"A Study on the Discharge Process of Fortis Escorts Heart Institute, Okhla, New Delhi"

A dissertation submitted in partial fulfillment of the requirements
For the award of

Post-Graduate Diploma in Health and Hospital Management

By

Akanksha Sharma

ENROLLMENT NO: PG/09/007

International Institute of Health Management Research
New Delhi

New Delhi -110075

2009-11

"A Study on the Discharge Process of Fortis Escorts Heart Institute, Okhla, New Delhi"

A dissertation submitted in partial fulfillment of the requirements
For the award of

Post-Graduate Diploma in Health and Hospital Management

By

Akanksha Sharma

Under the guidance of

Dr. Vibhu Ranjan Gupta
Medical Superintendent
Fortis Escorts Heart Institute, Okhla, New Delhi

Dr. Dharmesh Lal
Associate Dean
IIHMR, New Delhi

International Institute of Health Management Research
New Delhi

New Delhi -110075

2009-11

ACKNOWLEDGEMENT

A journey is easier when you travel together. Interdependence is certainly more valuable than independence.

This project report is the result of six months training whereby I have been accompanied and supported by many people. It is a pleasant aspect that I now have the opportunity to express my gratitude for all of them.

Firstly I convey my regards and thankfulness to **Dr. Rajeev Singhal** (Facility director, EHIRC), **Dr. V. R. Gupta** (Medical Superintendent), **Dr. Snigdha Singh** (Wards coordinator) and **Dr. Dheeraj P. Arya** (Administrator) for their vital encouragement and support.

I am fortunate to get this opportunity to convey my heartfelt thanks to my faculty and guide **Dr. Dharmesh Lal** (Associate Dean, IIHMR, New Delhi), for granting me the permission to do this project in FEHI.

With immense pleasure I express my gratitude and respectful regard to the nursing staff of all the wards and the head of all the departments of FEHI.

The acknowledgement would be incomplete if I don't mention about my friends and all my colleagues who helped me throughout the project.

My sincere thanks to all those who have been associated with this work.

-Akanksha Sharma

TABLE OF CONTENTS

APPENDIX/ANNEXURE

- CABG - Coronary artery bypass grafting
- Cath. Lab. - Cardiac Catheterization Laboratory
- CCC- Comprehensive Cardiac Check-up
- CCU - Coronary / Cardiac Care Unit
- CCU - Critical Care Unit
- CPR – Cardio Pulmonary Resuscitation
- CT - Computed Tomography
- ECG - Electro cardiograph
- ECHO – Echocardiogram
- EDOD- Expected Date Of Discharge
- EHC - Executive Health Check-up
- EHIRC - ESCORTS HEART INSTITUTE AND RESEARCH CENTRE
- F&B- Food and Beverages Department
- FOS - Fortis Operating System
- HR- Human Resource
- ICU -Intensive Care Unit
- IPD- In-Patient Department
- JCI - Joint commission international
- LAMA – Leave against medical advice
- LFT- Liver Function Test
- MLC - Medico legal Case
- MRD - Medical Record Department
- NABH - National accreditation board for hospitals & health care providers
- NABL - National accreditation board for testing and calibration laboratories.
- OM - Operations Management
- OPD- Out-patient Department
- OPG - Ortho pen tomogram

- **PAP Smear- Papanicolaou Smear Test**
- **PCS- Patient Care Services**
- PFT - Pulmonary Functional Test
- PHC- Preventive Health Check
- **PSA Test- Prostate Specific Antigen Test**
- **PTCA -** Percutaneous Transluminal Coronary Angioplasty
- PWD – Patient welfare Department
- PWO - Patient welfare Officer
- TAT- Turnaround time
- TMT - Tread Mill Test
- TPA- Third Party Administrator
- USG - Ultra Sonography

Abstract

"A Study on the Discharge Process of Fortis Escorts Heart Institute, Okhla, New Delhi"

By

Akanksha Sharma

AIM

To study the Discharge Process of FORTIS ESCORTS HEART INSTITUTE, OKHLA, NEW DELHI

INTRODUCTION

The discharge process is a critical bottleneck for efficient patient flow. Slow or unpredictable discharge translates into a reduction in effective bed capacity and admission process delays. Patterns of bed occupancy enable us to develop tools which assess performance measures based on activity within a hospital and its beds, and hence they improve the efficiency of bed management and they facilitate the more effective use of resources.

FEHI offers the most comprehensive range of Interventional Cardiology Services performed by Interventional Cardiologists, recognized all over the world as international leaders for their experience, expertise and skills. They are credited with pioneering advanced techniques in the areas of angiographies and angioplasties In addition it also provides excellent care in the area of Pediatric Cardiology, Nuclear Medicine, and Intensive Care and Emergency Services.

Problems Faced by patients:

Increased waiting time by patients in the Heart Command, Daycare and Emergency department for further treatment of the diagnosed disease. Emergency and Daycare rooms crowding due to lack of in-patient beds. Frustrated patients and staff. Inconvenience to the patient and the family members of the patient due to non availability of hospital beds.

Problem faced by hospital:

Procedure to patient is not being provided on time as there are delays occurring on behalf of hospital .Some patients are being returned due to high bed occupancy leading to non availability of beds .Financial losses due to returning of the patient are being bearded by the hospital authority.

OBJECTIVES OF THE STUDY

- To find out the difference in the discharge time for CASH, TPA and CREDIT patients.
- To understand the reasons of delay in the discharge time for the three category of patients.
- To find out the bed occupancy rate in the hospital and average length of stay.

STUDY SETTING

Departments: In-Patient Department

Stakeholders of the study: Patient, Health Care Workers

Tools of the study: Cross sectional study (Cross-sectional analysis)
Cross-sectional analysis studies the relationship between different variables at a point in time.This study will be carried out for a particular period of time.

Data collection:

Data collection methods used during the study includes concurrent observation data from medical records department, patient file and data from nursing station.

CONCLUSION

The higher bed occupancy is seasonal (especially in winter due to high cases of Cardiac ailments) than the optimum during the winter season.

Also it has been observed that the Discharge process is been delayed due to reasons mentioned in the chapters more than normal durations for the discharge process. This also further leads to higher bed occupancy present in the hospital and unnecessary long waiting hours by the patients for admission to the in-patient –department.

PART –I

INTERNSHIP REPORT

Fortis Escorts Heart Institute, formerly known as *Escorts Heart Institute and Research Center is* Pioneer in the field of fully dedicated cardiac care facility in India. Fortis health care is the fastest growing hospital network in India.

Fortis Healthcare, led by the vision of late *Dr. Parvinder Singh* of creating an integrated healthcare delivery system in India acquired Escorts Heart Institute and Research Centre Ltd. in 2005. EHIRC was established in 1988.

Fortis Escorts Heart Institute has set a benchmark in cardiac care with its path breaking work over the past 20 years. Today, it is recognized world over as a center of excellence providing the latest technology in cardiac Bypass Surgery, Minimally Invasive (Robotics), Interventional cardiology, Non invasive Cardiology and Pediatrics Cardiology Surgery.

The hospital is backed by the most advanced laboratories performing complete range of investigative tests in the field of Nuclear Medicine, Radiology, hematology, Transfusion medicine and Microbiology.

Fortis Escorts Heart Institute has a vast pool of talented and experienced team of doctors, who are further supported by a team of highly qualified, experienced & dedicated support staff & cutting edge technology like the recently installed Dual CT Scan Currently, more than 200 cardiac doctors and 1600 employees work together to manage over 14,500 admissions and 7,200 emergency cases in a year.

The hospital today has an infrastructure comprising of around 285 beds, 4 Cath Labs besides a host of other world class facility.

FEHI has a capacity of 285 beds, 9 Operation Theatres, 3 Heart Command Centers, and 2 Heart Stations besides an array of other world-class facilities. It provides top end services in areas of acute care, invasive and non-invasive cardiology and state-of-the-art surgical procedures, besides playing a leading role in prevention, early detection and the reversal of heart disease.

FORTIS ESCORTS HEART INSTITUTE, OKHLA, NEW DELHI

It is an ISO 9001 approved facility and a recent All India survey conducted by the Centre for Forecasting & Research has judged FEHI as the best hospital in cardiac care in the country.

A consumer forum (VOICE) has ranked its patient care and nursing services as No. 1 in Delhi. Recently Escorts Hospital has been accredited by National Accreditation Board for Hospitals & Healthcare providers (NABH) and Joint Commission International (JCI) for its quality services.

To spread cardiac care to more and more people FEHI has vast network of hospitals across the country. Also to cater the far-flung areas, the institute has started with Community Outreach Program. The institute also offers many cardiac preventive health checks.

FEHI launched its **Community Outreach Program**, which started out as a vision to reach out to the health needs of population in the remotest corners of the country, and has covered the states of Uttar Pradesh, Haryana, Punjab, Bihar, Madhya Pradesh, Himachal Pradesh and Rajasthan.

