STUDY TO IMPROVE DISCHARGE PROCESS IN MULTISPECIALTY HOSPITAL BY APPLING DMAIC APPROACH

Internship Training
at
The Mission Hospital, Durgapur

By
Kriti Tripathi

Under the guidance of
Dr. Anoop Khanna

MBA Hospital & Health Management
2013–15

Institute of Health Management Research
Jaipur
2015

INSTITUTE OF HEALTH MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Kriti Tripathi**, student of MBA Hospital & Health Management from The IIHMR University, Jaipur has undergone Internship training at **The Mission Hospital, Durgapur**, from 2nd February, 2015 to 30th April, 2015.

The candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical. The Internship is in fulfillment of the course requirements.

I wish her success in all her future endeavours.

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May 5, 2015

CERTIFICATE OF DISSERTATION COMPLETION

TO WHOM IT MAY CONCERN

The certificate is awarded to **DR. Kriti Tripathi** in recognition of having successfully completed her dissertation in Inpatient Department. She has successfully completed her Project on "**A Comprehensive Study to Improve Discharge Process By Using DMAIC Approach**" from February 2nd to April 30th, 2015 in **The Mission Hospital, Durgapur (West Bengal)**

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning. We wish her all the best for future endeavors.

THE MISSION HOSPITAL * DURGAPUR *

Mr. Abhijit Mukherjee
General Manager-Operations

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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled To Improve Discharge Process By DMAIC Approach, submitted by Kriti Tripathi Enrollment No 1454 under the supervision of Dr. Anoop Khanna (Professor,The IIHMR University) for award of MBA Hospital and Health Management of the university carried out during the period from 2nd February, 2015 to 30th April, 2015 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.

Kriti

Signature

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Acknowledgement

"The journey is more important than the destination. Excellence is a journey not a destination"

To traverse on the virtuous path of excellence, it required a great passion to pursue the performances of my desire and the path was illuminated by many a person of importance to whom I owe whatever I have been able to accomplish.

I am extremely indebted to all the professionals at **The Mission Hospital, Durgapur** for sharing generously their knowledge and precious time which inspired me to learn and deliver my best during dissertation training.

I would like to convey my heartfelt gratitude to **DR NEHA ASIJA , Asst Manager(operations and quality)**, a visionary who provided valuable insights on the total project. And who had been there to guide me all along the course of completion of the project. A and all my colleagues for their constant support during all phases of this work.

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I would take this opportunity to thank **Dr. ANOOP KHANNA**, **my mentor and guide who was there dawn to dusk for assisting me throughout the entire endeavor**. Moreover I would like to thank **Dr. Ashok Kaushik, Dean (Academics and Student Affairs)** for providing insights on various matters, cooperation and support. I would also like to pay my tribute to the stalwart and ideal of my life **Dr. S.D. Gupta, Director, IIHMR, Jaipur**.

Moreover, I'd like to thank our all significant personnel who have contributed immensely in my project.

I would like to bow down my head in front of the Almighty for his invisible hand always behind my destiny.

Finally, I'd like to acknowledge my parents and family, who had been there always for me with all the support I required.

I owe this project to my parents……

DISSERTATION REPORT:

A STUDY TO IMPROVE DISCHARGE PROCESS IN MULTISPECIALITY HOSPITAL BY APPLYING DMAIC APPROACH

2.0. Executive Summary

List of abbreviations

- NICU-NEO NATAL INTENSIVE CARE UNIT
- HRM – HUMAN RESOURCE MANAGEMENT
- HMIS-HOSPITAL MANAGEMENT INFORMATION
- EMRD-ELECTRONIC MEDICAL RECORD
- DMAIC-DEFINE MEASURE ANALYSE IMPROVE CONTROL
- TAT-TURNAROUND TIME
- IT – INFORMATION TECHNOLOGY
- KRA – KEY RESULT AREA
- KPI- KEY PROCESS INDICATIO
- NABH – NATIONAL ACCREDETATION BOARD OF HOSPITAL AND HEALTHCARE PROVIDER
- QI – QUALITY INDICATOR
- RCA –ROOT CAUSE ANALYSIS
- ROM – RESPONSIBILITIES OF MANAGEMENT
- SOP – STANDERD OPERATING PROCEDURE
- MT-MEDICALTRANCRIPTIONST

List of Tables and Figures:

TABLES

A STUDY TO IMPROVE DISCHARGE PROCESS IN MULTI SUPER SPECIALITY HOSPITAL

Abstract

A lengthy and in-efficient process of discharging in-patients from the Hospital is an essential component that needs to be addressed in order to improve the quality of Health care facility. Even though, several quality methodologies are adopted to improve such services in Hospitals, the implementation of Six Sigma DMAIC methodology to improve the Hospital discharge process is much limited in the Literature. Thus, the objective of this research is to reduce the cycle time of the Patients discharge process using Six Sigma DMAIC Model in a multidisciplinary hospital setting in India. This study had been conducted through the five phases of the Six Sigma DMAIC Model using different Quality tools and techniques. This study suggested various improvement strategies to reduce the cycle time of Patients discharge process and after its implementation; there is reduction in the cycle time of the Patients discharge process. Also, a control plan check sheet has been developed to sustain the Improvements obtained. This Study to reduce and optimize the cycle time of Patients discharge process in Hospitals using Six Sigma DMAIC Model.

