BED ALLOCATION PROCESS IN KIMS HOSPITAL AND IT'S EFFECTS ON PATIENT'S FLOW AND HOSPITAL EFFICIENCY

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ORGANIZATION INTRODUCTION

- KIMS Hospitals is a leading corporate healthcare organization in India with hospitals spread across Telangana, Andhra Pradesh, and Maharashtra.
- The network comprises 12 hospitals with a total of 4,000 beds, offering multi-disciplinary integrated healthcare services with a focus on tertiary and quaternary healthcare at an affordable price.
- The hospitals provide comprehensive healthcare services in 25 different fields, including cardiac sciences, oncology, neurosciences, orthopedics, organ transplantation, and mother and childcare.
- KIMS Hospital has a state-of-the-art infrastructure with 14 floors, a bed capacity of 1,000 (including 885 operating beds), a pharmacy, 12 operating rooms, and specialized units such as NICUs, PICUs, and SICUs.
- The hospital offers a range of accommodation options to suit various budgets, and it also has an international wing catering to patients from other countries.
- Sunshine Hospital, a branch of KIMS Hospital, is Asia's second-largest orthopedic hospital, offering super-specialty quaternary care with over 350 beds and 50+ specialties.
- Since its establishment in 2009, KIMS Hospitals has prioritized high-quality care, patient safety, and clinical excellence. The hospital is accredited by NABH, NABL, and ISO, and it continuously strives for improvement in patient care through teamwork, transparency, and the adoption of top medical procedures and consultants from India and abroad. The hospital has received numerous honors and accolades for its commitment to providing high-quality, safe, and patient-centric healthcare.

LITERATURE REVIEW

•Seung-Chul Kim, Ira Horowitz, Karl K Young, Thomas A Buckley. "Flexible bed allocation and performance in the intensive care unit." * Launch Year: 1999.

•Neil A Halpern, Stephen M Pastores, Howard T Thaler, Robert J Greenstein. "Changes in critical care beds and occupancy in the United States 1985-2000: Differences attributable to hospital size." * Launch Year: 2004

•Jomon Aliyas Paul, Li Lin. "Models for Improving Patient Throughput and Waiting at Hospital Emergency Departments." * Launch Year: 2010.

• S. Bucci, A.G. De Belvis, S. Marventano, A.C. De Leva, M. Tanzariello, M.L. Specchia, W. Ricciardi, F. Franceschi. "Emergency Department crowding and hospital bed shortage: is Lean a smart answer?" * Launch Year: 2015.

BED ALLOTMENT TURN AROUND TIME

- The time it takes for a hospital or healthcare facility to assign a bed to a patient after receiving an admission request or when a bed becomes available is referred to as the bed allotment turn around time. It is an important parameter that affects how efficiently patients move through the hospital and how well everything runs.
- The goal of bed allocation turnaround time is to speed up the process of allocating beds, cut down on delays, and guarantee that patients have prompt access to the care they need.
- Effective bed management is essential for providing patients with high-quality treatment, particularly during times of high demand or in emergency situations. Hospitals may maximize resource use, raise patient happiness, and increase overall operational effectiveness by cutting down on the time it takes to assign beds.

OBJECTIVES

Objective 1. To understand the process flow of bed allocation within the hospital

Objective 2. To estimate the current bed allotment TAT in the hospital.

Objective 3. To evaluate the ratio of delay cases according to the payer type in the hospital.

Objective 4. To evaluate the reasons for delay in bed allotment.

RESEARCH OBJECTIVES

RO1. What is the process flow of bed allocation within the hospita?

RO2. What is the current bed allotment TAT in the hospital?

