Assessing admission time and shifting time of the Inpatient admissions at Narayana multi-speciality hospital Jaipur

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Sultan Magdum

Under the Supervision and Guidance of

Neetu Purohit

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled ***Assessing admission time and shifting time of the Inpatient admissions at Narayana multi-specialty hospital Jaipur*** is the Bonafede record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished workof others has been duly acknowledged in the text.

Sultan Magdum

Date: 27th May 2023

Certificate

NH Narayana Multispeciality Hospital
Unit of Narayana Health

NH/JPR/HRD-NOC/2023/1099

23 May 2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mr. Sultan Magdum**, a student of IIHMR, Jaipur, has successfully completed his internship training at **Narayana Multispeciality Hospital Jaipur**, in **Inpatient Services** Department from **22 February 2023 to 22 May 2023**.

During the internship his character and conduct was good.

For Narayanaya Multispeciality-Jaipur

Nikhil Mathur
Deputy General Manager – HR

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CERTIFICATE

This is to certify that dissertation titled ***Assessing admission time and shifting time of the Inpatient admissions at Narayana multi-specialty hospital Jaipur*** is a record of the research. Work undertaken by (Name of Student) in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management)/MBA (Pharmaceutical Management)/MBA (Development Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur

Date: 27th May 2023

School Dean
IIHMR University, Jaipur

Date: 27th May 2023

Abstract

Efficient management of the In-Patient Department (IPD) admission process is crucial for hospitals to provide timely and satisfactory healthcare services. This research presents an ideal approach to calculate the Turnaround Time (TAT) for IPD admission and shifting time, enabling the identification of delays, and suggesting improvements in the process. The study begins by developing a comprehensive framework for TAT calculation in IPD admission. This framework encompasses the various steps involved in the admission process, including registration, documentation, and bed allocation. By analysing historical data and utilizing statistical techniques, the average TAT for each step is determined, serving as a baseline for performance evaluation for the hospitals.

Additionally, the shifting time, which refers to the duration between the admission order and the actual transfer of the patient to the assigned bed, is taken into consideration. By closely monitoring and recording the shifting time for individual patients, delays in bed allocation and transfer are identified. The effectiveness of the proposed approach was to evaluate the data on TAT and shifting time were analysed in identifying bottlenecks and delays, enabling targeted interventions to reduce TAT and improve patient satisfaction. The findings also underscore the potential benefits of implementing the suggested improvements, including increased operational efficiency, reduced waiting times, and an overall enhancement in the patient experience.

In conclusion, this research presents a comprehensive methodology for calculating TAT in IPD admission and shifting time, facilitating the identification of delays, and suggesting improvements. By implementing the suggested improvements, hospitals can effectively manage IPD admissions, minimize delays, and enhance the overall quality of care provided to patients.

KEYWORDS: - Admission Time, Shifting Time, In-Patient Department (IPD), Turnaround Time (TAT), Patient Satisfaction

Acknowledgement

Firstly, I would like to extend my sincere thanks to my esteemed faculty mentor, Ms. Neetu Purohit ma'am, for their unwavering support, encouragement, and guidance throughout my academic pursuits. Their expertise, insights, and feedback have been instrumental in honing my skills, expanding my knowledge, and fostering a deeper understanding of the subject matter. I am truly grateful for their dedication, commitment, and the time they have invested in mentoring me.

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Abbreviations

Sr. No	Abbreviations	Meaning
1	NABH	National Accreditation board for Hospitals
2	IPD	In-Patient Department
3	OPD	Out-Patient Department
4	IP	In-Patient
5	TAT	Turnaround time
6	TPA	Third Party Authority
7	SOP	Standard Operating Procedure
8	HIS	Hospital Information System
9	PCE	Patient care Executive
10	FM	Floor Manager

1) Introduction

The inpatient department is a critical area of a hospital that requires efficient and timely patient care. However, long turnaround times (TAT) and waiting times for inpatient admissions are significant challenges that can impact patient outcomes and hospital efficiency. Long waiting times can lead to delayed diagnoses, prolonged hospital stays, and increased healthcare costs. Additionally, long TAT can lead to patient dissatisfaction and delays in treatment, resulting in potential adverse health outcomes.

Reducing TAT and waiting times in the inpatient department is crucial to improve patient outcomes and enhance the overall efficiency of the hospital. To address these challenges, hospitals can implement various strategies, including optimizing the patient flow process, improving communication between staff and patients, increasing staffing levels, and leveraging technology solutions. For instance, implementing electronic medical records (EMRs) and appointment scheduling systems can help streamline processes, reduce TAT, and improve the overall efficiency of the inpatient department.

Reducing TAT and waiting times can have several benefits for hospitals, including higher patient satisfaction, improved patient outcomes, reduced healthcare costs, and increased revenue. Furthermore, shorter TAT and waiting times can also improve staff morale and reduce staff burnout, resulting in a more positive work environment. Therefore, hospitals must prioritize efforts to reduce TAT and waiting times in the inpatient department to provide optimal patient care, improve overall efficiency, and increase patient satisfaction.

2) Review of literature

year	Article name	Author names	Sample size	Study location	Sampling technique	Conclusion
2017	"The long wait for Health in India"-A study of waiting time for patients in a tertiary care hospital in Western India	Sailee Bhambere	41 patients in the emergency departmen t of the hospital	emergency department in the two tertiary care hospitals in western India emergency department in the two tertiary care hospitals in western India emergency department in the two tertiary care hospitals in western India	cross sectional observation al study using a non-probability sampling	• Total time from arrival of patient to final intervention or disposal for the patients was 1.98 hrs. to 2.22 hrs. with a mean of 2.10 hrs. and a standard deviation of 1.18 hrs. • The author suggested basic changes to develop an efficient patient flow system. • A separate admission counter for the emergency wards and increased number of healthcare staff is recommended. • According to the study Separate specialists for the Emergency ward should be appointed to reduce the waiting time wasted due to late arrival of the specialist in the Emergency department