INTRODUCTION

Discharge by definition is to formally terminate a patient care, and releasing him/her from hospital or healthcare facility. A patient is discharged only when he/she has recovered fully or satisfactorily according to the concerned physician. Discharge is a very complex process it involves several stakeholder. It is one of the major key factor for patient satisfaction and revenue generation for Hospitals.

It is imperative to have a timely discharge. A delayed discharge has an impact on the physical, mental, emotional and physiological status of the patient and also have negative financial implications on the hospital. A patient staying longer than stipulated time is responsible for unnecessary utilization of the hospital resources and is sheer waste. Good discharge management is vital to ensure: Patient Satisfaction, Bed availability for emergency and elective admissions, Quality of patient care remains high and revenue generation.

The key principles to effective discharge planning

- Start planning before or on admission
- Develop a clinical management plan within 24 hrs of admission
- To Improve process inefficiencies throughout discharge process to reduce Variability in discharge cycle time

REVIEW OF LITERATURE

- A study done by Peter R, Jessica E, Zaltmann G titled **Preventing Delay in the Patient Discharge Process: an Emphasis on the Nursing Role,** for a patient's post discharge needs care does not begin on the day when decision is made to release the patient from the hospital. It is generally accepted that discharge planning should start before admission (for a planned admission) or at the time of admission (for an unplanned admission). A combination of individual factors, most notably age, medical factors such as presence of multiple pathology, and organizational factors such as lack of alternative forms of care facilities put patients at risk of delayed discharge. Moreover, lack of nurses' participation also contributes toward the delaying of discharge. In this article, the author provides strategies to improve nurses' participation in discharge planning.
- **Research review on tracking delayed discharge:**In this study by Zehner ,R.B., Mofitt R, a combination of individuals ,medical and organisational factors interact to put people at risk of delayed discharge .The literature review identifies that older people, those with multiple pathology and those with some specific conditions and neurological deficit are most at risk. In other words it is not the clinical conditions that are causing delay but how the organization is managing services to care for these particular gr**oup.**
- **A Tool for Improving Patient Discharge Process and Hospital Communication Practices: the Patient Tracker by** Christopher G. Maloney They 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. They also tested the effectiveness of the software on the work flow by comparing outcomes between the pre-implementation control group (2002–2003) and the post-implementation experimental group (2003–2006). It was concluded that number of cancelled surgical procedures decreased. It was also found out that the average number of inpatient admissions increased, and the median emergency department length of stay decreased

- A comparative time motion study of all types of patient discharges in a hospital was done by Swapnil Tak, Sheetal Kulkarni, and Rahul More. This observational study was carried out in a tertiary care 350 bedded hospital in Pune city on 354 discharged patients of all types of discharges, comprising of Insurance patients (104), self-payment patients (227) & discharges against medical advice (DAMA) (23). The results indicate that there is a delay in all types of discharges in this hospital in all the steps except for the time needed to return unused medicines to the pharmacy. Time and tedious discharge procedure, also contributes to patient dissatisfaction

RESEARCH METHODOLOGY

- LOCATION: THE MISSION HOSPITAL DURGAPUR(W.B)
- DURATION: 3 months; FEBUARY 2015 to 30TH APRIL 2015
- STUDY DESIGN- Cross Sectional Study
- SAMPLE SIZE: 250 and For Staff 80% of direct stakeholders for discharge process (including nurses , RMOs doctors, co-ordinators, GDAs and patient party)
  Exclusion criteria was unplanned discharges ,DOR ,DORB and discharges planned after 6 P.M prior day of discharge
- SAMPLING METHOD- Convenience Sampling
- STUDY AREA- Wards, billing department, insurance/TPA desk, corporate desk.
- STUDY POPULATION- Nurses, duty doctors (RMO's), consultants, administrative staff, discharge patients, patient party, corporate/TPA and billing staff.

DATA COLLECTION TOOLS:

- Questionnaire
- Observation Checklist
- In-Depth interview checklist, etc

DATA COLLECTION TECHNIQUES:

- Interview (patients), observation, record-review, in-depth interview (staff)

Six sigma

Hospital is the most important service industry. Today, everybody is concerned about the Quality of Health Care facilities and the term "Quality" becomes an essential element to combat competition in the Health care Environment. In the process of attaining Quality, each and every process in the Hospital needs to be optimized to the fullest

The present study was conducted with two fold objectives using Six Sigma DMAIC Methodology viz:

- To reduce the time interval between when a discharge order written by the Physician and when the discharge summary is ready to be handed over to the patient.
- To find out which aspect of the current process would be in and out of scope to achieve the timely hand over of discharge summary to the patients. Also, this study addressed the non-value added activities increasing the cycle time of discharge summary preparation process.

