Study on Discharge Process Using DMAIC Approach at The Mission Hospital, Durgapur

By

Parul Raheja

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2017-2019

The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: **www.iihmr.edu.in**

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IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that **Ms. PARUL RAHEJA**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at The Mission Hospital, Durgarpur from 4th February, 2019 to 30th April, 2019.

The Candidate has successfully carried out the study assigned to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.

Dr. Ashok Kaushik

Dean, Academics and Student Affairs

The IIHMR University, Jaipur

16 May 2019

Piyusha 16/5/19

Dr. Piyusha Majumdar

Assistant Professor

The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Near Sanganer Airport, Jaipur- 302029, Rajasthan, India.
Ph.: 0141- 3924700, 2791431- 32, Fax: 0141 3924738, E-mail: iihmr@iihmr.edu.in, Web.: www.iihmr.edu.in

THE MISSION HOSPITAL DURGAPUR | FUTURISTIC TECHNOLOGY. BRILLIANT MINDS.

Ref: TMH/HRD/OG/April/19/84 **Date: 01/05/19**

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Parul Raheja** has done three months dissertation on **Study on Discharge Process Using DMAIC Approach at The Mission Hospital, Durgapur, West Bengal** from 04/02/2019 to 30/04/2019.

During the period of dissertation **Ms. Parul Raheja** has been found sincere, hard working having an attitude to learn.

We wish her a successful future and brilliant professional career ahead.

For The Mission Hospital, Durgapur

Ramesh Lall
Sr. General Manager - HR

The Mission Hospital, Durgapur | 219(P) Immon Kalyan Sarani, Sector-2C, Bidhan Nagar, Durgapur - 713212
P: 0343 2535555 | M: 9233355555 | F: 0343 2532550 | Email: hospital@themissionhospital.in | www.themissionhospital.com
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Study on Discharge Process using DMAIC Approach at The Mission Hospital, Durgapur**

and submitted by **Ms. PARUL RAHEJA** Enrollment No. **0621**under the supervision of **Dr. Piyusha Majumdar** for award of MBA in Hospital and Health in Health and Hospitals of the University carried out during the period from **4th February, 2019 to 30th April, 2019** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Raheja
16/5/19.
Signature

ABSTRACT

Title Study on Discharge Process using DMAIC Approach at The Mission Hospital, Durgapur

Name of Author: Parul Raheja

Background An episode of treatment ends with a discharge process in a hospital conducted by health professionals, health providers or assistants. Discharge can be defined as a process, tools and technique through which care of patient ends in a hospital. Discharge time has important implications on the hospital working as it affects patient satisfaction, utilization of hospital resources, revenue generation, timely access to inpatient bed, assured continuity of care. Define discharge time of The Mission Hospital is framed on its topographic situation and patient feedback. The hospital is facing problem due to delay in discharges which is leading to patient dissatisfaction. It was also causing unavailability of bed for new admissions. Smooth and structured discharge process is not present in the organization. The study focuses on streamlining the hospital discharge process by using DMAIC approach

Methodology The study is conducted within The Mission Hospital, Durgapur West Bengal based on descriptive observational study design and the sampling method used is convenient sampling. The study took two months (i.e 8 weeks) with a sample size of 300 planned discharges.

Time of observation was patient who got discharged from the wards from 9am to 6pm (except Sundays) as no planned discharges were scheduled for Sundays

Inclusion criteria: Patients who go through normal discharge process and on DOR.

Exclusion criteria:

1. Patients who get discharge from OT, ICU and ED etc.
2. Patients who get discharge through DORB.

Source of data collection: The data was collected by observing various wards on each floor., Discharge Monitoring Sheet, Interaction with IP Coordinators. Analysis was done with the help of MS-excel and root cause analysis was done.

Conclusion The study proves that the major time taking process is preparation of discharge summary done by doctors. The preparation itself includes multiple corrections of summary and also time consumed in typing a final summary. Another main reason is the availability of doctors for signature and approval on final summary.

Key Words

Discharge, Patient satisfaction, Planned Discharges, LOS, LAMA, DORB, DOR,

INTRODUCTION

Study on Discharge Process using DMAIC Approach at The Mission Hospital, Durgapur

Define Discharge Time: The define discharge time of The Mission Hospital is framed on its topographic situation and patient feedback.