2014	Arrival time pattern and waiting time distribution of patients in the emergency inpatient department of a tertiary level health care institution of North India	Yogesh Tiwari, Sonu Goel and Amarjeet Singh	591 patients were studied for the duration of 3 months	tertiary level medical, research and health care institution of North India	short term cross sectional descriptive study	• As per the author analysis there was a peak time for the arrival of the patient was between 9:00am and 12:00 noon in which 26% of the admissions were in the emergency department. • The primary waiting area for the patients includes patients under observations, waiting for their routine diagnostics or waiting for the discharge approval. • According to the authors there could be efficient flow of the patients in the emergency department if there was multi-disciplinary approach towards the admission and shifting of patients by having efficient and effective management of the IPD operations department.
2016	Analysis of patient waiting time for	Dr. Niloy Sarkar	200 IP-patients were analysed	The Mission Hospital, Durgapur	Time and motion study of the existing	• According to the research analysis both the admissions and the discharge process of

	hospital admission and discharge process.	and Ms. Tatini Nath	and studied to determine the admission and discharge of the patients		process and analysis of the data supported by various statistical methods	the hospital are dependent upon each other as if the discharged patients are effectively managed then the new admissions of the patients could be managed easily. • As per the author one of the main reasons of the delay for the admission of the patients was due to the un-availability of the bed so special attention should be focused on improving the bed management system and simultaneously the delay time for the discharged patients. • According to the study discharge process is an interdepartmental process and requires combine effort of all the departments, to achieve on timely discharges. • The author also suggested that There should be one Manager for each ward who will

						take care of the entire procedure for getting ready with the discharge summary. He should be able to approach any department either it is operation theatre or typing pool
2017	An assessment of patient waiting and consultation time in a primary healthcare clinic	BA Ahmad,Khairat and A Farnaza	820 patients were studied to determine the factors that causes longer waiting time	primary care clinic is situated in a large district of Gombak	universal sampling method	• As per the study analysis the time taken by the clinic for the registration of the patients was around 18.21 minutes which was higher than their SOP which was around 15 minutes. • Further analysis shows that there were multiple factors which caused delay in the registration of the patients which in turn resulted in high waiting time for the patients. • According to the study the clinic needs to improve its waiting

						time and to make the recommended changes to improve its services to patients. • The author also advised that there is also a need to conduct further research to assess patient satisfaction on the clinic services including identification of patient's needs and to improve the quality of waiting by having distractions and facilities for patient comfort
2017	Reducing waiting time and raising inpatient satisfaction in a Chinese public tertiary general hospital-an interrupted time	Jing Sun , Qian Lin , Pengyu Zhao, Qiongyao Zhang , Kai Xu , Huiying Chen, Cecile Jia Hu, Mark Stuntz , Hong Li, Yuanli Liu	60,000 inpatients and 70,000 prescribed inpatients	public tertiary hospital in Southern China	Random sampling method and segmented linear regression model to assess changes in levels and trends of waiting times before and after the introduction of waiting	• In this article the authors have assigned a task force to do the root cause analysis to determining the reasons of delay that have cause the increase the waiting time for the patients • According to the task force key elements were found that cause the increase in the waiting time such as late-arrival or early leave of the doctors,

	series study				time reduction interventions	doctor to the patient ratio was low and poor scheduling of the patient's appointments. • Series of interventions were planned by the taskforce to deal with root causes to reduce the waiting time such as monitoring of the physicians, hiring more doctors to maintain the doctor to patient ratio and developing a comprehensive data base management for proper scheduling of the patient's appointment. • After the implementation of the interventions the waiting time of the patients were drastically reduced from 42 minutes to 28 minutes • This study proved that using of the integrated health information system that will support a well-designed and carefully arranged quality

						improvement system and thus reducing waiting time and raising patient satisfaction
2022	Impact of the Automation of Inpatient Bed Management to Reduce the Emergency Service Waiting Time	Faiza Ajmi , Faten Ajmi , Sarah Ben Othman, Hayfa Zgaya , Gregoire Smith , Jean-Marie Renard , Slim Hammadi	360	adult emergency department (AED) of the LUHC which is one. of the greatest health campuses in Northern Europe	Probability non-convenience sampling method	• The aim of the author is to provide healthcare professionals with a technology support tool to automate bed allocation process. It is significant to highlight that the approach is presented as a decision-support system that reduces the workload of bed managers. • In this paper the author has used an approach combining metaheuristic (GA) and IoT-beacons to improve the inpatient management and resource utilization. • To test the performance of the approach, the author has implemented the automation in some hospital departments of LUHC.

						• The results shows that the use of evolutionary algorithms with IoT-Beacons to optimize the inpatient management is beneficial and practical
2021	Factors Associated with Patient Waiting Time at a Medical Outpatient Clinic: A Case Study of University of Nairobi Health Services	Rebecca Bisanju Awful and Dr. Richard Ayah	384 ambulatory patients over a period of four weeks	Staff clinic at University of Nairobi health services	Simple random sampling was employed to select participants from all patients who attended the clinic each day during the four weeks period	• According to the analysis the average waiting time was 55.3 minutes out of all the sample patients were tracked and interviewed 60 percent of them said by improving availability of staff at their stations would help to reduce patient waiting time. • According to the author the clinic also needs proper management system to improve staffing levels of doctors in the clinic. • The mean waiting time in senior staff clinic was about an hour to get the services needed which most patients felt was not acceptable. • The main cause of long waiting time was

						inadequate number of health workers

2.1) Narayana multi-speciality Hospital Jaipur policy for admission procedure

Every medical facility tries to provide best service to their patients. Standard operating procedures (SOP) for different departments together constitute the hospital manual which significantly determines the performance of the hospital. Thus, every hospital must have a SOP that ensure consistency in working and enables to obtain the best results in a cost-effective manner.

The policy of admission at Narayana Multi-speciality Hospital (Jaipur) has the purpose of admission of the patients according to condition of that patient. The patient would be admitted only for the services which are provided by the hospital.

Patients need to complete an one-time registration when coming for their first consultation that will help them in all subsequent visits.

Once all the initial patient record is entered correctly, a hospital file will be created and a UHID card (Unique Hospital Identification Card) will be issued.

All information regarding admission and paper works will be provided by our Admission Executive at the hospital Admission Desk.

Treatment of the patients is the responsibility of the treating Consultant. He will do the needful.

Once the admission process is done, patient relatives must submit all the insurance papers to the Admission Desk within 24 hours of admission.

2.2) Process of admission at Narayana multi-speciality Hospital

The “Admission Order” includes the details of proposed care, expected outcome, complications, alternative treatment, proposed stay of the patient in the hospital along with the provisional diagnosis. All “Admission Order (s)” will have name & seal of the consultant / senior consultant under whom the patient is to be admitted (exclusion: patients getting directly admitted via emergency) along with his signature, date, and time.