Over a period of time, the philosophy of the program **"A give back to society "** has evolved and over 100,000 people are provided free cardiac check-ups annually.

FEHI has now taken a landmark step in introducing Robotic Cardiac Surgery by installing the first the **Da Vinci Surgical System** in this Region. It is the only center from Germany to Japan, which is using the Totally Endoscopic Coronary Artery Bypass Surgery with the use of the Da Vinci Surgical System. Over 250 Cardiac Surgeries have been done on this system.

While Endoscopic procedures on the other organs have been successfully done over the years, the feat of carrying out Endoscopic procedures on a sensitive beating organ like the heart has just been accomplished by the development of the Da Vinci surgical system.

INTRODUCTION TO WARDS

Hospital ward- block forming a division of a hospital (or a suite of rooms) shared by patients who need a similar kind of care. Hospital in patient services basically covers 1/3rd of the total hospital complex.

The functions of inpatient services are-

- To render nursing care to all patients.
- To provide necessary equipments, essential drugs and all other stores requirements for patients care in an organized manner in the wards.
- It provides opportunity for training medical, nursing and paramedical, nursing and medical staffs besides conducting research work.

Types of wards-

- General wards
- Specialty wards

The nursing unit, also called the "ward" is a grouping of accommodation for the patients with service facilities which enable a team of nurses to care for inpatients under the best possible conditions, and includes under one roof patient beds, the nursing station, the service area, the storage area, the work area, and sanitary area.

Highest rates of the common life threatening diseases include coronary artery disease, diabetes, lung cancer, kidney diseases, chronic respiratory disease, stroke, asthma, arthritis and hypertension. These disorders are predominantly incurable and managed by primary practitioners and physicians. Surgery has little place to impact on the lives of people who suffer from these disorders.

FUNCTIONAL AREAS OF THE WARDS

- Nursing station
- Stores
- Treatment room
- Doctor's duty room
- Sister in charge duty room
- Sluice Room
- Used linen room
- Hub Room
- Sister's duty room
- Sister's changing room
- Pantry
- Study Room

Other ancillary services:

- Doctor's washroom -1
- Sister's washroom -1
- Patient's washroom -2 (1 male & 1 female)

STAFFING OF THE DOCTORS

HEAD OF THE CARDIOLOGY

↓

CARDIAC SURGEON

↓

CARDIOLOGIST

↓

CONSULTANT

↓

JUNIOR CONSULTANT

↓

SENIOR RESIDENT

↓

JUNIOR RESIDENT

STAFFING OF NURSING PERSONNEL IN WARDS

1-NURSING SUPRINTENDENT

↓

1-DEPUTY NURSING SUPERITENDANT (DNS)

↓

1-NURSING SUPERVISOR

↓

1-NURSING INCHARGE

↓

1-NURSING TL

↓

6-NURSES

SHIFT WISE STAFFING IN THE WARD

STAFF	MORNING SHIFT	EVENING SHIFT	NIGHT SHIFT
NURSES	**8**	**7**	**7**
HOUSEKEEPING STAFF	**3**	**3**	**3**
KITCHEN STAFF	**3**	**3**	3

DATA MANAGEMENT IN WARD

Data management is a continuous process that is carried in respect with various departments related for the smooth outcome of the process.

This technical and scientific approach in planning the schedules will thereby decrease the loss of time for both the patient and the hospital, thereby increasing the bed occupancy ratio, bed availability and giving a memorable experience to the patients/ attendants as well.This conceptual procedure would be arising factor for the excellent standards that have to be maintained and achieved to formulate the necessary conditions in force.

The first and the foremost objectives used to maintain/ reduce the TAT of the process. This can be achieved only through systematic and multilevel strategic planning, wherein at any given instant any link pertaining to a particular patient has come to a Holt the other leads should not collapse or effect should be minimal, so that the entire flow is not affected due to minor lapse or glitches.

- **Daily data-**
  - total patients list
  - patient discharge list
  - Planned patients discharge list for next day

- **Weekly data-** FOS (Fortis Operating System)

Total patient list

This is the list of total patients present in all the four wards. This is list every morning and mailed to all respective departments.

Methodology

- Go to the software report hook
- User name-…… Password- ……
- Select ward wise patient list and enter ward name, e.g. - dlward3.
- Export this outcome to desktop in format of excel (8.0 XLS extended), tabular format.
- Likewise abstract all ward lists and then merge these entire list into one in a sequential manner.
- Now rearrange this list according to the required format
- Mailing it to all the respective department heads.

Patient Discharge List

This is the list consisting of total patient to be discharged from all the four wards on the same day twice. Once in the morning for the same day, then in the evening for the next day.

Methodology

- Go to Medtrak
- User id and password
- Go to wards list and find out the total discharges for the ward with their respective bed numbers.
- Green color code is for the discharge on the same day.

Planned discharge List

For this data some parameters considered are-

- Patients who have undergone angioplasty the previous day are included because angioplasty patients are shifted to wards the next day after this procedure.
- Patients who had angiography the same day, we are making data. Because these patients are shifted in wards the same day of procedure.
- Surgery patients who are confirmed by duty doctor.
- And the patients who are there in medtrak list with a color code blue, to be considered in planned discharges, as confirmed by the respective episode doctor.

FOS DATA

- Extract the patient discharge list from software named Report hook
- Select the list from the dates for which the FOS data is to be made, e.g. 1st Nov.-7th Nov. 2010.
- Select the data for wards only. Choose data only for wards (3, 3a, 4,4a).
- Now arrange the data in a sequential manner for the required format. Columns like registration no., discharge time, date of admission, patient name, doctor name etc should be at the right place.
- Removing of outliers.
- These outliers are-
    - DOR (discharge on request)
    - LAMA (left against medical advice)
    - Daycare (patient admitted and discharged on the same day)
    - Half day (discharges after 11.30)
    - PEADS (patient under a pediatrics doctor)
- Calculate the total no of outliers so that it can be deducted from total discharges and discharges without outliers can be obtained.

- Using filter option, select data without outliers and copy it to another sheet to find out the billing clearance time before 11 & 12.
- Now calculate before 11 by seeing the patient discharge time, which are before 11.30.
- Now calculate the before 12 by finding out the discharge time before 12.30.
- Count total no. of before 11 & 12 discharges.
- Calculation of TAT= discharge time - clinical discharge time
- Correction of TAT by matching data with the track list of every day discharges.
- Find out the mode of payment for each patient.
    - Cash
    - Credit
    - TPA
- Now find out the outliers from planned discharge list for whole one week.
- Calculate the total planned, planned gone and total discharge of the week.

Formulas used in calculations-

While performing various calculations to make FOS data, there are no. of parameters to be considered. These parameters are either taken on the daily entries maintained by nurses and then calculated on the basis of weekly data requirement, or considering other sub parameters, calculated with use of various numeric values.

Some formulas that are used considering various parameters are-

- Adherence to planning= planned gone/ total planned
- Percentage of planned discharges= (total planned- outliers)/(total discharge-outliers)
- Percentage of bed manager= total gone/ total discharges
- Average midnight utilization= total midnight utilization of the week per wards/total beds available in the week.
- Total new admission = sum total of new admissions of every ward in whole one week.
- Total transfer in= sum total of transfer in for each ward in whole one week.

CONCLUSION

The study highlights the fact that ward management is inevitable for effective patient care and it is an equally important aspect of nursing as is patient care. Prime objective of a nursing unit is providing **"**the highest possible quality of medical and nursing care for patients", all ward activities whether internal or external (support services) are carried on effectively and are well co-ordinate in pursuit of providing quality medical and nursing services to patients.

Nursing staff performs the crucial ward functions such as-

- Necessary equipment support
- Essential drug administration and other stores required for patient care
- Creation of a desirable environment, which makes wards a temporary substitute of patients home.
- Ensuring that all facilities are provided in ward, which meets the needs of the visitors and attendants.

Also while, performing these functions and various other ward management activities efficiently and effectively, nurses ensure that there is no compromise in providing nursing services to patients.

Kitchen services are also important in ward management. Food and beverages are being provided at different times like. These services are provided in time so patients are satisfied with the services.

Housekeeping staff performs many duties like providing dresses to the patient, bedding change, dusting, cleaning of cardiac table. There is lack of staff so sometimes they are unable to change bedding, dusting and cleaning. Classification of activities in the ward has been done on the basis of time and staff performing them in order to develop the job description of the nursing staff, as they are directly responsible for patient care.

PART –II

"A Study on the Discharge Process of Fortis Escorts Heart Institute, Okhla, New Delhi"

CHAPTER 1: INTRODUTION TO THE STUDY

Hospital administrators and financial managers strive to achieve high bed occupancy, but the unpredictability of illness and injury requires that beds should be available if possible at all times. It is not a rate because there is no set time dimension. Bed occupancy is not the index for the efficiency of the hospital but has a significant and quantifiable negative influence on the Emergency department, affecting patients both discharged and hospitalized.

