

“Root Cause Analysis and Cost of Delayed Hospital Discharges and Strategies for Optimization”

Faculty Guide: Dr Goutam Sadhu

Presented by: Dr Seerat Kaur Thind (1601)

INTRODUCTION

“Root Cause Analysis and Cost of Delayed Hospital Discharges and Strategies for Optimization”

In today's fast-paced healthcare environment, identifying factors causing delayed hospital discharges is crucial for efficient operations and patient care. By conducting a thorough root cause analysis, we uncovered the underlying issues and implemented the strategies for its optimization.

- According to the hospital policy, all the discharges scheduled on the day must be completed and the bed must be vacated by 12 noon (discharge before noon) of the same day.
- At least 85% of all discharges must be planned one day prior and night billing must be initiated for all planned cases.
- The discharge process TAT must not exceed 240 minutes from the time of announcement of discharge. Ideal TAT must be maintained at 180 minutes.
- All patients undergoing discharge the following day must be counseled (pre-discharge counseling) about the discharge process according to their payment method, approximate duration for discharge process, documentation, and expectations from the attendants of the patient.

REVIEW OF LITERATURE

S. No.	AUTHOR	YEAR	TITLE	FINDINGS
1	Cadel L, Guilcher SJT, Kokorelias KM	2021	Initiatives for improving delayed discharge from a hospital setting: a scoping review	This qualitative study concluded that the majority of initiatives were implemented by multidisciplinary teams and resulted in improved outcomes, such as reduced length of stay and discharge delays. However, the experiences of patients and families were rarely reported. Included initiatives also lacked important contextual information, which is essential for replicating best practices and scaling up.
2	Micallef A, Buttigieg SC, Tomaselli G, Garg L	2020	Defining Delayed Discharges of Inpatients and Their Impact in Acute Hospital Care: A Scoping Review	This study found that the main causes of delayed discharges were faulty organizational management, inadequate discharge planning, transfer of care problems, and age. The main effects were bed-blocking, A&E overcrowding, and financial implications. The main interventions included 'discharge before noon' initiative, 'discharge facilitation tools,' 'discharge delay tracking' mechanisms, and the role of general practitioners and social care staff.

3	S Divya, S Aarthi	2020	A study on causes of delay in discharge process in one of the prominent hospitals in Tamil Nadu	This study concluded that the first cause of discharge delay is discharge planning by the consultant that is done on the day of discharge which delays further process. The consultant may be asked to take rounds for likely discharge patients first and then to others or pre-plan the discharge on the previous day. It also found that almost 74% of patients discharge time takes about more than 4hrs which is not according to prescribed NABH standards. All ward secretaries should be provided with guidelines in discharge procedures to reduce the delay in time taken for discharge process. Staffs should also be trained in proper communication skills to carry out the process. Another area of delay is pharmacy clearance which takes about 2-3hrs due to lack of manpower to carry out the process.
---	-------------------	------	---	--

4	Mundodan JM, Sarala KS, Narendranath V	2019	A study to assess the factors contributing to delay in discharge process in a teaching hospital	The mean time for discharge process was 5 hours 41 minutes. The mean time between advice of discharge and physically leaving the ward varied from 6.62 hours in urology to 3.01 hours in ear, nose and throat (ENT). Only 13 patients (18.8%) were discharged within the National Accreditation Board for Hospitals and Healthcare Providers (NABH) prescribed time limit of 180 minutes. The maximum delay occurred during time taken for discharge summary completion.
---	--	------	---	--

5	Bai AD, Dai C, Gill SS	2019	Risk factors, costs and complications of delayed hospital discharge from internal medicine wards at a Canadian academic medical center: retrospective cohort study	In this study, the results showed that the patients awaiting discharge process completion had longer median length of stay, higher median hospital costs, and more complications in hospital, especially nosocomial infections. It also concluded that delayed discharge is associated with higher hospital costs and complication rates especially nosocomial infections. A clinical prediction rule can identify patients at risk for delayed discharge.
6	Hamid S, Jan FA, Rashid H	2018	Study of discharge process of patients admitted in inpatient department of a tertiary care hospital of north India with a special focus on reducing the waiting time	The results show that the average time taken for discharge process was 240 minutes for those who had a planned discharge and had to pay out of pocket (Self- Payment). . The results also show that among all discharged patient's relatives observed, majority (54%) felt that their discharges were delayed due to non -availability of resident doctor for preparing the summaries.
7	Boyd S	2017	Hospital Administrators' Strategies for Reducing Delayed Hospital Discharges and Improving Profitability	This qualitative study explains that the major reasons for delay in discharge are: inadequate communication between discharge teams, lack of standardization in discharge timing and procedures, etc. These can be solved by facilitating effective leadership, focusing on improvements to the discharge process, etc.

8	Gaughan J, Gravelle H, Siciliani L	2017	Delayed Discharges and Hospital Type: Evidence from the English NHS	This study investigated differences in delays by type of hospital. It found that Mental Health Trusts have more delayed discharges due to non-NHS factors, including social care. This may indicate unmet social care needs for mental health patients, requiring more sophisticated care packages, which take longer to organize. Foundation Trusts had fewer delays, therefore, can be used as exemplars of good practice in managing delays.
9	Kochar R	2016	Role of discharge summary in delayed discharge process	In the results of this study, it was found that in the surgery department, time taken for maximum number of patients of summary finalization was between 1 to 3 hours. The maximum time, i.e., between 5-7 hours has been taken between discharge intimation and discharge summary finalization.
10	Hendy P, Patel JH, Kordbacheh T	2012	In-depth analysis of delays to patient discharge: a metropolitan teaching hospital experience	In this study, a total 54 of the 83 patients (65.1%) experienced a delay while waiting for a service. 40 of the 83 (48.2%) patients experienced a delay that extended their discharge date. There was a trend towards an increased number of patients experiencing longer delays with increasing patient age. Nine of the 10 patients whose discharge was delayed by more than five days were over the age of 75 years

METHODOLOGY

RESEARCH QUESTION

What are the primary causes of delayed hospital discharges and the associated costs? What evidence-based strategies can be implemented to optimize the discharge process, reduce delays, and improve patient outcomes?