Admitting / Treating Consultant / Executive- Admission Desk

The Consultants/Senior Consultants fills up the form after explaining the same to the patients, and then guides them to admitting desk where the patient gets information regarding the Financial Estimate. Admitting Consultant/ Treating Consultant

An estimate of expenses and outline of the admission process is described to the patient/relative at the time of admission advice. Executive- Admission Desk

The patients must get themselves registered in case they have not been registered earlier with Narayana Multi Specialty Hospitals Front Office Executive

At the admission desk the patient / attendant is asked to fill the details required from them in the admission order, Financial Counselling / Re-counselling forms, Admission case sheet along with the general consent for admission. The General consent of patient for admission, investigation, and treatment in the hospital in which signature is obtained from patient if capable, otherwise from the relatives Executive - Admission Desk

Detailed counselling of patient / attendant / relative regarding Service Tax, non-payable items / consumables / toiletries, co-payment, limit exhaust, difference of implants etc. Executive- Admission Desk

The patient and/or family member are explained about the proposed care, expected length of stay, expected result, and expected costs. Admitting & Treating Consultant/ Executive-Admission Desk

Patient Records are entered into ATHMA, and the "Admission Case Sheet" is generated electronically which is a printout of the incorporated patient’s information. Executive-Admission Desk

In case of planned procedure / surgery and non-critical patients, admission is done according to the bed categories as requested by the patient / relative who is subject to availability. In case of non-availability of requested category of beds, patient/relative is offered other categories of bed which are available. Executive- Admission Desk

The Hospital has different kinds of room categories such as General ward, Semi-private Rooms, Private Rooms, and Deluxe Rooms.

In case of critical patients, there is no provision of patient / relative's choice for the reason of appropriate care, if the admitting consultant / Critical Care Team specifies admission is done in Critical Care Unit like MICU, SICU, CCU, HDU etc. Admitting Consultant / Critical Care Team

After the bed is allotted, cash is deposited through Credit Card / cash / UPI as per the hospital’s norms. Billing Executive

All admissions get an Admission number in addition to a Registration number (MRN).

Executive- Admission Desk. Patient's file is prepared with all the basic required documents.

If patient belongs to TPA / Credit than patient / relatives are guided for availing cashless facility for unplanned cases. Where in planned cases, TPA / corporate department will forward approval documents, which will be kept with Inpatient file of patient. TPA/ Corporate Cell

In case of unidentified patient, the patient shall be registered and admitted as Medico-legal case and Medico-legal case policy and procedure shall be followed. Emergency Medical Officer/ Executive Admission Desk/ Billing Executive

Schedule of deposit is explained, and the amount is deposited by the patient / relative at billing counter. Billing Executive

Patient or relative is guided to their respective room along with an attendant for further process by Housekeeping GDA to decided location.

Patient's relatives are provided with Attendants Pass if the Category of bed allows 24 hours attendant and one Visitors Pass to meet the patient during visiting hours only. Executive- Admission Desk

Patients / relatives are explained of the General Guidelines, Patient Rights & Responsibilities at the time of admission.

Advance Room Booking

If the patient wants to get the room booked in advance for his / her admission, the admission executive takes the complete details from the patient and advance deposit is taken. Executive- Admission Desk

Room as per the class selected is booked a day prior to admission depending on the availability of room.

The patient is clearly explained that in unforeseen conditions, hospital has right to cancel the booking with prior information to the patient.

During high occupancy, the advance room booking shall not be permitted.

Cashless / Corporate

All credit patients (Corporate, TPA, CGHS, etc.) shall require a pre- authorization letter (in case of planned admission). Patient can admit without prior approval by giving

advance deposit, consent / undertaking for payment if approval not given by the TPA / Corporate - Patient Attendant

Once the approval is received, the same shall be reflected in HIS. In case, the amount exceeds the approved amount, then grant for next approval shall be sent to the respective TPA/Corporate

At the time of Discharge, all documents (Discharge Summary, Investigation Reports) are sent to TPA/ Corporate for approval. After the approval of the billing amount patient is discharged from the system

In case of Planned Admission: The Authorization letter shall be handed over to the staff prior to admission of the patient along with the room category, either a prescription from OPD or History Sheet from Emergency. Executive- Admission Desk / TPA Coordinator

In case of Surgery / Procedure: Entire advised estimated expense needs to be deposited for OT / Cath Lab clearance and in case patient is not having the counselled amount at the time of admission then a consent is taken from patient after seeking approval of the same from Facility Director / Finance Head / Appropriate Authority. Billing Executive

In case of Unplanned Admission: The information of the patient shall be given to the TPA Help Desk and the relevant documents (such as approval to treat) shall be collected latest on the same day or on the next day by the TPA Help Desk Department. TPA Help Desk

The patient shall be explained that the admission is irrelevant to the approval and in case of denial, the patient shall be responsible to make the whole payment.

The patient shall be explained that in case he/she must undergo a surgery before approval from the TPA Company then the patient must pay the total surgery amount before the surgery is performed.

Foreign Patients:

All foreign nationals coming to the hospital for planned admission, following requisites to be checked:

Medical Visa for Patient & person accompanying the patient shall have Medical Attendant Visa Patient /Attendant. At the Time of Admission “Form ‘C’ needs to be filled first in a hard copy & same shall be filled at FRRO site

(https://indianfrro.gov.in/frro/FormC). Registration process of Form 'C' is as per annexure. Patient / Attendant / International Patient Coordinator

Form 'C' shall be filled and submitted within 24 hours of admission. Admission Desk shall check the photocopy of Passport & Visa of patient & the attendant-if in Visa there is a written message" FRO or Local Police Station Verification", contact International Marketing team for further formalities. Patient/ Attendant/ OPD staff doing registration / Executive – Admission Desk.

One form in a Hard Copy shall be filled & handed over to Patient/ Patient attendant. International Patient Coordinator

In case if patient Expected Date of Discharge exceeds, provided at the time of admission, then Admission Desk needs to inform International Marketing for further formalities. Executive Admission Desk

At the time of Discharge, Form 'C' needs to check out from online portal within 24 hours of physical discharge of patient. International marketing Coordinator

2.3) Types of admissions at Narayana multi-speciality Hospital

Planned admission: This type of admission occurs when a patient has an appointment for a procedure or surgery and hospital staff prepares for their arrival.

