

**FACTORS CONTRIBUTING TO DELAY IN THE DISCHARGE PROCESS OF
A TERTIARY HOSPITAL: MEDANTA, GURUGRAM**

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/Pharmaceutical Management/Development
Management

by

Dr. Divya Khanduri

Under the Supervision and Guidance of

Dr. Anupam Mehrotra

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titledis the bonafide record of my original research work. 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Name of Student: Dr. Divya Khanduri

Date:

CERTIFICATE

This is to certify that (Name of Student) in partial fulfilment 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, has successfully completed her/his internship at (name of the organization) during February 20- May 19, 2023.

Place:

Preceptor/Head of the Organization

Date:

Name of the organization: Medanta, Gurugram

Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that the dissertation titled.....is a record of the research work undertaken by (Name of Student) in partial fulfilment 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

School Dean
IIHMR University, Jaipur

Date

Date

Abstract

Title: Study on factors contributing to delay in the discharge process of a tertiary hospital, Medanta, Gurugram.

Background: Delayed discharges not only directly impact patient well-being but also strain healthcare resources and increase healthcare costs. Therefore, understanding the factors contributing to delays in the discharge process is essential for improving healthcare delivery. Medanta Gurugram caters to a diverse patient population, including those seeking specialized medical interventions and complex treatments. This study aims to bridge the knowledge gap by identifying and examining the key factors that contribute to delayed discharges in the hospital.

Aim & Objectives: This study aims to gain a comprehensive understanding of the discharge process for in-patients. This includes analyzing the time taken for discharge and identifying the specific factors contributing to delays in the process. Ultimately, the research will provide valuable recommendations aimed at reducing the overall discharge time of patients, thereby improving the efficiency of the healthcare system.

Method: A cross-sectional study was conducted at the in-patient ward of Medanta, Gurugram, a renowned multi-super speciality healthcare centre. The study was conducted over two months, and the sample size was 198 patients selected through convenient sampling. Data was captured from daily patient discharges, including paying and credit categories from a discharge live dashboard. The data collected included patient demographics, length of stay, reasons for delay in discharge, discharge planning status, and comorbidities.

Results: The study's findings reveal significant factors contributing to delays in the discharge process. The analysis indicates that specific processes, namely the return of medication, finalization of discharge summaries, preparation of bills, and the time required to vacate beds, are the primary causes of delay. The results demonstrate that only 34% of medications are returned within the specified turnaround time. Moreover, in approximately 41% of cases, discharge summaries take longer than two hours to be prepared. Furthermore, a mere 15% of bills are generated within one hour. The time taken to vacate beds after bill settlement is also a notable concern, with approximately 77% of beds being vacated after 30 minutes.

Conclusion:

Based on the findings, the hospital demonstrates a notable preference for unplanned discharges, raising concerns as only 40% adhere to the planned discharge protocol. Implementing planned discharges allows for the timely preparation of essential documents, addresses patient inquiries, and contributes to a smoother patient departure process. Certain specialties exhibit a higher frequency of planned discharges, highlighting the need for targeted efforts. The timely return of bedside medications is crucial, yet only 34% are returned within the specified timeframe, necessitating measures to improve efficiency. Delays in activity scan time and discharge summary completion impact billing procedures and the overall discharge process. Corrections in discharge summaries require authorization and timely completion. Bill preparation requires proactive measures, with a significant number taking more than 3 hours. The bed vacate time is primarily the responsibility of the administration, and improving this aspect can contribute to better overall Turnaround Time (TAT).

Acknowledgement

I would like to express my heartfelt gratitude to the following individuals and institutions who have been instrumental in the completion of my dissertation:

First and foremost, I extend my sincere appreciation to my esteemed university, IIHMR Jaipur, for providing me with the necessary resources, guidance, and academic environment to pursue my research. I am deeply thankful to Dr. P. R. Sodani, the president, IIHMR University, Jaipur, for his continuous support and valuable insights throughout my academic journey. I would also like to express my gratitude to Dr. Mahender Kumar, Dean, of IHMR, for his guidance and encouragement.

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I am grateful to Medanta Hospital for providing me with the opportunity to conduct my dissertation research in their esteemed organization. The support and cooperation received from the staff at Medanta Hospital were essential to the successful completion of my study.

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I would like to express my deepest appreciation to my parents and my brother Shiva Khanduri for their unwavering support, love, and encouragement. Their belief in me and constant motivation have been instrumental in my academic journey. Finally, I would like to thank Dr. Shashank Ramola for being my constant support, providing guidance, and motivating me to strive for excellence.

I am truly grateful to all the individuals and institutions mentioned above for their invaluable contributions, without which the completion of my dissertation would not have been possible.

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List of Abbreviations:

IPD	In-patient department
TL	Team leader
TAT	Turn around time
CTVS	Cardiothoracic and Vascular Surgery
ENT	Ear, Nose, and Throat
GDA	Ground discharge associate
TPA	Third-Party Administrators

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MEDANTA, Gurugram:

Mission:

The mission is to deliver world class health care by creating institutes of excellence that integrate medical care, teaching and research.

Vision:

Medanta as an institute is governed under the principles of providing affordable medical services to patients.

Medanta Hospital Gurugram, nestled in the vibrant city of Gurugram, is a distinguished healthcare institution renowned for its unwavering commitment to providing exceptional medical care. With an unwavering focus on patient well-being and safety, Medanta Hospital has solidified its position as a leading healthcare provider, offering an extensive range of specialized services. This thesis aims to explore the remarkable aspects of Medanta Hospital Gurugram, shedding light on its prestigious NABH and JCI accreditations, multiple awards and accolades, unparalleled patient care and safety standards, expansive branch network, and the wide scope of services it offers. Additionally, we will delve into the innovative home care services, the establishment of mediclinics, and the specialized programs tailored for the elderly population.

Medanta Hospital Gurugram has accreditations from two internationally recognized organizations, the National Accreditation Board for Hospitals and Healthcare Providers (NABH) and the Joint Commission International (JCI). These prestigious accreditations validate steadfast commitment to upholding the highest standards of quality and safety in healthcare delivery. By adhering to stringent protocols and continually refining its practices, Medanta Hospital ensures that patients receive world-class care and experience exceptional outcomes. Moreover, the consistent recognition of the hospital as one of the top hospitals in India, consistently ranked as the No.1 hospital in numerous national surveys, serves as a testament to its unwavering dedication to excellence.

At Medanta Hospital Gurugram, patient care and safety serve as the cornerstones of its operations. A multidisciplinary team of highly skilled doctors, nurses, and support staff work tirelessly to provide personalized care that places the well-being of the patient at the forefront of every decision. Medanta comes with uncompromising commitment to patient safety is evident through its robust protocols and state-of-the-art facilities, ensuring the best possible outcomes for all patients.

Branch Network and Scope of Services:

Medanta Hospital Gurugram has a comprehensive network of branches, each equipped with cutting-edge medical technologies and staffed by renowned experts in their respective fields. These branches cater to an array of specialties, including cardiology, neurology, oncology, orthopedics, and more. This expansive reach ensures that patients have convenient access to specialized care, irrespective of their location, enabling them to receive the most appropriate treatments and interventions.

Recognizing the significance of extending care beyond the confines of hospital walls, Medanta Hospital Gurugram has pioneered innovative home care services. This pioneering initiative allows patients to receive comprehensive medical care in the comfort of their homes, reducing the need for frequent hospital visits and promoting expedited recovery. The home care program encompasses a wide range of services, including skilled nursing care, physiotherapy, counseling, and assistance with medical equipment. This holistic approach ensures that patients with chronic illnesses or those in need of post-operative support receive the highest quality care in a familiar environment, fostering improved well-being and enhancing overall patient satisfaction.

Medanta Hospital Gurugram goes beyond traditional healthcare delivery by establishing a network of Mediclinics. These clinics offer a diverse range of outpatient services, providing patients with convenient access to specialized consultations, diagnostic tests, preventive screenings, and follow-up care. By providing a seamless experience, Mediclinics enable patients to receive prompt medical attention and expert guidance without the need for hospital admission. These clinics serve as a vital bridge between in-patient care and continued outpatient management, ensuring continuity of care and improving patient outcomes.

Medanta Hospital Gurugram understands the unique healthcare needs of the elderly population and has developed a specialized program focused on geriatric care. This comprehensive program addresses the physical, emotional, and social well-being of elderly individuals, providing dedicated medical consultations, preventive screenings, rehabilitative services, and tailored care plans. With a compassionate and experienced team, Medanta aims to enhance the quality of life for elderly patients, promote healthy aging, and provide comprehensive support to their families and caregivers.

Medanta Hospital Gurugram stands as an exemplar of excellence in the healthcare industry, setting new benchmarks for patient care, safety, and service quality. With its prestigious accreditations, numerous awards, patient-centric approach, extensive branch

network, comprehensive scope of services, innovative home care initiatives, establishment of Mediclinics, and specialized programs tailored for the elderly, Medanta Hospital Gurugram has firmly established itself as a leading institution dedicated to delivering unparalleled medical care. By prioritizing patient well-being, embracing innovation, and fostering a culture of excellence, Medanta Hospital Gurugram continues to redefine the healthcare landscape, making a significant difference in the lives of countless individuals and communities it serves.

Medanta Hospital Gurugram prides itself on its state-of-the-art infrastructure and cutting-edge medical technology. The hospital is equipped with advanced diagnostic and therapeutic equipment, enabling precise and effective treatments across various medical disciplines. This technological prowess ensures accurate diagnoses, minimally invasive procedures, and enhanced patient outcomes.