OBJECTIVES

- To identify and analyze the root causes of delayed hospital discharges, including hospital related, and physician related factors, such as inadequate post-discharge care arrangements, inefficient discharge process communication and awareness, improper time management, etc.
- To recognize various kinds of costs associated with the delayed discharge process.
- To examine the existing interventions and initiatives aimed at reducing delayed discharges and assess their effectiveness in improving discharge efficiency.
- To provide solutions that address the causes of delayed discharges practically with the aim of improving the discharge workflow and enhancing patient care in hospital setting.

STUDY DESIGN

Mix methods study, involving qualitative analysis of the existing literature to examine the existing evidence on discharges, and quantitative analysis of the hospital administrative data, including patient records, discharge logs, and HIS to understand and identify gaps in the process.

STUDY SETTING AND DURATION

The study was conducted at the in-patient department of the 6Th floor, B wing at Medanta, the Medicity, Gurugram, for a period of 3 months from March to June, 2024.

STUDY POPULATION

Includes all patients who were admitted to the hospital and were declared eligible for discharge from the hospital during the period under study. This population includes patients, who were medically stable and ready for discharge, but experienced delays due to various reasons such as lack of post-acute care availability, administrative issues, or other factors. The study population is a subset of the target population, which is all the patients who are admitted to the hospital during the study period, but the study has focused on those patients who have experienced delayed discharges.

Inclusion criteria: Age over 18, non-vulnerable, and patients/attendants who provide their consent to include their information and data in the research.

Exclusion criteria: Age under 18, vulnerable patients, DAMA/LAMA patients.

SAMPLING TECHNIQUE and SAMPLE SIZE

Convenient sampling, 62 eligible patients

RESULTS

DOCTOR 72%

Unplanned discharge care plan

Investigation advice on
discharge day

Advising cross-consultation
on discharge day

Doctors' rounds

Rounds at an irregular timing

Last minute discharge announcements

Discharge Summary

Unavailable for
summary correction

Unavailable for final
signatures

PATIENT 18%

Limited patient
knowledge on discharges

Lack of finance

Language barrier

Transportation issues

Refusal to discharge

**DELAY IN
DISCHARGE**

Equipment

slow HIS/ equipment
breakdown

Inadequate transport
system

Manpower

Staff shortage

Staff burnout

Poor coordination among
departments

MANAGEMENT 8%

Billing

Activity not received on
time

Incomplete activity
received

Cancellation of
billing activity

TPA

Delay in Insurance clearance

Delay in bill settlement after approval

Lack of coordination between
departments and TPA

Medicine related

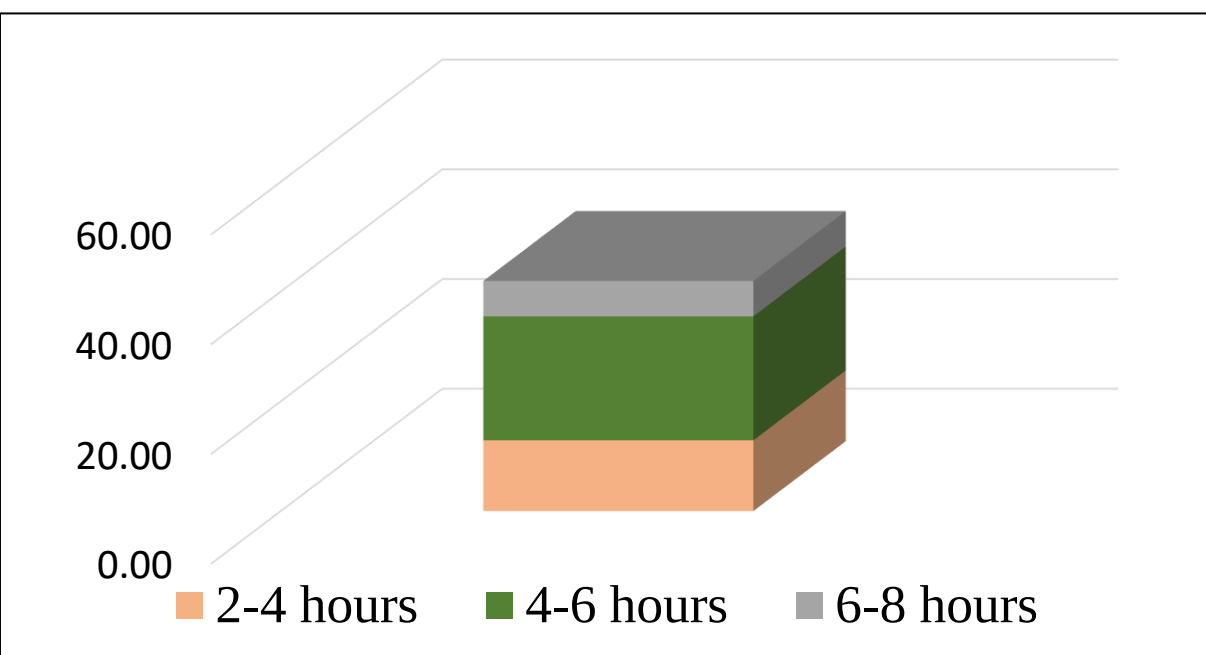
Delay in return to pharmacy

Errors in indenting

PROCESS

Focusing on the doctor's part from the RCA:

- **Unplanned discharge care plan:** The doctor plays a crucial role in unplanned discharge care planning, ensuring timely and safe transitions by coordinating with other healthcare providers, addressing patient concerns, and providing necessary guidance and support through pre-discharge counseling. This was not followed efficiently for all types of patients.
- **Discharge summary pending:** A delay in discharge summary finalization by the doctor's team can delay the entire discharge process by diverting resources and causing inefficiencies. This was a very prominent cause of overall delay in the discharge process.
- **Irregularity of doctor's rounds:** The rounds were scheduled irregularly leaving the patients/attendants anxious. The discharge announcement was also made at the last-minute, due to which the process became inefficient.



Majority of discharges (up to 60%) had a TAT for more than 4 hours, going up to 6 hours.

Figure a): TAT of discharge process completion

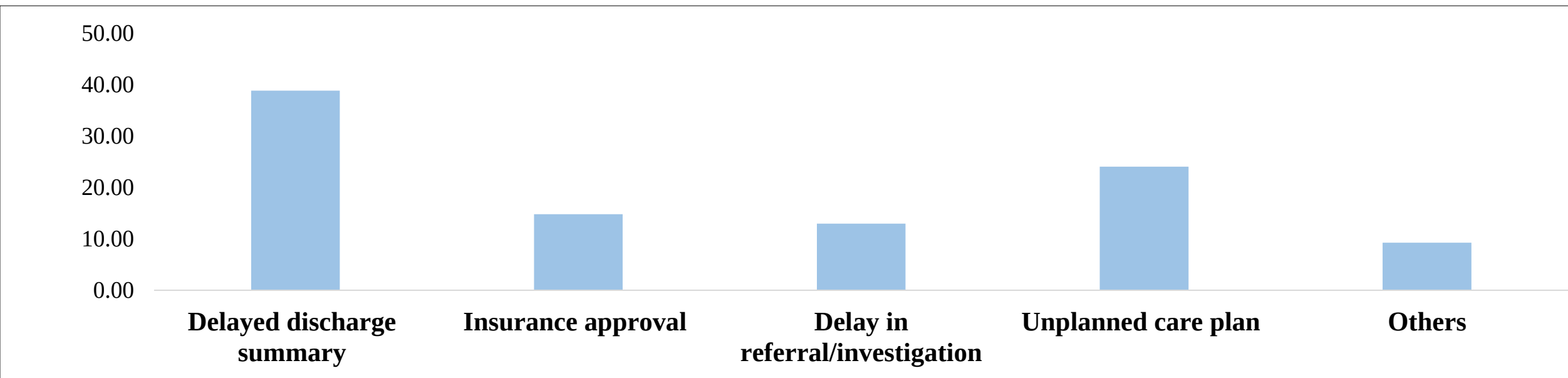


Figure b): Root causes of delayed discharge process

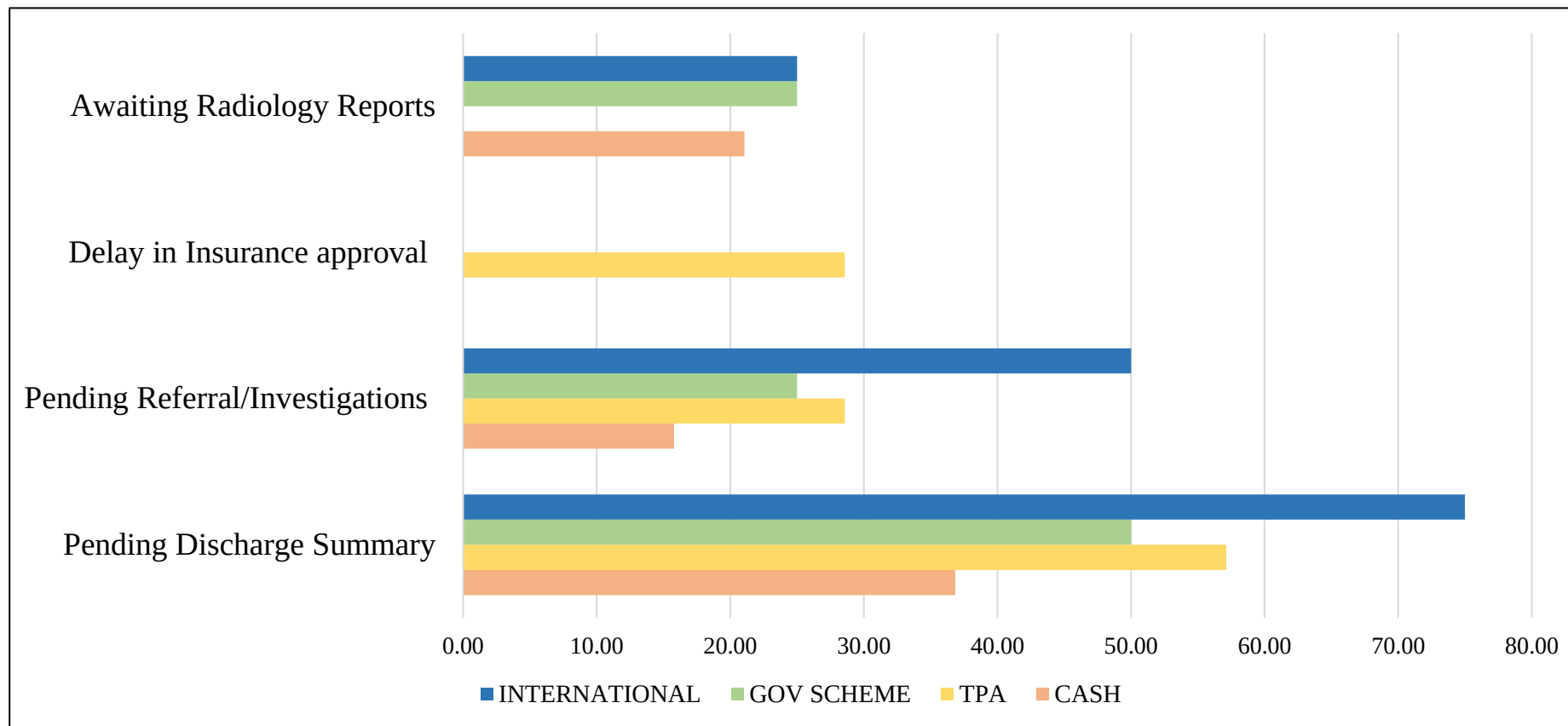


Figure c): Analysis of the causes of a delayed discharge process

- Distraction of resources from its usefulness in the hospital.