Emergency admission: This type of hospitalization occurs when a patient requires urgent medical attention due to a medical emergency such as a heart attack or stroke.

Elective admission: This type of hospitalization occurs when a patient requires urgent or non-urgent medical assistance necessary to treat a medical condition.

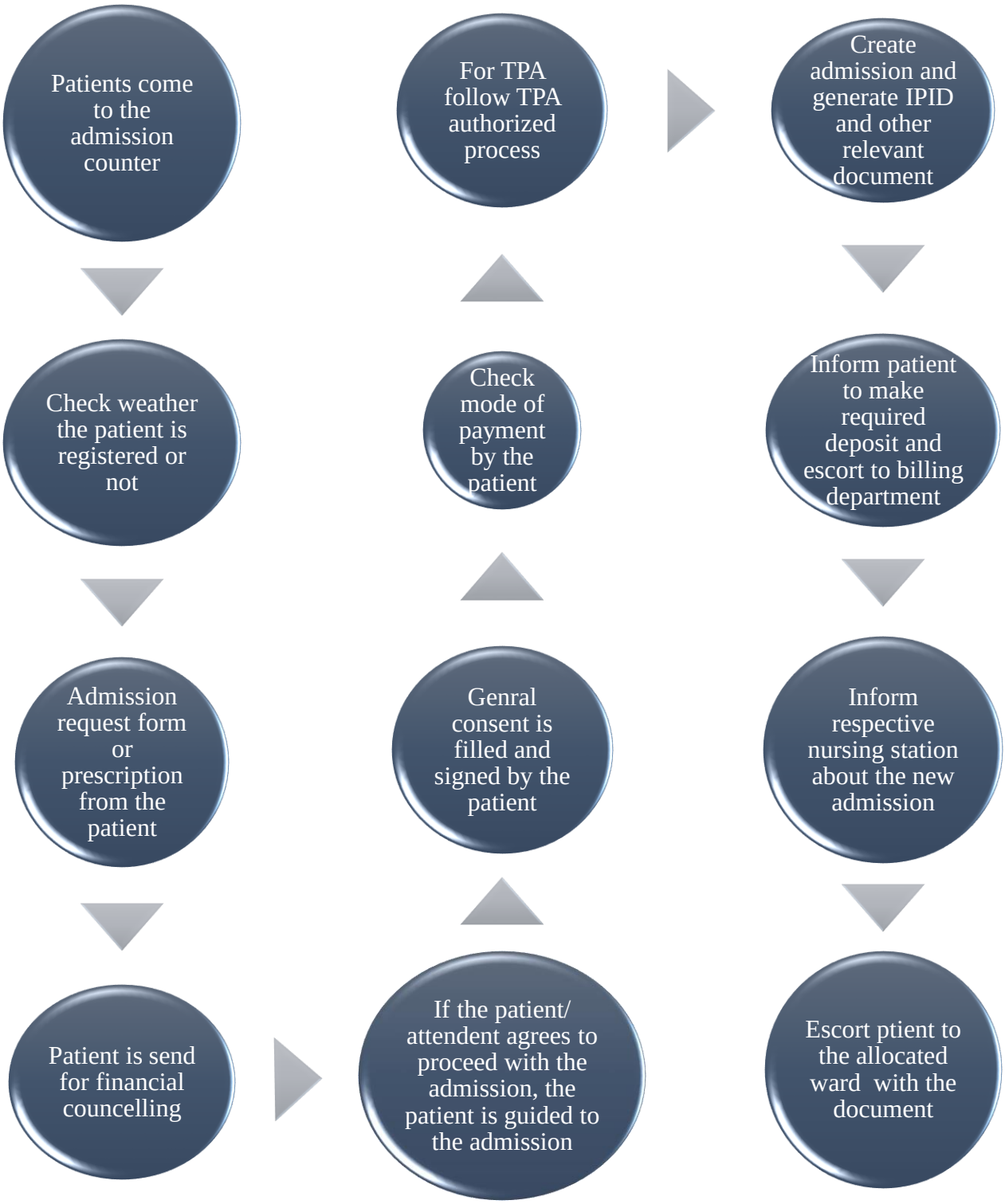
Day care admission: This type of hospitalization includes patients admitted for short periods of time, usually less than 24 hours, for treatment or testing that does not require an overnight stay.

Transfers: Patients transferred from other hospitals or institutions for further treatment or testing.

Outpatient admission: Patients who are receiving treatment at a hospital but are not hospitalized or staying overnight. This type of hospitalization includes outpatient surgery, diagnostic tests, and other medical procedures.

Observation admission Patients hospitalized for short periods (usually less than 24 hours) for monitoring and evaluation of medical conditions.

Hospital Standard operating procedure for hospital admissions



1) Methodology

3.1) Research Question

1 What is the average turnaround time (TAT) of patients in the admission?

2) What are the factors which causes delay in the admission process?

3.2) Objectives

1) To analyse the time taken for IPD admission and Shifting of the patients to their respective ward

2) To determine the bottlenecks in the process

3) To suggest various methods by which the waiting time for the patients could be reduced

3.3) Study Setting

In patient department desk at Narayana Multi-speciality hospital Jaipur

3.4) Study Design

A descriptive cross sectional was used use to analyse the barriers and bottlenecks in the process of the admission of the patient at the IPD desk.

3.6) Type of Data

Primary data was collected from the patients who came to the hospital for their admission.

3.7) Sample Size

300 IPD patient admissions were taken which constitutes the 30 % of the total admissions done by the hospital in 3 months duration (approximately 1000 patients)

3.8) Sampling Technique

The technique that was used is non-Probability convenience sampling.

3.9) Data Collection Method

Data was collected by observing patients who came for their admissions at the in-patient department desk ad it was done by using a “time motion study”.

3.10) Sample selection

Inclusion criteria

Admissions done through EMR (where doctor put up the request for admission) and through offline (where patient have the admission order and then came to IPD department)

Exclusion criteria

The patients who came only for investigation purpose only.

3.11) Data Analysis Procedure

Observational study was used to create a checklist for the parameters required for the admissions of the IPD patients as it was most appropriate method to analyse the data and to understand the procedure of the admission.

Also, time motion study will be essential and was used to determine the time duration of each activity.

MS excel software will be used to analyse the data and interpret the results.