Medanta Hospital Gurugram extends its exceptional care to international patients seeking world-class medical treatments. The hospital provides comprehensive services to facilitate seamless medical travel, including assistance with visa arrangements, travel logistics, interpreter services, and personalized care throughout the patient's journey. This focus on international patient services underscores Medanta's global reputation and commitment to delivering exceptional healthcare experiences.

Medanta Hospital Gurugram actively engages in corporate social responsibility initiatives, contributing to the welfare of the community it serves. The hospital conducts health camps, awareness programs, and initiatives aimed at providing healthcare services to underserved populations. Medanta's commitment to social responsibility extends beyond its core medical services, making a positive impact on society at large.

Medanta Hospital Gurugram collaborates with renowned national and international medical institutions, fostering partnerships to enhance patient care and expand its scope of services. These collaborations facilitate knowledge sharing, exchange of best practices, and access to specialized expertise, ensuring that Medanta Hospital remains at the forefront of medical advancements.

Medanta Hospital Gurugram is committed to the continuous professional development of its healthcare professionals. The hospital offers robust training programs, conferences, workshops, and fellowships to enhance the knowledge and skills of its medical staff. By investing in the growth of its workforce, Medanta Hospital ensures the delivery of high-quality care that meets international standards.

Medanta Hospital Gurugram provides patient-centric facilities designed to offer comfort, convenience, and a healing environment. From spacious and well-appointed patient

rooms to specialized amenities, the hospital prioritizes patient comfort and well-being throughout their stay. Medanta Hospital Gurugram actively engages in philanthropic initiatives to provide medical assistance to those in need. The hospital offers financial aid programs, supports medical treatments for underprivileged patients, and partners with charitable organizations to extend healthcare services to marginalized communities. These philanthropic efforts embody Medanta's commitment to improving healthcare accessibility and affordability.

Chapter 1 : Introduction

Efficient and prompt discharge of patients is vital for optimizing hospital resources, improving patient flow, and enhancing overall healthcare delivery. However, delays in the discharge process can significantly impact patient satisfaction, resource utilization, and hospital efficiency. This dissertation aims to investigate the factors that contribute to delays in the discharge process of Medanta Gurgaon, a tertiary hospital in India.

“The cohesiveness of the discharge process is critical for ensuring the safety and quality of transition of patient care from the inpatient setting to the next level of care”. Reducing delays in discharges impacts patients as it enhances patient experience as patients are able to return home sooner, it reduces the risk of hospital acquired infections, it is cost saving for the patients as they spend less time in the hospital reducing their accommodation and medical bills. It increases bed availability and contributes to the efficiency of health care professionals

Research question:

What factors contribute to delays in a tertiary hospital’s discharge process?

Aim:

To study factors that cause delays in the in-patient discharge process of a tertiary hospital.

Objectives:

1. To study the discharge process of in-patients.
2. To calculate the total discharge time.
3. To identify the reasons for the delay in the discharge process.
4. Do a Root-cause analysis of the cause of delay in the in-patient discharge process.
5. To recommend and implement measures to reduce the discharge time of patients.

We were able to build a formal framework for examining the discharge process by identifying these factors. The time needed to complete each stage, from gathering medical records to setting up follow-up appointments, was carefully examined.

We were able to establish a baseline or typical turnaround time for each stage of the discharge process thanks to the predetermined criteria. This benchmark allowed us to evaluate and contrast the actual turnaround times for the discharge of specific patients.

Any notable delays or variations were found by comparing the actual turnaround time to the expected turnaround time. This analysis allowed us to identify the precise stages that were delaying things and look into the underlying causes of those delays.

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1. Why streamlining of discharge process is necessary for patients or hospital.
2. Why it is important to reduce the time spent in discharge process and its related processes.
3. Also mention what impact does it have for hospital and patients if the these processes is streamlined and time spent is reduced.
4. Then show based on these description on why this study is necessary.

By comparing discharges to the turn-around-time (TAT) the hospital discharge process was evaluated and assessed.

It allowed us to assess whether the process was moving along within a reasonable amount of time or whether there were any areas that needed to be improved in order to reduce delays.

Hospitals can apply interventions that are targeted to optimise processes, shorten turnaround times, and enhance patient flow by recognising the precise issues causing delays in the discharge process. In the end, this results in improved patient experiences, greater resource utilisation, and increased bed availability for new patients.

To analyse the discharge process in our study, predetermined criteria and predetermined TAT (Turnaround time) provided methodical way and quantitative way to analyze the discharge process.

To streamline the procedure for increased productivity, timely patient discharges the analysis conclusions will be used as a starting point. The study-based recommendations aimed to improve communication between healthcare workers and patients, expedite discharge procedures, and increase staff coordination.

Chapter 2: Review of Literature

The study focuses to investigate the causes of delay in the discharge process,. Relevant articles, research studies, and reports on delayed hospital discharge were collected from electronic databases, academic journals, and credible websites.

The selected literature was carefully analyzed to identify common themes and factors associated with delayed discharge.

“(Rojas-García A, Turner S, Pizzo E, Hudson E, Thomas J, Raine R. Impact and experiences of delayed discharge: A mixed-studies systematic review. 2018 Feb;21)”

This literature review aims to explore the existing literature on delayed discharge, providing insights into its effects and the factors influencing its occurrence.

A comprehensive analysis of mixed-study designs was conducted to systematically review the relevant literature on delayed discharge. The search strategy encompassed electronic databases, gray literature sources, and reference lists of pertinent studies. To ensure inclusion, Quantitative and qualitative studies were performed for example observational studies, surveys, interviews, and case studies,. Data collection and quality assessment were done in diligently to established guidelines to ensure data credibility.

Preliminary findings reveal a wide range of impacts associated with delayed discharge. The mixed-study systematic review findings underscore the significant consequences of delayed discharge for both patients and healthcare systems. By synthesizing evidence from diverse research methodologies, this review provides a comprehensive understanding of the effects and experiences associated with delayed discharge. The identified factors contributing to delayed discharge, such as inefficiencies in the healthcare system, limited community resources, , shows the need for holistic yet focused interventions.

By working on the factors contributing to discharge. Delays, as identified, can help improve patient transitions and departures. Hospitals can improve on many aspects such as resource allocation optimization , patient satisfaction and over all patient care. Research must continue on this, to understand deeper how the discharge process can be better streamlined.

“(Ms.S.Arthi,S.Divya Assistant professor , Student 1Department Of Hospital Administration, 1Dr. NGP Arts and Science college, Coimbatore, India, A Study on causes of delay in discharge process in one of the prominent hospitals in Tamil Nadu. 4th April 2020.)”

This research article focuses on the causes of discharge in a hospital at Tamil Nadu in India. On reviewing this literature, we understand that the study aims at identifying the primary factors that contribute to delayed discharge. It also focuses to understand their impact on healthcare organization and patients. It is through the results of this research that proactive strategies can be made to streamline the discharge process and enhance overall hospital operations. The method adapted for the study is to investigate the causes of delay in discharge of patients. Thorough literature review was performed wherein, journals, website information from credible sources, electronic data base were comprehensively reviewed.

The reviewed articles were categorically analysed to understand the common factors that contribute to the delay in discharges. Terms were used to search articles so that the articles collected incline with the theme of the study.

The major findings of the research reveal several reasons for delays in the hospital discharge procedure. Some examples being: Administrative factors, including delays in obtaining medical clearances, incomplete documentation, and communication gaps among healthcare members and staff, contribute to delayed discharge. Patient-related aspects such as waiting for test results, arranging post-discharge care, and financial concerns also contribute to the prolongation of the discharge process. Along with which, limitation of bed availability, and coordination with hospital services affect the timely completion of discharge process. Hence it becomes more important to get deeper into the reasons and then make focused-solutions.

Administrative obstacles, patient-related factors, and resource limitations all play a role in delaying hospital discharge. The study brings out sheds the causes of discharge delays in a prestigious hospital in Tamil Nadu, India. The identified causes, including administrative issues, patient-related factors, and resource constraints, emphasize the need for proactive strategies to overcome these challenges. By implementing interventions that address these causes, hospitals can enhance patient flow, optimize resource utilization, and improve the overall efficacy of the discharge process.

“(P Hendy, JH Patel, T Kordbacheh, N Laskar and M Harbord, In-depth analysis of delays to patient discharge: a metropolitan teaching hospital experience, Clin Med August 2012)”

In the following study, a metropolitan teaching hospital expertise is used to give an in-depth comprehensive analysis of delay in discharging patient. To find relevant studies on the topic delay in patient discharge, an in-depth literature review was done. Keyword such as "patient discharge delays," "factors contributing to discharge delays," and "metropolitan teaching hospital experience" were extensively used to examine a variety of internet databases, scholarly publications, and reliable sources. For scientific accuracy and relevance for research purpose, the selected case studies, reports, and qualitative and quantitative research were thoroughly reviewed. The study's analysis identified a number of factors that contribute to patient discharge delays in a large teaching hospital. Significant delays were found to be caused by administrative reasons, such as inadequate documentation, communication breakdowns between healthcare teams, and difficulties obtaining medical approvals. Organising post-discharge care, waiting for test results, and financial considerations are among patient-related variables that have been observed to impede release. Additional factors that have been recognised as having an impact on discharge delays include bed availability, resource limitations, and cooperation with outside medical providers.

By offering a complete analysis of patient discharge delays, the study provides important insights into the distinctive environment of a metropolitan teaching hospital. The elements that have been discovered demonstrate the necessity for targeted interventions to address logistical problems, patient-related concerns, and resource limitations. The factors that have been noted complicate the discharge procedure. The best way to reduce discharge delays is to increased accessibility to community resources, reduce communication gaps among the stakeholders involved in discharge process, streamline procedures, and to inculcate the culture of teamwork among healthcare professionals.