- Distraction of the staff focus from doing their work efficiently, which delayed the discharge process.
- It disrupted the efficiency in communication that was supposed to happen between the hospital and the primary care providers; appropriate gaps in the patient's care and, often, the readmissions ensued.
- This too led to negative feedback from the patient's side. The patient was getting extremely frustrated and angry due to the time-consuming discharge process.

UNPLANNED DISCHARGE CARE PLAN

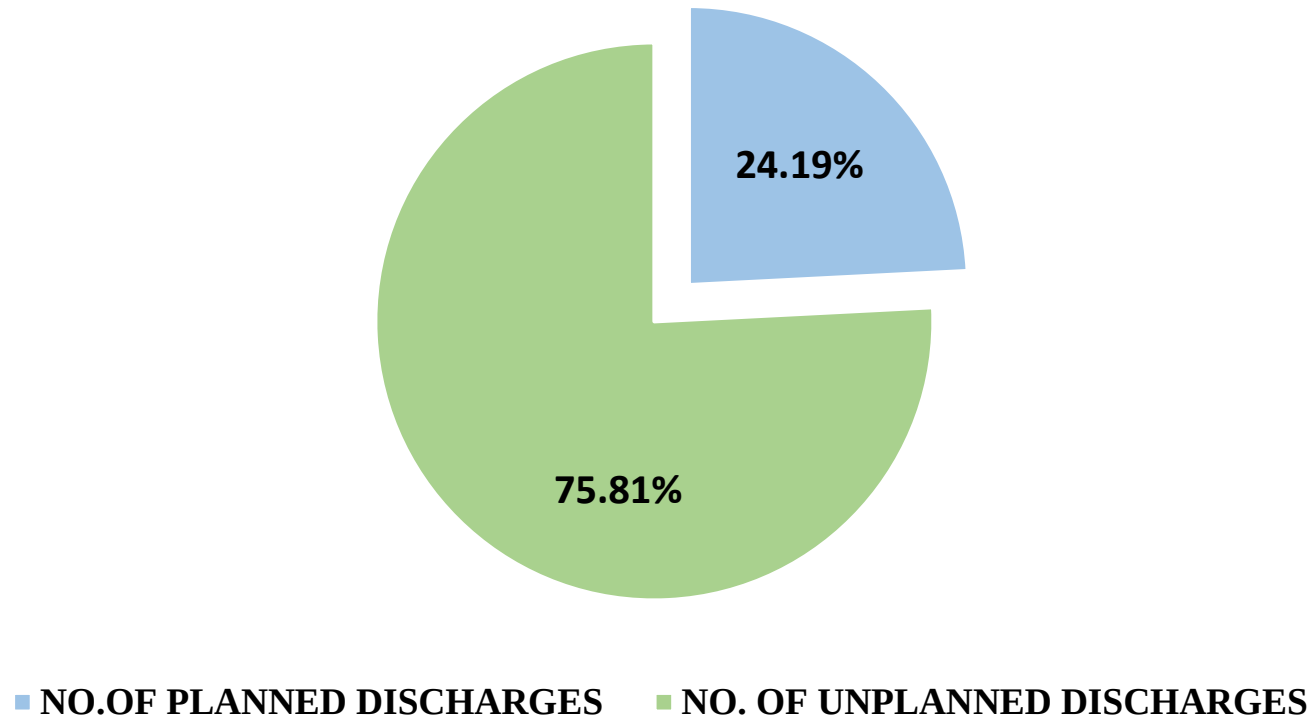
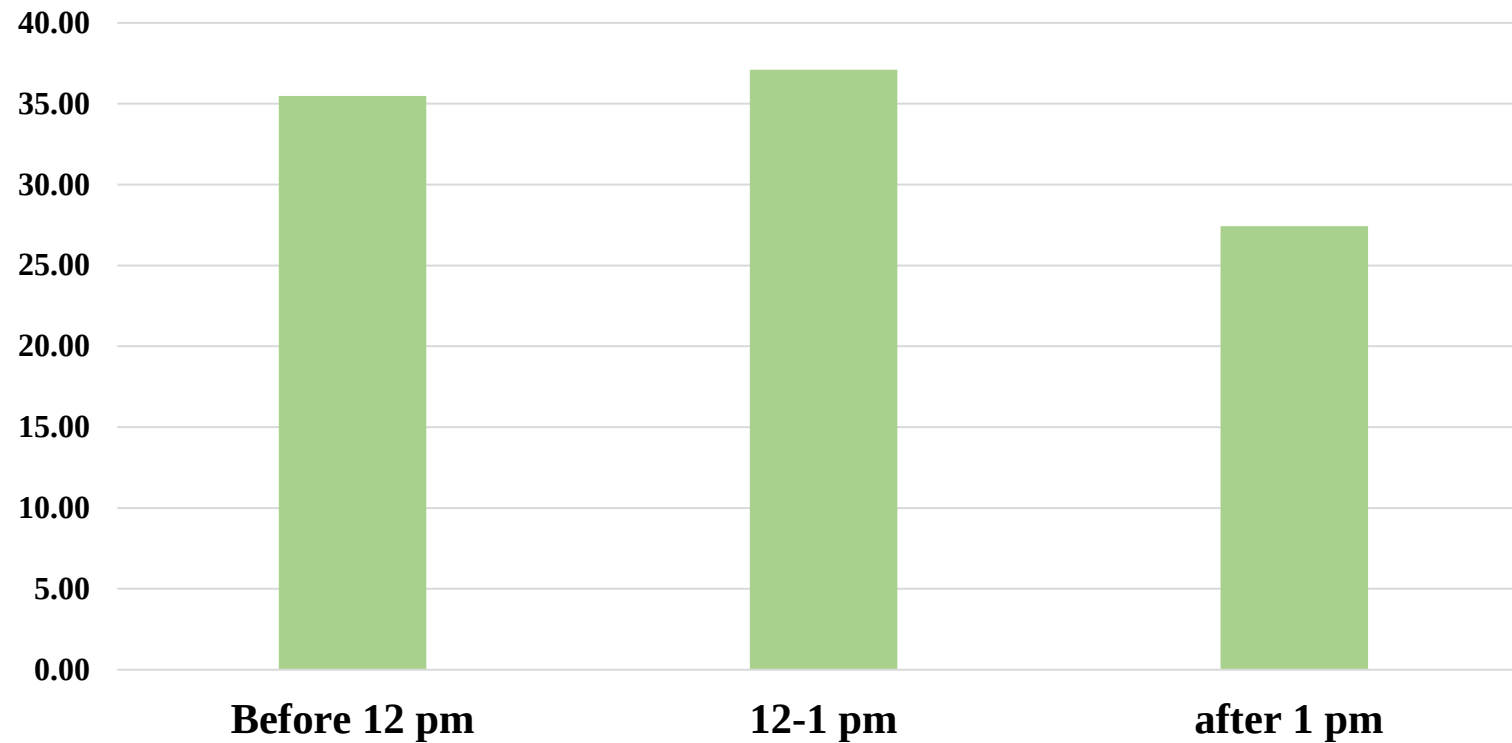


