

Study About the Cause of Delay in Discharge Process in IPD
of Jindal Institute of Medical Science

By

Priyanka Kumari

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2018-2020



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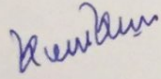
Study to determine the cause of Delay in Discharge process

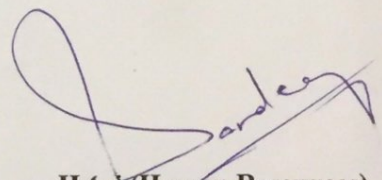
Date: 3rd Feb to 4th May 2020

Jindal institute of medical science, Hisar, Haryana

She comes across as a committed, sincere & diligent person who
Has a strong drive and zeal for learning

We wish her all the best for future endeavors


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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled “**Study to determine the cause in delay of discharge process**” and submitted by **Priyanka Kumari** Enrollment No **805** under the supervision of **Dr. Sameer Phadnis** for award of MBA in Hospital and Health in Health and Hospitals of the University carried out during the period from 3Feb 2020 to 4May 2020.embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

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Thanks to one and all.

Priyanka Kumari

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LIST OF ABBREVIATION

JIMS- Jindal institute of medical science

NABH- National Accreditation Board for Hospitals and Health Care Organizations

TAT- Turnaround time

IPD- Inpatient department

TPA- Third party administrator

ESI- Employee state insurance

ICU- Intensive care unit

HIS- Hospital information system

MO- Medical officer

GDA- General duty assistance

ABSTRACT

TITLE OF STUDY – A Study about the cause of Delay in Discharge process in IPD at Jindal institute of medical science, Hisar

BACKGROUND- The discharge process is complex and involves setting specific challenges that limit generalizability of solution. Discharge planning is the development of an individualized discharge plan for the patient prior to leave the hospital, to ensure that patient is being discharged at an appropriate time and with provision of adequate discharge services.

AIM AND OBJECTIVE- The present study aims to determine the different factors that influence the Turnaround time.

Objective

- To ascertain Turnaround time of discharge of IPD patient of various departments in Jindal institute of medical science.
- To assess the factors influencing the turnaround time for discharge process in various IPD of Jindal institute of medical science.

METHODOLOGY- This study is an observational that focuses to assess the efficiency of discharge process in inpatient department. Data was collected through direct observation, time study and conversation with different department staff and workflow diagram was prepared for better clarity of reporting processes. Total 148 sample was taken to analysis cause of delay in discharge.

FINDINGS- The higher number of planned discharge can help in reduction of total discharge time. This also helps in reducing the clearance time by different department. The major problem identified was time take for bill preparation (1:44:13) which contribute most in delay of discharge.

KEYWORDS-Cause and effect metric, turnaround time, planned discharge

HOSPITAL PROFILE

Jindal institute of medical science is serving since 1968, an upgraded secondary level charitable hospital managed by O.P. Jindal group running under support of N.C Jindal charitable trust and Om Savitri Jindal charitable trust society. NCJIMCARE & OPJICACRE is a 580 bedded multi-subspecialty hospital catering to medical needs of millions of people in rural Haryana, Punjab and adjoining areas of Rajasthan. It is spread in 15.5 Acres with multiple lush green lawns and patient friendly Ecosystem at Hisar, in Haryana.

Milestone



NCJIMCARE & OPJICACRE is equipped with latest equipment's to provide quality medical care at an affordable cost to community. Today NCJIMCARE & OPJICACRE is a frontrunner Charitable Hospital have more than 75 Doctors, 11 Operation Theaters, Radiotherapy department, 1.5 Tesla MRI, 128 Slice CT Scan10, Intensive care unit and many other facilities like Oncology, Cardiology, Gastroenterology, Linear Accelerator & Lasik Laser.

Location

Hospital is in Model town area of Hisar city with 15 acres of land having state of art buildings, lush green garden, spacious parking, multistory residential campus to house doctors and staff.

Target population

Main target for JIMS is the lower and middle class of the society. Jims give subsidized services to target population and also organized camps for speech therapy and mobile health checkup.

VISION

“Be a **“Centre of Excellence”** for providing comprehensive health care & training in medical science”

MISSION

“Quality Medical Care at Affordable Cost”

VALUES

- “Practice Dignity and Equity in relationships. Provide opportunities for people to realize their full potential.
- Manage our operations with high concern for patient’s right.
- Stay updated with latest technological advancement and managerial expertise to enhance patient satisfaction.
- Inculcate cost consciousness and concept of effective and efficient service with concern for patients' affordability”.

SCOPE OF SERVICES

Trauma & Emergency	Anesthesiology & Cardiac anesthesiology
Blood bank	Cardiology
Cardiovascular & Thoracic surgery	ENT
Dentistry	Dermatology
Gastroenterology	Gastroenterology surgery
General & laparoscopic surgery	Internal Medicine
Interventional radiology	Laboratory
Medical oncology	Neuro surgery
Nephrology	Obstetrics and Gynecology
Nutrition and dietetics	Ophthalmology
Orthopedics	Physiotherapy & Rehabilitation
Pediatrics	Plastic & Reconstructive surgery
Psychiatry	Radiation oncology
Radiodiagnosis	Surgical Oncology
Urology	Paediatric Surgeries

SERVICES NOT IN SCOPE

Bone Marrow transplant	IN-Vitro Fertilization
Immunology	Medical Genetics
Paediatric Dialysis	Transplant Surgeries

NC Building

Ground floor

- Reception
- OPD billing counter
- IPD Billing counter
- Ortho OPD room
- Eye OPD
- Gynae OPD
- Minor OT
- Pedia OPD
- Dental OPD
- Physiotherapy
- Ortho IPD
- Maternity ward
- Labor room
- Emergency
- Trauma ICU
- Appni pharmacy (2)
- IPD pharmacy
- Pharmacy head room
- Enplanement counter
- Lab report collection room
- Security room
- Administrator office
- Medical central store