The necessity and urgency of identifying and resolving factors that lead to patient discharge delays in an urban teaching hospital is highlighted by the study's findings. The adoption of personalised interventions to improve patient flow, maximise resource utilisation, and boost overall discharge process efficiency can be guided by a thorough understanding of administrative, patient-related, and resource-related difficulties. Future

studies should concentrate on assessing the efficacy of certain therapies and creating best practises to reduce delays in patient discharge.

“(Islam El-Abbassy , Wafaa Mohamed , Hazem Mohamed El-Hariri ^o, Maged El-Setouhy, Jon Mark Hirshon, Mohamed El-Shinawi , Delay in hospital discharge of trauma patients in a University Hospital in Egypt: A prospective observational study Dec 2021)”

This research paper comprises of quantitative and qualitative research, observational studies, and reports included in the study were evaluated critically according to their methodological rigor and relevance to the research objective. The study exposes several factors that contribute to the delay in trauma patients' hospital discharge from the University Hospital in Egypt. These factors included administrative and clinical considerations. Administrative factors included delays in procuring required documentation, insurance-related issues, and coordination difficulties between healthcare teams. Clinical factors included the necessity for additional diagnostic tests, surgical interventions, and complications necessitating a lengthened hospital stay. we can add that , limited hospital bed availability and insufficient facilities for care after patient has departed have been seen as factors contributing to delay in discharge processes.

The research article also provides a comprehensive analysis of the delay in hospital discharge among trauma patients, with a focus on the experience at a "Egyptian university hospital." The identified factors highlight the multidimensional nature of discharge delays and the necessity of managing them with targeted interventions.

Improving administrative processes, enhancing interdepartmental coordination, and optimizing resource allocation are crucial strategies for minimizing discharge delays and enhancing patient outcomes.

This article's findings bring out factors that contribute to the delay in hospital discharge among trauma patients at an Egyptian university hospital. The identified administrative, clinical, and resource-related factors highlight the complication of the discharge procedure and the need for individualized interventions. By addressing these factors, healthcare organizations can improve patient throughput, maximize resource utilization, and enhance the overall efficacy of the discharge procedure. More research should concentrate on evaluating the efficacy of particular interventions and devising best practices to reduce discharge delays in trauma patients.

“(Alexander Micallef,Sandra Buttigieg,Gianpaolo Tomaselli,Lalit Garg” Defining Delayed Discharges of In-patients and Their Impact in Acute Hospital Care, Feb 2022)”. The scoping article reveals various definitions and factors associated with delayed discharges of in-patients in acute hospital care. The definitions varied across studies, highlighting the lack of a consistent framework. Common contributing factors to delayed discharges included clinical factors (e.g., complex medical conditions, lack of specialty services), system-related factors (e.g., bed shortages, inadequate care coordination), and social factors (e.g., waiting for community care arrangements, financial constraints). The impact of delayed discharges encompassed increased healthcare costs, compromised patient safety, decreased bed availability, and challenges in managing hospital operations.

This study provides a deep view into delayed hospital discharges for acute care inpatients. The identified factors show the complexity of the issue. It emphasizes the need for a standardized definition of delayed discharges and the development of targeted interventions to address the underlying causes. Improving care coordination, enhancing communication among healthcare teams, optimizing bed management strategies, and strengthening community care services are essential for reducing delayed discharges and enhancing patient outcomes.

The definitions and contributing factors highlight the issue's complexity. Standardizing the definition of delayed discharges and implementing targeted interventions are essential for improving patient care, resource utilization, and healthcare efficiency. Further studies should evaluate the efficacy of specific interventions and establish best practices for addressing delayed hospital discharges in hospital settings.

Chapter 3: Methodology

This study was aimed to identify the factors contributing to delays in the discharge process in the tertiary hospital. A cross sectional study design was used, which involve collecting live data on daily patient discharges. The study included both the categories of patients admitted, i.e., paying and credit categories.

Study Design: Cross-Sectional Study.

Study Setting: In-patient ward of Medanta, Gurugram.

Medanta – The Medicity is amongst India's largest and most renowned multi-super speciality healthcare centres with 1250 beds, 29 super speciality units and accomplished doctors. Supported by state-of-the-art infrastructure, all the departments in the hospital are fully equipped with cutting-edge technology, modular Operation Theatre, and modernized monitoring systems in ICUs. Medanta in-patient wards are designed to take care of medical needs, maximize comfort and accommodate personal requirements for recovery.

This study was conducted on the 8th floor of In-patient Department (IPD) of Medanta Gurgaon, which consists of two distinct wings: 8A, a multispecialty ward, and 8B, the Department of Cardiothoracic and Vascular Surgery (CTVS).

Study Duration: 2 months (March and April 2023)

Study Tools:

- Spandan Portal
- Health information system
- Zykrr feedback application

Study Population:

Inclusion criteria:

- Patients admitted to the hospital for at least 24 hours.
- Patients admitted to any hospital department, including medical, surgical, and HDU.
- Patients who were discharged from the hospital during the study period.
- Patients of all paying category

Exclusion criteria:

- Patients who left on LAMA

Sample size: 198

Sampling techniques: Convenient sampling

Data collection method:

The study design was cross-sectional study, and the data was collected daily from a discharge live dashboard. The discharge dashboard will provide real-time information about patients' length of stay, reasons for the delay in discharge, and discharge planning status. The data was extracted from the discharge dashboard and entered into an Excel spreadsheet on daily basis.

Variables to be collected:

- Patient demographics (age, gender, ethnicity, etc.)
- Length of stay in the hospital
- Reasons for delay in discharge (such as awaiting test results, delayed consults, pending procedures, awaiting discharge planning, and other factors)
- Discharge planning status (such as referral to post-acute care, home health care, or other care settings)
- Comorbidities or pre-existing conditions that may impact discharge planning or prolong hospitalization.
- Overall, this data collection method will enable the study team to collect and analyze data daily and identify the factors contributing to delays in the in-patient discharge process of a tertiary hospital.

Ethical considerations:

- Privacy and confidentiality: participant confidentiality will be maintained, with all data collected, stored securely, and accessed only by the study team.
- Risk of harm: the researcher ensured that any process did not cause undue stress to the participants.
- Equitable recruitment: Recruitment was equitable, and ensured no group is excluded or unfairly represented. The participants was selected based on pre-defined inclusion and exclusion criteria without any bias.

- Data sharing and reporting: The researcher ensured that any data collected was used appropriately and reported in a responsible and transparent manner, without sharing the personal details of the study participants

It was crucial that this research provided unique insights into the factors causing delays in the discharge process at Medanta Gurgaon. The study adhered to rigorous research methodology, ensured ethical data collection, meticulous analysis, and interpretation. The research findings would provide valuable information that could be utilized by Medanta Gurgaon on facing similar challenges in their discharge processes.

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Chapter 4: Results

The primary objective of this study was to examine and analyze the discharge process at Medanta Hospital, situated in Gurgaon.

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While observing and studying the discharge process across various departments, we gained a comprehensive understanding of how each department functions in terms of patient discharge. This allowed us to not only assess the efficiency of the discharge process in each specialty but also provided us with valuable insights to develop targeted solutions specific to each department's needs.

The results of this study revealed the intricacies involved in the discharge process across different departments. We were able to identify gaps and areas for improvement within the process. This information is vital for streamlining and optimizing the discharge process, ensuring a smoother transition for patients from hospital care to post-discharge arrangements.

By highlighting the specific challenges and bottlenecks within the discharge process, our study aims to contribute to the overall improvement of patient care at Medanta Hospital. The department-focused solutions derived from our findings will assist in enhancing the efficiency, coordination, and quality of the discharge process in each clinical specialty, ultimately benefiting both patients and healthcare providers.

Identifying and listing standard procedures of a discharge process and understanding the turnover time at each step, while collective live data for each process gives room to an opportunity of comparative study. The main focus of this comparison will tell us if there is a delay in the hospital's discharge process, by how much is the delay, the most time consuming process.

Our study aimed to identify the standard procedures involved in the discharge process at the hospital, along with which to understand the processes deeply. e data for each process, A comparative analysis was done as real-time data had been collected.

The motive of this research was to understand whether there were delays in the hospital's discharge process, the next point was to understand the extent of those delays if they happened. Along with this, we were also looking to find which particular step was the most time consuming and contributed majorly to delays .

Through a meticulous understanding of the customary procedures entailed in the process of discharge, we had created a comprehensive framework for our investigation during the initial phase. The aforementioned enabled us to monitor and quantify the duration of each phase of discharge, inclusive of medical documentation and medication consultations, scheduling of doctor appointments, and counseling of essential directives to patients.

Collecting real-time data for each process enabled us to comprehend the discharge workflow in real time. We were able to identify any significant variations or combinations that could signify potential delays or barriers in the process by comparing the time required for each step across patients and departments.

The objective of our analysis was to compare and gain a comprehensive understanding of the efficacy of the hospital's discharge protocol and processes. with that understanding it was important to know Through the process of quantification and comprehension of the extent of delays, expressed in percentage terms, coupled with the identification of the most time-consuming procedures, we were then able to check for specific areas that present opportunities for betterment in discharge processes.

Understanding the causes of delays in the discharge process is essential for optimizing procedures and promoting good patient care experiences. By identifying and working on any inefficiencies, hospitals can make effort towards reducing the overall discharge time, this will help in facilitating smoother transitions for patients, and ensuring timely availability of beds for new admissions.