1.1 FORTIS ESCORTS HEART INSTITUTE

1.2 Discharge Process

Discharge from the hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge involves the medical instructions that the patient will need to fully recover. Discharge planning is a service that considers the patient's needs after the hospital stay, and may involve several different services such as visiting nursing care, physical therapy, and home blood drawing. As the final step in the hospital experience, the discharge process is likely to be well remembered by the patient. Even if everything else went satisfactorily, a slow, frustrating discharge process can result in low patient satisfaction .The discharge process is a critical bottle neck for efficient patient flow. Slow or unpredictable discharge translates into a reduction in effective bed capacity and admission process delays. In fact, the discharge process and scheduling in-patient surgery rank as the two biggest factors impacting wait times for in-patient beds.

The hospital discharge is a complex, multi-step process requiring integrated communication among the inpatient care team .The discharge process is a critical bottleneck for efficient patient flow. Slow or unpredictable discharge translates into a reduction in effective bed capacity and admission process delays .Hospital bed demands sometimes exceed capacity, leading to delays in patient admissions, transfers and cancellations of surgical procedures. Effective strategies must be in place for an efficient use of existing beds. As the final step in the hospital experience, the discharge process is likely to be well remembered by the patient.

Even if everything else went satisfactorily, a slow, frustrating discharge process can result in low patient satisfaction improving the discharge process, hospitals can increase patient satisfaction. Though it's commonly believed that patients don't like short hospital stays because they feel as though they're being hurried out before they're ready

1.3 DEFINITION AND TERMS USED:

Bed Occupancy : The ratio of inpatient service days to bed count days in the period under consideration The inpatient census represents the actual occupancy (number of occurrences) .The bed count represents the possibility for occupancy (number of times it could have occurred or the maximum possible. It has found that patients with shorter stays are more satisfied with their experience than those with longer hospital visits. The study identifies four areas that contribute to patient satisfaction with the discharge process:

Patient readiness to leave the hospital ,An efficient, swift patient discharge process ,Clear instruction for care after discharge ,Coordination of arrangements following discharge so that the patient has all the support and equipment necessary.

Average length of Stay : The average length of stay (ALOS) is an important indicator of the efficiency of hospital resource utilization .The total number of patient days for an inpatient episode. The duration of an inpatient's hospitalization is considered to be one day if he is admitted and discharged on the same day and also if he is admitted on one day and discharged the next day. Total length of stay (total discharge days) is the number of days of care rendered to a group of inpatients from admission to discharge. The sum of the length of stay of any group of inpatients discharged during a specified period of time. Physicians exert ultimate control over the way in which treatment procedures are used and the subsequent length of stay of patients.

Diagnosis and treatment procedures for the same cause of admission vary among physicians of the same department.

Bed turnover rate: - The number of times a bed, on average, changes occupants during a given period of time, The average number of admissions per bed per time period useful because two time periods may have the same percentage of occupancy, but the turnover rates may be different While conducting the study we need to be familiar with the following terminology which are commonly used in the hospitals and are required for understanding the process.

Key personnel : Senior Doctors, Junior Doctors, Nurses, Discharge sectary, General duty Assistant, Billing Department, Insurance Company, Patients

1.4 Review of Literature

A Root cause analysis was done to ensure improvement. After studying the existing processes for three months, the major causes for delays were identified.

Doctors' Round: This was to declare that the patient was fit for discharge. The final nod was the main driver for the entire process. The doctors generally came for rounds at 10 AM. All the processes related to discharge started late. The nod would come by 11 AM and then the patient would get discharged only by evening. The doctors can be asked to start their rounds early, so we had to find other means for the entire process to complete quickly. After the final nod would come from the doctor in the morning, then only the unused medication would be returned and the money would be deducted from the patients' bill. At one time, nearly 30 discharges would take place and this increase the time to clear the unused medication.

Time taken by billing: The accounts department would take time to prepare the discharge summary and thus the bill. After the bill was handed over to the patients' relative, the patient would need time to arrange for money as the banks would open late. This delayed the time taken by attendant to clear the final bill. Moreover, since in Amritsar, most patients come from nearby villages to get the quality treatment, so the attendants take a long time to arrange for vehicles from their villages. "We could not blame the patients as the process was first delayed from our end.

The Action Plan So, vital steps were taken to tackle the issue. Advance Information: Nurses were trained to confirm the date of discharge from the treating consultant during his rounds every day. "The doctors had a fair idea a day in advance, but the whole problem was communication. So, we asked the doctors to convey to the nurses and other staff about the patient discharge one day in advance. The next day, the discharge was confirmed by the nurse. So were there any hiccups in this? "Not really, because in cardiac care there are packages and the discharge time in most cases can be easily estimated in most cases.

Once the date of discharge was confirmed by the doctor (to be the next day), steps had to take place 12 hours before the day of discharge. "All stakeholders involved were informed of the planned discharges. Unused medication of the patient was returned the previous night. The patients' attendants were informed, so that they could make the required financial and logistic arrangements," shares Singh.

Daily Updating of Bills: To speed up of the billing process and to ensure quick turnaround of the final bills, all bills are audited and updated every night to ensure minimum time is taken on the day of discharge. The aim is to complete all the discharges before 11am every day, so that the same beds could be made ready for the new admissions.

Discharge Summary: The discharge summary is typed from the day the patient is admitted, is updated on a daily basis and on the day of discharge, only minor additional information is added. "The summary is to be checked and signed by the consultant during his morning visit to the patient on the day of discharge.

On the day of the discharge, a final approval from the treating doctor triggers the information to all stakeholders and the attendants to carry out what was necessary to enable the discharge of the patient in shortest possible time. Since most of the work is already completed in advance, there is no last minute chaos.

Upgrading IT: To ensure speedy processes, IT systems too were upgraded. Some automation in the Hospital Information System (HIS) was brought in to enable a faster billing process as well as availability of diagnostic reports online which ensured that there was minimal delay.

Daily Payment: It is not easy to ensure that the attendants are ready with the balance of the payment and logistic arrangements. "So, whenever there is a credit from the patients' side, the attendant is asked to pay the amount on a daily basis, so that in the end there is not a bulk of payment to be made," says Singh.

The Results As a result of the above actions, the overall time taken to discharge patients dropped significantly. The time to discharge the patient is now 90 minutes, a benchmark for the industry A hospital bed is both a scarce and expensive commodity in healthcare. Administrators running these hospitals are in a dire need of objective measures and methods for efficient management of their limited financial resources. Bed utilization rates can be of immense help in realistic and effective decision making.

A descriptive study was carried out in an 845 bedded tertiary care public hospital in Goa. Hospital data for the entire year 2003 was collected and was analyzed using the various hospital indices. Internationally accepted working definitions and calculations were used for calculating the indices[1].

Total OPD attendance for the year 2003 was 363,949. There were a total of 40,262 admissions, 38,204 discharges and 2058 deaths. The average length of stay in the hospital was 5.9 days (Table 1). The longest length of stay was for the skin ward (21.7 days) reflecting the chronic nature of several skin diseases, while the lowest was for the ophthalmology ward (4.2 days). E Ravi Kiran et al[2] reported an average length of stay of 9 days in a tertiary care teaching hospital. The overall bed occupancy rate for the hospital was 77.4%. The orthopedics wards had the highest bed occupancy of 97.4% followed closely by surgery wards (94.5%), neurosurgery (89.6%) and ophthalmology (86.7%). The lowest bed occupancy was seen in the skin ward which had occupancy of only 28.1% reflecting the declining prevalence of leprosy in Goa.

Bed turnover interval which expresses the average period in days during which a hospital bed remains vacant was 1.7 days. A very low turnover interval was seen in orthopedics wards (7 hours), surgery wards (9 hours) and neurosurgery (12 hours) while, the skin ward had the highest turnover interval (55.4 days).

The bed turnover ratio for the hospital was 47.6. The turnover ratio indicates the number of turnovers in one year for the given bed complement. Saha JB et al reported a bed turnover ratio of 20-40 in their study in west Bengal[1].

A further disease-wise or department-wise analysis would give valuable information about the requirements of drugs, equipments and manpower so that advance planning could be done. The study highlighted the urgent expansion needed by orthopedics, surgery and neurosurgery branches. Shifting of the skin ward to a smaller location and reuse of the skin ward for some other clinical branch was recommended .Hospital utilization indices are an objective measure of the efficiency of the hospital management system. Their consistent use will help the administrators in making their decisions more realistic, scientific and free from subjective bias. A structured methodology similar to that of Six Sigma was adopted to carry out the whole change process

1.5 JUSTIFICATION OF THE STUDY

1.5.1 OBJECTIVES

During the period of my training the hospital was facing the problem of high bed occupancy. The patients were waiting for long hours to get admitted to the hospital for their treatment procedures which also lead to the revenue loss for the hospital as the patients were being returned due to non availability of beds The hospital administration wants to convert this problem of high bed occupancy in the hospital to optimum bed occupancy as well as to provide the quality of patient care to those in need of it at the earliest possible. For this the hospital administrative authority also wants to see the effectiveness of the current discharge process being followed in the hospital. We would be discussing about the discharge process as this is directly related to bed occupancy in the hospital. The objectives for the study will be based on the utilization of hospital services by the patients and the non –availability of the bed in the hospital.