First floor

- PICU
 - NICU
 - Gynae HDU
 - General surgery ward
 - Gold jubilee General ward
 - ENT Ward
 - EYE Ward
 - Burn Unit
 - Pedia ward
-

OP Cancer Building

Ground floor

- Reception
- OPD billing counter
- Appni pharmacy
- Chemotherapy ward
- Radiology department
- Radiotherapy department
- Oncology OPD
- General medicine OPD
- General surgery OPD
- ENT OPD
- Urology OPD
- Dialysis
- ECG/TMT
- Audiometry
- Board room
- Administrator room

First floor

- Main ICU
- HDU Neuro
- CSSD
- Gastro day care
- OT complex
- Endoscopy

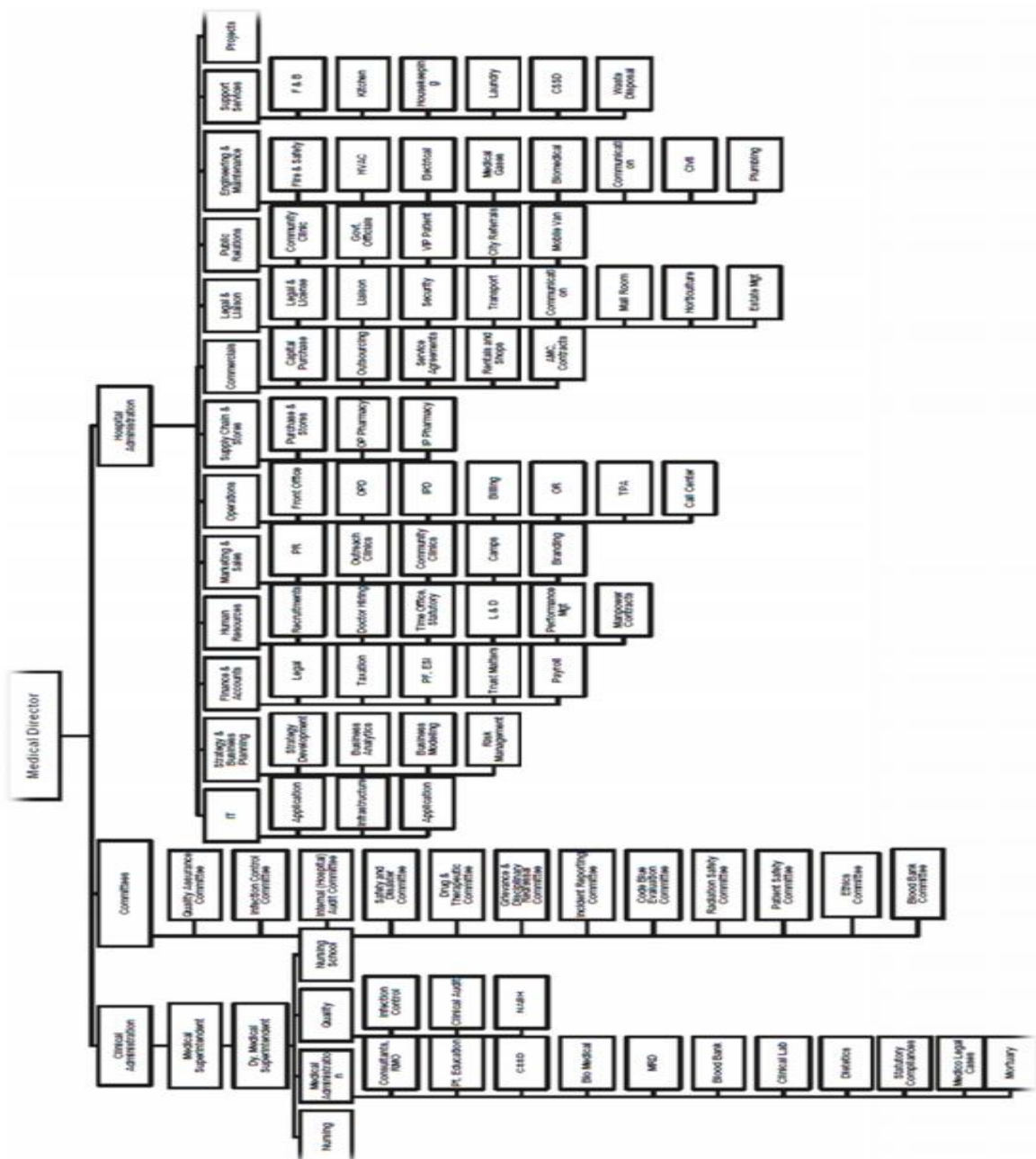
Second floor

- Private room
- General ward
- Oncology HDU
- Medical HDU
- IPD billing counter
- Auditorium

OP Cardiac Building

Basement	• MRI /CT SCAN • Procurement department • Central store • ICN office • BME department • Blood bank • Central MRD
Ground floor	• Reception • Cardiac pharmacy • Gastro OPD • Cardiac OPD • ENT OPD • Neuro OPD • Plastic surgery OPD • Nephrology OPD • Procedure room • OPD billing counter
First floor	• Medical ICU 1 • Medical ICU 2 • Gastro HDU • Neuro HDU
Second floor	• CTVS ICU • Cardiac OT • MRD • HR Department
Third floor	• Economy ward • Neuro ward • Psychiatric ward

6 ORGANISATIONAL STRUCTURE (Feb 2018)



INTRODUCTION

Discharge is defined as, “a release of a hospitalized patient from the hospital by the admitting physician after providing necessary medical aid for a period deemed necessary”.

As per NABH, “Discharge is a process by which a patient is shifted out from the hospital with all concerned medical summaries ensuring stability. The discharge process is deemed to have started when the consultant formally approves discharge and ends with the patient leaving the clinical unit”.

National Accreditation Board for Hospitals and Health Care Organizations (NABH) has set a standard of 180 minutes for the completion of the discharge process. Hence, maintaining an appropriate level of discharge time provides competitive edge to the organization.