The findings from the study will provide valuable insights for hospital administrators, clinicians, and staff to implement targeted interventions and optimize the discharge process to deliver more efficient and patient-centered care.

The following table displays the process of this analysis:

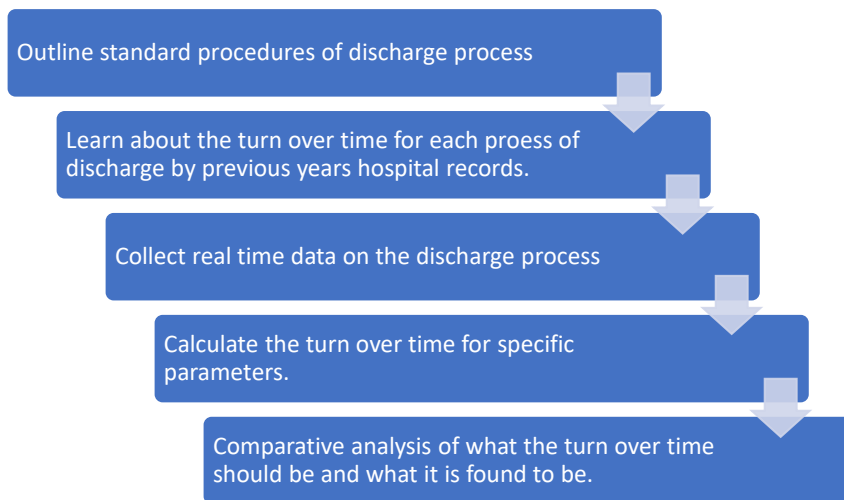


Fig.4.1

In order comprehend the factors contributing to delays in the discharge process, we established specific parameters for our study. These parameters encompassed the various steps involved in the discharge process, and we calculated their turnaround time, thereby making them the key metrics to assess, compare, and evaluate the efficiency of patient discharges against the standard turnaround time of the hospital's discharge process.

We were able to build a formal framework for examining the discharge process by identifying these factors. The time needed to complete each stage, from gathering medical records to setting up follow-up appointments, was carefully examined.

We were able to establish a baseline or typical turnaround time for each stage of the discharge process thanks to the predetermined criteria. This benchmark allowed us to evaluate and contrast the actual turnaround times for the discharge of specific patients.

Any notable delays or variations were found by comparing the actual turnaround time to the expected turnaround time. This analysis allowed us to identify the precise stages that were delaying things and look into the underlying causes of those delays.

By comparing discharges to the turn-around-time (TAT) the hospital discharge process was evaluated and assessed.

It allowed us to assess whether the process was moving along within a reasonable amount of time or whether there were any areas that needed to be improved in order to reduce delays.

Hospitals can apply interventions that are targeted to optimise processes, shorten turnaround times, and enhance patient flow by recognising the precise issues causing delays in the discharge process. In the end, this results in improved patient experiences, greater resource utilisation, and increased bed availability for new patients.

To analyse the discharge process in our study, predetermined criteria and predetermined TAT(Turnaround time) provided methodical way and quantitative way to analyse the discharge process.

To streamline the procedure for increased productivity, timely patient discharges the analysis conclusions will be used as a starting point.

The **parameters** that have been selected for further development are as follows:

1. Discharge now time: • The interval from the announcement of discharge to the update of discharge status on the Hospital Information System (HIS) (Medanta EMR)
2. Medication return time: • Time taken duration it takes for the pharmacy to acknowledge the return of medicine from the moment the clinical pharmacist updates the return status.
3. Activity sheet sent time: • Time taken to send the activity sheet from the ward to the billing department since the time of discharge.
4. Discharge summary finalized time: • Time taken for the finalization of the discharge summary since the time of discharge.
5. Bill sent to TPA time: • duration it takes for the bill to be sent to the Third-Party Administrator (TPA) from the time of activity scan by the GDA.
6. Bill save time: • Time taken for the bill to be prepared from the time of the activity scan.
7. Financial clearance time: • Duration it takes for the attendant to settle the bill from the moment the bill is prepared
8. Bed vacate time: • Time required for the bed to be vacated from the moment the patient gets a financial clearance.

Fig 4.2

Data Analysis:

The following presents an in-depth examination and comprehensive analysis of the study that has been conducted. It provides a detailed exploration of the data collection, findings, and interpretations. The analysis delves into various aspects, including comparative assessments, and relevant contextual information.

Live data was acquired from Medanta's Hospital Information System (HIS), wherein a sequential log of the discharge process is continually updated to reflect real-time progress.

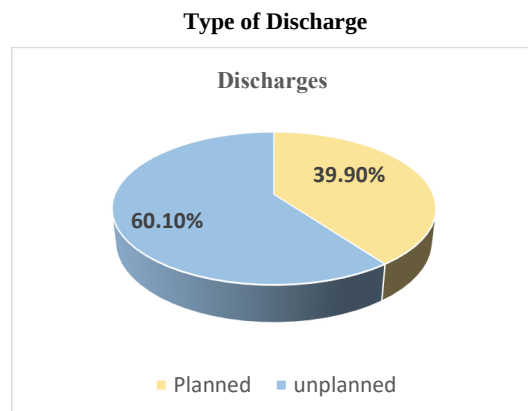


Fig 4.3

The data analysis yields the following findings:

- Among the overall population of discharged patients, approximately 60% of the discharges are categorized as unplanned.
- Among the overall population of discharged patients, 40% of the discharges are classified as planned.
- These findings highlight the concern of a relatively low proportion of planned discharges.

- The data underscores the importance of prioritizing efforts to augment the number of planned discharges.

Discharges of various departments

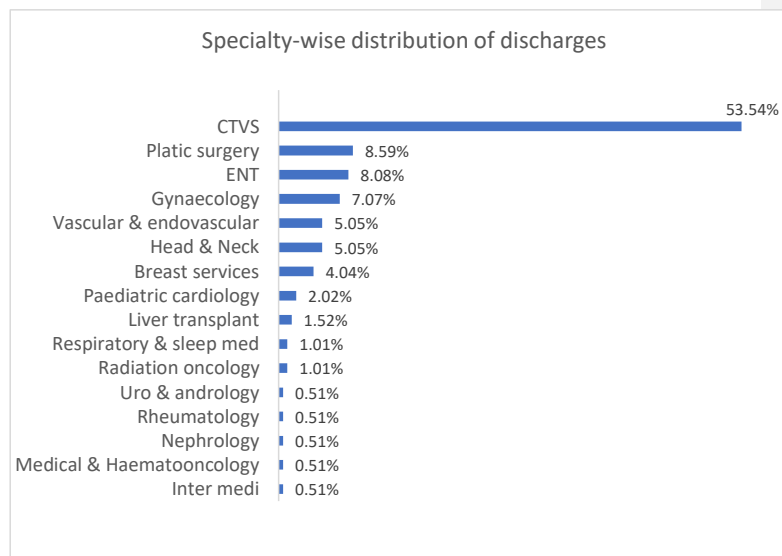


Fig 4.4:

The data analysis yields the following findings:

- The graph illustrates the distribution of discharges across different specialties within the hospital.
- The data from the graph indicates that the department of Cardiothoracic and Vascular Surgery (CTVS) exhibits the highest proportion of discharges.
- Following CTVS, the departments of Plastic Surgery and Ear, Nose, and Throat (ENT) show the second highest percentage of discharges.
- Comparatively lower percentages of discharges, specifically 0.51 percent, are observed in the specialties of Urology and Andrology, Rheumatology, Nephrology, Medical & Haemato-oncology on the 8th floor.

Time taken for return of patient bed-side medicines

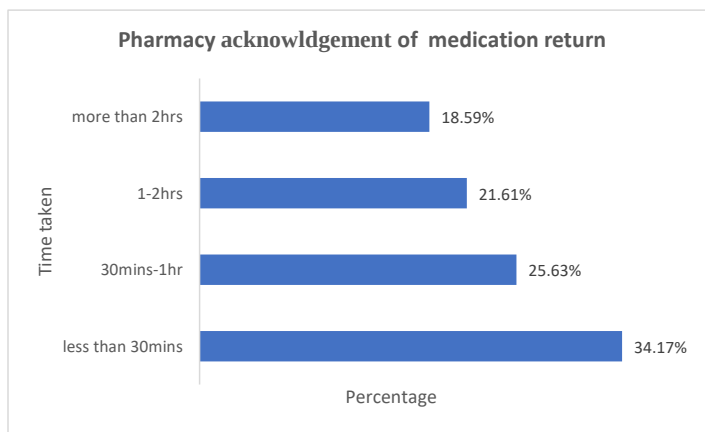


Fig: 4.5

The data analysis yields the following findings:

- The graph depicts the pharmacy's acknowledgment of the return of patient bedside medications by the nurses.
- Notably, the graph reveals that the highest percentage, nearly 35 percent, of medications are returned within a time frame of 30 minutes.
- Approximately 25 percent of the medications are returned within 30 minutes to 60 minutes.
- Within the period of 1 hour to 2 hours, around 21 percent of medications are returned.
- However, there is a considerable delay in returning medications, with almost 19 percent of medications being returned after a duration exceeding 2 hours.
- Nevertheless, it can be observed that approximately 60 percent of medications are returned within 1 hour. However, to achieve more efficient and expedited discharges, it would be advantageous to focus on

expanding the proportion of medication return within the first 30 minutes, as percentage difference between 30 minutes and 30minutes to 1 hour is of 10 percent.