1.5.2 General Objectives of the study

(i) To study the of admission and discharge process in the hospital.

(ii) To find out the difference in the discharge time for CASH, TPA and CREDIT patients.

(iii) To find out the bed occupancy rate in the hospital and average length of stay.

CHAPTER 2 DATA AND METHODS

2.1METHODOLOGY

2.2 Specific objectives

2.2.1 Objective no. i

(a) To find out the admission process in the hospital
(b) To find out the discharge process in the hospital.

2.2.2 Objective no. ii

(a) To calculate the total time taken for discharge of patient from consultant's approval to physical walk out of patient, i.e. the TAT for the discharge process

2.2.3 Objective no. iii

(a) To find the bed occupancy rate in hospital
(b) To find the average length of stay of patient in hospital.
(c) To find bed turnover rate of the hospital

2.3 Research design for the study

The design of the study would be as mentioned:

Departments: In-Patient Department

Stakeholders of the study: Patient, Health Care Workers

Cross sectional study (Cross-sectional analysis)
Cross-sectional analysis studies the relationship between different variables at a point in time.This study will be carried out for a particular period of time.

2.4 Data collection

Data collection methods used during the study includes concurrent observation data from medical records department, patient file and data from the nursing stations.

Place of study – Fortis Escorts Heart Institute, Okhla, New Delhi
Period of study – 17th January to 10th April

The average length of stay:

The average no. of days stay in hospital & is calculated as:

$$\frac{\text{Cumulative no. of days for each patient (during particular period)}}{\text{Total number of patient admitted in the hospital during the period}}$$

Percentage of Bed occupancy:

The percentage of inpatient beds occupied over a given period. Calculated as

$$\frac{\text{Total number of Patient's days for a given period x 100}}{\text{Total no. of beds in the hospital x Time Period}}$$

Bed Turnover Rate:

The time difference or the interval between the discharge of patient or the time the patient leaves the bed and the admission of another patient on the bed in the hospital.

Formula used:

$$\frac{\text{Number of discharges (separations) in the period}}{\text{Available beds}}$$

TURN AROUND TIME FOR DISCHARGE PROCESS

Total time taken for the discharge process from the first step which is doctor's intimation the last step which is the physical walkout of the patient from the hospital.

CHAPTER 3 RESULTS AND FINDINGS

3.1 DATA INTERPRETATION & ANALYSIS

3.2 ADMISSION AND DISCHARGE PROCESS

Aim: To understand the Admission and Discharge Process

Objectives: Find the admission and discharge process flow in the hospital, understand the role of different department in the admission process.

3.2.1 Admission Process:

Hospital admission involves staying at a hospital for at least one night or more

Description: An individual is admitted to the hospital for a positive experience, such as undergoing an elective surgery or procedure, or because they are being admitted through the emergency department. Prior to hospitalization your physician is expected to explain to you / your attendant, the provisional diagnosis, proposed line of investigations and treatment, approximate length of stay and reasons for admission to the Hospital. Questions pertaining to these topics should not be addressed to the Hospital Staff other than the senior physician who is responsible for admitting you to the Hospital.

Information provided by the paramedical / junior staff may be misleading or incomplete at the best. The patient arrives at the IP reception with the admission request form. The patient is counseled about the estimated expenditure for his stay/procedure and various hospital guidelines .Being admitted through the emergency department is the most stressful of these circumstances because the event is unexpected and may be a major life crisis**.** Before the person is taken to their room, admitting procedures are performed. The person's personal data is recorded and entered into the hospital's computer system. This data may include:

Name, Address, Home and Work Telephone, Number, Date of Birth, Place of Employment, Occupation Emergency Contact Information and the names and telephone numbers of those individuals the hospital should contact if the person being admitted needs emergency care or their condition worsens significantly. Also the reason for Hospitalization, Allergies to Medications or Foods, Religious Preference

There are several forms to fill out. One form is a detailed medical and medication history. This history will include past hospitalizations and surgeries. Having this information readily available will make the process move faster, and will allow a family member or friend who is accompanying the person to help fill out the forms more easily. The hospital staff will ask if there are any advance directives.

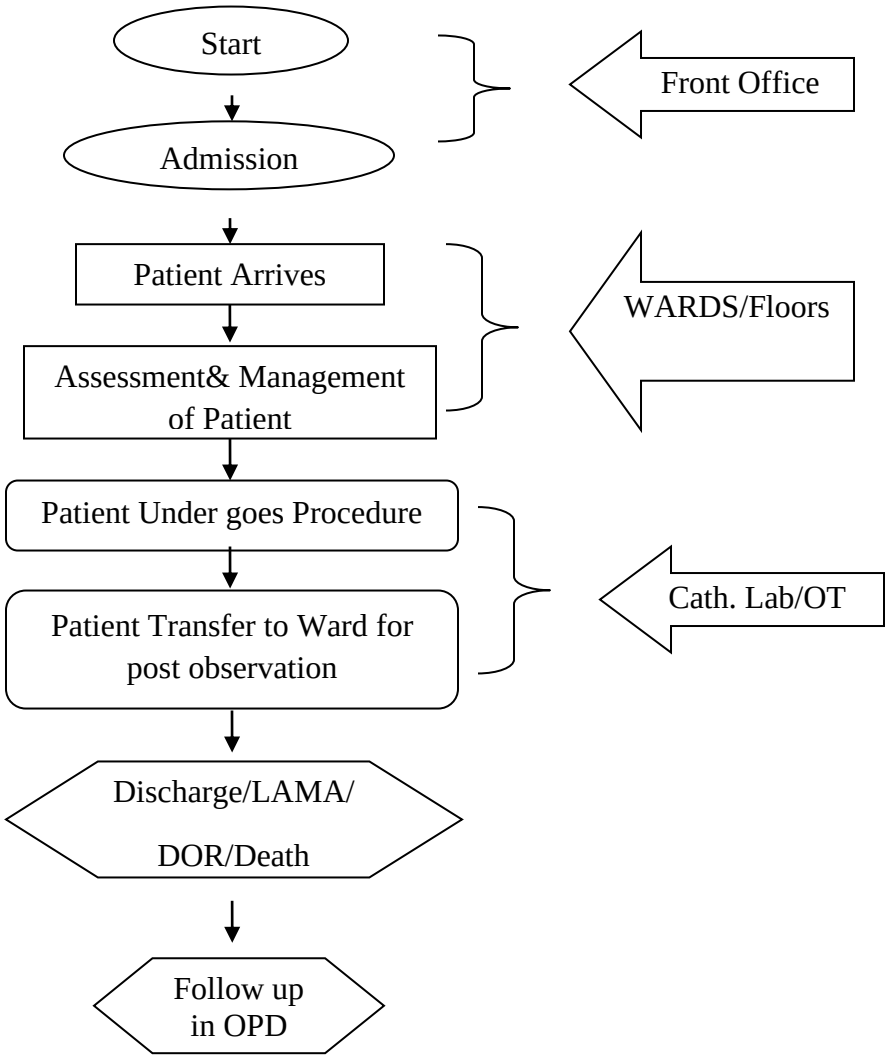
This refers to forms that have been filled out indicating what medical decisions one wants others to make on their behalf .Sometimes when people are admitted to the hospital they need extremely close observation that can only be given in specialized care called an intensive care unit.

Preparation: If the hospitalization is prearranged, there are preparations that will make the process go more smoothly Beds in the wards are for patients suffering from a particular type of illness for instance, patients with general medical problems are admitted to the General Medical Ward.

Patients suffering from critical conditions are admitted to ICU and patients suffering from surgical problems are admitted to Surgical Ward the beds are allotted in each ward to different consultants

It is helpful to have a list of all medications currently being taken, the dosages, how often they are taken, and the reason for taking them. The list should also include any allergies to food and medications, including a description of the reaction If the hospital stay involves surgery in which there is the potential for significant blood loss, it may be possible to arrange to have blood drawn and stored so that in the event of a transfusion, the individual receives his or her own blood.

So Patient Flow at FEHI can be depicted as follows:



Admission by Insurance. Today, most Health Insurance policies do offer cashless hospitalization facility and route your policy through a Third party Administrator (TPA). However you should be familiar with the terms- Network Hospital and Non-network Hospital. Network Hospitals are those hospitals that your TPA has an agreement with. In case of hospitalization, if you get admitted to a Network Hospital you will be eligible for cashless hospitalization, subject to the other terms and conditions mentioned in your policy being fulfilled. In case you are admitted to a Non-network Hospital, you will have to settle the bills directly to the hospital and then seek re-imbursement through your TPA.