Define the Problem:

The selection of that critical issue is based on the three key parameter

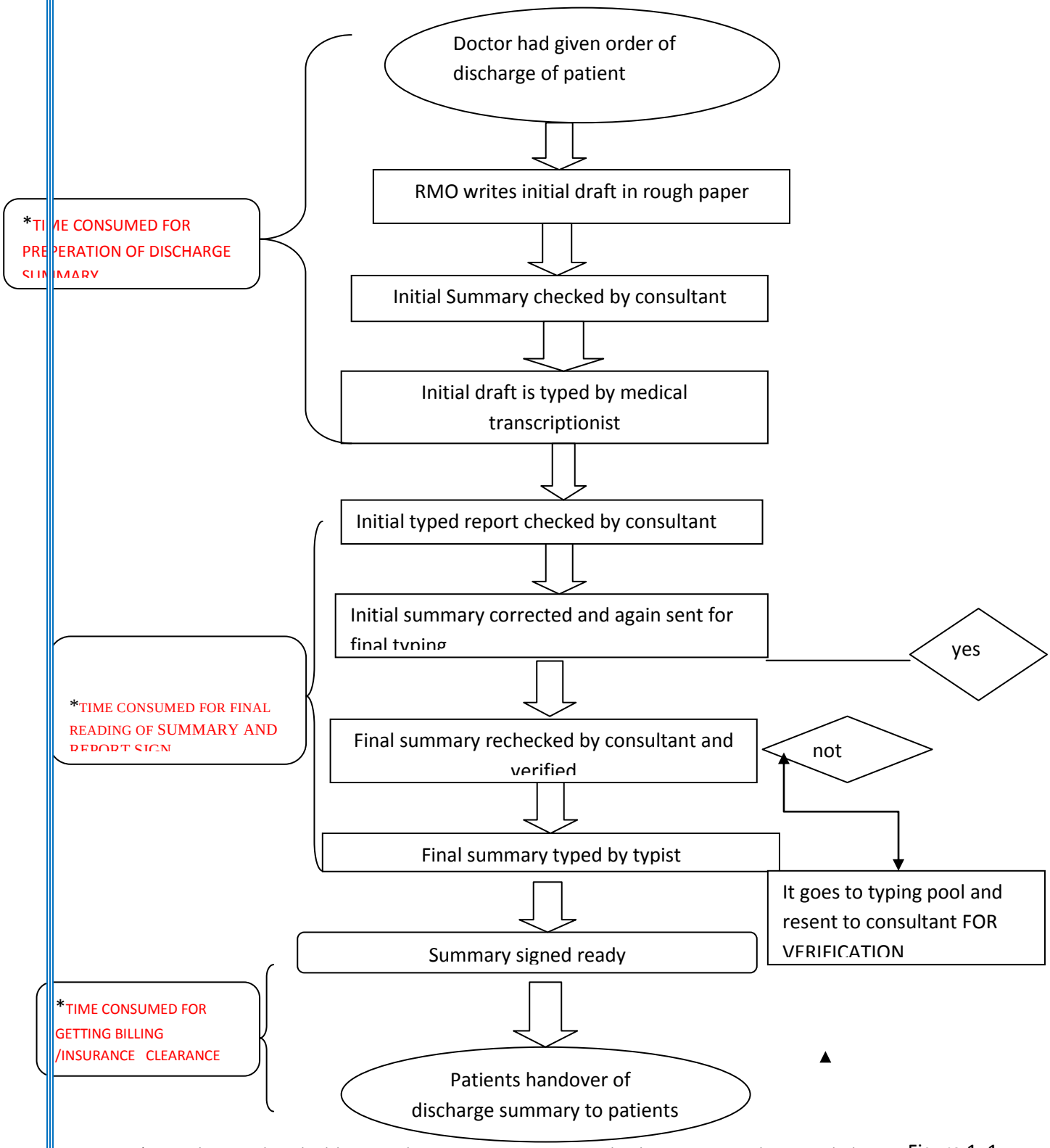
ViZ. (i) Patient Centred Hospital Mission.

(ii) Past complaints received from the Patients .

(iii) Historical Patient satisfaction Survey results.

By analyzing the above three key parameters with particular attention to the voice of customer (Patient feedback form), it was inferred that there is need to reduce patient discharging time, which had been identified as one of the critical factor contributing to dissatisfaction among inpatients and it increases revenue in hospital due to bed management by new admissions. The patient are not leaving bed before 12 Am most of the patients are going after that time due to which occupancy of hospital is very high and non availability of bed for new patients.