Activity scan time

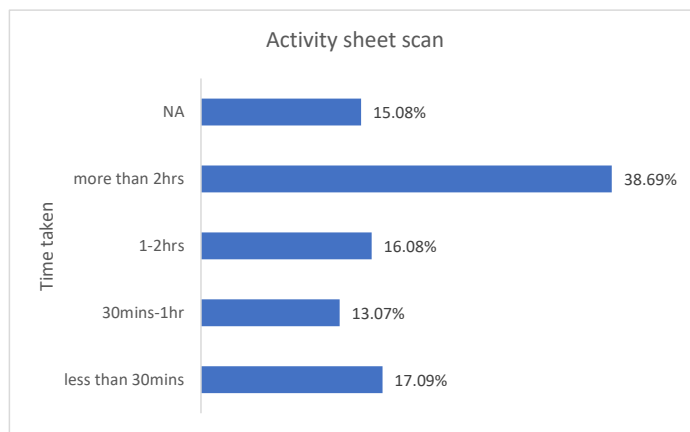


Fig 4.6

The data analysis yields the following findings:

- The findings reveal the duration it takes for the activity scan to be transmitted from the ward to the IPD (In-patient Department) Billing department.
- This represents the time when the GDA arrives at the billing department and scans the activity sheet for further processes.
- This transmission is essential for the billing department to receive the activity scan as the closure of patient bill occurs exclusively upon the submission of activity sheets.
- The graph demonstrates a substantial proportion of 38% of activity sheets taking more than 2 hours to reach the billing department.
- Only 17% of activity sheets are promptly sent to billing within a 30-minute timeframe.
- The considerable delay in transmitting activity sheets raises a significant concern.

- “Timely submission of the activity sheet to the billing department is a crucial step as it serves as the primary requirement for patient clearance.”

Discharge advised

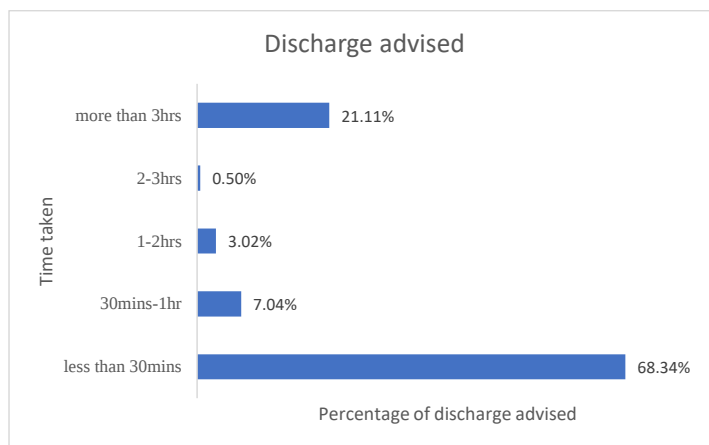


Fig 4.7

- Following the scanning of the activity sheet, the discharge advice is promptly placed, with a notable percentage of 69% being positioned within 30 minutes.
- This achievement is commendable as it contributes to the expeditious preparation of the bill.
- However, it is concerning that 21% of discharge advises are taking more than 3 hours to be placed, warranting further attention and investigation.
- Upon closer examination, we observe a relatively small number of activities falling within specific time intervals: 7% between 30 minutes to 1 hour, 3% between 1-2 hours, and only 0.5% between 2-3 hours.
- Successfully reducing the significant portion of 20% where discharge advice is placed after 3 hours of activity scanning to under 30 minutes presents a formidable challenge.

- Nonetheless, an initial focus can be directed towards sending the discharge advice within 1.5 hours or within 2 hours, with the goal of minimizing the percentage that exceeds 3 hours.

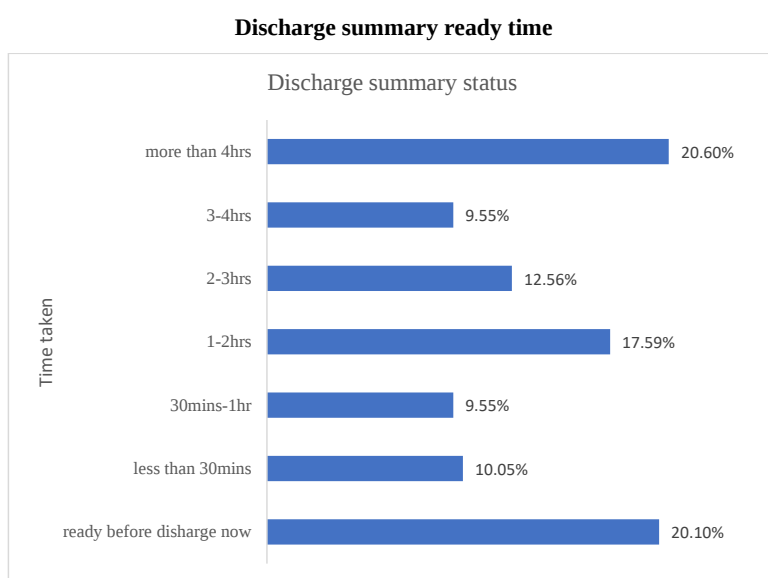


Fig 4.8

The data analysis yields the following findings:

- At least 26% of discharge summaries are ready within 2 hours of time.
- Only 19% of discharge summaries are ready within one hour.
- 41% of total cases have discharge summaries ready only after 2 hours.
- 36% of cases have discharge summaries ready under 2 hours.
- 20% of summaries are ready before discharge now, but it nullifies the impact because an equal proportion of 20% of discharge summaries were ready only after 4 hours.

From the data, we can infer the following that:

- A minimum of 26% of discharge summaries are completed within 2 hours, indicating that a significant portion is completed promptly.
- However, if we focus on the first hour, only 19% of discharge summaries are ready, which suggests a slight delay in the initial phase.
- On the other hand, 41% of cases experience a longer wait time, with their discharge summaries becoming available only after 2 hours.
- Approximately 36% of cases have their summaries ready within a time frame of less than 2 hours.
- While it may initially seem positive that 20% of summaries are ready before discharge, this is offset by the fact that an equal proportion of 20% of summaries are only ready after 4 hours. This indicates that the early completion of summaries does not necessarily lead to an overall reduction in the discharge process time.
- These insights highlight the distribution of discharge summary readiness across different time intervals and emphasize the need for improvement in the efficiency of preparing discharge summaries, particularly in reducing the time it takes to make them available after the patient's discharge.

Bill preparation time

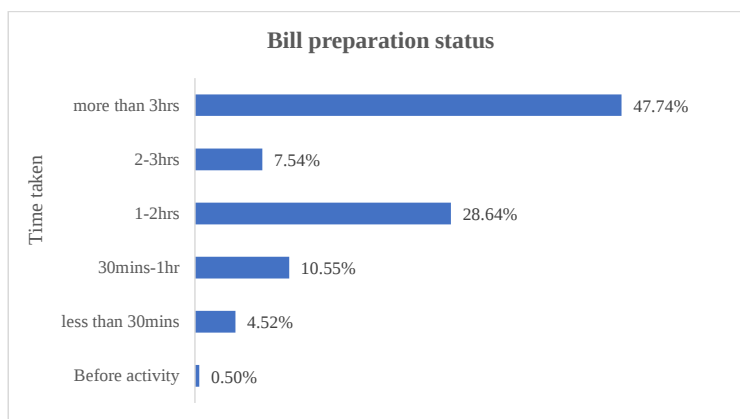


Fig 4.9

From the data, we can infer the following that:

- Only 15% of patient bills are ready within 1 hour, indicating a relatively low percentage of prompt bill preparation.
- Out of that 15%, only 4% of bills are prepared within 30 minutes, suggesting that a small fraction of bills are expedited.
- A mere 38.6% of bills are prepared within 1 to 2 hours, representing a moderate percentage within this time frame.
- The majority of bills, approximately 55%, are prepared after two hours, indicating a significant delay in bill preparation.
- Out of the 55%, only 7% of bills are completed within 2-3 hours, while the remaining 48% take more than 3 hours to be prepared.

- This data raises an alarming concern that a significant proportion of bills take more than 3 hours to be prepared, which greatly contributes to slowing down the discharge process and increasing the overall turnaround time for discharges.
- These findings highlight the inefficiencies in bill preparation, with a majority of bills taking longer than desired to be completed. Addressing this issue and reducing the time required for bill preparation is crucial in streamlining the discharge process and minimizing delays.

Time taken for attendant to settle the bill

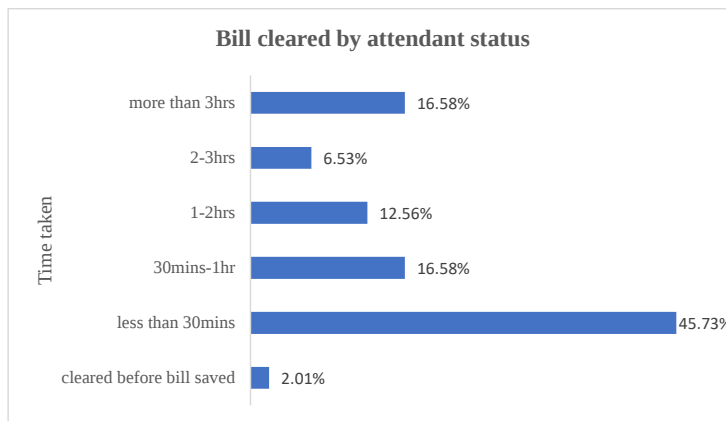


Fig 4.10

From the data, we can infer the following that:

- It is notable that a majority of attendants clear the bill in less than 30 minutes, with 45% falling within this time frame.
- 16% of the attendants took between 30-60 minutes for financial clearance
- 12% of the attendants required 1-2 hours to complete the process of financial clearance
- 22% of the attendants can be seen taking more than 2 hours for financial clearance which indicates a significant delay in the discharge process which represents a focus area for further improvement, by

reducing this percentage of delay can have a significant impact on the overall TAT of the discharge process

- This 22% represents a focus area for improvement, as reducing this percentage can have a substantial impact on the overall discharge process, resulting in a reduction of the overall turnaround time.
- These insights highlight the distribution of bill clearance times among attendants and emphasize the need to address the delay experienced by the 22% who take longer than 2 hours to clear the bills. By focusing on reducing this delay, hospitals can streamline the discharge process and significantly decrease the overall turnaround time, improving efficiency and patient satisfaction.