Discharge can be broadly defined as the processes, tools and techniques by which an episode of treatment and/or care to a patient is formally concluded by a health professional, health provider organization or individual. It involves the development and implementation of a plan to facilitate the transfer of an individual from hospital to an alternative setting/home where appropriate. Discharge time has important implications on the hospital working as it affects patient satisfaction, utilization of hospital resources, revenue generation, timely access to inpatient bed, assured continuity of care. The standard of discharge management impacts on hospital efficiency, quality and safety of patient care. The hospital is facing problem due to delay in discharges which is leading to patient dissatisfaction. It was also causing unavailability of bed for new admissions. There was lack of clear communication and coordination between disciplines. Process for discharge was not streamlined .So it was important to analyze the bottlenecks and take preventive and corrective actions to improve the process.

Each hospital has its own discharge policy. Once you're admitted to hospital, your treatment plan, including details for discharge or transfer, will be developed and discussed with you.

A discharge assessment will determine whether you need more care after you leave hospital.

The problems of delayed or poorly planned discharge illustrate the broader challenge of integrating health and social care. Analyzing the causes of these delays, including

a) poor communication between health and social care
b) lack of assessment and planning for discharge
c) inadequate notice of discharge
d) inadequate involvement of patient and family
e) over-reliance on informal care
f) Lack of attention to the special needs of vulnerable groups. (3)

In general, the basics of a discharge plan are:

1. Evaluation of the patient by qualified personnel

2. Discussion with the patient or his representative
3. Planning for homecoming or transfer to another care facility
4. Determining whether caregiver training or other support is needed
5. Referrals to a home care agency and/or appropriate support organizations in the community
6. Arranging for follow-up appointments or tests

Guidelines for discharge follow in The Mission Hospital, Durgapur

1. The ID band is removed only at the time of discharge.

2. Discharge procedure

- ❖ Discharge procedure of the patient will be carried out only with the written order by the treating doctor.
- ❖ Discharge Summary is documented and signed by the treating doctor prior to discharge.
- ❖ Two copies of discharge summary are prepared, one copy is given to patients and another copy is filed in patient case sheet. In case patient is corporate or TPA, another discharge summary is prepared as per the company tie-ups.
- ❖ A Discharge Summary is given to all the patients leaving the organization at the time of discharge. In case of patient leaving the hospital with discharge against medical advice, treatment summary is given.

Discharge Summary Contains the Following Information:

- Date of Admission
- Date of Discharge
- Reason for Admission
- Significant Diagnosis & Co-morbidities
- Diagnosis and Therapeutic Procedures Performed
- Significant Physical and Other findings
- Significant Medications & Other Treatment
- Patient's Condition at the Time of Discharge
- Discharge Medications (To be taken At Home)
- Follow-up Instructions and instructions during urgent care are required.

In case of death occurring, the summary of the case also includes the cause of death; patient records also contain a copy of the discharge / death summary.

REVIEW OF LITERATURE

- David Anthony, VK Chetty, Anand Kartha, "*Re-engineering the Hospital Discharge: An Example of a Multifaceted Process Evaluation*" refers The transfer of patient care from the hospital team to primary care and other providers in the community at the time of discharge is a high-risk process characterized by fragmented, non standardized, and haphazard care that leads to errors and adverse events. A detailed multifaceted process analysis has provided us with powerful insight into the many patient safety issues surrounding the discharge process. The generalize methods described here have produced the re-engineering of the discharge process, allowing for the planning of a clinical trial and significant improvements in patient care. (4)
- Christopher G. Maloney, Et.al. "A Tool for Improving Patient Discharge Process and Hospital Communication Practices: the Patient Tracker" states the conclusion hospital bed demands sometimes exceed capacity, leading to delays in patient admissions, transfers and cancellations of surgical procedures. Effective strategies must be in place for an efficient use of existing beds. Establishing such strategies at academic hospitals poses serious challenges. We developed and implemented a web-based software application called "Patient Tracker" to manage the discharge process, minimize delays in admission and reduce surgical procedure cancellations. (5)
- Harmanjot Kaur, Roopjot Kochar. "A Study on Discharge Process of Discharged Patients of a Multispecialty Hospital Ludhiana" says in his study that discharging patients from the hospital is a complex process that is fraught with challenges. Discharge planning is the development of an individualized discharge plan for the patient prior to leaving the hospital, to ensure that patients are discharged at an appropriate time and with provision of adequate post discharge services.(6)
- David Anthony, VK Chetty, Et.al. "Re-engineering the Hospital Discharge: An Example of a Multifaceted Process Evaluation" states that by bringing together a multidisciplinary team to apply several epidemiologic and quality control methods, we are identifying high risk patients, detailing the essential aspects of the discharge process, and identifying sources of error that can impact on outcomes. The diversity of methods applied to this problem has given us valuable insight into the complex array of issues surrounding the high-risk transition of patients from the hospital to community care providers. (7)