Hospital discharge plan includes clearance from all departments, bill settlement, and inform patient regarding appropriate post-hospital treatment as per standard documentation. The patients and his families are eagerly waiting to return home. Whereas, hospital needs to complete all the processes to confirm successful discharge and minimize readmission. Every hospital strives to boost up quality through various measures, one among which is reduction in discharge time. The total time consumed within the discharge process is “a sum of clearance time consumed by all departments along with other factors associated with patients and the process”. However, discharge time can't be brought down without analyzing the underlying factors that consume time during discharge process .

Time motion study is often used when, there are repetitive work cycles of short to long duration, wide variety of dissimilar work is performed, or process control elements constitute a part of the cycle.

Discharge planning may lead to increased satisfaction with healthcare for patients and professionals. Discharge planning is the development of a personalized plan for each patient who is leaving hospital, with the aim of containing costs and improving patient outcomes. Discharge planning should ensure that patients leave hospital at an

appropriate time in their care and that, with adequate notice; the provision of post discharge services will be organized.

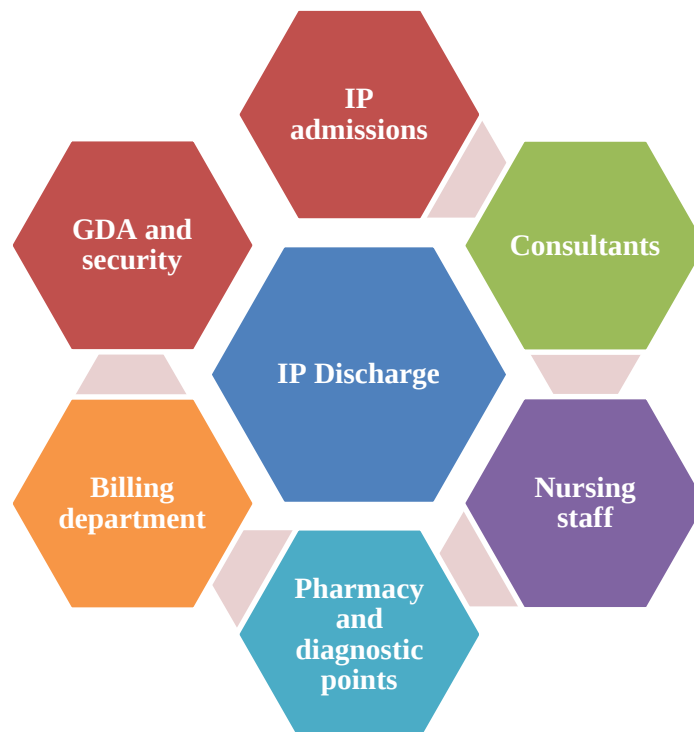
The key principles for effective discharge and transfer of care are ...

Unnecessary admissions are avoided and effective discharge is facilitated by whole system approach to assessment processes and the commissioning and delivery of services.

The engagement and active participation of individuals and their career(s) as equal partners is central to the delivery of care and in the planning of a successful discharge.

Discharge is a process and not an isolated event. It has to be planned for at the earliest opportunity across the primary, hospital and social care services, ensuring that individuals and their care(s) understand and are able to contribute to care planning decisions as appropriate.

Different touch point of discharge process flows



AIM

The present study aims to determine the different factors that influence the Turnaround time of IPD discharge patient.

OBJECTIVE

- To ascertain Turnaround time of discharge of IPD patient of various departments in Jindal institute of medical science.
- To assess the factors influencing the turnaround time for discharge process in various IPD of Jindal institute of medical science.

LITERATURE REVIEW

Discharge planning — “Discharge planning is the development of an individualized discharge plan for the patient prior to leaving the hospital, to ensure that patients are discharged at an appropriate time and with provision of adequate post-discharge services. Discharge planning is a complex process. This process ideally begins at the start of the hospitalization. The hospital case manager should be involved as soon as the patient will require services at home, or will require transfer to an alternative level of care”. (*Alper E, Malley O.A, Terrence, Greenwald J, 2015*)

Medication reconciliation — “Medication reconciliation, or medication review, is the process of verifying patient medication lists at a point-of-care transition, such as hospital discharge, to identify which medications have been added, discontinued, or changed relative to pre-admission medication lists. Performing accurate medication reconciliation is a critical element of a successful discharge transition. Most studies included in a 2012 Systematic Review showed that medication reconciliation was associated with a decrease in actual and potential adverse drug events. Medication reconciliation may have a more important impact on the reduction of readmissions due to adverse drug events”. (*Alper E, Malley O.A, Terrence, Greenwald J, 2015*)

Role of discharge process in determining patient satisfaction

“In the present competitive world, quality of health care is playing an important role in the modern society. Among various factors affecting the health care system, discharge process is one of the important factors related to patient satisfaction. It is the process that occurs when the patient leaves the facility. It implies that the patient has previously been admitted to the facility. 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. Soon after completion of treatment, the patient as well as his or her escorts expects to be relieved off immediately. The delay in discharge process leads to dissatisfaction and affects image of the hospital”. (*Kumari VJ, 2012*)

Cause and reason for delay discharge

“Scattered information and non-integrated database systems had resulted in increased works loads and dissatisfaction among internal and external hospital clients. Research in the Shahid Sadoghi Hospital, Iran has shown that the average length of the discharge process in the morning shift for a patient leaving the hospital in the afternoon is about six hours. The average length of the discharge process in the afternoon shift for patients leaving the hospital in the same shift is about two hours”. (*Derayeh, Tennfer, Jazanfa, 2006*)

Average length of stay: “This measure refers to the average number of days that a patient staying a hospital. It is calculated using the following formula $ALOS = (\text{inpatient days} / \text{admissions})$. **Bed Occupancy rate (BOR):** The occupancy rate is a measure of utilization of the available bed capacity in a hospital. It indicates the percentage of beds occupied by patients in a defined period of time, usually a year”. It is computed using the following formula: $BOR = (\text{inpatient days}) \setminus (\text{Bed days}) * 100$. (*Lovepreet Kaur, 2015*)