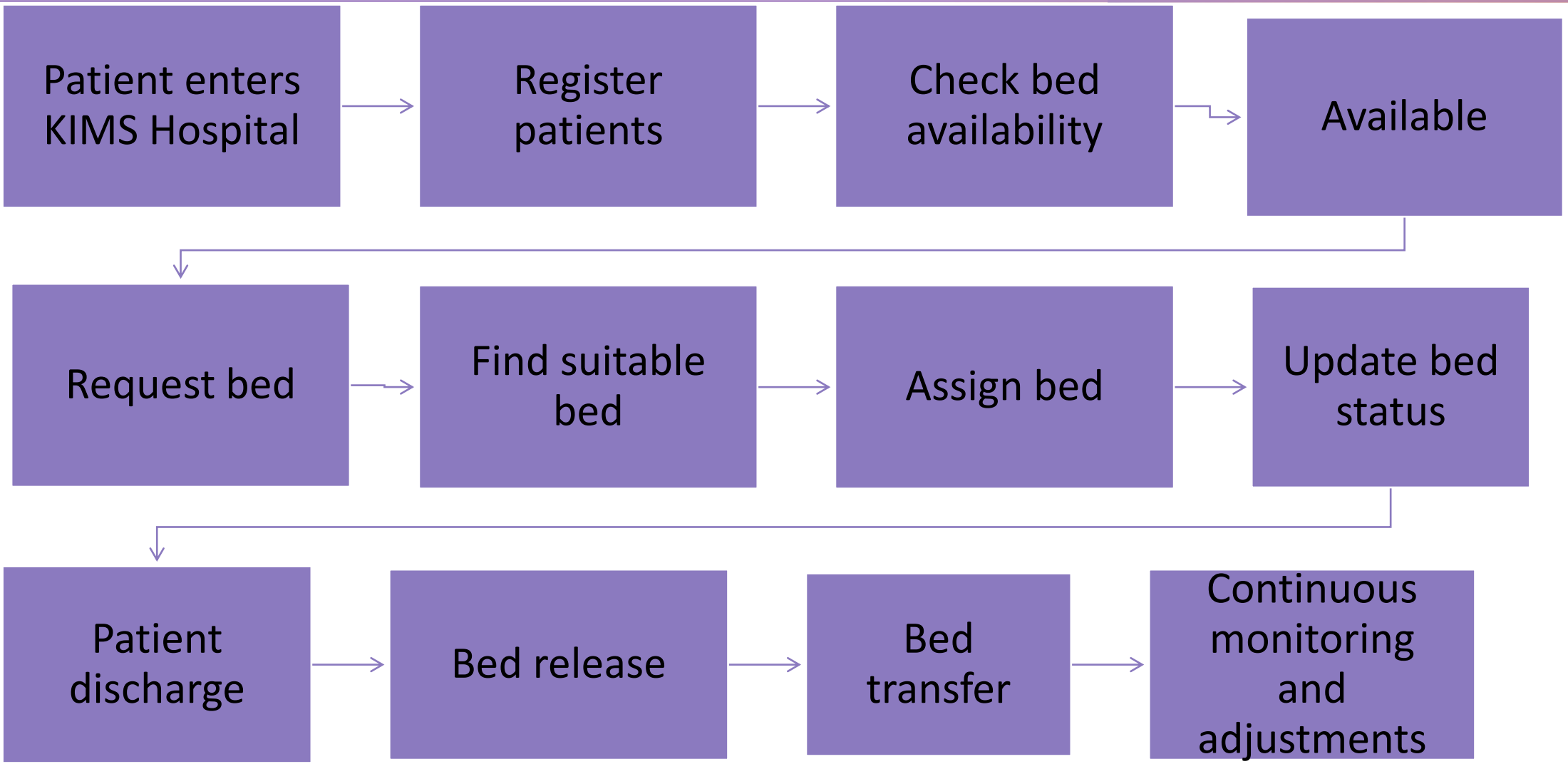
RO3. What is the ratio of delay cases according to the payer type in the hospital?

RO4. What are the reasons for delay in bed allotment?

METHODOLOGY

1. Study Design: A descriptive observational study was conducted at a Tertiary Care hospital in Secundrabad.
2. Data Source: Secondary data was collected from the Hospital Information Management System (HIMS) software used for bed allocation.
3. Sample Size: The sample consisted of 209 patients, selected through convenience sampling, who required bed allotment and transfers during the three-month study period.
4. Data Collection: Findings were recorded in a self-structured Emergency Room (ER) list, utilizing the HIMS software for data collection on bed allotment turnaround time (TAT), patient flow, and hospital efficiency.
5. Data Analysis: Advanced Microsoft Excel functions were used for data analysis, including descriptive statistics to summarize the data and potentially inferential statistics to evaluate the impact of delayed bed allocation on patient flow and hospital efficiency.
6. Operational Definitions: Key terms such as bed allotment TAT, patient flow, and hospital efficiency were operationally defined for the study.