MEASURE-The measure phase involves documentation and evaluation of the existing Patients" discharge system before implementation of the Improvement strategy that the team might suggest. As an initial step, the process sigma level of the Patient discharging process



*Process location where the delay occurs due to input is waiting to proceed to the next activity in the Patient discharging Figure 1 .1.

Flow Chart showing major steps in the Patients Discharge Process

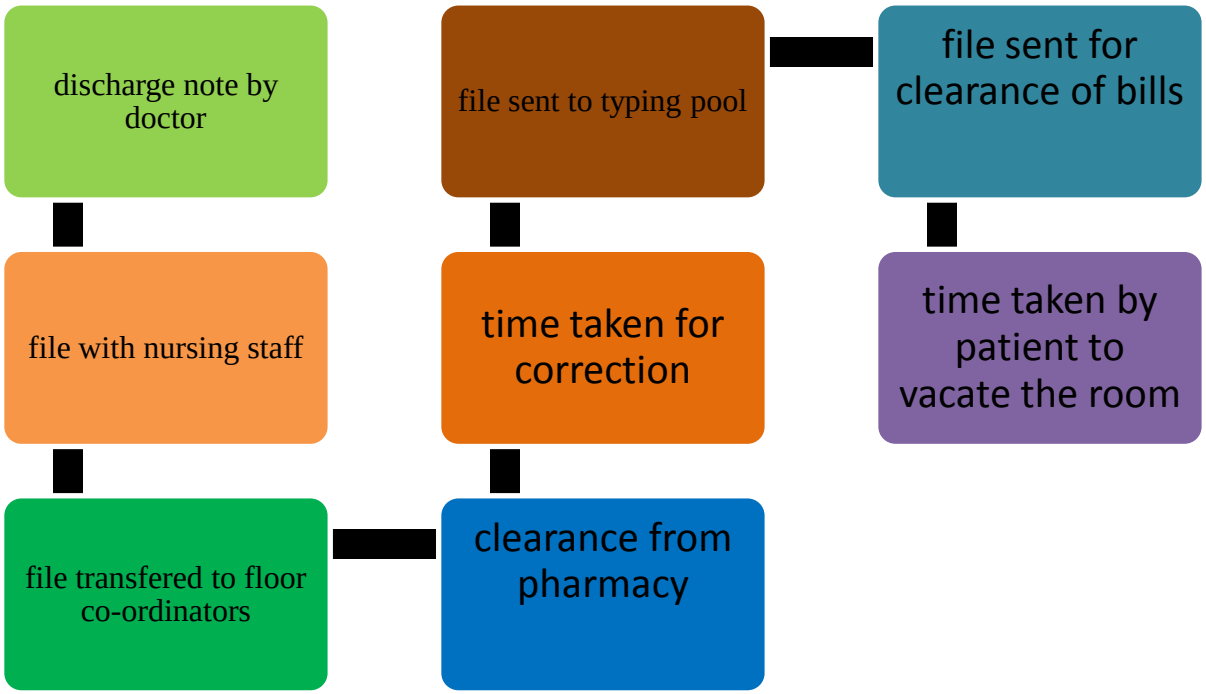


Fig 1.2 **Patient discharge patients process for cash /corporate**

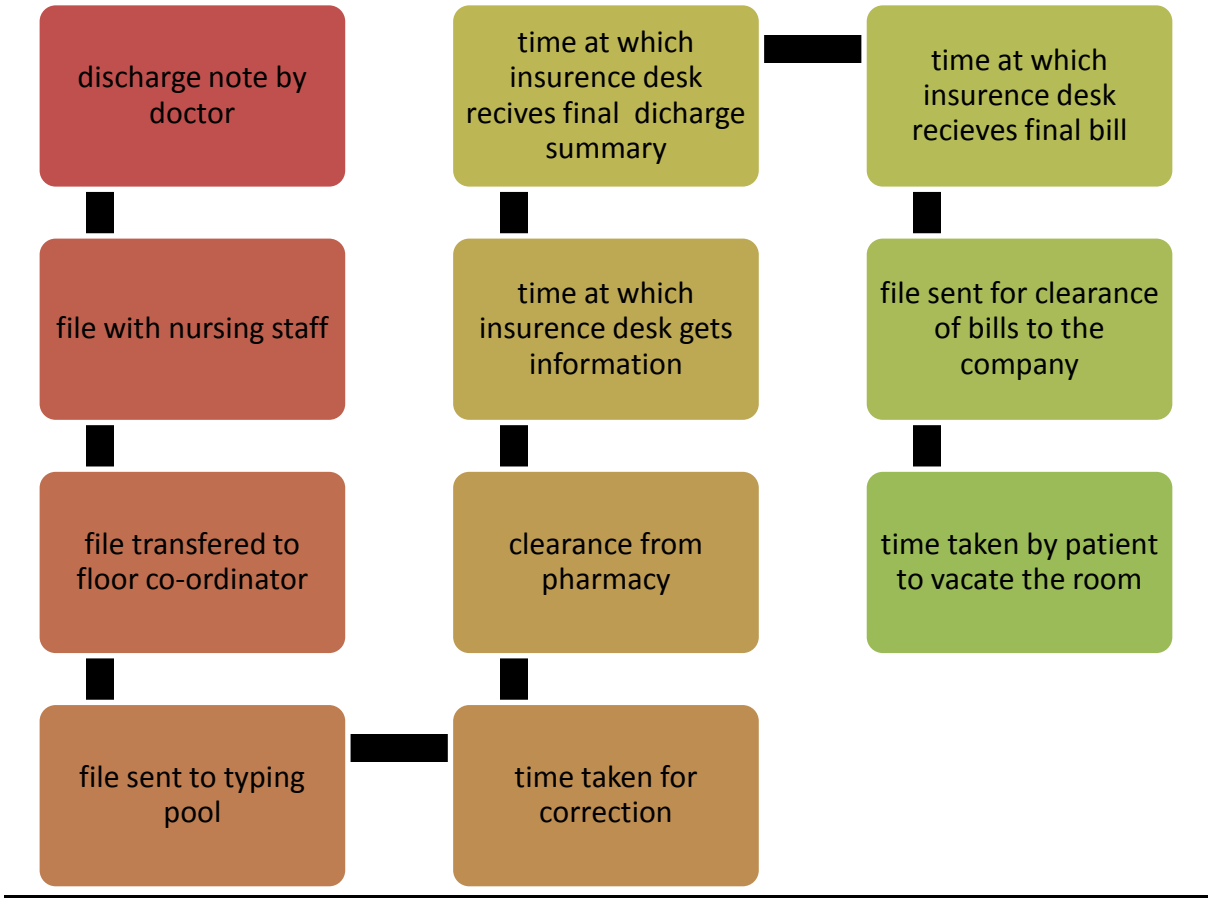
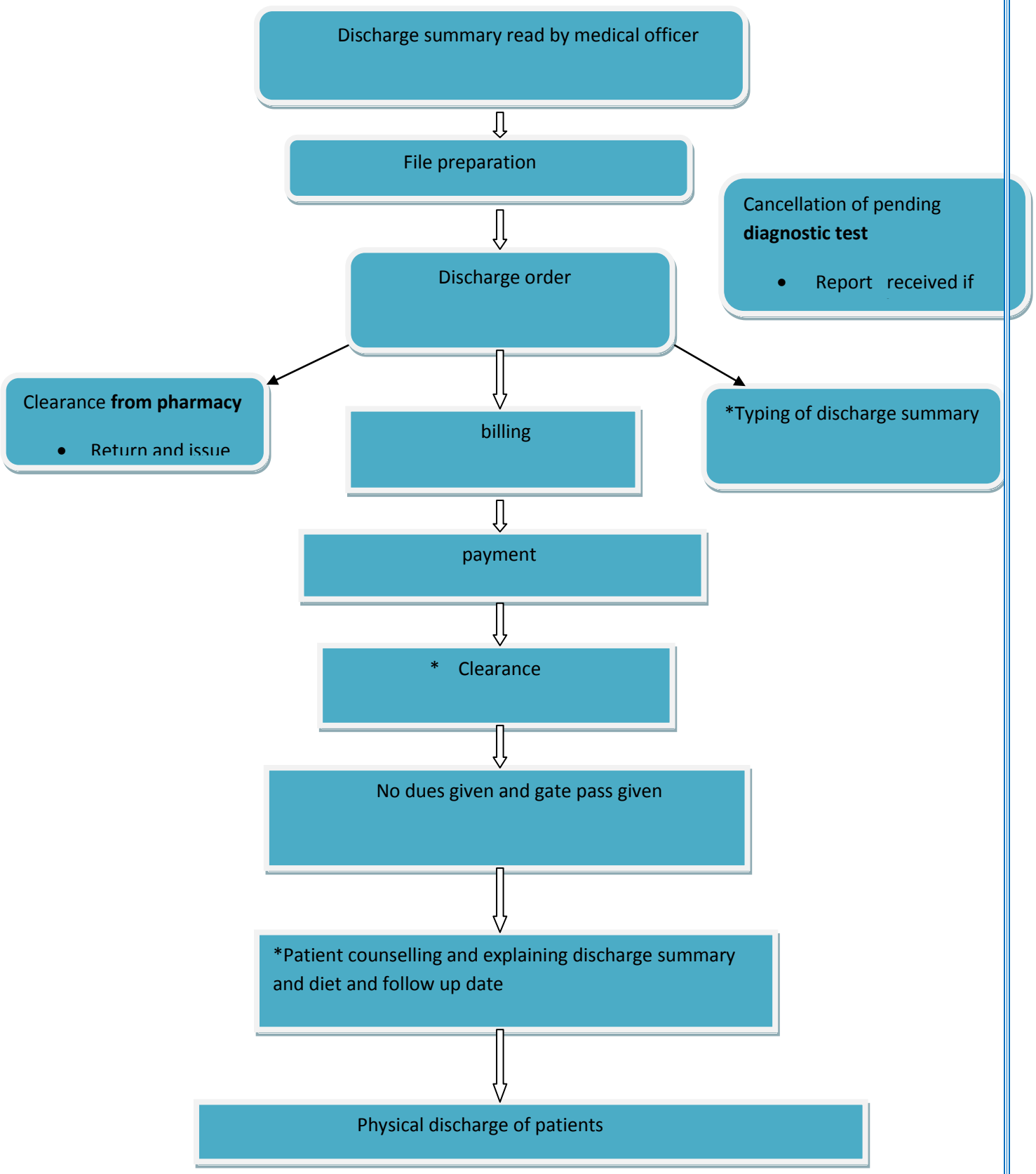