Turnaround time - “The total time taken during discharge intimation to final summary is calculated as the time gap between the discharge intimation to final summary signed by doctor. Time study is a direct and continuous observation of a task, using a stopwatch, video camera etc., to record the time taken to accomplish a task. Time motion study is often used when. There are repetitive work cycles of short to long duration, wide variety of dissimilar work is performed, or process control elements constitute a part of the cycle”. (*Swapnil Tak, 2013*)

Root cause of discharge- “The main reasons for discharge delays are the processes and can be improved by appropriate interventions. The study was conducted in two Teaching hospitals by reviewing the medical records of the patient admitted to internal medicine ward. A pilot study was conducted to determine the sample size. The delays in discharges that occurred in two hospitals were 60% and 50.7% respectively. The main reasons identified for the delay were waiting for the test reports, delays in making clinical decisions and in providing specialized consultation”. Silva et.al (2014)

“A study was done in Iran to analyses the waiting time for the discharge. The author collected the data using questionnaires, observation and checklist. The collected data was analyzed using SPSS and OR methods. Queuing model was used to study the reasons for delay in the

discharges. Average waiting time for all the wards was found to be 4.93 hours. As per hospital personnel opinion the main reasons identified for the delay were delay for the discharge summary completion, lack of proper guidelines for the staff involved in the discharge process and absence of Hospital Information networking systems”. (SimaAjami, 2007)

METHODOLOGY

The study was limited to Jindal institute of medical sciences. This study is an observational that focuses to assess the efficiency of discharge process in inpatient department.

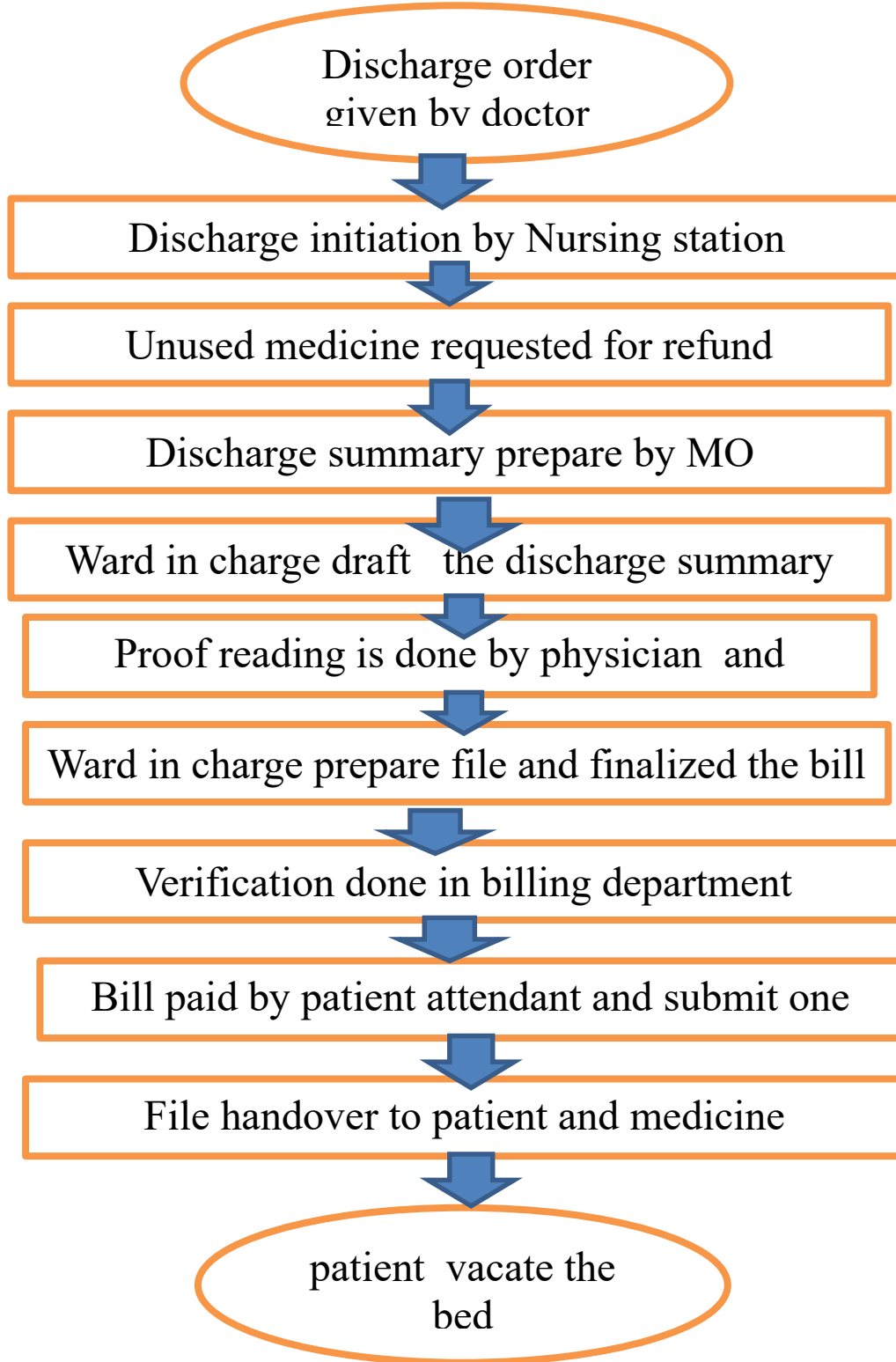
- **Study period-** 3months
- **Study location-** Jindal institute of medical sciences
- **Study population-** all patient who were discharge from inpatient department of JIMS.

Inclusion – IPD admitted patient, cash mode payment, morning shift discharges.

Exclusion- Day care discharge, evening shift discharge, TPA and ESI patient, ICU discharges.