BED ALLOCATION PROCESS FLOW



HIMS (HOSPITAL INFORMATION MANAGEMENT SYSTEM)

HIMS software provides modules and features for patient management, appointment scheduling, electronic health records, billing and financial administration, inventory management, and bed management.

The bed management module in HIMS software enables effective tracking, allocation, and availability monitoring of beds.

Real-time bed availability feature allows users to track and view information about vacant beds, occupied beds, and beds undergoing cleaning or maintenance in real-time.

The software enables healthcare clinicians or bed management staff to reserve and allocate beds for incoming patients based on factors like patient acuity, specialist requirements, and bed availability.

Staff members can update the status of beds, such as clean, occupied, discharged, or awaiting cleaning, using the software, ensuring accurate and up-to-date data for efficient bed allocation.

HIMS software may include reporting and analytics features that provide insights on bed utilization, turnaround times, occupancy rates, and other critical performance metrics, aiding in process optimization and resource management.

The software helps in improving efficiency, streamlining operations, and optimizing resource allocation in the hospital's bed management process.

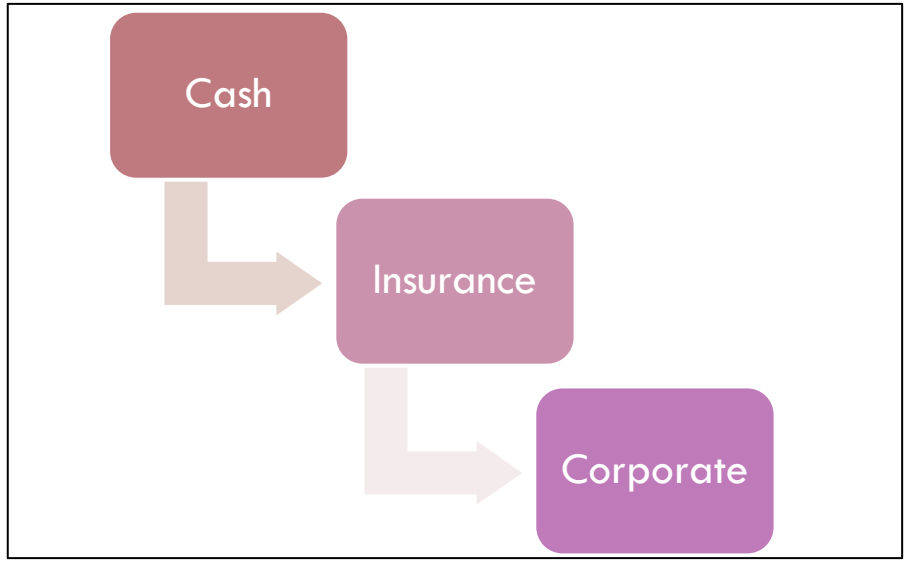
BED CATEGORY

ROOMS	TOTAL NO. OF BEDS
DIWAKAR WING	9
CORPORATE	10
GENERAL WARD	8
TRIPLE SHARING	18
ANNAPA REDDY	22
SURYA SECOND WARD	22
KURRA WING	4
SPANADA	13
PRERANA	10
DR.SS WING	10
SAHANA WING	14
SICU	20
CTIC	18(4 ISOLATION)
KTU	4
MICU	10
HDU	11
NICU	10
INCU	10
SURGICAL ICU	20
STEP DOWN ICU	7
CORPORATE WARD (M)	10
CORPORATE WARD (F)	7
SURYA POST CATH	9
BHAVANAN	8
CARDIO	20
RESERVE	45
TOTAL	350