Fig 1.3 patients discharge process flow for TPA patients

Fig 1.4 process flow of planned discharges



*

Tab 1.1 Average Time Taken by Each Procedure involved in discharge procedure with their standard time

procedure	Expected time	Overall or on avg	Present scenario	What should be ideal
Discharge summary	45 min for initial summary and 2 hours for final summary before day of discharge	80%Initial summary prepared and 70% final summary prepared on day of discharge	75% prepared on the day of discharge	All initial summary checked on day to day basis and final summary ready before day of discharge
File preparation	0:30	2 hr	3 hr	File should be ready with all reports on day today basis
Medical Transcription	0:20	1hr	2hr	It should be typed within 40 min of order of discharge
Pharmacy clearance	0:10	42 min	1hr	It should be done at night before day of discharge
Billing clearance	0:20	45min	2hr	Billing card updated before 9 am on day of discharge
counseling	0:15	0:25min	1hr	Within 15min
Physical discharge after n dues	0:25	60min	2hr	Not more den 30min

To measure the process in each step of discharge we introduced format for each and every department related to discharge process

tab 1.2***For Pharmacy And Billing department**

IP NO:	Patient name	Billing card received by pharmacy for clearance	Billing card cleared by pharmacy	Billing card recived by billing department	Billing card cleared by billing department

Tab 1.3 checklist for billing to corporate and TPA

TIME at which billing department gets billing card from wards	Time at which the update and make ready to billing cards	Time at which billing manager verify updated cards	Time at which the billing departments give intimation of ready cards to TPA	Time at which the billing departments give intimation of ready cards to CORPORATE

Tab 1.3 Checklist for billing to corporate and TPA

Patient name	IP NO:	floor	Time at which discharge summary went to TPA	Time at which final ready bill sent to TPA	Time at which insurance desk mails to TPA	Time at which approval received from TPA	Time at which patient party informed	Time at which patient party comes	remarks

Tab1.4 **Checklist for TPA**

Date	IP NO:	Name of patient	floor	specialty	date of typing of initial summary	Date of typing of final summary

tab1.5 **Checklist for typing pool**

Name and IP no:	Ward and on duty co-ordinator name	No: of patients discharged before 12 P.M

Tab 1.7 Checklist for wards

Patient name	Ip no:	Floor
Date of admission	diagnosis	Date of procedure
Date of initial summary written	Initial summary reached to typing pool	Initial typed summary sent to wards
Initial summary again sent to pool for typing	Final draft typed	Final draft sent to wards
Summary again sent to pool	Summary typed and sent to wards	Doctor verifies the summary and signed
Patient gets ready by GDA	Discharge summary counseling by nurses	Patient physically discharged

Analysis of the Data In the analyze Phase-

A list of Key process Input variables (KPIs) were analyzed. The Key process input variables include „Time factors" that are controlling the Opportunities of the Patients Discharge process. The time consumed for each of the six process steps of the Patients discharge process is shown in the tables . Based on the homogeneity of activities related to preparation of discharge summary, it is found that four critical areas consumed more time with respect to other process

viz :

1) Preparation of rough discharge note by the Physician;

2) Further processing and issuance of discharge note by the co-ordinator

3) Processing time for typesetting the discharge summary by the typist

4) Discharge summary ready to be handed over to the Patient after signed by the Physician or Surgeon

5) Processing time to handover the discharge summary to the patient after getting clearance from the billing and the Insurance department.(time taken from taking NO-DUES to physically leaving bed)