4.0) Results and Discussions

4.1) Analysis of the admission time and shifting time of the IPD Patients

Had taken data of the 300 IPD admissions for my research and detail analysis was done on the 300 sample by getting step by step details of the patient's admission time, transaction time and shifting time. Data was divided into EMR and offline admissions. Out of 300 patients 105 patients have been admitted into the Hospital through EMR (Electronic health records) process Where the doctor has put up the request in the HMIS for patient's admission whereas 195 admissions were done through offline process where the patients have the admission order and then they come to the IPD for their admission. According to the analysis 35% of the admissions were done through EMR whereas 65% of the admissions were done through offline process.

Admission Type	No of patients	Percentage
EMR	105	35%
Offline	195	65%
Total	300	100%

Table 4.1 Number of EMR and offline admissions

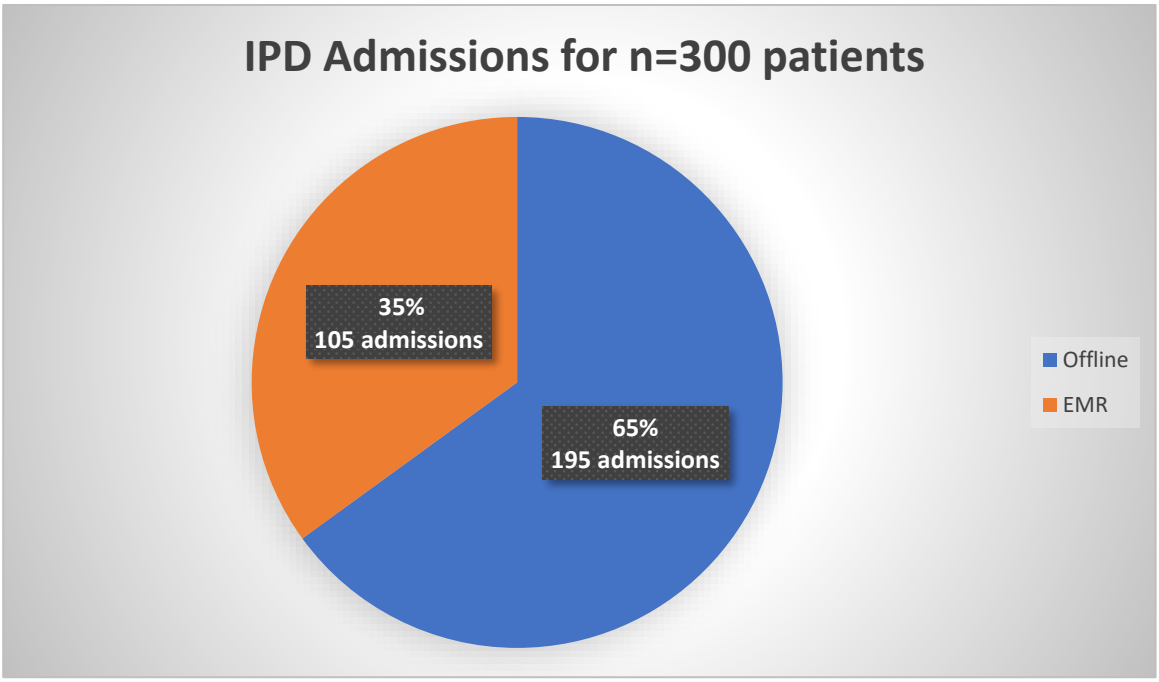


Fig 4.1 Pie representation of the 300 IPD patient admission

After careful observation of the admissions process, further analysis was done on how much time is required to do the admission process of the patient till the time it requires the patient to shift to the designated ward. And it was found out that according to the hospital SOP it was around 20 minutes.

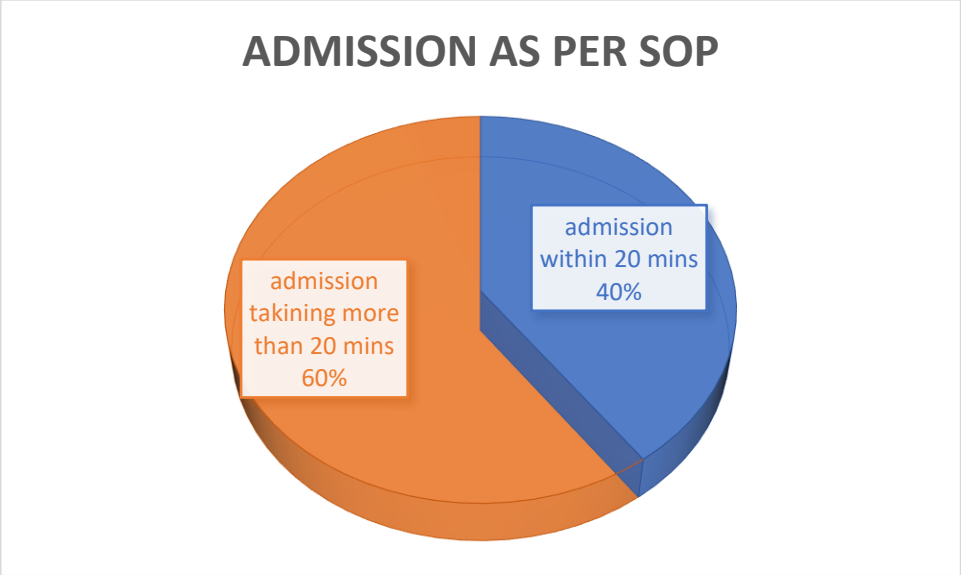


Fig 4.2 percentage of the number of admissions as per SOP

The above-mentioned diagram shows that only 40% of the admission were under optimal time. The main issue was to understand the cause of increase in the TAT for the remaining 60% of the cases.

Further analysis was done to find out the TAT in which the maximum admission happened.

