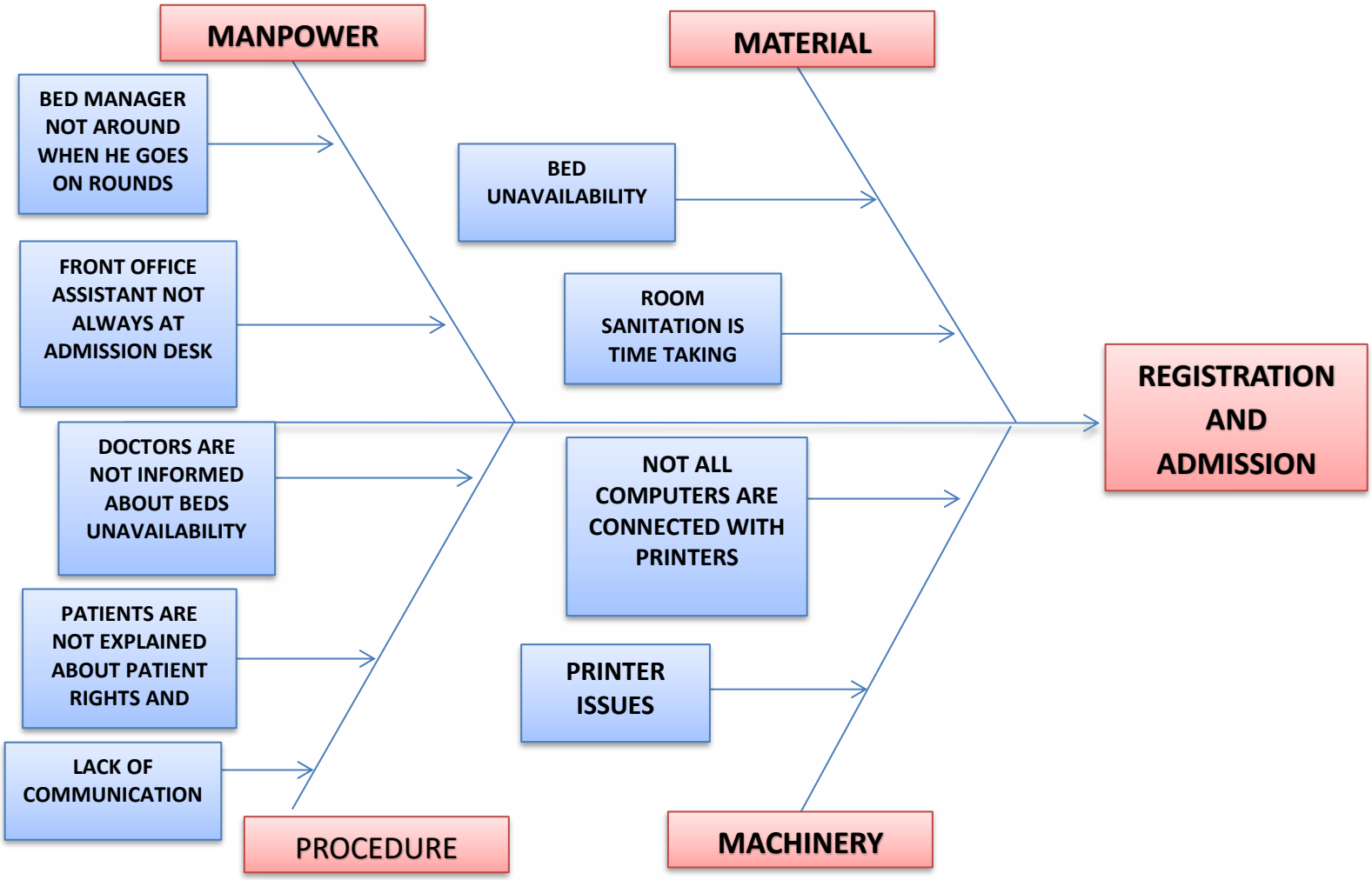


ILLUSTRATION 7 : CAUSE OF DELAY IN THE PROCESS PATIENT ADMISSION AND REGISTRATION

Lean method is used to eliminate waste , build quality, create knowledge, deliver fast, respect people and optimize the whole. Lean maximizes customer value and minimizes wastes and waits. Based on Toyota's model, it focuses on how efficiently resources are being used and eliminate inefficiency of the manufacturing processes. Lean method is used to improve efficiency cycle time, productivity and reduce material costs and scraps to improve competitiveness. Lean is not limited to manufacturing, it can improve how a team works together, inventory management and even client interaction. [7]

The quality tool used for root cause analysis(RCA) that assists in identifying underlying factors or causes of an adverse event or near-miss. The contributing factors or causes of a system failure can help develop actions that can enable the correction. A cause and effect diagram, often called a "fishbone" or ishikawa diagram , can help in brainstorming the possible causes of a problem. A fishbone diagram is a visual way to look at cause and effect of a problem. The effect is displayed at the head or mouth of the fish. The possible contributing causes are listed on the smaller "bones" under various categories of the causes. A fishbone diagram can be extremely helpful in identifying possible causes for a problem.[8]

The process of bed allotment was time taking as the sanitation of rooms was time taking. Also, discharge process was time taking but a detailed study is required to look into the process of discharge as it is not included in the scope of the current study. Creating Standard Operating Procedure(SOP) for better coordination among staff so that admission desks are not left empty could facilitate better patient service. Proper training of the Front office assistants on the medical knowledge and terminologies to lessen time required to register. Planned patients and pediatric, surgery, etc could be prioritized to improve the workflow and lessen turn around time for patient admission.