- Muhammad Umair Majeed, Dean Thomas Williams, Et.al. “Delay in discharge and its impact on unnecessary hospital bed occupancy “states elderly patients are potentially more vulnerable to prolonged hospital stay as they frequently require additional resources to facilitate their discharge. In an acute hospital setting, we aimed to quantify and compare length of stay (LOS) for all patients over and under the age of 65, and identify the number and cause of days lost under the care of a single surgical unit. (8)
- Harris., KevinEl-Eid, Ghada R. DHA, Et.al. “Improving Hospital Discharge Time: A successful Implementation of Six Sigma Methodology” says the aim of this study was to assess the effectiveness of using Six Sigma methods to improve the patient discharge process. The primary outcome was discharge time (time from discharge order to patient leaving the room). Secondary outcome measures included percent of patients whose discharge order was written before noon, percent of patients leaving the room by noon, hospital length of stay (LOS), and LOS of admitted ED patients. (9)
- Sheetal Bishnoi. “Re-Engineering of the Discharge Process at MSSH” defines that a lengthy, inefficient process in-patient is a common concern of hospitals. It not only causes frustration for patients and family members, but also leads to delay for new admissions. The study eliminates few steps from the hospital discharge process. (10)

RESEARCH METHODOLOGY

RESEARCH QUESTION

What are the factors blocking the discharge process to be streamlined?

OBJECTIVES

1. To identify the variation in the discharge process
2. To identify the factors causing delays to streamline the process

RESEARCH METHODOLOGY

The study is conducted within The Mission Hospital, Durgapur West Bengal based on descriptive cross-sectional study, observational study design and the sampling method used is convenient sampling. The study took two months (i.e 8 weeks) with a sample size of 300 planned discharges

Time of observation was patient who got discharged from the wards from 9am to 6pm (except Sundays) as no planned discharges were scheduled for Sundays.

Inclusion criteria: Patients who go through normal discharge process and on DOR.

Exclusion criteria:

3. Patients who get discharge from OT, ICU and ED etc.
4. Patients who get discharge through DORB.

Source of data collection: The data was collected by observing various wards on each floor, Discharge Monitoring Sheet, Interaction with IP Coordinators. Analysis was done with the help of MS-excel and root cause analysis was done.

DATA ANALYSIS

DMAIC (an acronym for Define, Measure, Analyze, Improve and Control) refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. The DMAIC improvement cycle is the core tool used to drive Six Sigma projects. However, DMAIC is not exclusive to Six Sigma and can be used as the framework for other improvement applications.

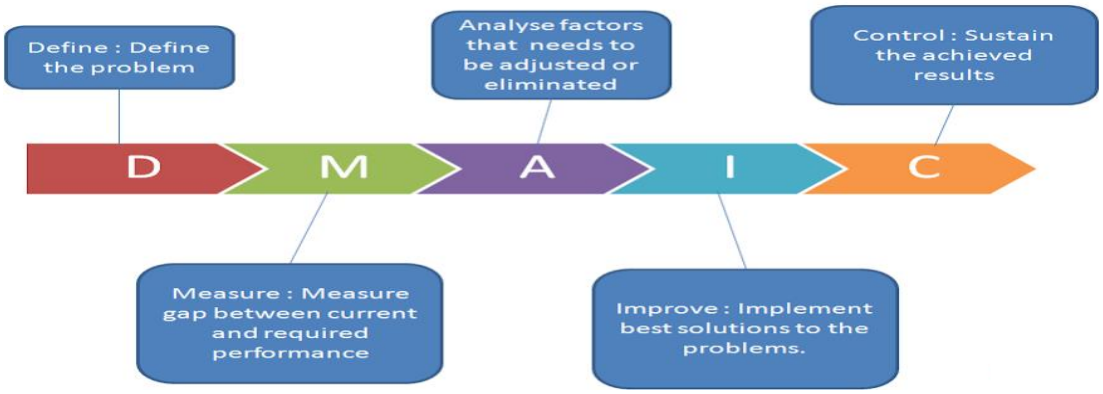


Figure 4. DMAC Approach

Phase I: Define: *Define the problem*

Discharge process in the hospital is a complex procedure, delay in discharge process plays a major role in patient dissatisfaction, increase patient length of stay, wastage of hospital resources, unavailability of beds, delay in new patient admission, etc.