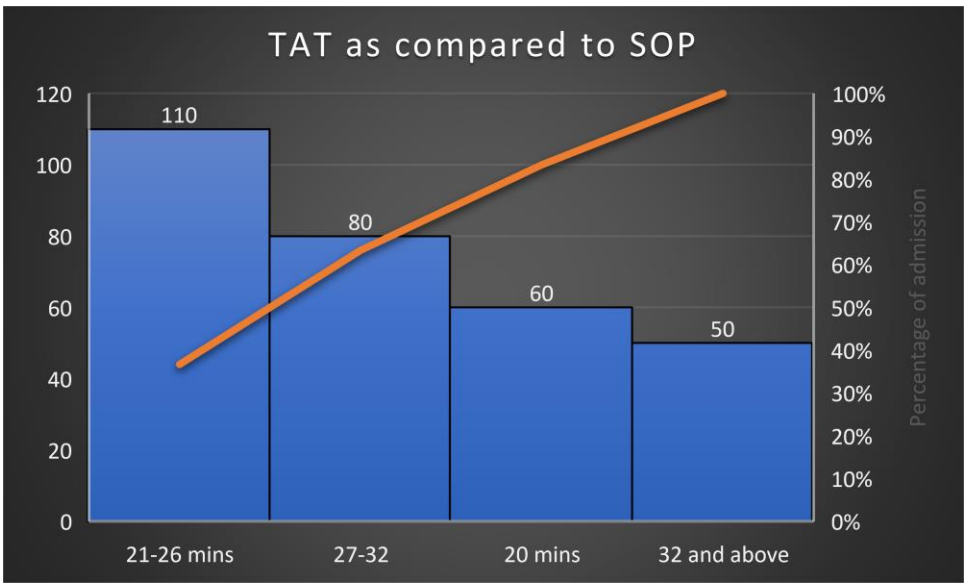


Fig 4.3 admissions against TAT

The above-mentioned chart shows that around 90 percent of the admissions took around 21 to 26 minutes to fully complete the admission process along with shifting of the patients to their designated ward. And from the graph it is observe that only 60 patient's admissions were according to SOP timing which was under 20 minutes. Which is only 40% of the total admissions.

The admission process of the patients within the hospital has a holistic process and consists of step-by-step activity. And each activity is depended on the previous activity to complete the admission process. Now detail analysis was done to get the time duration of each activity and with the help of this time duration, the overall average TAT was calculated. This average TAT has been calculated by observing and continuous time motion study for the admissions of the 300 patients.

Activity	**Time taken (HH.MM.SS)**
Filling out financial Counselling form	00.02.00
Explaining of the details	00.01.30
Signing of the consent form	00.00.30
Co-ordination with the bed management	00.01.00
Entering the details in the HMIS	00.01.30
Printing of the labels and Admission sheets	00.00.30
Completion of the admission documents	00.01.00

Initial Payment by the patient	00.01.30
Escort to the ward	00.05.00
Avg TAT	14.5 minutes
Avg actual Total TAT	30.5 mins

Table 4.2 Activity wise average TAT

Analysing the total activity TAT (14.5 mins) and the overall TAT was (30.5 mins). It was analysed that on an average 16 minutes were taken more by the admission desk to complete the admission of the patient in the hospital and along with that it increased the waiting time of the patient.

After the TAT was calculated further deep analysis were done on the admission time and shifting time to determine the time taken for each activity

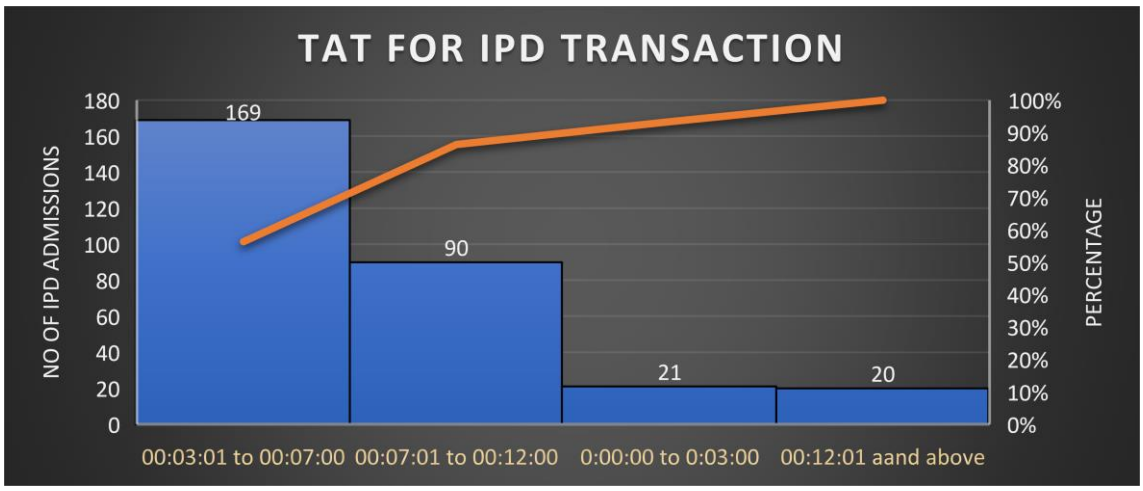


Fig 4.4 IPD transaction against TAT

From the above-mentioned Pareto Chart, 60 percent of the IPD Transaction took approximately 3 to 7 minutes to complete the in-patient admission formalities. Followed by it took around 7 to 12 minutes to complete the transactions and documentation for 90 patients. Lastly for few patients it took more than 12 minutes to complete the IPD admission process.

Further on the research TAT for the Shifting time was also calculated to determine how much it take for a nursing staff to shift a patient from IPD desk to the ward assigned to the patient where it is admitted.