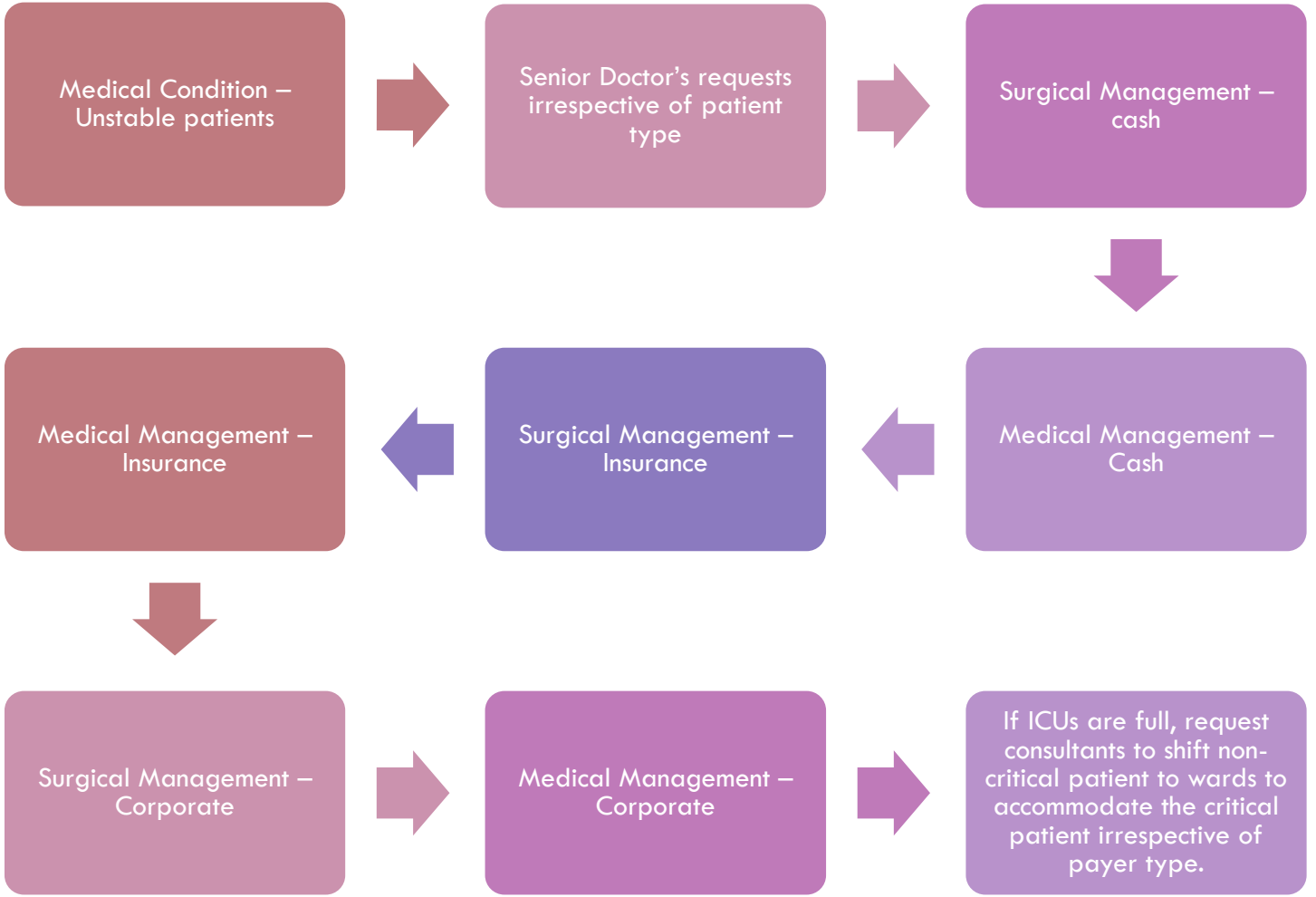
ROOM AMENITIES

AMENITIES	GENERAL WARD	TWIN SHARING	SINGLE	DELUXE	SUITE	PREMIER SUITE
BEDS	3 with curtain in between	2 with semi partition	1	1	1	1
CENTRALLY AC	✓	✓	✓	Yes	Yes	Yes
ATTACHED TOILETS AND BATHROOMS	Common	Common	✓	Yes	Yes	Yes
PATIENT COT	Manually operated	Fully automated motorized	Fully automated motorized	Fully automated motorized	Fully automated motorized	Fully automated motorized
CARDIAC TABLE	✓	✓	✓	✓	✓	✓
BEDSIDE LOCKER	✓	✓	✓	✓	✓	✓
PHONE FOR EACH BED	✓	✓	✓	✓	✓	✓
ATTANDANT COUCH	×	✓	✓	✓	✓	✓
LED TV WITH CABLE CONNECTION	× Or sharing	✓	✓	✓	✓	✓
WiFi	×	×	✓	✓	✓	✓
TEA POY	×	×	×			
SOFA SET	×	×	No	3 pieces	3 pieces	5 pieces
ATTACHED PANTRY WITH MINI REFRIGERATOR ANDMICROWAVE OVEN	×	×	×	×	✓	✓