There is a delay in discharge process and discharge process needs to be streamlined.

Phase II: Measure: *Gaps identified in existing manpower involved in discharge process*

- ✓ **Nurse time Calculated**: Time taken by nurses to intimate patient family about discharge
- ✓ **IP Coordinators time Calculated**: Time taken by coordinators from the time doctors sign discharge summary to the discharge summary receive by wards
- ✓ **GDA time Calculated**: Time taken by GDA in transferring discharge summary from wards to TPA desk
- ✓ **Billing Department time Calculated**: Time taken by billing department in bill clearance of planned discharge patient

- ✓ **Patient time Calculated**: Time taken by patient to physically wheeled out from hospital from no dues clearance

Phase III: Analysis: *Calculations and evaluation of factors*

Category	Sample Size
Cash	104
Corporate	113
TPA	83
Total Samples	**300**

Figure 5. Calculation & Evaluation of Factors

Benchmark of Hospital	Compliance	Total Summary
D/S not Ready by 9 AM	0%	00

Figure 6. Benchmark Compliance of hospital

Average Turn Around Time Calculated for various steps in Discharge Process	
Average Time taken by Nurse to intimate patient family (Median value)	00:30:00
Average time taken to finalize Discharge Summary after Doctor Correction	5:23:15
Average time taken by GDA Staff for transferring summary to TPA desk (Median value)	0:16:00
Average time taken for Bill Clearance	3:47:40
Average time taken by patient to physically wheeled out after issuing Clearance Slip	1:42:54
Average time taken for Discharge	3:40:32
Cash	2:48:42
Corporate	3:34:53
TPA	4:51:54

Figure 7. Average Turn Around Time Calculated for various steps in Discharge Process