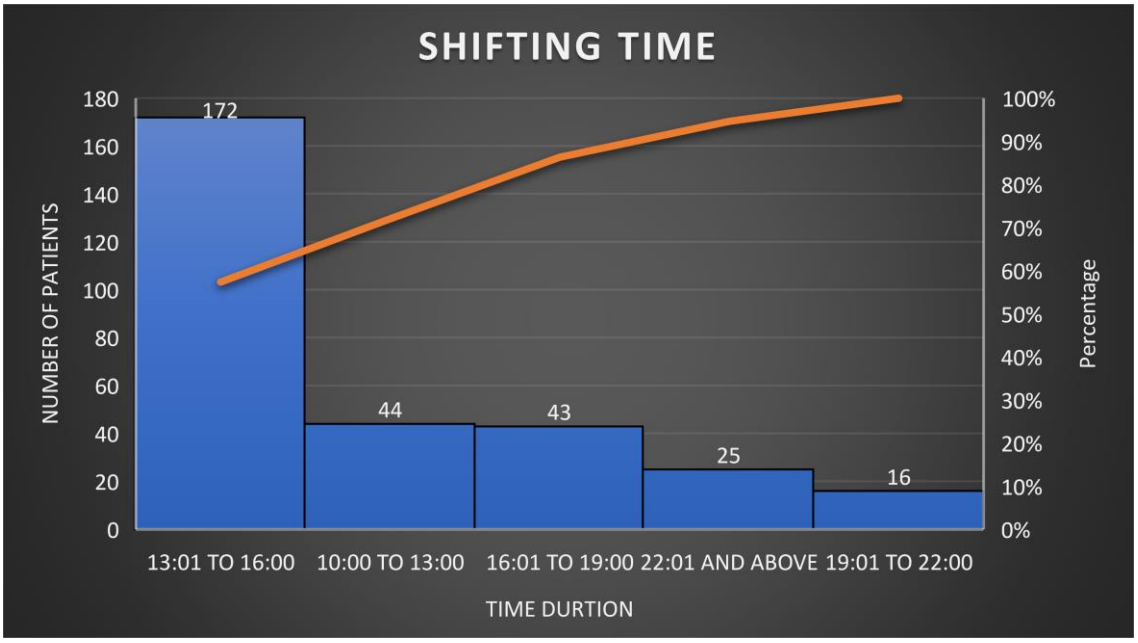


Fig 4.5 Shifting time against TAT.

According to the Pareto chart 92 % of the patient were shifted to their respective ward within the time range of 13 to 16 minutes. Followed by 44 and 43 patients were shifted between 10 to 19 minutes.

4.2) On Detailed analysis on finding out the bottlenecks in the admissions of the patients

As per the result out of 300 patients for admissions, 180 patients. the admissions of the patients were delayed due to various reasons. According to the data collected 60% patient's admissions was delayed.

Table 4.3 No of patient admission delayed along with reason

Reasons of delay	No of admissions delayed
Non availability of the beds	40
TPA formalities	20
Limited nursing staff to transport patients to their respective wards	70
Patient Side Delay	15
Room not cleaned by housekeeping staff	25
miscommunication between operations executive and patient side	10

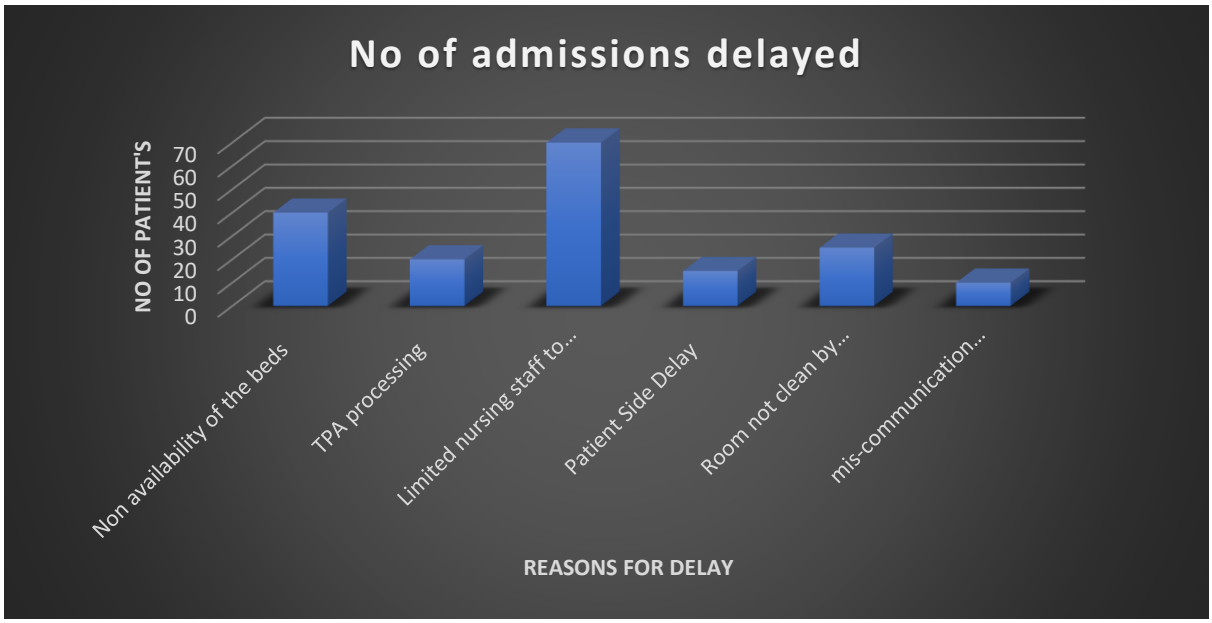


Fig 4.6 Reasons of delay against no of patients

Average time taken for each activity.

Average time was determined for each of reason of delay that occur, and this was done to determine the reason and frequency of the delay in the admissions of the patients in the hospital. According to the analysis maximum time in delay was due to limited availability of the nursing staff.

On as average 1 patient waited for almost 10.5 minutes which creates an issue for the patients who require immediate treatment and because of that the treatment was also delayed.

The below mentioned table will also give us an idea about the average delay time for each reason of the delay. They are as follows.

Reasons of the delay	**Average time for delay**
Limited nursing staff	17 minutes
Non availability of the beds	15 minutes
Room not cleaned by housekeeping staff	10 minutes
TPA Processing	8 minutes
Patient side delay	8 minutes
Miscommunication between patient side and operations executive during counselling	5 minutes

Table 4.4 Reasons and average time for delay

Explanations for the reasons of the delay on the basis on

Limited nursing staff

It was one of the main reasons for the increased TAT in the IPD admissions because there was only one nursing staff available at the IPD to shift the patient to their respective ward after their admission and during the rush time especially on Monday's and Saturday's the patient flow was very high due to which the single nursing staff was not able to comprehend with the flow of the patient shifting, Hence it was also increasing working load on the nursing staff

Non availability of the beds

Another major reason was the non-availability of the beds. Hospital undergoes very high occupancy which further lead to non-availability of the beds for the patients coming for the admissions. In that the patients need to wait till the already admitted patient to get discharged and vacant the bed. Discharges also get delayed to to many reasons such as discharge summary is not prepared, bill not cleared, waiting for the approval from the insurance company, pharmacy bill is not cleared. This all reasons further leads to reasons for the delay for the admissions of the new IP admissions which leads to the increase the level of dissatisfaction among the patient, and they start to doubt the service provided by the hospital. Further once the patient vacant the room, the housekeeping will require some time to clean the room before the patient is admitted will take more 20 to 30 minutes.

Rooms not cleaned by the Housing staff.