UPGRADE PREFERENCE



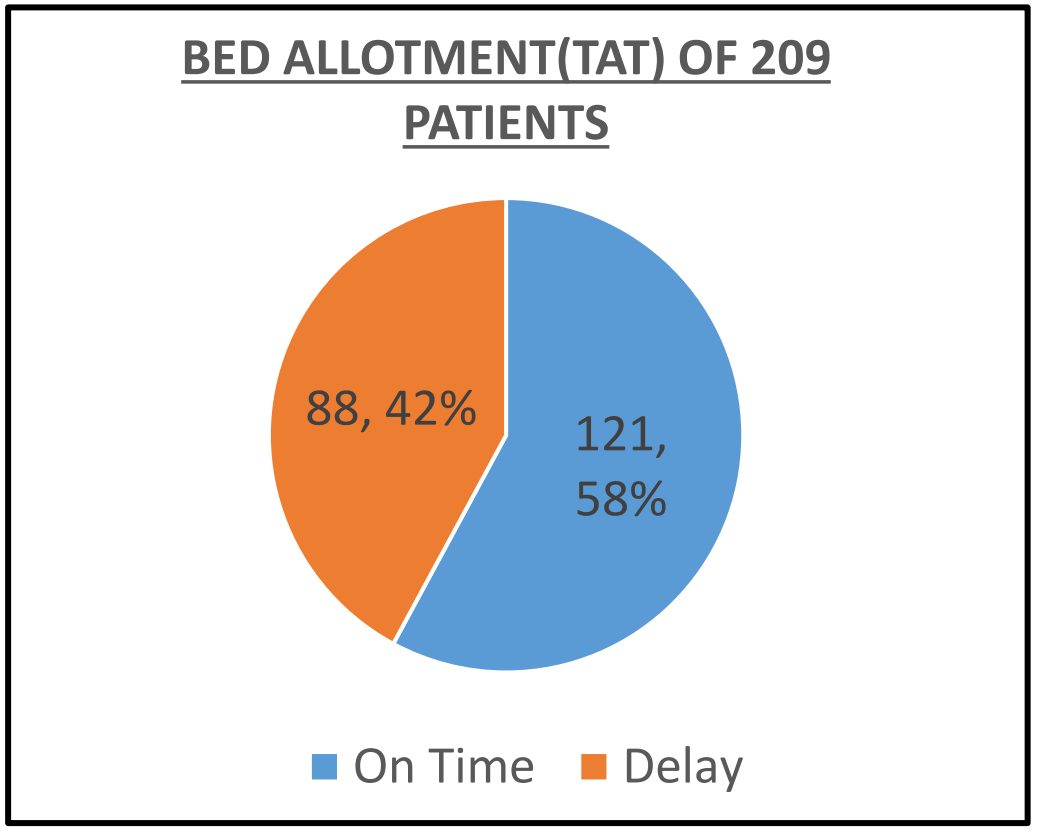
PREFERENCE FOR ADMISSIONS/TRANSFERS



NON-AVAILABILITY AT TIME OF ADMISSION SCENARIOS

SCENARIO	ACTION	TARIFF FOR BILLING
A room is not available in the desired category	The patient shall be counselled to be admitted in a higher category room for 24 hours	Higher category room tariff for first 24 hours
Desired room not available at the time of admission- patient unwilling to pay higher room tariff	Patient stays in upgraded room until desired room is available and shifted immediately once available	Billed for desired room tariff but transferred on system to "treated ward" category
Desired room become available after 24 hours- patient wants to be shifted	Patient shifted to desired room	Billed as per the tariff of occupied room
Desired room become available after 24 hours- patient wants to retain the room	Patient continues to stay in the upgraded room- subject to availability	Billed as per the tariff of occupied room
Desired room become available after 24 hours	Patient continues to stay in the upgraded room until the desired room becomes available.	Billed for desired room tariff but transferred on system to "treated ward" category