3.2.2 DISCHARGE PROCESS

Description: Hospitalization is often a short-term event, so planning for discharge may begin shortly after admission. The physicians, nurses, and case managers involved in a patient's discharge from the hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge involves the medical instructions that the patient will need to fully recover. As the final step in the hospital experience, the discharge process is likely to be well remembered by the patient. Even if everything else went satisfactorily, a slow, frustrating discharge process can result in low patient satisfaction. The discharge process is a critical bottleneck for efficient patient flow. Slow or unpredictable discharge translates into a reduction in effective bed capacity and admission process delays. In fact, the discharge process and scheduling in-patient surgery rank as the two biggest factors impacting wait times for in-patient beds. Discharge planning includes

- A discharge summary of the hospital stay
- A list of test and surgeries performed with results and a list of test results still pending
- A list of tests needed after discharge, such as a repeat chest x ray
- A list of medications the patient is being discharged with, including the dosage and frequency
- A copy of the patient's discharge instructions
- When the patient should see the primary care physician for a follow-up appointment
- The plan for outpatient treatment, such as home intravenous antibiotics or nutrition to ensure that responsibility for this treatment has been clearly transferred and that the primary care physician accepts the treatment responsibility
- Discharge instructions to the patient on activity level, diet, and wound care

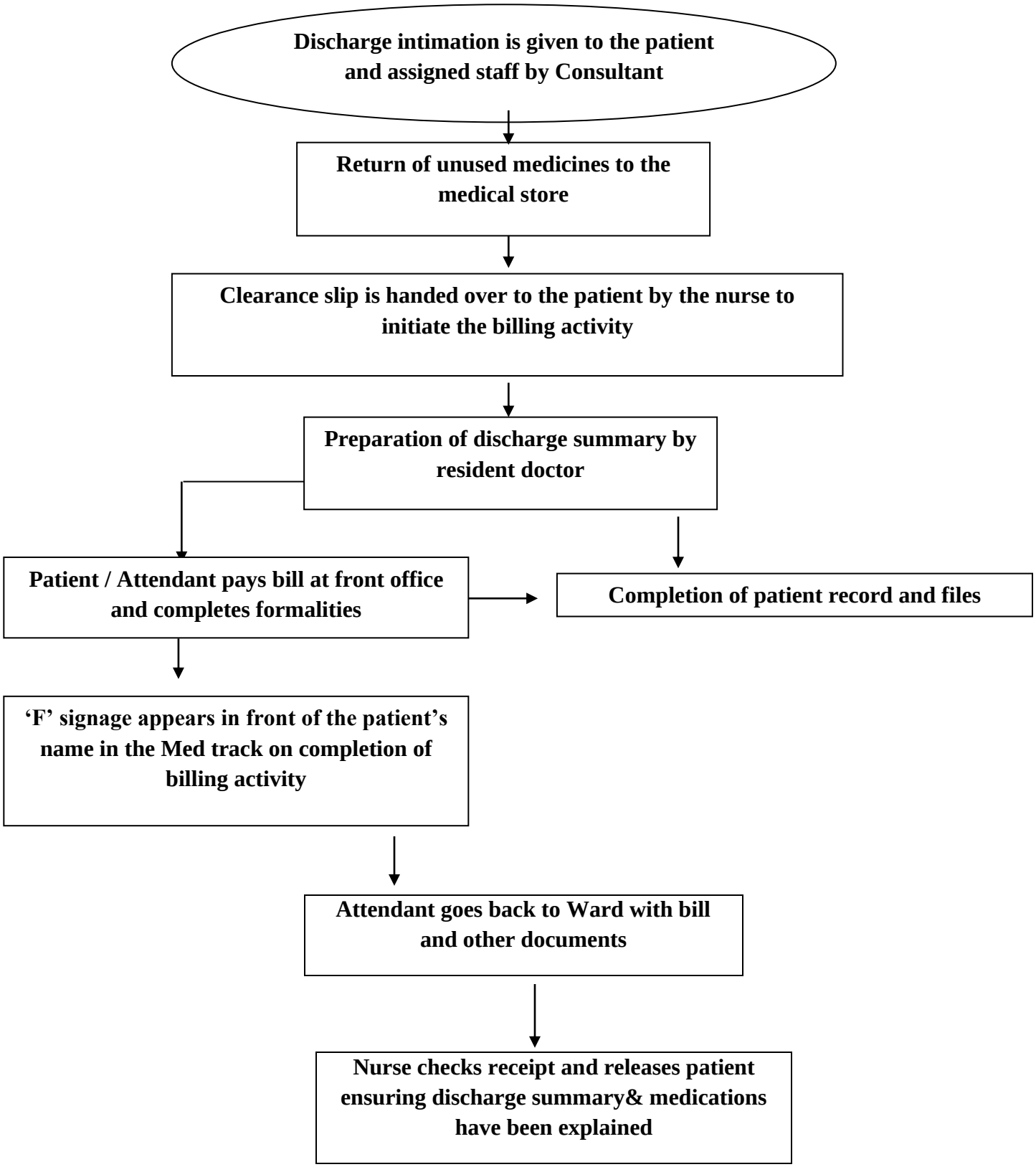
Prior to discharge: The patient will receive discharge instructions that should include an explanation of the care the patient received in the hospital, list of medications the patient will be taking (the dosage, times, and frequency),list of potential side effects of any newly prescribed medications, prescription for any newly prescribed medications ,when to see the primary care physician for a follow-up appointment, home care instructions such as activity level, diet,

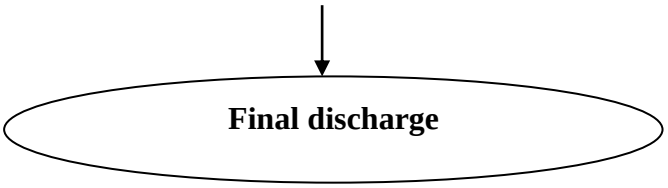
restrictions on bathing, wound care, as well as when the patient can return to work or school, or resume driving ,signs of infection or worsening condition, such as pain, fever, bleeding, difficulty breathing, or vomiting an explanation of any services the patient will now be receiving, such as for a visiting nurse, and to include contact information

The term discharge planning may be used to refer to the service provided to help patients arrange for services such as rehabilitation, physical therapy, occupational therapy, visiting nurses, or nursing home care. This service may be provided by a case manager or by the hospital's social service department. The patient may request this service, or the physician may make the request in the form of a referral to the department.

The patient will need to be evaluated to see what services he or she requires, as well as what services he or she qualifies for (such as meals-on-wheels), or what services the patient's insurance will cover..A follow-up from the hospital staff, either physician, nurse, or case manager, should take place within two weeks of discharge to review the results of any tests that were done in the hospital that came in after the patient was discharged,. To remind the patient of the follow-up appointment with the physician, to see if the patient has any questions about any new medications that were added in the hospital, and to be sure that no problems arises after the discharge of patient

Discharge Process flow:





3.3 Total Discharge Time for Patients

Aim: To study the total time taken for the discharge of patients in Fortis Escorts Heart Institute.

Objectives: Study the time taken for each step in the discharge process, find out the difference in the time of discharge for three category of patient (CASH, TPA, and CGHS), and understand the reasons for delay during the billing for the three types of category for patient

Key personnel: Senior Doctors, Junior Doctors, Nurses, General Assistants, General duty Assistant, Billing Department, Insurance Company, Patients,

Sample size for the study: 3000

Period of study: 17th January – 10th April

Location: 3rd and 4th floor of the hospital

The major ratio of patients admitted to the hospital included the C.G.H.S (central governent health schemes) ,the next being the Cash patients and T.P.A(Third party administration) patients being less in ratio compared to the other two modes of payment. The type of pateints