Bed vacate time

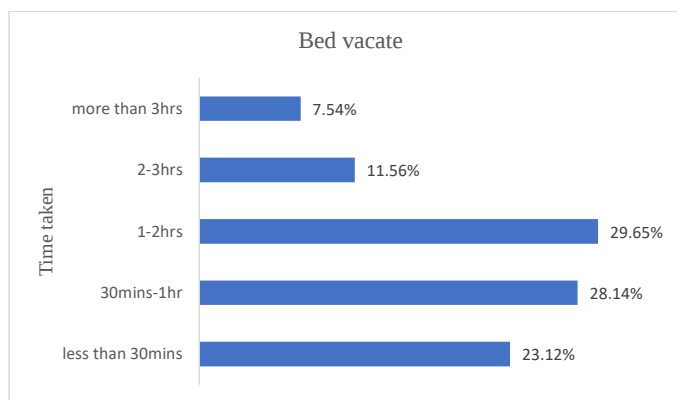


Fig 4.11

The data analysis yields the following findings:

- The rate of time taken for beds to be vacated after a patient's departure is increasing.
- There is a significant drop in the time taken when it exceeds 2 hours, which is a positive trend.
- Only 23% of beds are vacated within 30 minutes, indicating a low percentage.
- Approximately 28% of patients vacate the beds within 30 minutes to 60 minutes.
- The highest percentage of bed vacating falls within the time frame of one hour to two hours, with 29% of patients falling into this category.
- It is necessary to focus on reducing the time taken to vacate beds.

- The focus should be on ensuring that most bed vacating occurs within one hour, considering the current challenge of achieving the 30-minute target.
- Strategies such as streamlining discharge procedures and improving coordination can help expedite the bed vacating process.
- By reducing the time taken to vacate beds, overall efficiency can be enhanced and capacity for new admissions can potentially be increased.
- These statistics highlight the need to focus on reducing the time taken to vacate beds. It would be beneficial to prioritize making the majority of bed vacating occur within one hour, considering that achieving the 30-minute target may be challenging at the moment.
- By implementing strategies to speed up bed vacating, such as streamlining discharge procedures, optimizing bed turnover, and improving coordination between healthcare teams, it may be possible to decrease the time taken for beds to be ready for new patients. This would enhance overall efficiency and potentially increase the capacity for accepting new admissions.

Chapter 5 : Discussion of results

Planned and un-planned discharges:

The initial observation that emerges pertains to the classification of the discharge as either planned or unplanned. Enhanced Continuity of Care is facilitated with planned discharges, healthcare providers are able to ensure a seamless transition in the patient's care. Coordination with the patient's primary care physician or specialists is required to assure appropriate follow-up appointments, medication management, and ongoing support. Planned discharge enables hospitals and clinics to allocate their resources optimally. By anticipating patient discharges, hospitals can optimize operational efficiency by proactively planning bed availability, staff assignments, and other necessary resources. According to research articles, planned discharge is associated with lower hospital readmission rates. Proper planning enables healthcare professionals to address patient requirements, provide comprehensive discharge instructions, and implement appropriate post-discharge support, which can lead to improved outcomes and decreased hospital readmissions. Planned discharge enables increased patient and family participation in the treatment process, thereby keeping the patient and family informed of patient conditions and discharge protocols. It permits improved communication, collaborative decision-making, and sufficient time to address any concerns or inquiries. As the graph depicts that 60% discharges are un-planned and 40% are planned. This data reveals that most patients departures are un-planned discharges. unscheduled discharges leave healthcare professionals with little time to properly prepare the patient for discharge. This can cause in discharge instructions to be delivered in hurry, this may bring challenges to properly process follow-up care, and also cause inadequate communication with the patient and their attendant.

Department-wise discharges:

The department of Cardiothoracic and Vascular Surgery (CTVS) has the highest proportion of discharges. This indicates that a significant number of patients are being discharged from this specialty on the 8th floor.

Following CTVS, the departments of Plastic Surgery and Ear, Nose, and Throat (ENT) show the second highest percentage of discharges. These specialties also have a substantial number of patients being discharged.

On the other hand, certain specialties have comparatively lower percentages of discharges. The specialties of Urology and Andrology, Rheumatology, Nephrology, Medical & Haemato-oncology on the 8th floor reveal a discharge rate of only 0.51 percent from the 8th floor during the time period of the study. These specialties have comparatively lower percentages of discharges during the time period of the study. This suggests that a smaller number of patients are being discharged from these particular specialties.

To conclude, , we can see that the graph provides insights into the distribution of discharges across different specialties within the hospital. It brings out that the department of Cardiothoracic and Vascular Surgery (CTVS) has the highest number of discharges, followed by Plastic Surgery and Ear, Nose, and Throat (ENT).

This information can be useful for understanding patient flow and the demand for different specialties within the hospital, potentially informing resource allocation and staffing decisions.

The examination of discharge patterns across various specialties, particularly focusing on Cardiothoracic and Vascular Surgery (CTVS), Plastic Surgery, and Ear, Nose, and Throat (ENT), directs our attention towards the critical need to develop strategies that facilitate the timely finalization of discharge summaries in these areas. By addressing this aspect proactively, we can mitigate the risk of discharge delays and enhance the overall efficiency of the discharge process.

Analyzing the discharge process in specialties with high discharge rates, like CTVS, Plastic Surgery, and ENT, can help identify best practices and efficient workflows. These insights can then be shared with other specialties to streamline their discharge processes and reduce delays leading to process optimization.

Hospitals allocate their resources, such as nursing staff and support services, based on requirements of the department. In this case, resources, nursing staff and support staff are assigned depending on the discharge patterns of different specialties. We can help

facilitate Delays can be reduced by ensuring that adequate resources are available in high-discharge departments such as Cardiothoracic and Vascular Surgery (CTVS).

For the faster and accurate processing of discharge summaries, the processing of discharge summaries by medical transcribers is essential. These professionals have the knowledge necessary to proficiently transcribe and organize important medical information, allowing them to complete timely and error-free discharge summaries in an orderly manner. Therefore, departments with a high discharge volume, such as Cardiothoracic and Vascular Surgery (CTVS), Ear, Nose, and Throat (ENT), and Plastic Surgery, should strongly consider integrating medical transcriptionists into their workflow.

By integrating more medical transcriptionists into the discharge process, departments with a high rate of discharge can gain many benefits. Medical transcribers can efficiently create and handle the transcription and formatting of medical records, this makes sure that discharge summaries are completed accurately and on time due to their specialised skills. In addition, the implementation of more medical transcriptions in departments with a high rate of discharge can boost efficiency and productivity of the administration and staff . With their understanding of medical terminology, classification systems, and documentation standards, these professionals can comprehend complex medical information, streamline the discharge summary process, and expedite its completion. This streamlined workflow not only enhances the overall efficiency of the department but also enables a smoother transition for patients from the hospital to post-discharge care settings. Apart from addressing the discharge summary process, it is also crucial to give due attention to billing procedures, especially considering the high number of discharges observed across the department of CTVS, ENT and Plastic surgery. Efficient billing processes are essential for ensuring timely reimbursement and financial stability for the hospital. By reviewing and optimizing billing procedures delays can be minimized.

Medication return:

The first step in the patient discharge process involves the retrieval of medications. Upon the doctor's notification of the patient's discharge, the medications administered at the bedside are collected and returned. It is essential to complete the medication return before initiating the bill preparation procedure. The responsibility for returning the medications to the clinical pharmacy, which is situated on each floor, lies with the assigned nurse for the patient. Subsequently, the clinical pharmacist updates a formal request for the return of these medications to the in-patient (IP) pharmacy. The IP pharmacy acknowledges and verifies this request before commencing the medication return process by issuing a Goods Delivery Advice (GDA). The GDA is then forwarded to the respective ward, where the medications requiring return are gathered, along with the patient's activity sheet. This comprehensive procedure serves as a significant milestone, signifying the initiation of the patient discharge process.

While it is observed that 34% of medication returns are completed within 30 minutes, it is crucial to direct attention towards the remaining 47% of cases where pharmacy acknowledgement exceeds 30 minutes but is under 2 hours. Given the substantial proportion of 47%, proactive measures can be implemented to reduce this timeframe and optimize the efficiency of the process.

The in-patient (IP) pharmacy conducts a thorough assessment to determine the eligibility of medication for return. This evaluation involves verifying the integrity of the medicine packaging, ensuring that the medications are properly sealed, medications have not been tampered with or damaged, and confirming that the medications have been stored properly. For some specific medicines for example: examining insulin vials to ensure the absence of bubbles. Only medications that meet these returnability criteria are accepted for return. Subsequently, the price of the medications that align with the return policies is deducted from the final bill, facilitating the subsequent closure of the bill.