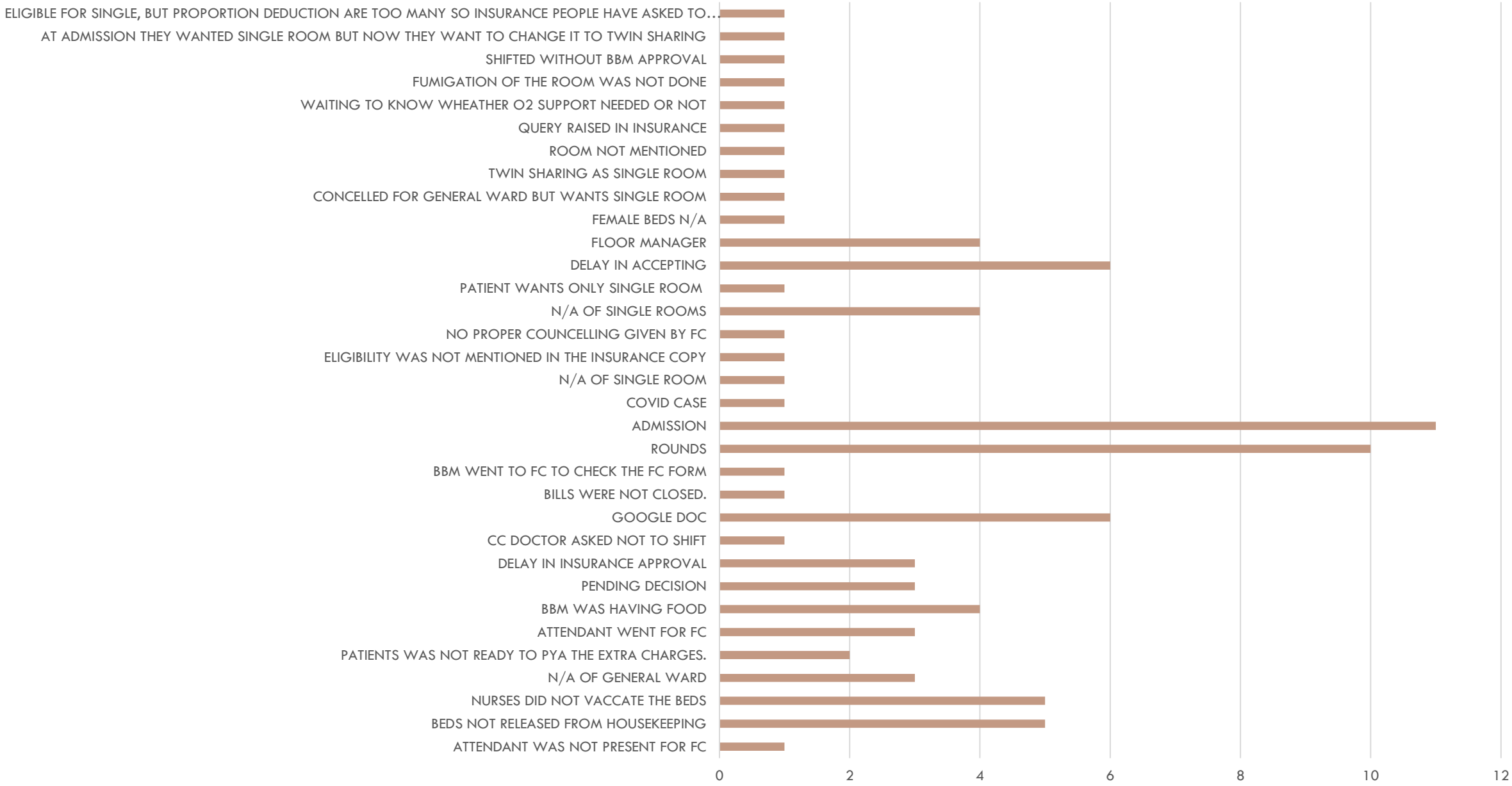
ANALYSIS



Payer Type (Unique List)	Count	On time	Late
Corporate	65	50	15
Cash	68	39	29
Insurance	76	32	44