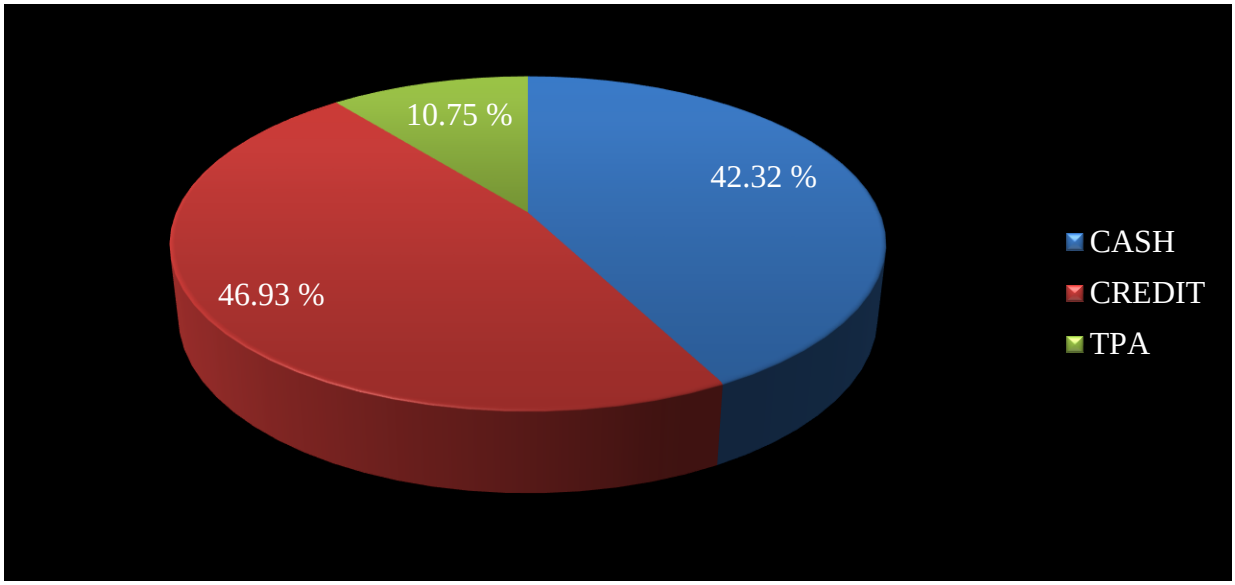
which are admitted to the in-patient- ward of the hospital are generally of the following catergory:

Central Government Health Schemes : These are the pateints which comprise the largest group of pateints admitted to the in-patient department of the hospital.The people working under the central government and their family members are the beneficiary of these schemes which have FEHI also on their panel for providing health services to its employees or retired personnel from the central government. The settlement of the bill for this catergory is very time consuming due to the slow functioning and long procdures of approval by the government athourities.

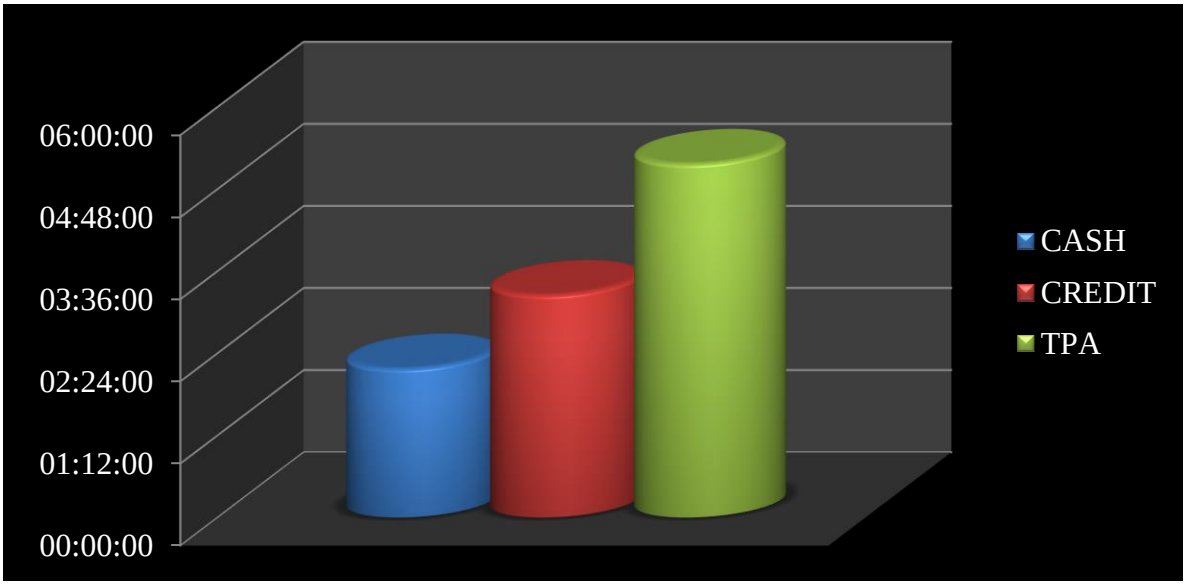
Cash : These include the second largest group of patients admitted to the in-patient – department. These pateints pay the hospital fees and the hospitalization charges in the form of cash at the time of discharge in the billing section .These also include the foreign patients or commonly called as the International patients.

Third Party Administrator : This catogory comprises of the least nuber of patients out of the three catogories. These include the insurance patients who have cashless treatment or hospitalization based upon their health policy and the benefits . The billing department settles the bill of the patient with his /her insurance company during the time of the discharge.

INTERPRETATION OF THE STUDY BASED ON MODE OF BILL PAY :



TIME TAKEN FOR DISCHARGE BY ALL THREE CATEGORIES OF PATIENTS



1-3 Hours	3-4 Hours	4-5 Hours or more
These are generally cash Patient As these patient require lesser time for completing the formalities of billing compared to Patients with Insurance or CGHS	The patients under the central government health schemes fall in this catergory This group of patients were generally seen with longer duration of discharge time as they have very time consuming formalities and the procedures generally are slow from the government sectors. Insurance Patients were mostly falling under this category. Insurance companies have certain time consuming procedures and formalities for payment of the hospital bills therefore it takes longer when compared to the cash patient	Insurance Patients were mostly falling under this category. Insurance companies have certain time consuming procedures and formalities for payment of the hospital bills therefore it takes longer when compared to the cash patient These pateints take more time in discharge due to the diference in policy for the various insurance companies regarding the payment of the hospital bills.

3.4 Bed Occupancy Rate ,Average Length Of Stay

AIM: To study the bed occupancy rate and average length of stay in the hospital during the given time period

Objectives: Find out the rate of bed occupancy in the hospital .and average length of stay, find out the reasons for high bed occupancy in the hospital, understand the correlation between bed occupancy and average length of stay

Duration Of Study: 17th January to 10th April

Sample Size: 910 patients in the month of january to February

914 patients in the month of Feburary to March

910 patients in the month of March to April

Location: Fortis Escorts Heart Institute, Okhla, New delhi

Method :The method used for calculating the bed occupancy and the average length of stay in the hospital is as given

Bed occupancy rate:

$$\frac{\text{Total number of Patient's days for a given period x 100}}{\text{Total no. of beds in the hospital x Time Period}}$$

Average length of stay(ALOS):

$$\frac{\text{Cumulative no. of days for each patient.(during particular period.}}{\text{Total number of patient admitted in the hospital during the stay.}}$$

The ALOS and the Bed occupancy rate were calculated by taking the data of the patients admitted in the hospital from the given hospital for the time period of 3 months (january to february, february to March and March to April). The data was carefully examined and then

used for the calculations after which it was used for the further application in the given formula to get the ALOS and Bed occupancy rate.

3.4.1 Bed Occupancy Rate:-

Defination: The number of hospital beds occupied by patients expressed as a percentage of the total beds available in the ward, specialty, area, or region. It is used to assess the demands for hospital beds and hence to gauge an appropriate balance between demands for health care and number of beds.

Description: Bed occupancy rates have been proposed to reflect the ability of a hospital to provide safe efficient patient care. A hospital bed is both a scarce and expensive commodity in healthcare. Administrators running these hospitals are in a dire need of objective measures and methods for efficient management of their limited financial resources. Bed utilization rates can be of immense help in realistic and effective decision making. Normal rate of occupancy vary with the size and the type of the hospital and the other factors affecting the utilization of the hospital facilities .It has been seen that small hospitals have a lower bed occupancy rate when compared to larger hospitals

Optimum Rate

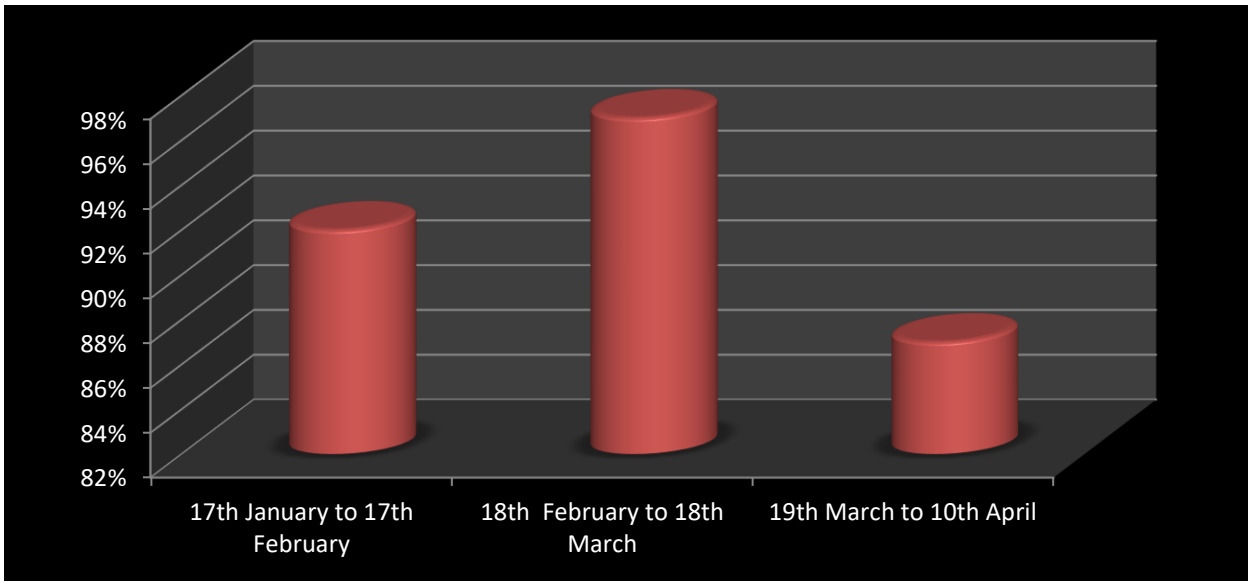
The optimum bed occupancy rate of the hospital should be between 75%- 80%.As this ensures less waiting time for the patients in the hospital for admissionIt also allows the emergency case to be treated in the right time.As unavailaibilty of bed in hospital may cause serious complication for the patient and his condition.