The percentage of medications that are returned after a period of 3 hours, amounting to 18%, is a significant area of concern that requires attention in order to streamline the discharge process. Reducing this percentage is essential to expedite the overall discharge workflow.

It is crucial to recognize the correlation between the prompt acknowledgment of medication returns by the pharmacy and the expeditious scanning of the activity sheet, which then enables the initiation of discharge and subsequent billing procedures. To

address this issue, it is advisable to focus on the allocation of GDA for the 8th floor and closely examine their efficiency in adhering to reporting deadlines.

By closely monitoring and evaluating the timely reporting of GDAs for the 8th floor, potential bottlenecks or delays can be identified and rectified, thus facilitating smoother operations and minimizing the occurrence of prolonged medication return durations. This proactive approach will contribute to enhancing the efficiency and effectiveness of the discharge process.

Activity scan:

The activity scanning process holds crucial importance as it allows us to monitor the movement of the activity sheet within the in-patient department (IPD) billing department. When the GDA reaches the billing department, it undergoes a prompt scanning procedure. This scanning operation serves the purpose of recording the precise time at which the activity sheet is received from the respective floors. It is only after a meticulous evaluation of the activity sheet, considering deductions for returned medications, that the final bill is generated. Subsequently, the bill is forwarded to the relevant entities, such as Third-Party Administrators (TPA) or prepared for cash patients, depending on the respective payment method.

By employing the activity scanning system, we ensure accurate tracking of the activity sheet's progress, enabling timely assessments, deductions, and bill preparation. This streamlined approach enhances efficiency and facilitates the subsequent billing processes for various payment scenarios.

From the data it is evident that a mere 17% of activities undergo scanning within a timeframe of 30 minutes. A smaller proportion of 13% corresponds to activities that are scanned within a duration ranging from 30 minutes to 1 hour. However, a significant concern arises when observing that a substantial percentage of 38.69% of activities are scanned after a period of 2 hours.

This alarming trend indicates that nearly 40% of bill preparation processes will experience delays, subsequently leading to an overall extension in the discharge timeline. This situation necessitates immediate attention and remedial measures to enhance the efficiency of the scanning process and minimize unnecessary delays in billing and discharge procedures.

It is hence essential to monitor the activity scan procedure with a closer lense.

Discharge advised:

The discharge process is initiated upon the scanning and acknowledgment of activity sheets at the billing department. It is commendable that nearly 70% of discharges are advised promptly, within a timeframe of 30 minutes. However, a noteworthy concern arises as 21% of advised discharges require a significantly longer duration of over 3 hours.

To address this issue effectively, it is recommended to concentrate efforts on reducing the discharge processing time from over 3 hours to a maximum of 2 hours. This targeted objective is more feasible to achieve and can yield a substantial impact on reducing the overall discharge duration. By streamlining and expediting the processes involved in these discharges, the hospital can significantly enhance operational efficiency and ultimately improve the overall patient experience. This research finding underscores the importance of optimizing the discharge workflow for timely and efficient patient care.

Discharge summary:

"The average time required to finalize discharge summaries is 2 hours. Analysis of the data reveals that only approximately 36% of cases have their discharge summaries completed within this timeframe. It is concerning that a significant portion, amounting to 40%, of the discharge summaries are prepared after the 2-hour mark. Therefore, a focused analysis is necessary to enhance the efficiency of processing discharge summaries. Any delay in completing the discharge summaries will inevitably lead to a substantial delay in the overall discharge process. Discharge summaries hold utmost importance for TPA patients, as the absence of these summaries hinders the approval and progress of their treatment. Given that the TPA process is already time-consuming, any delays in finalizing discharge summaries can significantly impact the overall discharge procedure. However, there are instances where attendants can leave and the summaries can be sent to them once they are ready. This practice can be implemented for cash patients who can undergo financial clearance before the discharge summary is finalized, allowing them to collect it at their convenience."

The hospital can aim to ensure that night billing discharge summaries increased and are prepared and ready by 8 o'clock in the morning. To achieve this goal, particular attention should be given to specialties with high discharge rates, assessing whether they possess sufficient resources to minimize delays in the process of creating discharge summaries.

This analysis holds particular relevance for specialties such as ENT (Ear, Nose, and Throat), Plastic Surgery, and CTVS (Cardiothoracic and Vascular Surgery). By focusing on these specialties and evaluating their available resources, steps can be taken to address any potential bottlenecks or inefficiencies that contribute to delays in the timely completion of discharge summaries. This approach aims to streamline the workflow and improve the overall efficiency of generating night billing discharge summaries, facilitating smoother operations and enhancing the quality of patient care.

Bill preparation status:

The process of bill preparation plays a vital role in the overall completion of the discharge process. The duration of preceding steps greatly influences the time required for bill preparation. Therefore, it is important that all following steps are completed in a timely, regular and effective manner. The data on analysis shows that a significant proportion of up to 45%, of bills take more than 3 hours to be prepared. This finding is concerning as the average turnaround time for bill preparation is only 45 minutes. Such a high percentage exceeding the average highlights substantial deficiencies in the billing process.

Merely 15% of bills are prepared within one hour, representing a small fraction. Furthermore, out of this 15%, only 4% of bills are prepared within less than 30 minutes. It is alarming that such a minuscule percentage of bills are prepared within the average turnaround time. Urgent attention should be directed towards significantly increasing this figure.

Approximately 28% of bills are prepared within 1 to 2 hours, which is a comparatively high percentage, while less than 8% are prepared within 2 to 3 hours. The proportion of bills requiring more than one hour to prepare warrants a comprehensive investigation, and efforts should be made to reduce processing time.

The delay in bill preparation significantly contributes to the overall delay in patient discharges. It is important to know that patients require time to arrange their finances and settle their bills. Therefore, it becomes even more critical to ensure that their bills are prepared as expeditiously as possible, avoiding any unnecessary delay of the discharge process.

Financial clearance by attendant:

The "financial clearance by attendant" is the time taken for the attendant to visit the billing department and settle the bill once it is ready. Analysis of the data shows that about 46% of attendants have cleared their bills in less than 30 minutes in the billing department. This finding shows that there is a potential to increase this percentage to 50% at least with the right strategy, with half of all patients being able to clear their bills within 30 minutes.

According to the results of this study, 16% of the patient's attendants have their expenses cleared within 30 minutes to one hour. This percentage is likewise substantially low and has room for improvement. The following study shows that attendants take at least 1 to 2 hours to clear their bills, which amounts for around 13%, indicating a small variation of only 3%. This shows that there is room for improvement in reducing the duration from 1 to 2 hours to a range of 30 minutes to 1 hour.

The Major focus should be on the attendants who take more than 2 hours to clear their bills after bill preparation. This group represents approximately 23% of attendants, which is considerably high.

Taking steps to minimize the time taken by attendants to clear their bills, especially those exceeding 2 hours, can greatly enhance the efficiency and timeliness of the billing process. This, in turn, will contribute to smoother patient flow and reduce potential bottlenecks in the overall discharge procedure.

The various factors that attributed to the delay in financial clearance, including attendants taking extended periods of time to arrange for bill settlement. However, on practical observation as well as the data reveals too, there are many cases where the bill has been prepared but the family member of the patient have not yet proceeded to clear it. This delay may be due to a lack of awareness on the part of the attendants. To address this challenge, Medanta ensures proactive measures by providing billing-related information to patients through text messages sent to their registered mobile numbers with the hospital. Additionally, floor managers conduct feedback rounds that include discharge counseling, ensuring that patients and attendants are kept informed about the progress of their discharge process, including bill preparation and readiness.

To mitigate the high percentage of attendants clearing bills late, it is essential to prioritize timely communication to patients and attendants by floor managers. They should emphasize the importance of expediting the bill clearance process. Furthermore, in situations where attendants are taking an excessive amount of time to clear bills, the implementation of pseudo discharges can be considered and increased. This approach involves initiating the discharge process without the actual discharge taking place, serving as a reminder for attendants to promptly settle the bills.

By improving communication and actively promoting prompt bill payment, the hospital can substantially reduce the proportion of attendants who pay their bills late. This method not only increases operational efficacy, but also facilitates a more streamlined discharge process for patients and their attendants.

Bed vacate:

The turnaround time (TAT) for vacating a bed is approximately within 30 minutes. However, upon analyzing the data, it becomes evident that only a small 23% of beds are actually being vacated within this timeframe. This percentage represents a significantly low rate of compliance with the expected TAT.

On the other hand we observe that, a substantial proportion of beds, approximately 28.14%, are being vacated within a period of 30 to 60 minutes. This figure shows some level of adherence to the turnover timeframe.

If we really look through the microscope, it becomes apparent that nearly 49% of beds remain occupied for more than one hour after bill clearance. Patients are observed to be occupying the rooms for long periods of up to three hours or more, even after their bills have been settled. This trend raises serious concerns as the extended occupation of beds directly impacts the overall hospital occupancy and availability of beds for incoming patients.

Efforts must be directed towards addressing this issue and promoting adherence to the designated TAT for bed vacation. By implementing measures to encourage timely discharge and prompt bed clearance, the hospital can optimize bed utilization and ensure a more efficient patient flow. Timely bed vacation is essential to maintaining an optimal occupancy rate and facilitating the smooth functioning of the hospital.

This study possesses certain limitations that should be acknowledged. Firstly, it is worth noting that the study only encompasses a single floor within a multispecialty hospital.

Therefore, it does not provide a comprehensive overview of the hospital-wide discharges. Nevertheless, the findings from this floor can still impact the overall average discharge time.