Payer type vs count

DELAY REASONS



DELAY REASONS

STAFF

- Beds were being cleaned by housekeeping.
- The nursing station did not update about the bed vacancy on time.
- The FC assigns rooms based on eligibility, but the doctor advised a different room, resulting in the attendant having to go for counseling again.
- The first consultant initially instructed to shift, but after raising the request, the attending doctor asked not to shift.
- Bills were not closed on time.
- The floor manager did not ask the attendant to vacate the bed on time.
- Insurance approval did not come on time.
- The room for the HDU patient was not fumigated.
- No proper counseling was given by the FCs.
- The patient was shifted without BBM's approval.
- A wheelchair was not provided at the time of discharge.
- An insurance query was raised.
- The room was not mentioned.

B B M

- The BBMs were busy with the admission process.
- The BBM was on rounds.
- The BBM was maintaining a Google sheet.
- The BBM went for breakfast/lunch.
- The BBM went to check the FC form as the attendant had lost it.
- There is a non-availability of general wards and single rooms.
- Female beds are not available.

DELAY REASONS

ATTENDANT AND PATIENTS

- The patient believes they should be shifted to a particular room at a specific time only.
- The patient is not willing to shift to a different room when beds are not available.
- The attendant was not willing to pay extra for the room after the patient had been shifted to SICU.
- It is difficult for RMs to convince the patient to shift to twin sharing from a single room.
- The attendant wanted to see the rooms before making a decision.
- The patient wanted to change the rooms that were allotted during the financial counseling.
- The patient wanted to change the rooms that were allotted during the financial counseling and is not willing to pay extra charges.
- The attendant was not present during the financial counseling.
- The decision is pending from the attendant's side.
- Waiting for transportation.

CONCLUSION

The study identified a bed allotment turnaround time (TAT) delay rate of approximately 42% in KIMS Hospital, indicating the need for improvement in reducing delays.

Payer type was found to influence bed allocation efficiency, with the corporate payer type having the highest rate of timely bed allocation and insurance payer type experiencing the highest rate of delays.

Staff-related issues, departmental coordination challenges, billing delays, and attendant and patient preferences were identified as contributing factors to bed allocation delays.

Recommendations for improvement include implementing digital bed allocation systems, standardizing protocols for bed cleaning and availability, enhancing staff training and communication, and managing attendant and patient expectations.

The study's limitations include a small sample size and convenience sampling, suggesting the need for future research with larger, randomly selected samples and multiple hospitals.

Improving bed allocation efficiency and reducing delays can enhance the overall patient experience, improve patient outcomes, and increase hospital efficiency.

Addressing staff-related issues, optimizing BBM processes, and effectively managing attendant and patient preferences are key steps towards achieving better bed allocation outcomes.

By implementing the recommended improvements, hospitals can make significant strides in enhancing bed allocation efficiency, patient satisfaction, and overall operational effectiveness.

SUGGESTIONS

- Rm's and nurses should be given proper training, and there should be someone to monitor their work at least once a week so that they do not take things casually.
- BBM should not update everything on google docs.
- There should be someone or fc's should take care of the bed allotment process when BBM are having their meal.
- Someone should take care of the admission process.
- BBM should be given the credentials of FC so that they can check the eligibility on their own.
- Attendants should be informed with written documents that mention the extra charges, bed allotment process, and every step that will take place throughout the patient's stay.
- Fc's should be well-trained about insurance and eligibility criteria.
- Mobile applications: develop mobile applications for healthcare providers that allow them to access the bed management system on their smartphones or tablets. This enables them to check bed availability, allocate beds, and receive real-time notifications from anywhere within the hospital.
- Automated alerts: implement an automated alert system that notifies staff members when a bed becomes available or when a patient's discharge is imminent. This can be done through mobile notifications, pager systems, or integrated communication platforms commonly used within the hospital.
- Real-time monitoring: equip each bed with sensors or integrate them with the hospital's network to monitor bed occupancy continuously. This real-time monitoring allows hospital staff to have up-to-date information on bed availability and occupancy.

THANK YOU!!