Bed Occupancy Related Data

MONTHS	NO. OF PATIENTS	NO. OF BEDS	TIME PERIOD	BED OCCUPANCY
17th January to 17th February	1308	285	32	92%
18th February to 18th March	1079	285	32	97%
19th March to 10th April	745	285	22	87%

The bed occupancy is seasonal (especially in winter due to high cases of Cardiac ailments) than the optimum during the winter season. Also it has been observed that the Discharge process is been delayed due to reasons mentioned in the chapters more than normal durations for the discharge process. This also further leads to higher bed occupancy present in the hospital and unnecessary long waiting hours by the patients for admission to the in-patient –department. The average length of the patient was mainly dependent on the disease profile of the patient as the non surgery patient required to be admitted for longer days for close observation along with the intensive care unit patients. The surgery patients were discharge depending on the recovery of the patient after the surgical procedure. Only in some cases was it seen the average length of stay for the patient depended on the consultant due he share of the consultant in the hospital fee generated for the patient.

BED OCCUPANCY FOR JANUARY, FEBRUARY & MARCH



Reasons For High Bed Occupancy Rate

It was mainly due to aggrevation in the cases of chronic heart disease during the winter season.it has been observed that the bed occupancy rates are generally higher in the hospital during this season as it heart speciality institute and the heart related disorder cases increase in this season there therefore the bed occupancy is also higher.

3.4.2 AVERAGE LENGTH OF STAY

The average length of stay (measured in days) provides general information about the efficiency of care delivery, and is therefore an important quality indicator. However, some hospitals care for patients with a greater severity of illness and therefore may have a longer average length of stay like the choice of hospital; the Average Length of Stay (ALOS) also depends on the procedure. For example, Cardiac surgery: eight days in hospital, Joint replacement (unilateral), neuro and spinal surgeries: seven days in hospital, Joint replacements (bilateral): 10 days in hospital Cosmetic procedures: 2-3 days in the hospital, seven days in the city. Heart patients usually stay for four days or longer in the hospital after surgery. Some patients are advised to stay longer due to complications.

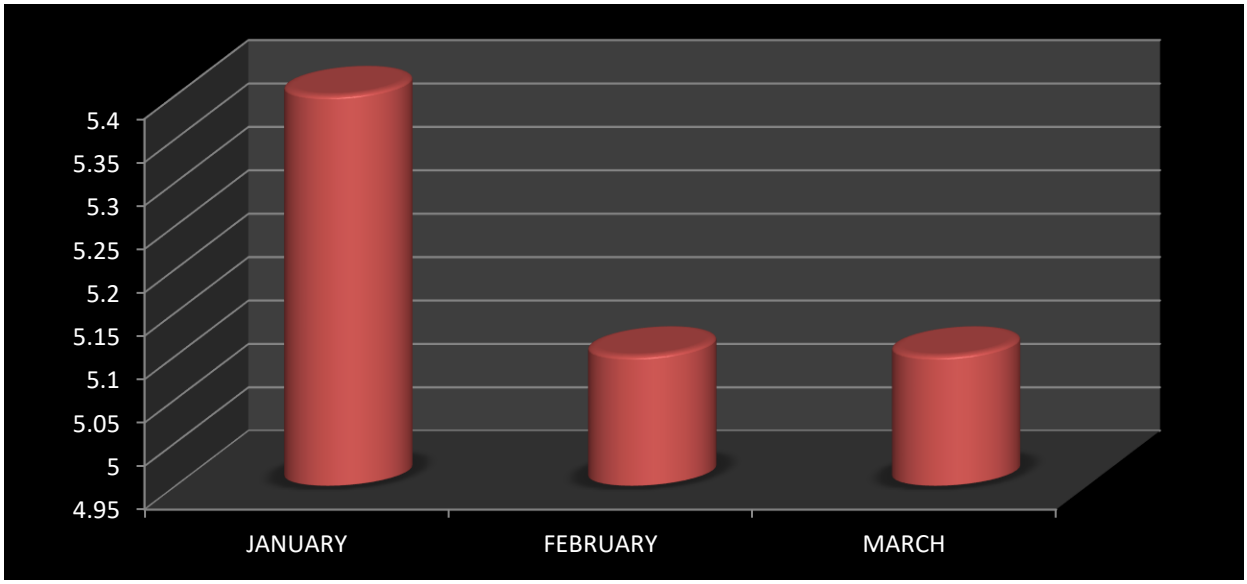
ALOS for January, February and December

MONTH	NO. OF PATIENTS	ALOS (in days)
JANUARY	**1308**	**5.4**
FEBRUARY	**1493**	**5.1**
MARCH	**1521**	**5.1**

FORMULA USED:

$$\frac{\text{Cumulative no. of days for each patient during particular period.}}{\text{Total number of patient admitted in the hospital during the period}}$$

GRAPHICAL REPRESENTATION OF ALOS



OBSERVATION FOR LENGTH OF STAY

It was observed that the length of stay of patients varied according to the disease profile of the patient. Cardiac surgery Patients when compared to cardiac medicine patients stay for a shorter duration in the hospital as the patients of cardiac medicine require more observation by the doctors .Patients of angiography usually don't stay for a long period they may get discharge on the same day or the next day from the hospital

3.4.3 BED TURN OVER RATE

The number of times a bed, on average, changes occupants during a given period of time, The average number of admissions per bed per time period Useful because two time periods may have the same percentage of occupancy, but the turnover rates may be different. Bed Turnover Rate gives the number of patients using one bed in a time span of a year total inpatient days is the sum of each daily inpatient census for the time period examined.

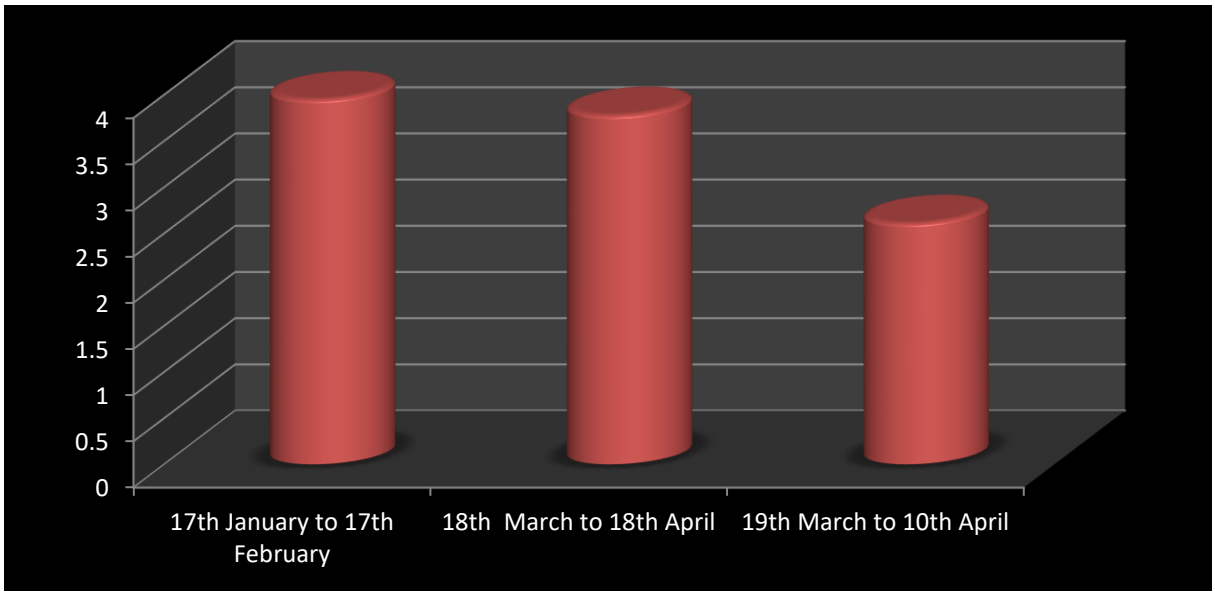
Period of study: 17th January to 17th February, 18th March to 18th April, 19th March to 10th April