Figure d): % of planned and unplanned discharges

- It clearly shows that the proportion of unplanned discharges is way more than the planned discharges being announced for patients during the course of their study. This shows a clear gap in the compliance to hospital protocols, and policies of the hospital.
- Night billing, pre-discharge counseling as per hospital protocols were not being followed.
- Convenience discharges



DISCHARGE BEFORE NOON

Figure e): Time taken for the discharge process

According to NABH guidelines: 180 minutes to 240 minutes maximum.

But it was observed that a discharge before noon was only possible for patients who had a planned discharge, as compared to those with unplanned discharges. The time for discharges during the period under study ranged from 12 noon to exceeding as much as 7 pm in the evening.

DELAY IN FINALIZATION AND HAND-OVER OF DISCHARGE SUMMARY TO PATIENTS

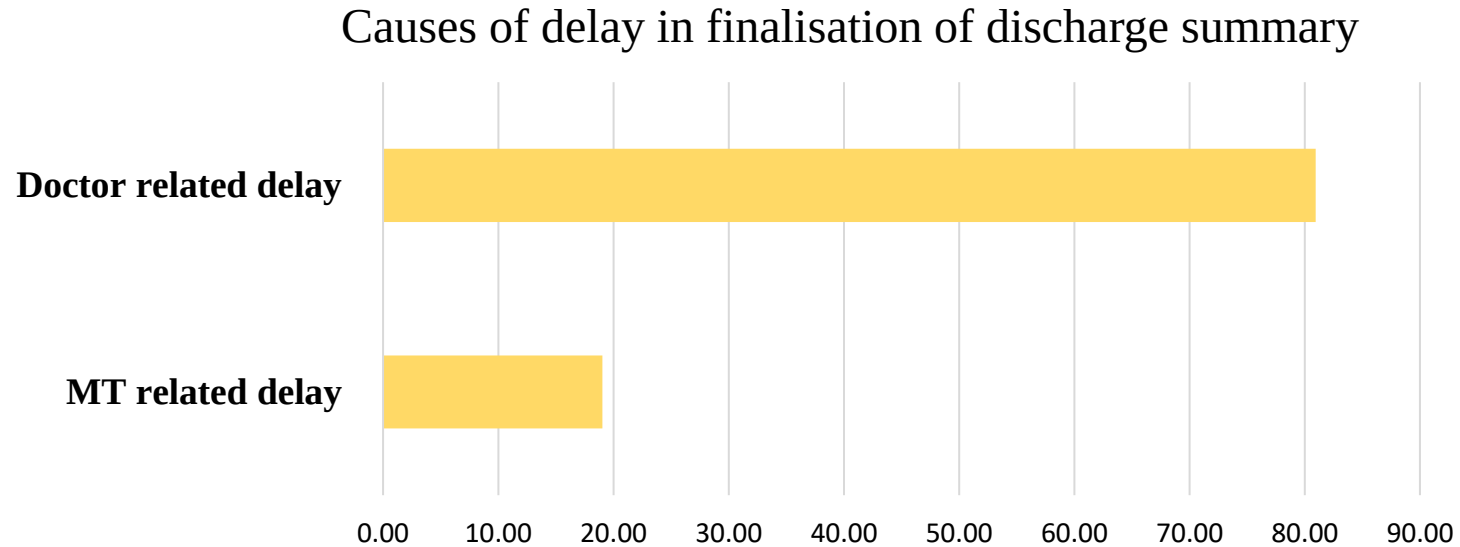
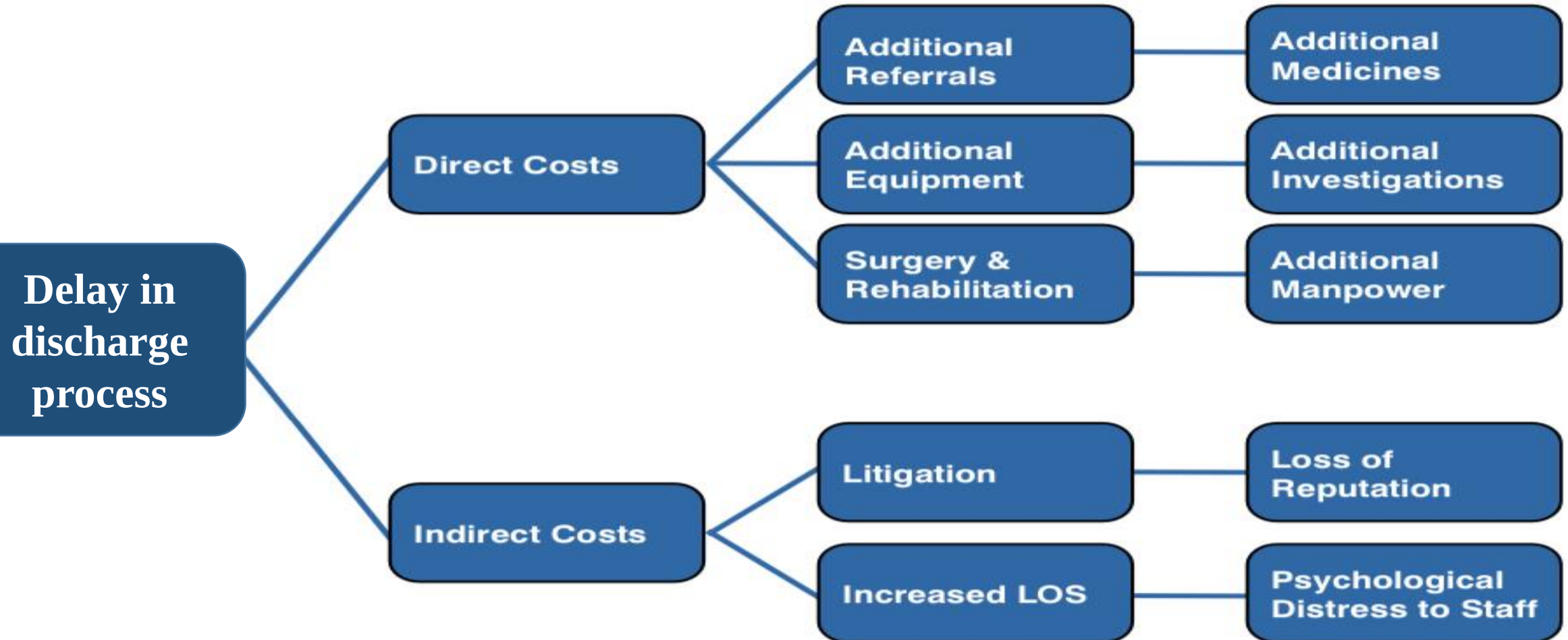


Figure d): Proportion of causes of delay in finalization of discharge summary

- MT prepares the primary draft, followed by evaluation and signing off by the doctor or team.
- It was found that almost 90% of discharge summaries were not finalized due to doctor and/or his/her team.
- The most common reasons for this delay in finalization was the non-availability of the doctor and/or his team at that moment because of attending other newly admitted or more vulnerable patients, which makes them unavailable for signing off the summary and allowing smooth hand-over to the patient.

Cost Analysis



Conclusion and Recommendations

Identifying a Multi-Disciplinary Discharge Leader

A multidisciplinary discharge leader is a senior professional who is one of the key participants in discharge planning within a hospital setup. The discharge leader will enhance the efficiency of discharge planning and ensure it is effective.

He/she could be team doctor, resident, staff nurse or anyone in the clinical team to be able to fully understand the discharge process, discharge criteria for patient, the expected date of discharge, etc.

Responsibilities:

- To finalize patients eligible for Night Billing, on the previous evening itself.
- To proof read and finalize the discharge summary at least 2 hours prior to discharge time (on completion of 24 hours).
- To coordinate the discharge work flow with the floor manager and the ward secretary on billing activities, etc.
- To direct the TL of nursing to explain the discharge summary to the patient/attendant
- To keep a track of all patients' EDD, and to communicate the same to the patient and family
- To counsel and inform the patient and family on the patient's clinical criteria for discharge (Pre-discharge Counseling or D-1).