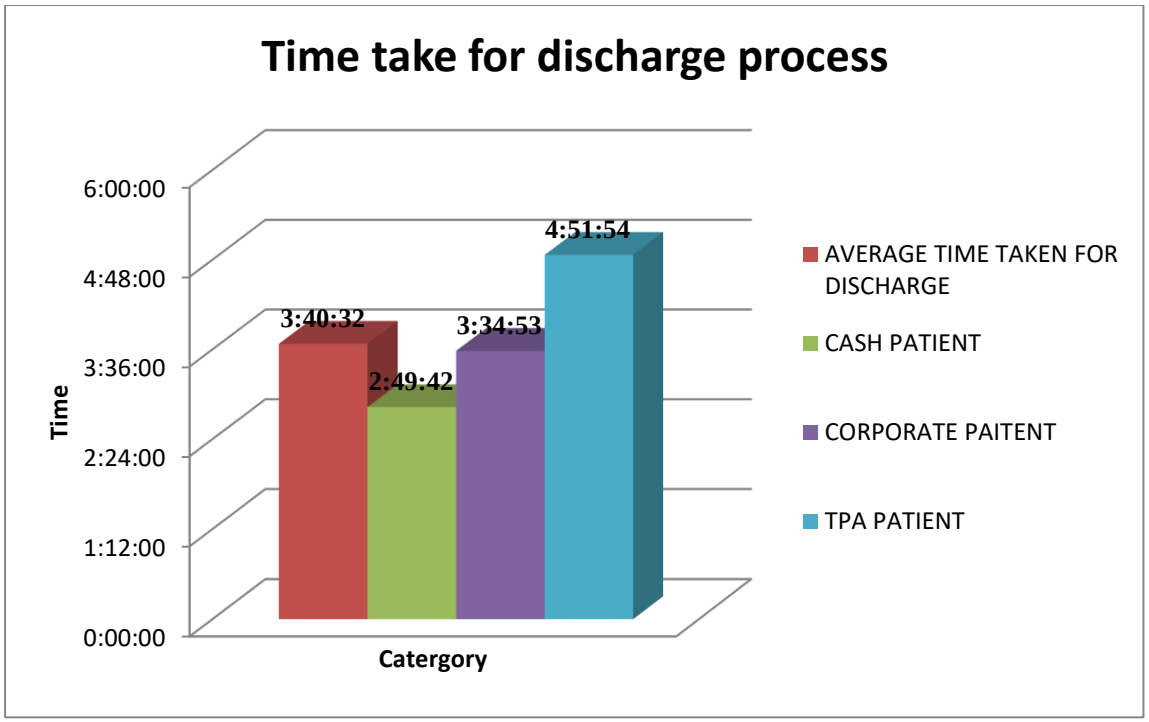
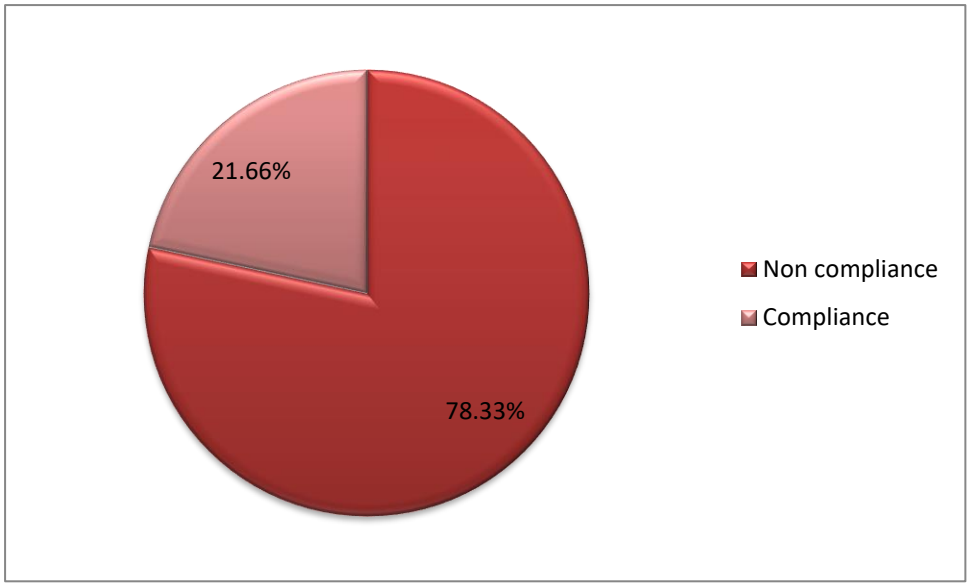


Figure 8. Average time taken for discharge

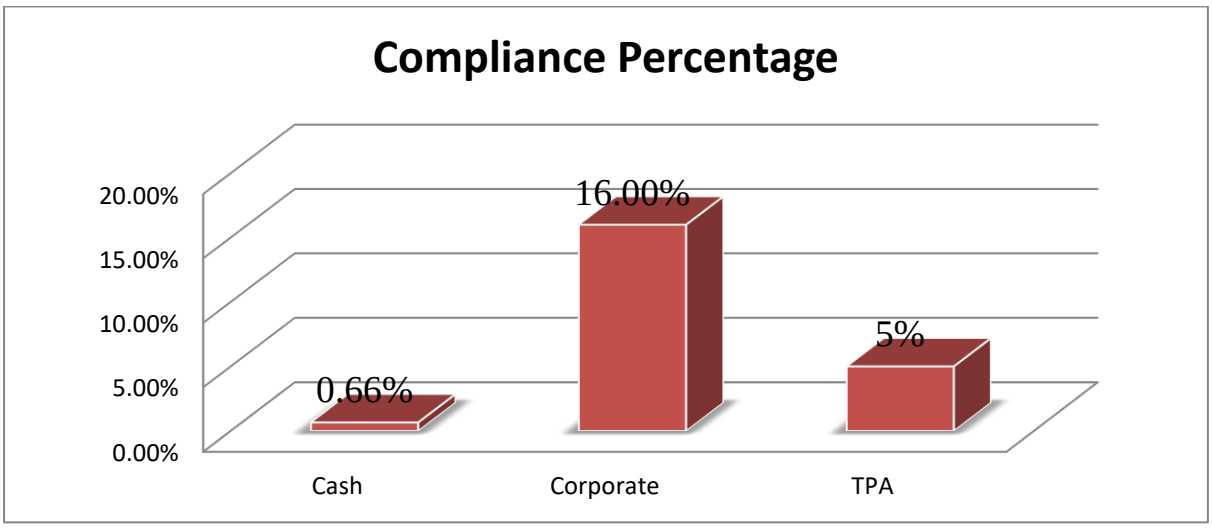
Interpretation: On an average time taken for discharge process is 3 hours 40 minutes The maximum time taken in discharge process was by TPA patient for their clearance from their respective insurance companies.