MONTHS	NO. OF PATIENTS DISCHARGED	NO. OF BEDS	BED TURN OVER RATE (DAYS)
17th January to 17th February	1126	285	3.95
18th February to 18th March	1079	285	3.78
19th March to 10th April	745	285	2.61

Formula used:

$$\frac{\text{Number of discharges (separations) in the period}}{\text{Available beds}}$$

GRAPHICAL REPRESENTATION OF BED TURN OVER RATE



CHAPTER 4 DISCUSSION

4.1 Observations During The Study Of Discharge Process

During the course of the study it was observed that there were various other factors for the delay in the time of the dischrge process other than the mode of payment for the hospital bill these include delays on the behalf of the following personnel:

Doctors

1. **Late rounds by doctors-** It has been observed that discharges are not confirmed on time as the respective episode doctor does not consult the patient on time. So the nursing staff and other administrators do not receive the discharge order on time. So all related steps gets delayed. Senior doctors are engaged performing surgeries and their team doctor and other junior doctors/consultants have to assist them. Attending all patients among all the wards, recovery rooms take ample of time to make it delayed in the discharge process of patients in wards

General Assistant

1. Delay in discharge summary is another major reason for delays in discharge process. It was observed that while preparing the discharge summary the general assistants have to wait for the doctors to make any corrections, modifications, addition in the discharge summary as they can only can complete the discharge summary once it has been approved by the consultant.
2. The summaries are checked on each floor by the Doctor on duty for each respective ward. But many a times it is being observed that the Episode doctor comes and generally make changes in the medications. Therefore the summary has to be prepared again, leading to further delays.

Bill Clearance and TPA problem

1. Billing clearance is the biggest barrier in making the discharge process smooth. A patient seeks for the comfort in getting the billing clearance done. Patient usually does not want to leave before the lunch hours. Even if they get the clearance done they won't return the clearance slip back to the nursing team. As a result nursing team can't discharge the patient in the minimal assigned time for the discharge. In case of TPA patients there are a number of protocols to be followed by the attendant and the TPA department that it takes time in getting the authorization of bill from the TPA Company

Nurses

1.Delay may occur in carrying forward the discharge process on behalf of nurses as she may be busy with the doctor during the doctor round as a nurse may have different doctors for different patient and they may have difference in their patient rounds

2. Nurses are busy with patient especially during the morning hours with the treatment plan of the patients as given by the doctors whether there is change in medicines or to continue the same medicines.

3.Change in the shift of the nurse takes place at 2pm at this time the patients of TPA and CGHS are middle of the dischrge process.So the next nurse on duty has to take the process further.it may delay the process only by few mins but is important.

Reports not prepared on time

1. First reason is lack of performing staff. Then again if consulting doctor does not give a basic framework of reports to be made, other people can't give a final layout. So reports are usually not prepared on time. Patient/ attendant have to wait for the reports at the time of discharge in it results in the increasing TAT

2. Not signed by doctor (Sent to OPD**) -** reports if prepared late or early or on time, then it gets delayed in getting these report signed by the consulting doctor who are usually busy in their case operation

General Duty Assistant (GDA)

1. The GDA takes the unused medicines for the patient to the medical store which many a times consumes more than required time

2.GDAs are generally doing multi tasking in the hospital which includes attending to the patients ,nurses,general assistants, doctors, house keeping, doctor sectrary which also causes delays in the delivering of the discharge related steps.

Patients

1. Patients generally wait for the lunch after getting their clearence done.

2..Patients waiting for the dietician to consult for the further diet of the patient during the home care of the patient.

3. Patients waiting to meet the consultant.

Miscellaneous

1. In some samples it was observed that the patients waited for their facilitators for the settlement of their bills as they had language problem. This was mainly seen in the case of international patients

2. Patients waiting for discounts in their bill amount. This leads to delays in financial clearence.

3. Very few planned discharge from the medical side (~20 %) - Planned discharges are usually of the surgery patients. There are very less planned discharges from the medical patients. These patients are either not in the plan for a long time or they suddenly get discharged as commanded by the doctor. So their recovery status and other reports to be tracked are frequently neglected and not prepared on the time of discharge.

CHAPTER 5 CONCLUSION AND RECOMMENDATION

5.1 RECOMMENDATIONS

Suggestions which can be used for modifying the present discharge process in the hospital are as given for each component forming the discharge process.

1. Preparation of Discharge Summary

The discharge summary is a very time consuming step along with preparation of the pharmacy return and the activity sheet by the nurse just after the discharge intimation by the doctor .Therefore the nurses on the night duty should be instructed to feed in the discharge summary and complete the pharmacy sheet and return the stopped unused medications to the medical store by evening.

2. Modification in Admission Time

The hospital staff should be asked to inform the patient about his/her admission timing. Instead of calling the patient to the hospital at 8:00AM in the morning, the patients should be advised to reach at 12:00PM .So as to reduce the waiting time by the patient for his or her admission to the hospital.

This will also help in lesser stress and disappoint of the patient in terms of getting admitted for the treatment.

3. Planned discharge

The discharge process should be started as early as possible in the morning, so that the earliest discharge can be at or around 11.30 AM. The doctors should be asked to tell the tentative discharge for the next day .so that the work load can be kept minimal. Especially the surgery patients are missed out, which should be avoided as it takes a longer time in preparation of their discharge summaries

3. **Evening rounds**
   By medical doctor, so that discharges are known and confirmed. And patient/ attendant is also informed before the time of discharge.

4. **Availability of reports** before discharge, focusing on the patients who are there in plan discharge for the next day.

5. **Update Regarding Patient Condition.**

Constant evaluation of the patient condition with the consultant, junior doctors in the team, so as to limit the length of stay of the patient in the hospital based on his disease profile, condition, treatment. Personnel should be assigned to keep track of the daily patient condition .As this will help in reducing the bed occupancy in the hospital.

6. Others

The hospital administration should look forward to create a sufficient number of discharges early enough in the day so that demand can be accommodated from the emergency department and patients waiting to get admitted to the wards for treatment. Measures should be taken for speeding up of the billing process and to ensure quick turnaround of the final bills, all bills are audited and updated every night to ensure minimum time is taken on the day of discharge.

The doctors should be asked to convey to the nurses and other staff on the floors, wards about the patient to be discharged one day in advance from the actual discharge date as it will help the staff to prepare the documents in advance saving a lot of time during the actual process. Moreover, the administrative department should develop plans to ensure speedy processes. For this the IT systems too should be upgraded so that the information regarding the patient medicines, services can be available for clearance, billing etc, purposes. Some automation in the Hospital Information System (HIS) should be done to enable a faster billing process as well as availability of diagnostic reports online which ensured that there was minimal delay.

The discharge summary should be typed from the day the patient is admitted and should be updated on a daily basis and on the day of discharge, only minor additional information is added. The summary is to be checked and signed by the consultant during his morning visit to the patient on the day of discharge,

5.2 CONCLUSION

The higher bed occupancy is seasonal (especially in winter due to high cases of Cardiac ailments) than the optimum during the winter season.

The Discharge process is been delayed due to reasons mentioned in the chapters more than normal durations for the discharge process. This also further leads to higher bed occupancy present in the hospital and unnecessary long waiting hours by the patients for admission to the in-patient –department.

The average length of the patient was mainly dependent on the disease profile of the patient as the non surgery patient required to be admitted for longer days for close observation along with the intensive care unit patients.

5.3 LIMITATION OF THE STUDY

The total subjects of my study are being selected through convenient sampling therefore the result outcome of the study cannot be generalized to the entire population.

Also the various other reasons which caused difficulty during the study and collection of various data included:

Non cooperation on the part of the nurses, Para medical staff.

Non availability of data on time due to various other reasons .Like hospitals private policy.

Inability to track the insurance company's time regarding the different policy and different insurance company providing services to different patients.

5.4 REFERENCES

1. India Medica ,Cited on[2011 ,February 09] Available at : http://www.indmedica.comarticleid

2.Express health care, Cited on [2011 , March 11] Available at : http://www.expresshealthcare.in

3. Fierce Healthcare,Cited on [2010, December 28] Available on http://www.fiercehealthcare.com

4.Thomaas group,Cited on [2011,January 16] Available on : http://www.thomasgroup.com

5.Surgery encyclopedia Cited on [2011,February 08] Available on http://www.surgeryencyclopedia.com

6. Jarcet , Cited on [2011, February 13] Avaialble on : http://www.jarcet.com

7. G.D KUNDERS, 2007."Facilities planning and Management, Hospitals: Planning design and management". Tata Mc Graw Hill.

Annexure

(SAMPLE 1TO 10…….n=3000)