- **Research design-** Observational Cross- sectional
- **Research approach-** Quantitative approach
- **Sampling Procedure-** Non- probability convenient sampling
- **Sample size-**148 (total discharges in 1480) so I selected 10% of total discharge
- **Mode of data collection-** Primary data collection through observation.
- **Data collection tool-** The time taken for discharge from physician writing orders on the case sheet to completion of billing process in all the departments was observed and measured using a stop watch by staff nurse present in each department of the hospital and survey of the internal layout of the hospital was also done to assess the transit time for discharge procedures according to locations of concerned departments.
- **Data analysis** – data analysis performed using Microsoft excel.
- **Source of data** –Patients, Nursing staff, doctors, HIS, activity register, Security staff.

Process flow of discharge of IP department



FINDINGS

Fig.1 - Avg. turnaround time of discharge process

Avg. TAT of discharge process	3:18:25 hrs.
Avg. TAT of Planned discharge	2:12:55 hrs.
Avg. TAT of Unplanned discharge	4:03:35 hrs.

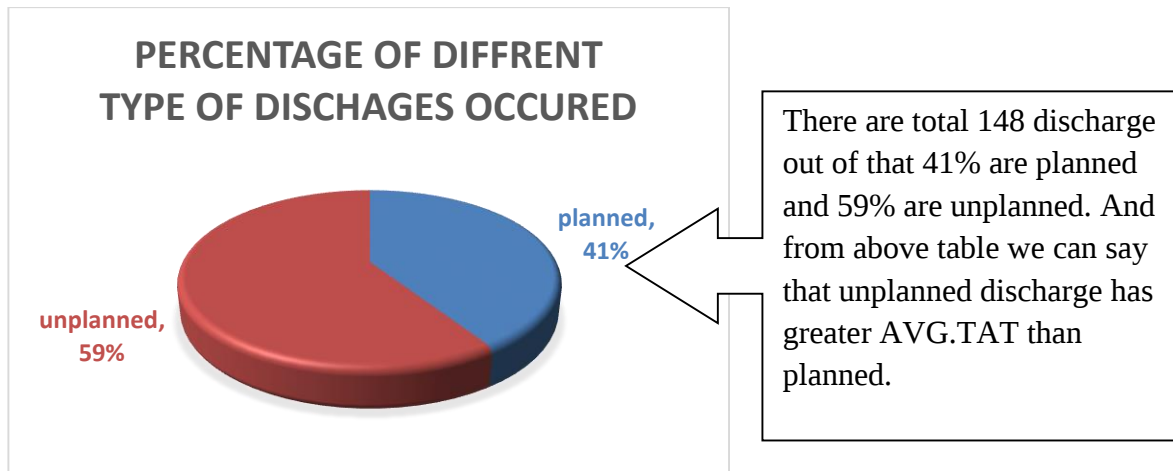


Fig.2 – percentage of different type of discharges

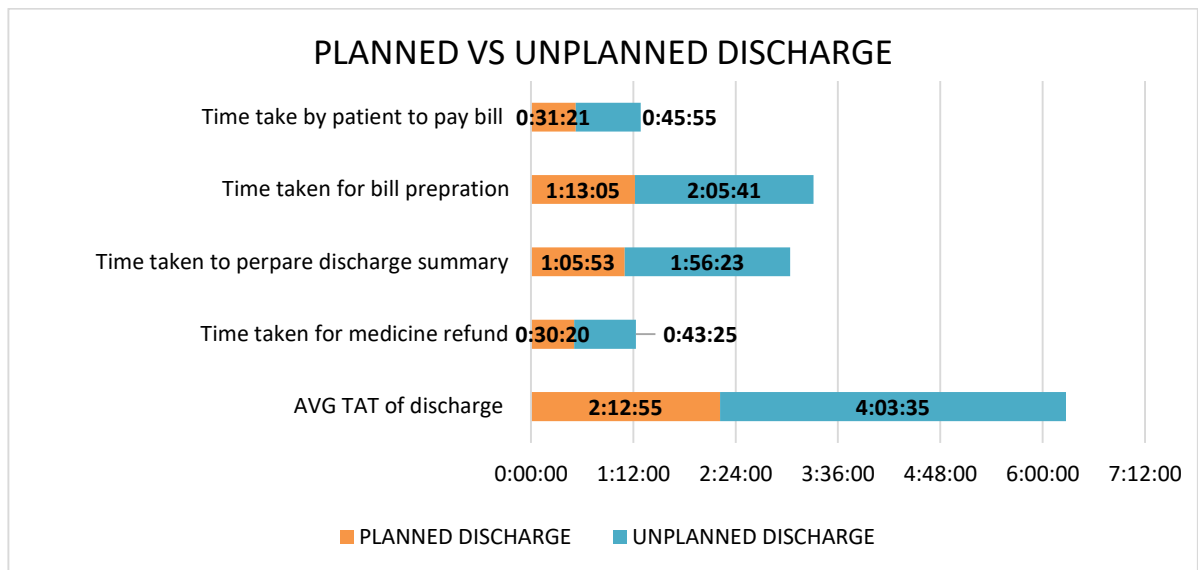


Fig3 – comparison of time taken in various steps of planned and unplanned discharge

Above graph shows the comparison between planned and unplanned discharge, which shows the difference in time take by various process. if we look at the differences between the time consumed by planned and unplanned discharges, unplanned discharge is comparatively taken more time than planned discharge.