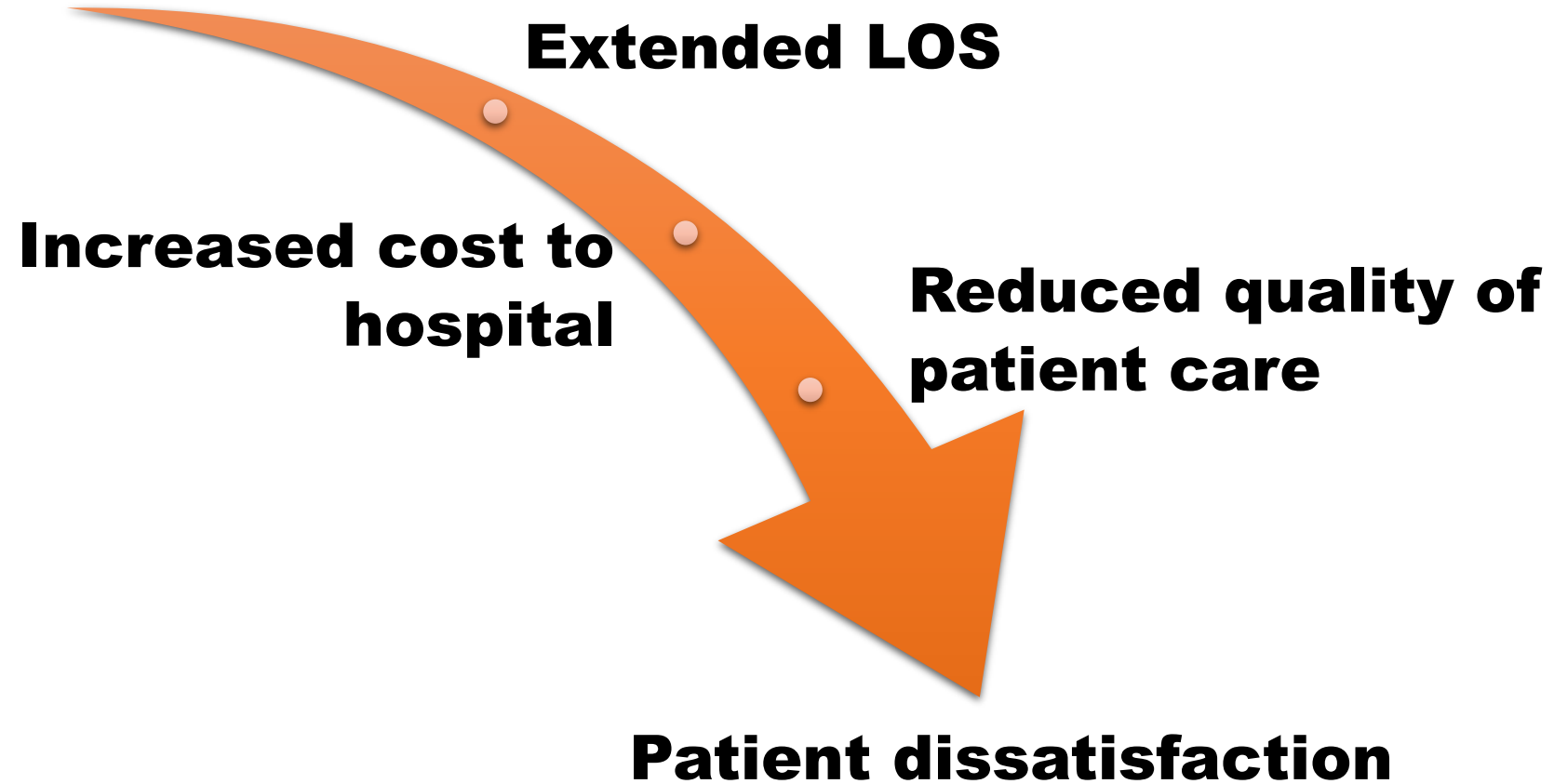
Introduction of Red-to-Green Bed Days

A “Red Day” indicated a day when the patient only receives routine, non-acute care with no significant progress made towards discharge.

A “Green Day” signifies a day when the planned care, such as tests, treatments, or meeting discharge criteria was successfully completed.

- The goal is to minimize “red days” and maximize “green days” to improve patient flow and reduce unnecessary hospital stays. This is achieved through:
- Daily multidisciplinary board rounds to review each patient’s status and plan next steps.
- Setting an expected date of discharge and clinical criteria for discharge at admission.
- Identifying and addressing barriers to progress, either within the hospital or in arranging post-discharge care.
- Improving communication and coordination among the care team.
- Using visual management tools like whiteboards to track each patient’s status.