Benchmarks are set for physically wheeled out patient from the hospital



Interpretation: Out of 300 patient almost three fourth of total patient (78.33%) are not getting discharge as per the set targets by the organization and 21.66% are compliant

N= 65 out of 300



Interpretation: Out of total 113 corporate patient around 16% were compliant as per the targets, 5% TPA patient and 0.6% were cash patient.

Root Cause Analysis

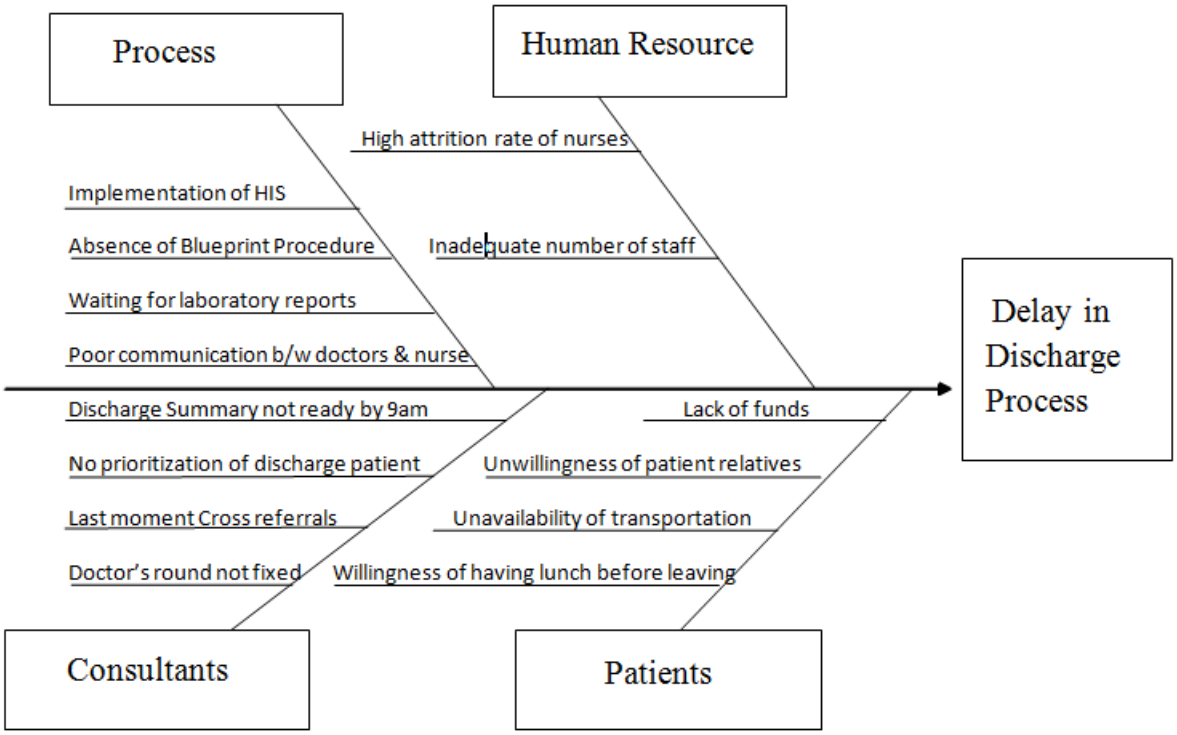


Figure 9. Root Cause Analysis

Flow Chart

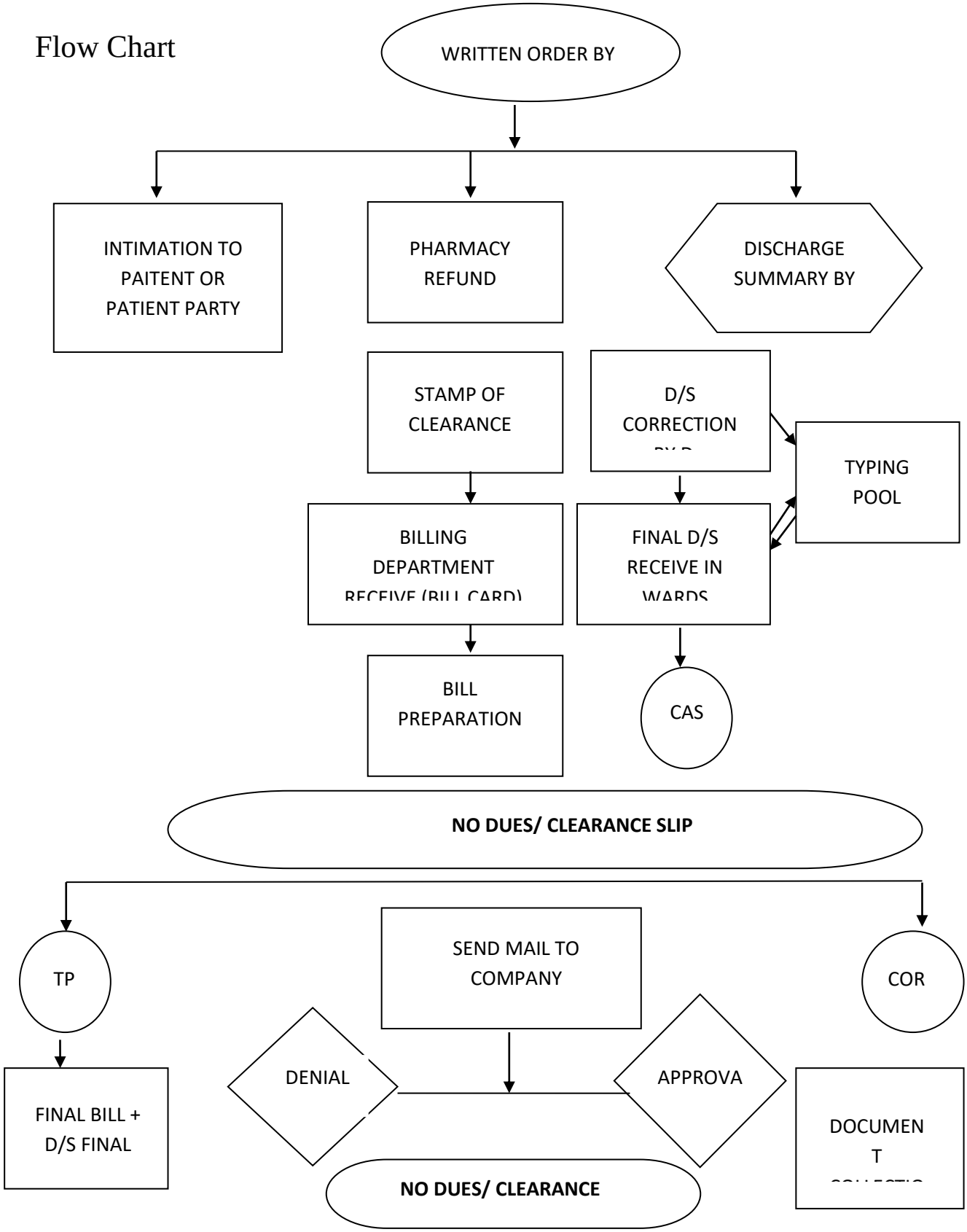


Figure 10. Flow Chart for Discharge Process

Phase IV: Improve: *Implement best solution*

Hospital discharge process includes various unnecessary steps that creates delay in discharge process

At the time of finalizing discharge summary

S.No.	Reasons	Solutions
1	Multiple correction of discharge summary	Implementation of HIS doctors can use their unique mail ID for writing summary, helps and eliminates multiple correction at typing pool
2	Cross referrals at last moment on the day of discharge	Cross referrals should be done a day before final discharge
3	Planned discharge after 6pm in a day	Late planned discharges should be considered as unplanned discharges
4	Delay in lab reports	Timely lab reports verification increase the discharge process

At the time of payment of bills

S.No.	Reasons	Solutions
1	Patient unwillingness to pay/ take patient home	Early implementation regarding billing
2	Cash patient: Unavailability of funds	Counselling and refer to government hospital
3	TPA patient: Denial of application, Queries from insurance companies	Regular follow up and quick conversion TPA to Cash should be done
4	Corporate patient: Denial of application, Indenting of medicines	HIS update will timely update pharmacy