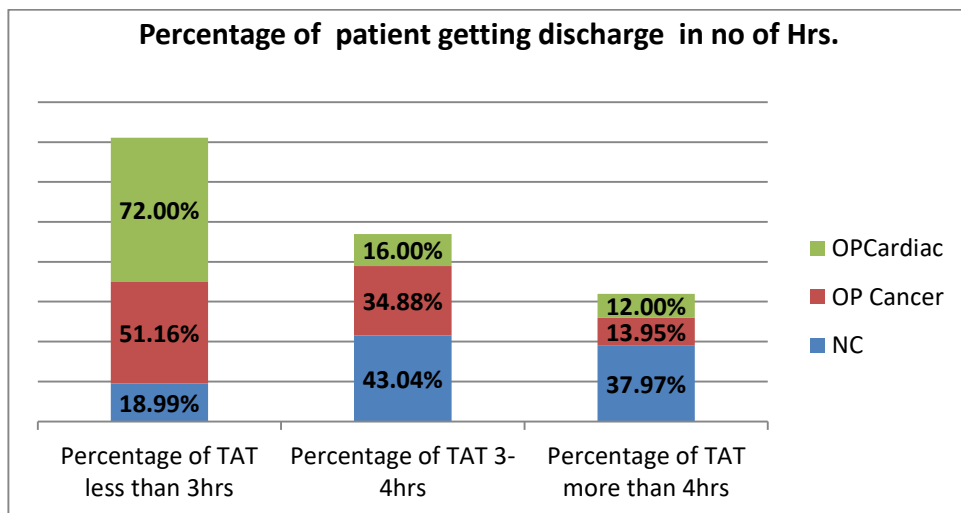
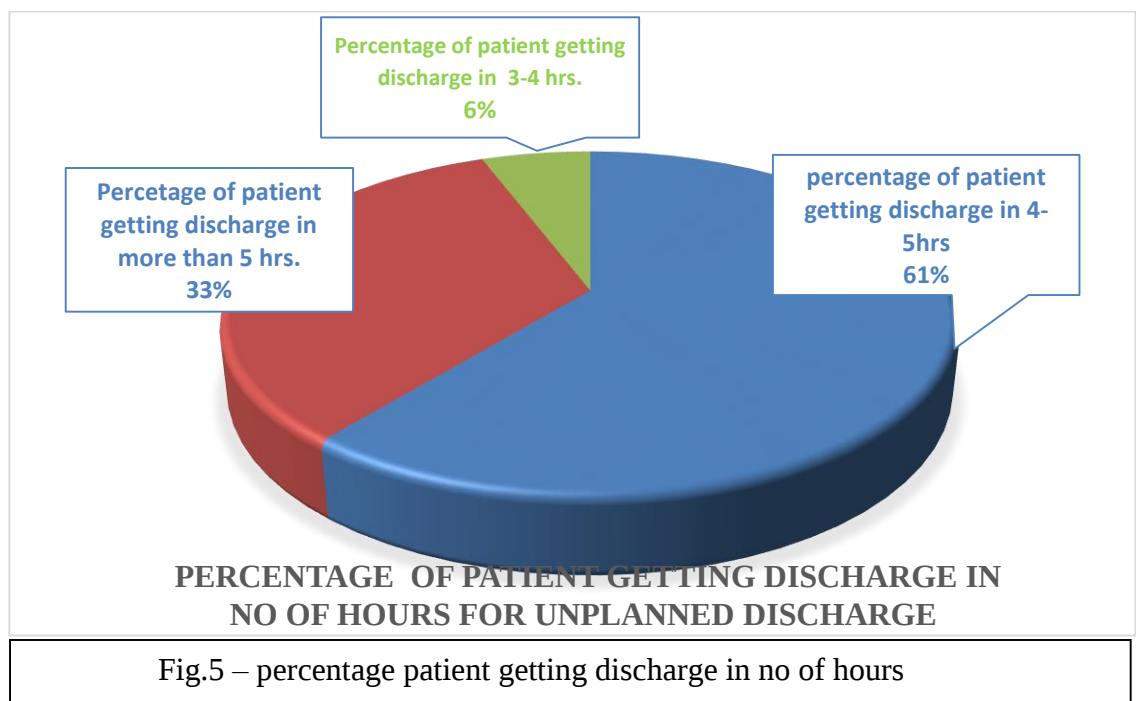


Fig.4 – Percentage of patient distribution according to numbers of hours taken in discharge TAT Building wise

Above graph shows the distribution of patient according to no of hours taken for discharge process in different building, In OP cardiac building 72% of the discharge are taking less than 3hrs time and in NC building minimum (18.99%) of discharge are happing under 3hrs.whereas most of discharge in NC building are happing between 3-4 hrs. (43.04%) and 37.97% of discharge are taking more than 4hrs.In OP cardiac building min 12% of discharge are taking more than 4hrs



In above graph show the analysis of unplanned discharge getting delayed by how much time. Most of unplanned discharge are getting done between 4-5hrs (61%) and 33% of discharge are taking time more than 5hrs.