RED DAY

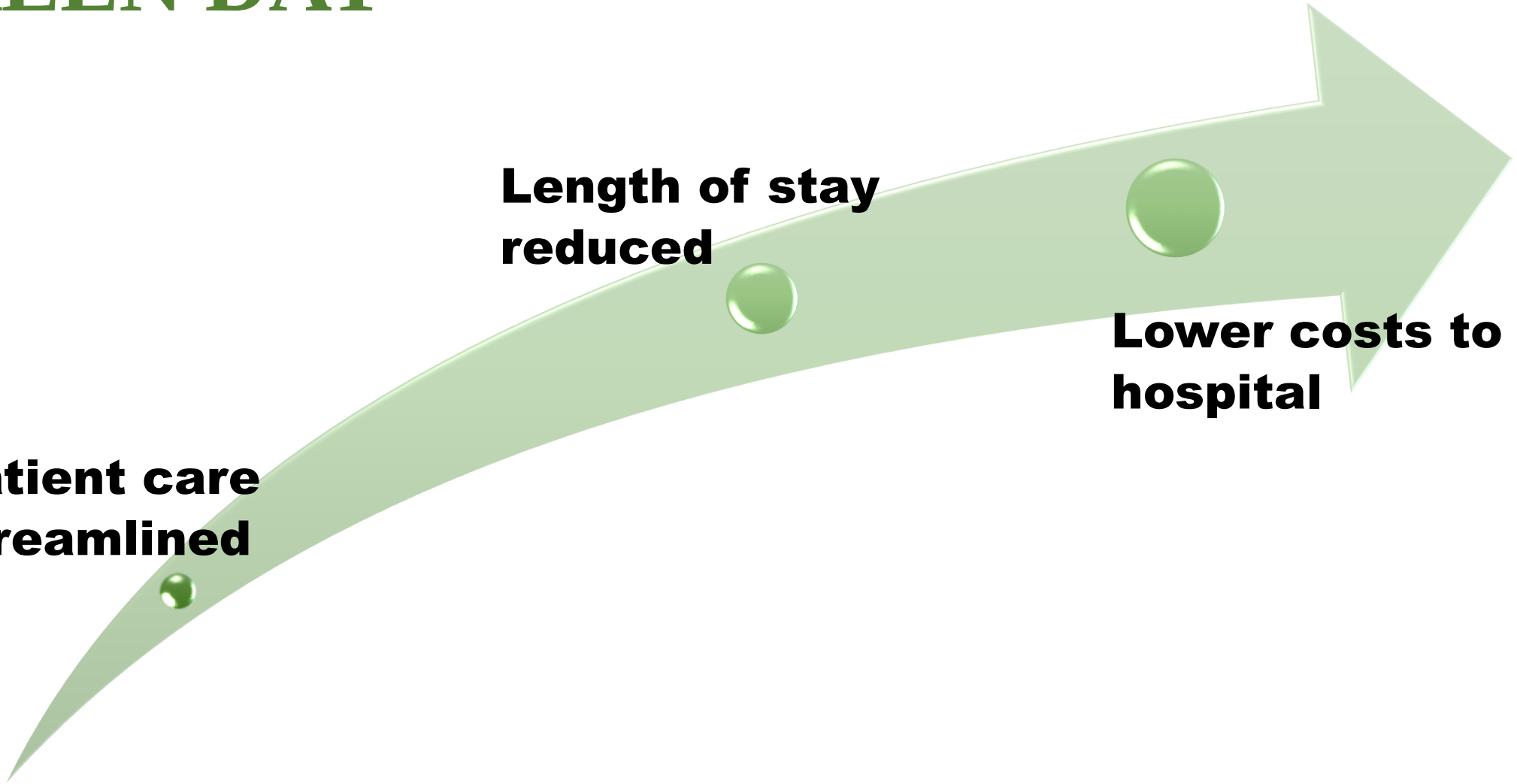


GREEN DAY

**Patient care
streamlined**

**Length of stay
reduced**

**Lower costs to
hospital**



- Red to Green bed days can be implemented with the SAFER patient flow bundle for more effective results.
- The **SAFER Patient Flow Bundle** is a combined set of rules for inpatients wards, and blends five elements of best practice. These being:

S—senior review before midday,

A—all patients have an expected discharge date and clinical criteria for discharge,

F—flow of patients at earliest opportunity,

E—early discharge before midday, and

R—review via multidisciplinary team for patients with length of stay greater than seven days.

The patient/attendant were clearly able to answer the following:

- *Why am I admitted to the hospital?*
- *What is going to happen to me today, while I am in the hospital?*
- *When can I expect to go home?*
- *What needs to happen for me to get home?*

REFERENCES

- Laurel Cadel SJTGKMK. Initiatives for improving delayed discharge from a hospital setting: a scoping review. BMJ. 2023 March.
- Alexander Micallef SCBGTLG. Defining Delayed Discharges of Inpatients and Their Impact in Acute Hospital Care: A Scoping Review. International Journal of Health Policy and Management. 2022 February.
- S Arthi SD. A study on causes of delay in discharge process in one of the prominent hospitals in Tamil Nadu. International journal of Creatiev Research Thoughts. 2020 April; 8(4).
- Jenyz Mundodan KSS. A Study to Assess the Factors Contributing to Delay in Discharge Process in Teaching Hospital. International Journal of Research Foundation of Hospital and Healthcare Administration. 2020 July.
- Anthony D Bai CDSS. Risk factors, costs and complications of delayed hospital discharge from internal medicine wards at a Canadian academic medical centre: retrospective cohort study. BMC Health Services Research. 2019 December.
- Shahnawaz Hamid FAJHRHITA. Study of discharge process of patients admitted in inpatient department of a tertiary care hospital of north India with a special focus on reducing the waiting time. International Journal of Medical and Health Research. 2018 July; 4(7).
- Boyd S. Hospital Administrators' Strategies for Reducing Delayed Hospital Discharges and Improving Profitability. Walden Dissertations and Doctoral Studies Collection. 2017.
- James Gaugan HGLS. Delayed Discharges and Hospital Type: Evidence from the English NHS. Fiscal Studies: The Journal of Applied Public Economics. 2017 September; 38(3).