At the time of transferring discharge summary to typing pool or TPA desk/ corporate desk

S.No.	Reasons	Solutions
1	Unavailability of GDA staff on the floor	Recruitment and dedicated distribution of GDA staff
2	Piling of discharge summary at typing pool	Dedicated typing pool, Implementation of HIS

Phase V: Control: *Achieved Results*

As it has seen that discharge summary finalization takes maximum time in the whole discharge process and other steps are simultaneously are affected so the management has instructed RMO doctors to make use of personal whatsapp to communicate with consultants and finalize the discharge summary as per the set benchmark i.e. 9AM.

To streamline the whole process hospital has set few targets in physically discharge patient i.e. Cash patient by 11am, Corporate Patient by 2pm and TPA patient by 3pm.

Since the steps are implemented and hoping for streamlining discharge process in future.

ETHICAL CONSIDERATION

- No unethical practices will be carried out while doing the research.
- Appropriate measures will be carried out to ensure data security, privacy and confidentiality.

IMPLICATIONS OF RESEARCH

Through my research we can identify the reasons and bottleneck of hospital operational system. The study will see the level of patient satisfaction at the last step of patient care and also streamline the existing process of discharge process in The Mission Hospital.

FINDINGS:

1. Doctors rounds are not fixed (morning or evening)
2. Multiple correction of discharge summary by consultants
3. Piling up of discharge summaries at typing pool
4. Lack of manpower to take over the work in the absence of main staff
5. No standard/ structured policies are made by the organization regarding discharges
6. Cross referrals are planned at the last moment.
7. Proper implementation of HIS is missing within the organisation
8. Lack of training among staff regarding technology, continuous learning education, workshops, etc.

SUGGESTIONS

- Policy of streamlined discharge process should be formed and implemented
- Online or Hospital Information System (HIS) should be implemented to make the discharge process easy.
- Training programs should be conducted for the staff for being technology friendly.
- Clear communication should be encouraged among nurses, consultants, patient relatives and other staff to get early discharge as miscommunication at one step leads to delay in the whole process.
- The staff should be more encouraged to improve the discharge and a duty roster for the consultants should be prepared
- Dedicated staff should be appointed for time being until HIS is implemented for transferring of discharge summary
- Investigation reports should be timely verified to avoid delays in the process
- Cross referrals should be done a day prior to the day of planned discharge
- Evening planned discharges after 6pm should be considered as an unplanned discharges instead of planned discharges
- Doctors writing should be legible to avoid tying errors in typing pool

CONCLUSION

My study proves that the average hospital discharge process takes 3hours 40minutes 32seconds. As per the NABH guidelines the standard are three hours from the doctors order till the patient physically wheeled out from the hospital. We are taking three hours and trying to reduce and come up to the NABH standards.

During my course of study few targets were set to streamline the process like corrected discharge summary should be ready by 9 AM but there were zero percent compliance and another target was to physically discharge patient by 11 am for cash patient, 2 pm for corporate patient and 3 pm TPA patient. Results are 42% were compliant for TPA, 18% for corporate and for 1.9% cash patient.

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ANNEXURE

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
SL NO.	Date	Patient IP.NO	Department	FLOOR	CATEGORY CASH/ CORP/ TPA	Discharge Order by Consultant	Intimation to the patient or patient party regarding	Pharmacy refund/clearance & Billing Card sent	Draft D/S prepared	D/S corrected by Consultant	Final D/S received by ward	D/S Ready by 9AM	D/S Ready by 10AM	TAT B/w Discharge Summary (L-K)

P	Q	R	S	T	U	V	W	X
Bill Receive Time	Bill Sending Time	TAT For Bill Clearance (P-Q)	D/S sent to TPA Desk	Discharge Summary Received By TPA	D/S sent to Corporate Desk	No Dues/Gate Pass/Billing Clearance Issued	TAT For TPA Clearance (T-V)	TAT For Travelling D/S To TPA (S-T)

Y	Z	AA	AB	AC
Feedback form Completed	Handover of Documents & Medicines to the patient	Patient Wheeled Out	TAT Billing Till Patient walk out (V-AA)	Remarks