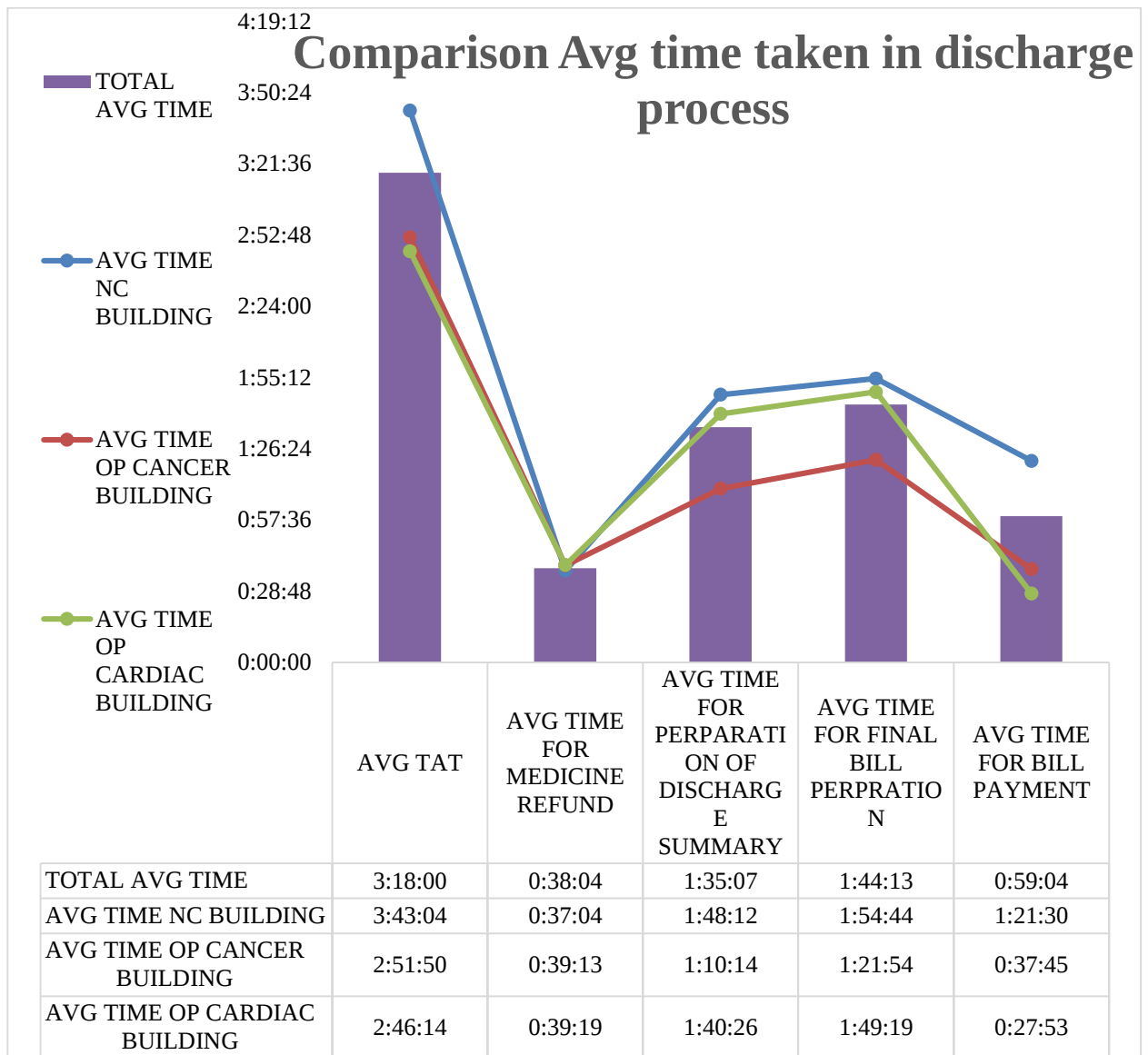


Fig.6- AVG. time taken in discharge flow in various steps by all three building

Above graph depicts the avg. time taken in various discharge steps in all three building of hospital. In, NC building the avg. TAT is more than total avg. TAT. in all three building medicine refunds takes almost equal time but in OP cancer, discharge summary preparation is time is less than avg. preparation time whereas in NC and OP cardiac building preparation time was more than total avg. time. Waiting time for bill to be paid was found more in NC building as compare to others, main reason for this could be only one bill counter in NC block as other blocks have floor wise bill counters.