GAPS	Solutions
COUNSELLING	
1. Admission desks are left empty by front office assistants 2. Patients and their attendants are not counseled about the consent forms and patient rights documents 3. Bed manager is also given responsibility	1) Creating Standard Operating Procedure(SOP) for better coordination among staff so that admission desks are not left empty 2) Proper training of the Front office assistants on the medical knowledge and

of handling first floor wards, patients are made to wait when he goes on rounds.	terminologies 3) A separate bed manager and floor manager is needed.
ADMISSION REQUEST FORMS	
Admission Request Forms are not filled	Admission request forms should be fully filled. Next of kin/contact person's details not mentioned in ARF
TPA	
Time taking due to the queue of patients	Cash patients and patients with insurance can have separate admission areas
BILLING	
1. A separate counter 2. Long queue	Quick Response codes, Unified Payment Interface address may be displayed at admission areas itself
1. All computers are not connected with printers 2. Second printer was not working, later removed	Regular checking of devices by the IT department.
BED ALLOTMENT	
1) Time taking , long waiting hours 2) Sanitation of rooms takes time 3) Discharge process is time taking	1) Planned patients could be prioritized 2) Pediatric, surgery, etc. patients could be prioritized. 3) Patients could be called based on

	availability of beds 4) Bed manager, out-patient dept. doctors need to be better interco-ordinated about availability of beds 5) Better counselling of the patients to upsell or downsell an available bed to get the admitted (may be in the general ward) and start the treatment procedure and may be later upgrade to the cabins or single rooms as per requirement/demand. 6) Doctors should be trained to used Electronic health record(EHR) 7) Detailed study is required to look into the gaps in discharge process as well as it is not under the scope of the current study

STRENGTHS OF THE STUDY

1. The study could be conducted on patients who had come for their admission at the hospital and their individual viewpoints could be taken into account.
2. The entire time duration of the patients' journey from the admission desk to the ward could be covered as the Lean method helps in tracing the wastes and the waits.

LIMITATIONS OF THE STUDY

1. In some cases bed allotment was time-consuming due to delayed discharge but discharge turn around time was not included in the study.
2. Time bound study as OPD timing is 8am to 8 pm.

CONCLUSION

Entire process could be digitalized. LED boards or booking on digital applications can be used to make the entire bed allotment process transparent to their patients. Better coordination among staff is necessary so that admission desks are not left empty. More than one bed manager is also necessary so that at least one coordinator is available at all times. Planned, Pediatric, Surgery, etc patients could be prioritized. Cash patients and insurance patients can have separate admission areas. Bed manager, out-patient dept. doctors need to be better inter-co-ordinated about availability of beds.

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8. https://www.cms.gov/medicare/provider-enrollment-and-certification/qapi/downloads/fishbonerevised.pdf

ANNEXURES

DATA SHEET

PATIENT DETAILS			
NAME	RITU AGARWAL	MASTER DHIR	MR.ALI MOHAMMAD KHMER AL IBADI
UHID	11515428	7167796	11530837
ADMITTING SPECIALITY	NEUROSURGERY	PEDIATRIC	NEUROSURGERY
CONSULTATION			
Dr.	DR. SANDEEP VAISHYA	DR KRISHAN CHUGH	DR ATUL MITTAL
Admitting privileges:	YES	YES	YES
Admission request form	PARTIALLY FILLED	PARTIALLY FILLED	PARTIALLY FILLED
Planned or unplanned:	PLANNED	UNPLANNED	PLANNED
ADMISSION DESK			
Whether details properly filled in the facesheet	NO	NO	NO
COUNSELLING(by FOA counselor)			
Patient rights	NOT EXPLAINED	NOT EXPLAINED	NOT EXPLAINED
Room stay	EXPLAINED	EXPLAINED	EXPLAINED
Package	EXPLAINED	EXPLAINED	EXPLAINED
Time taken	2	3	2

BILLING			
Time taken	2	3	4
Third party insurance:			
Time taken	10	4	6
Consent forms for admission :			
Properly explained or not:	NOT EXPLAINED	NOT EXPLAINED	NOT EXPLAINED
TAT	2.4	2.25	55
	144	135	55
BED ALLOTMENT Time taken	2.5	3	50
TIME TAKEN TO REACH WARD	5	CANCELLED ADMISSION	5