Sometimes what happens is that even if the room is vacant the ward is not cleaned for the new patient this is due to the ignorance of the housekeeping department. The patient does have complaints such as the bed sheets are not cleaned or sometimes the bedsheets are missing this is one of the major reasons, other than that hygiene maintenance, washroom for the patients and other housekeeping activities causes increase in the lead time which causes unnecessary delay for the next patients' admissions.

TPA Processing

In case of the patients are either admitted through EMR or offline, the patients have not done the TPA formalities earlier, then before the admission process the patient or the attendant goes to the TPA counter where they process the TPA formalities i.e. TPA form is filled by the doctor, submit all the TPA documents which take time and it delays the admission process. Without counselling admission cannot be done in many cases patient is not aware about the room category covered by their insurance company

Patient Side delay

There are many instances where the patients are not aware of the estimated cost to the surgery due to which they are indecisive on taking a decision whether to admit their patients or not followed by that many times they call to connect with their friends or relative to take suggestions from them weather they want to admit the patient or not such cases could impact the health of the patient and could be fatal

Miscommunication between the operations staff and patient side during counselling

There have been few cases where there has been the miscommunication between the IPD and the patient during the counselling for the patient to be admitted. Sometimes some vital information such as costing of the consumables, doctor's communication with the

patient regarding the packages and the packages mentioned with the operations executive do differ due to which it causes conflict between the patient and the IPD staff. Also, the new staff executive sometimes is not aware about the recent changes in the government health packages and because of that sometimes causes issue with the patients. All these factors are contributing factors in increasing the waiting time in the In-patient department.

Other reasons for the delay

Diagnostic Tests and Consultations

Before admission, patients may need to undergo diagnostic tests, consultations with specialists, or additional evaluations to determine the appropriate ward or course of treatment. These tests and consultations may have limited availability, resulting in delays in the admission process.

Insufficient Display of signage

There should be a proper display of signage which should be easily visible from a distance, to help patients to reach their destination without any assistance.

Technical issues

There have been times where the printers where in breakdown due to which the admissions form where not be able to print due to which it causes increase in the admission time. And causes a chain reaction and caused delay in the admissions of the other patients as well.

Other admissions

This reason occurs because of rush at the admission desk, the staff had to do multiple admission at a time which led to delay and waiting time for the previous patients.

Miscellaneous queries

Different types of the query come to the IPD desk either regarding financial packages or the information about any other queries other than the admission of their respective patient due to which it causes the admission of the patient who wanted to get the admission.

4.3) Recommendation to reduce waiting time for the patients.

Increase the number of nursing staff in the In-patient department.

Since it is observed that the most delay cause in the admission of the patient was due to the limited staff available to transport the patient to their respective ward especially during the rush timings. It would be more convenient for the hospital to have at least 3-4 nursing staff available at the IPD desk so as this will reduce the workload on the previous existing

one nursing staff. Also, during the rush hours, they could take shifts among themselves and can effectively manage the shifting of the patients to their respective wards.

Strict protocols and monitoring on the Housekeeping Staff

There have been various instances where the hygiene is not maintained within the ward and the reason was found out to be that the nursing staff has not cleaned the ward as per the standards. For this there should be proper training and guidance should be given to the nursing staffs on the importance of the cleanliness maintenance. Also, there should be a manager appointed to supervise the nursing staff to comprehend the standards of the hygiene maintenance and to address the query of the patient related to the hygiene maintenance.

Unavailability of the beds

It is one of the reasons in the delay of the admission process was due to the non-availability of the beds. It is important that same importance should be given on the discharge of the patients. The patient who got discharged and are in good condition but are waiting due to their approval from their insurance company or any non-health related issue. There could be some sort of arrangements like a discharge waiting rooms so that the patient can wait there so that the relative of the patient can sort out the discharge formalities and with this the room can be made available for the new patient to be admitted. And, according to the Hospital's standard operating procedure (SOP) once the bill is cleared the patient should vacant their bed and that bed should be made available to the new patients.

There must be an effective management team to overlook the discharge process and to manage the discharge to make room for the new patients.

Regular training and meeting with the HOD and IPD staffs

There should be regular training of the operations executive who have recently joined the organizations and help them in building confidence so that they can easily communicate with the patients as well as attendant. Also, there should be a soft skills training of the staff so that they are more connected with patients and their attendants so that they are able to calm them down and help them throughout the admission process.

Assistance regarding TPA inquiry.

There have been cases where the patients were cover under insurance policy but there were unaware of the details of what were covered inside their insurance policy and along with that TPA department is located in different location as of the IPD department within the hospital due to which the attendant of the patient are unaware because of that the attendant visits the IPD desk first where they came to know that their formalities will be done by TPA department and again they have to come to IPD desk because of all these hassle the patients are dissatisfied and which in turn it increases the admission time of the patient which leads to increase in turnaround time. So, if there is an TPA inquiry staff within the IPD this was reduce the attendant hassle and they could easily get their enquiries answered.

Other Suggestions

The area for the IPD admission is very less, more room for movement should be given to the admissions location or should at least give some sort of services in the waiting area for the patients that are waited for their admissions such as television, self help desk where attendants along with the patients could get necessary information regarding their admissions.

The interaction among the different departments should be managed properly, nursing staff must be consulted and trained for giving accurate information on the status of the bed availability. Regular visits should be made by the floor manager to the different wards to ensure that the rooms are vacant as fast as possible so that the new patients could be transferred.

For the admissions that are through the EMR each patient must get their pre-admission process done couple of days prior to the planned admission date so that the delay can be reduced and the planned surgery or the procedure could be done on time.

5) Conclusion

In conclusion I would like to say that during my 3 months of the dissertation at the Narayana multi-speciality hospital, I have understood the in-patient admission process of the hospital along with the operations of the IPD desk. I have managed to learn the inter-department working of the operations executive and the floor manager on how they co-ordinate with the patient as well other working staff of the hospital.

During my internship I have observed various hurdles in the admission process which have caused the delay in the admission process which in turn have increased the waiting time of the patient waiting time and which could result in patient dissatisfaction

After the analysis of the study, it was found out that there is huge scope of improvements in the inpatient admission process of the hospital. The analysis shows that average time taken for the hospital admission was around 30.5 minutes which was higher than the hospital's standard operating procedure (SOP).

Once finding out the reasons of the delay few suggestions has been recommended so as to ensure the reduction of the waiting time for the patients and which will led to better patience experience for the patients.

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