TIME TAKEN BY DISCHARGE PROCESS IN WARDS

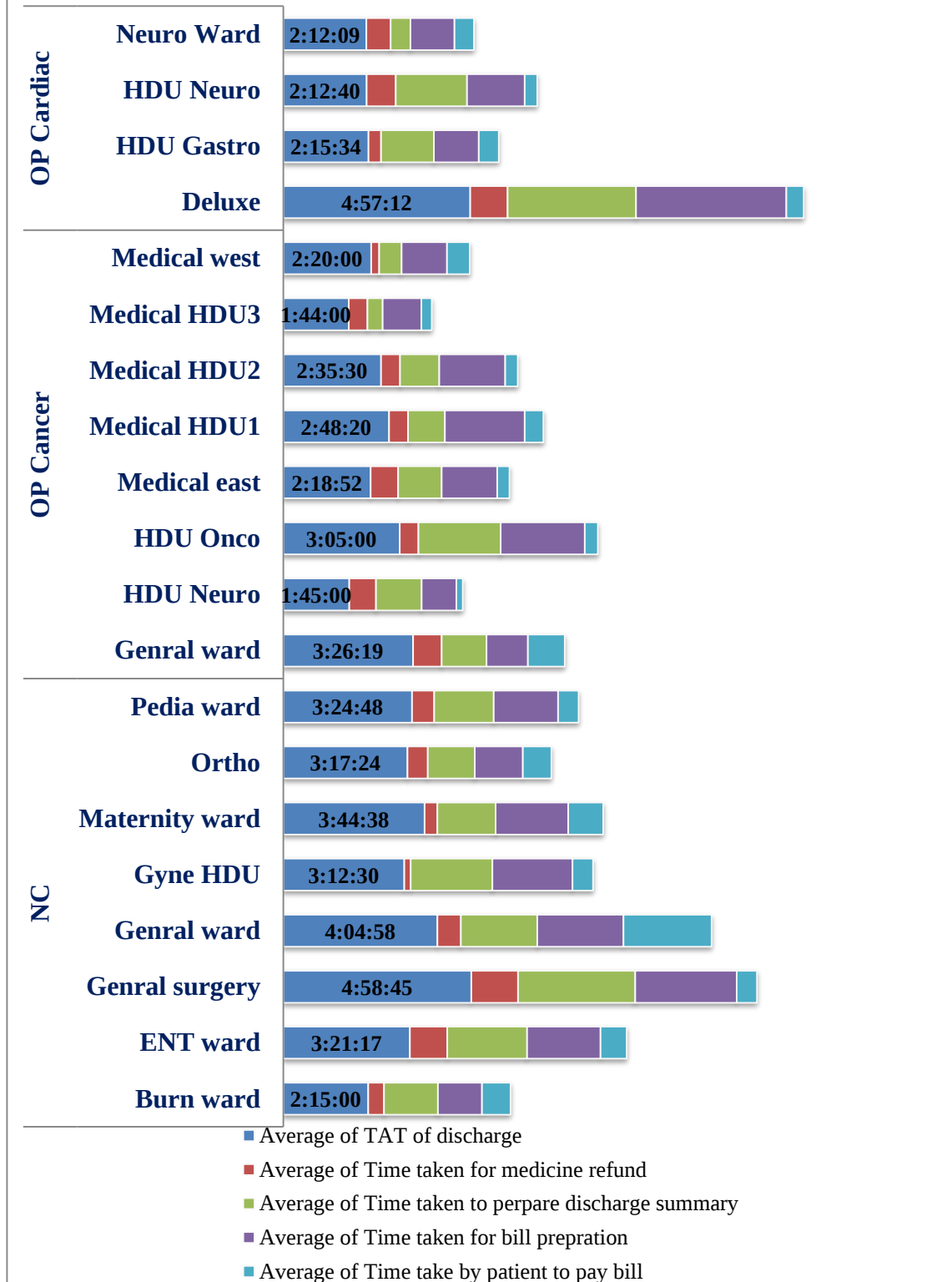


Fig.7- AVG. time taken in discharge flow in various department

From above graph we can identify waiting time in discharge flow in various wards of different blocks of hospital maximum AVG. TAT was found in deluxe ward OP cardiac building and minimum avg. TAT was in HDU neuro of OP cancer building (1:45:00hrs). In NC, building all the ward was taking more than 3hrs for discharge as most of unplanned discharge happen here only. In Onco HDU Long stay and large bill patient admitted so AVG. TAT is found (3:05:00hrs), op cancer general ward having (3:26:00hrs) large no of beds size under single MO, numbers of waiting found for discharge preparation. Time taken in bill payment in NC block wards was found more than others wards as only one billing counter was there but, in all others, blocks floor wise billing counter was there. Time taken in medicine refund was almost equal in all wards as intend and medicine collection time was found same as only one IP pharmacy was there in hospital.

FISHBONE ANALYSIS

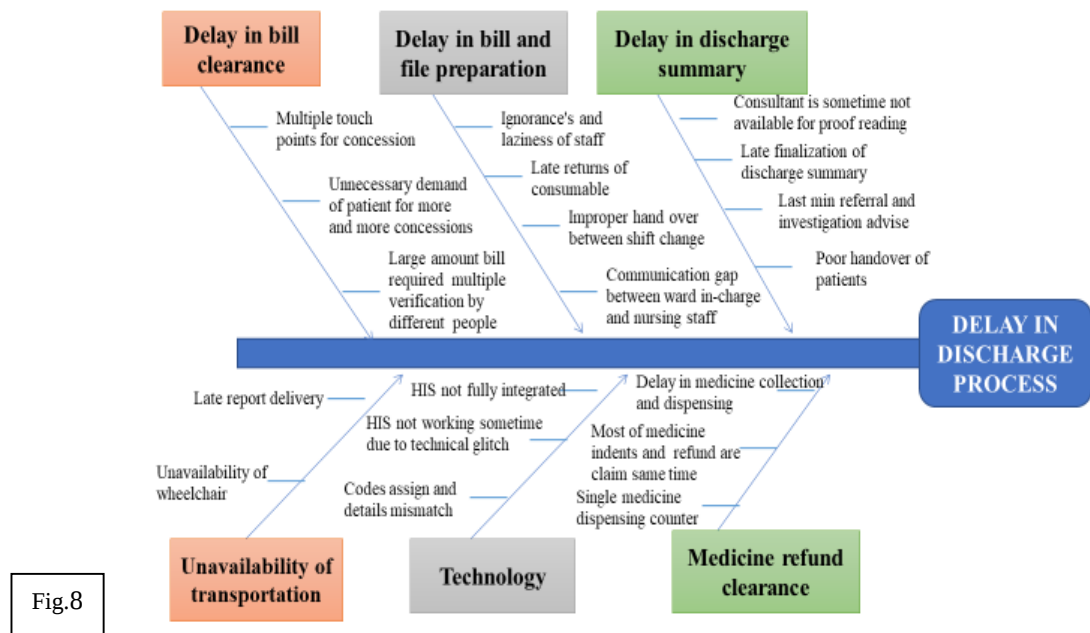


Fig.8

Root Cause Analysis Diagram of delay in discharge process

Fish bone diagram (also known as cause effect diagram) helps us to identify the underlying problems and track the factor affecting the process. And identify the root cause of the problems

RECOMMENDATIONS

Based on the current study findings, there is need of improvement in some department TAT and make discharge procedures more familiar to patient and care provider, it could be recommended that:

- Discharge process should be standardized.
- Early discharge planning and prioritization of discharge patient.
- Pending indent should be clear before initiation of discharge.
- Timely finalization of discharge summary.
- Prior information of running bill should be given so that patient arranged the cash.
- Fully integrated HIS needed.
- Training of staff about HIS (how to raise medication refund.)
- Timely transport and patient transfer arrangement to be made (patient shifting by wheelchair).
- Patient need to shift in waiting area as soon as after discharge to improve the bed availability for other admission.
- Regular training of staff nurse for filling activity charts
- Checking of IP billing of each patient in night and motivate duty doctors to promote discharge summary preparation before morning shift then they can contribute for improvement of summary
- An effort should be to promote more and more planned discharge, so that we can enhance discharge flow.

CONCLUSION

The present study indicates that; higher number of planned discharges can help in reduction of total discharge time. This also helps in reducing the clearance time by different department. Therefore, an effort should be made to plan more and more possible discharges to boost up the discharge process flow. The major problem identified was time take for bill preparation (1:44:13) which contribute most in delay of discharge.

Discharge of patient in hospital required coordination between all the staff. If one process carried out on time the subsequent process will also be on time. Discharge is one of the last experiences that patient undergoes in a hospital. An effective, fast and hassle-free discharge process will increase the patient satisfaction and patient will take away good memories back home.

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