S.No	Problem under investigation	**Analysis of the Problem** (by asking five Whys to reach the Root cause)				**Root Cause of the problem**
		Why?	Why?	Why?	Why?	
1.	Delay in the Preparation of rough discharge	RMO manually prepares the discharge note by checking all the relevant case reports of the patients. And lab and investigation reports of patients.				Failure to utilize Information Technology system to generate and verify
R	Delay in further processing & issuance of discharge note by the co-ordinator	Frequent Clarifications in the discharge report delays the process.	RMO's/consultant Hand writing difficult to understand	Co-ordinators are busy in their bed management work and they dun have tym to sent discharge note to typing pool	Co-ordinator duty timing is upto 6 pm after that nobody present to sent notes and typing pool open upto the eve 6 pm lack of typing manpower	Communication gap between typing pool and floors in case of information regarding summary and if doctors or RMO writes summary late so there is no-one to type in typing pool.
		Delay in getting Investigation report that is to be merged with the discharge summary.				Failure to develop a proper channels of communication or mechanism to get the
3.	Delay in finalization of the of the initial typed reports by consultant.	Centralized Discharge Summary preparation	Lack of Manpower to setup discharge unit for each Specialty Department			Lack of decentralized Discharge summary preparation Process
		Non availability of Physician /Surgeon to proof read the	Engagement of the attending Physician or Surgeon in the rounds or surgery			Failure to empower the Assistant Physician/Surgeon to proof read the rough Discharge Summary.
4.	Delay in handover of the discharge summary to the patient after signed by the Physician	Delay in getting Insurance or corporate or billing clearance for the Patients	Consumes more time to get clearance from the source using paper based methods. If summary or billing card updated late it will ultimately do delay in the sending mail to TPA and most of cases this is due to late referral and cancellation of the investigations			Packages installed in the Computer terminals located at the selected departments to access necessary patient records for confirming the bills clearance when the need arises. And patient's party is not getting messages in time regarding dues so in

Tab 1.8Analysis of Root causes contributing to delay in the Patients Discharge Process.