Another limitation pertains to the absence of complete data entries. Numerous data points are left blank due to occasional lapses in timely process updates. It is imperative for the staff to promptly update the "discharge now" and "patient out" statuses on the Hospital Information System (HIS) to mitigate this issue.

Sampling: Convenient sampling may introduce selection bias since participants are chosen based on their easy accessibility rather than through randomization. This could reduce the generalizability of the findings to the broader population.

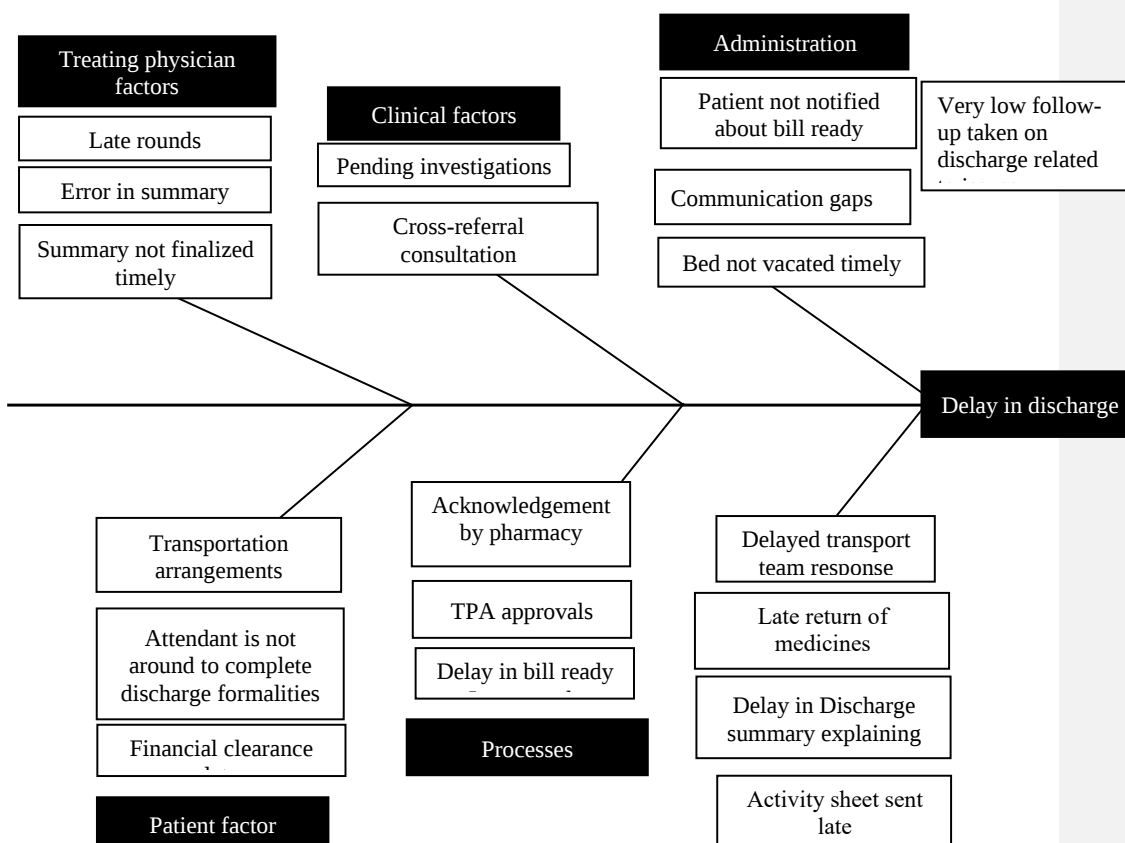
Lack of Causality: Cross-sectional can make it a challenge to establish a cause-effect relationship between the identified factors and discharge delays as it is an observational study. The study design is more suitable for exploring associations rather than determining causality.

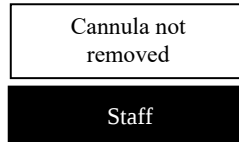
Limited Temporal Sequence: Cross-sectional studies capture information at a single point in time, preventing the examination of temporal sequences. Factors identified in the study may not necessarily precede the discharge delays, making it difficult to determine the direction of the relationship.

Limited Depth of Data: Cross-sectional studies often rely on survey questionnaires or interviews, which may not provide in-depth information about the factors causing discharge delays. The study design may not capture complex interactions or underlying mechanisms that contribute to the delays.

Inability to Establish Longitudinal Trends: Since cross-sectional studies capture a snapshot of data at a specific time, they cannot identify longitudinal trends or changes in factors causing discharge delays over time. Long-term patterns and variations may be missed with this study design.

Fig 5.1 : Fishbone diagram : Factors causing delay in discharge.





Chapter 7: Conclusion

Based on the findings, it can be inferred that the hospital currently demonstrates a notable preference for unplanned discharges in contrast to planned discharges. This observation raises concerns, given that merely 40% of all cases adhere to the planned discharge protocol. The implementation of planned discharges enables the hospital administration to timely prepare essential documents, particularly discharge summaries, while also allowing sufficient time for addressing patient and attendant inquiries related to post-procedure concerns, billing, and other matters. Moreover, a planned discharge contributes to a smoother patient departure process.

Another noteworthy discovery reveals that the specialties of Cardiothoracic and Vascular Surgery (CTVS), Plastic Surgery, and Ear, Nose, and Throat (ENT) exhibit the highest frequency of planned discharges. This observation suggests the need for concentrated efforts in ensuring a greater proportion of planned discharges within these departments. It is imperative to adopt a more targeted approach towards the timely preparation of discharge summaries for patients belonging to these specialties.

As previously stated, the timely return of patient bedside medications plays a crucial role in initiating the discharge process, which should commence promptly upon the announcement of discharge, ideally within 20 minutes. Notably, the data indicates a significantly low percentage of only 34% in terms of medications being returned within the specified timeframe. Until the medications are returned, the activity sheet cannot be updated, and the invoicing procedure cannot be completed. Therefore, it is important to take necessary measures to improve medication return process. to bring about steps that focus at bettering the process of return procedures. these are patient bed side medication return.

The results and analysis of activity scan time bring out a delay in the activity scan process, from the graph it is depicted that most of the activities that are scanned, is done after 2 hours which further delays the discharge process.

This observation suggests a correlation with the inefficient medication return procedure. The notably low percentage of sent and scanned activities within the required timeframe has implications for the timely initiation of invoicing procedures and delays the discharge process.

By analyzing the discharge summaries status, data reveals a clear need for enhanced planning. Currently, discharge summaries are composed in a variety of timeframes. While 20% of summaries are completed prior to the patient's discharge, the same proportion of summaries require approximately four hours to complete. This highlights the need of increasing the number of targeted discharges in order to lower the total time necessary to submit discharge summaries on time.

It must be noted that there are times when modifications to discharge summaries are required, and these corrections cannot be supplied to patients until the summaries have been properly authorized and signed. There is a lot of time with planned discharges to make and save modifications to the discharge summaries. Furthermore, it is critical to stress that discharge summaries cannot be supplied to patients unless they have been legally authorized and signed by the right authorities.

From the study we also learn that the time taken for bill preparation is a major area of concern, it demands important proactive strategies to expedite the process. The data displays to us a significant percentage of bills being prepared within 30 minutes, with nearly half of the cases (50%) taking more than 3 hours to be prepared. Consequently, it is imperative to implement strategies aimed at enhancing the efficiency of bill preparation, reducing the overall time required for timely completion.

Additionally, the results highlight that approximately 53% of patients settle their bills after a duration exceeding 30 minutes.

Finally, the bed vacate time, I strongly believe that most of this is in the hands of the administration responsible for that floor. Unless there is a major delay caused from the patient's end, the patient must be timely out from the ward and system.

The TAT for bed vacate is 30 minutes, within these 30 minutes post clearance, the discharge summary must be properly explained to the patient and attendant by the TL,

the cannula must be removed in time, the patients dress needs to be changed and transport team must be called on time for the departure of patient.

In all, this is under the control of the administration and with more focus on this aspect: a better overall TAT Can be conclusive.

Regarding the bed vacate time, I firmly assert that the majority of this responsibility lies with the administration overseeing the respective ward. Unless there are significant delays caused by the patient, it is crucial to ensure the prompt discharge of the patient from the ward and the system.

The Turnaround Time (TAT) for bed vacate is set at 30 minutes. Within this timeframe, it is essential for the Team Leader (TL) to adequately explain the discharge summary to the patient and their attendant. Furthermore, timely removal of the cannula, changing the patient's dress, and calling the transport team for the patient's departure must be diligently carried out.

Overall, the administration has control over these factors, and by placing greater emphasis on this aspect, a more efficient and satisfactory Turnaround Time (TAT) can be achieved.

Recommendations:

Medication return	• Ensure that medicines that have been discontinued are returned daily, preventing any pending medications on the day of patient discharge.
Discharge summary	• A comprehensive daily summary should be created and regularly updated, documenting all patient records. This summary should be easily accessible for the attending doctor to review on a daily basis. By ensuring that the majority of the details and summaries are approved and finalized by the day of patient discharge, the process of finalizing the discharge can be expedited.
Bill preparation	• One long-term goal to address this challenge could be the augmentation of manpower. • It is necessary to promptly update the system with the status of "patient out."
	• Implementing consistent discharge counselling and actively encouraging attendants to promptly complete the necessary clearances. • Diligently conducting follow-ups for the discharge process, including explanations of the discharge summary, removal of cannulas by the TL, patient dress changes by the GDA, and coordination with the transport team and housekeeping.

- Implementing these recommendations will enable the hospital to reduce discharge delays, improve patient satisfaction, and enhance the overall effectiveness of the discharge process.

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