Fig 1.6

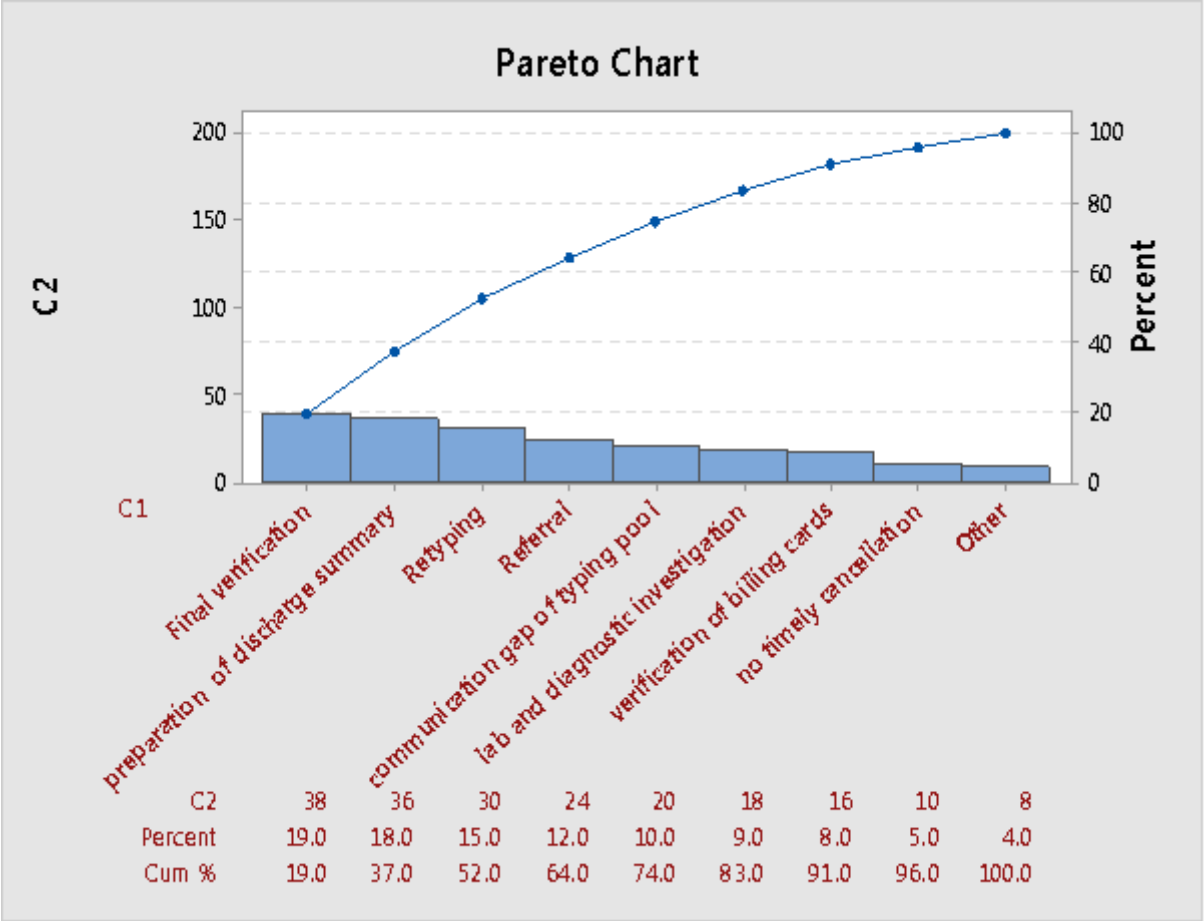
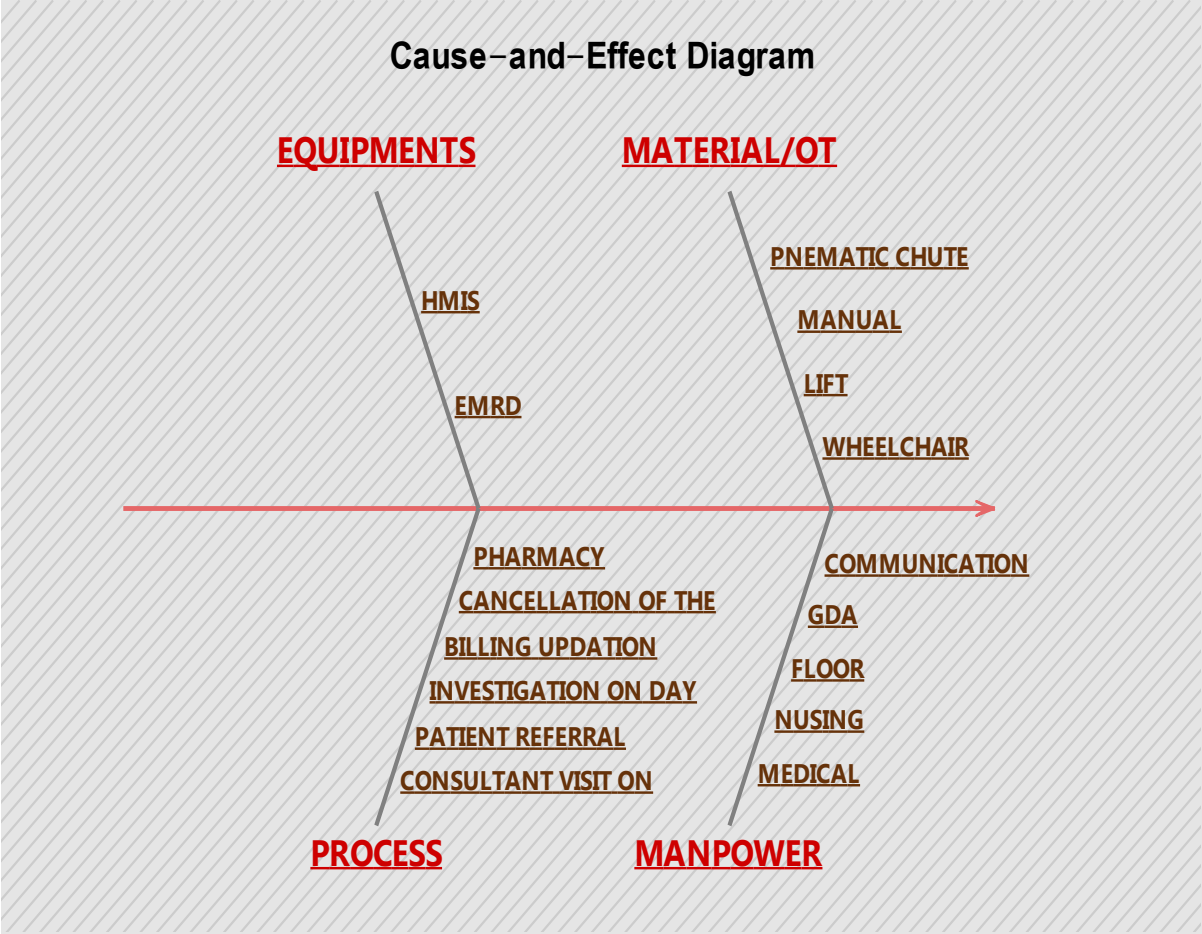

Pareto Chart
C2
Percent
200
150
100
50
0
100
80
60
40
20
0
C1
Final verification
preparation of discharge summary
Retyping
Referral
communication gap of typing pool
lab and diagnostic investigation
verification of billing cards
no timely cancellation
Other
C2 38 36 30 24 20 18 16 10 8
Percent 19.0 18.0 15.0 12.0 10.0 9.0 8.0 5.0 4.0
Cum % 19.0 37.0 52.0 64.0 74.0 83.0 91.0 96.0 100.0

Fig 1.7


Cause-and-Effect Diagram
EQUIPMENTS
MATERIAL/OT
HMIS
EMRD
PNEMATIC CHUTE
MANUAL
LIFT
WHEELCHAIR
PHARMACY
CANCELLATION OF THE
BILLING UPDATION
INVESTIGATION ON DAY
PATIENT REFERRAL
CONSULTANT VISIT ON
COMMUNICATION
GDA
FLOOR
NUSING
MEDICAL
PROCESS
MANPOWER

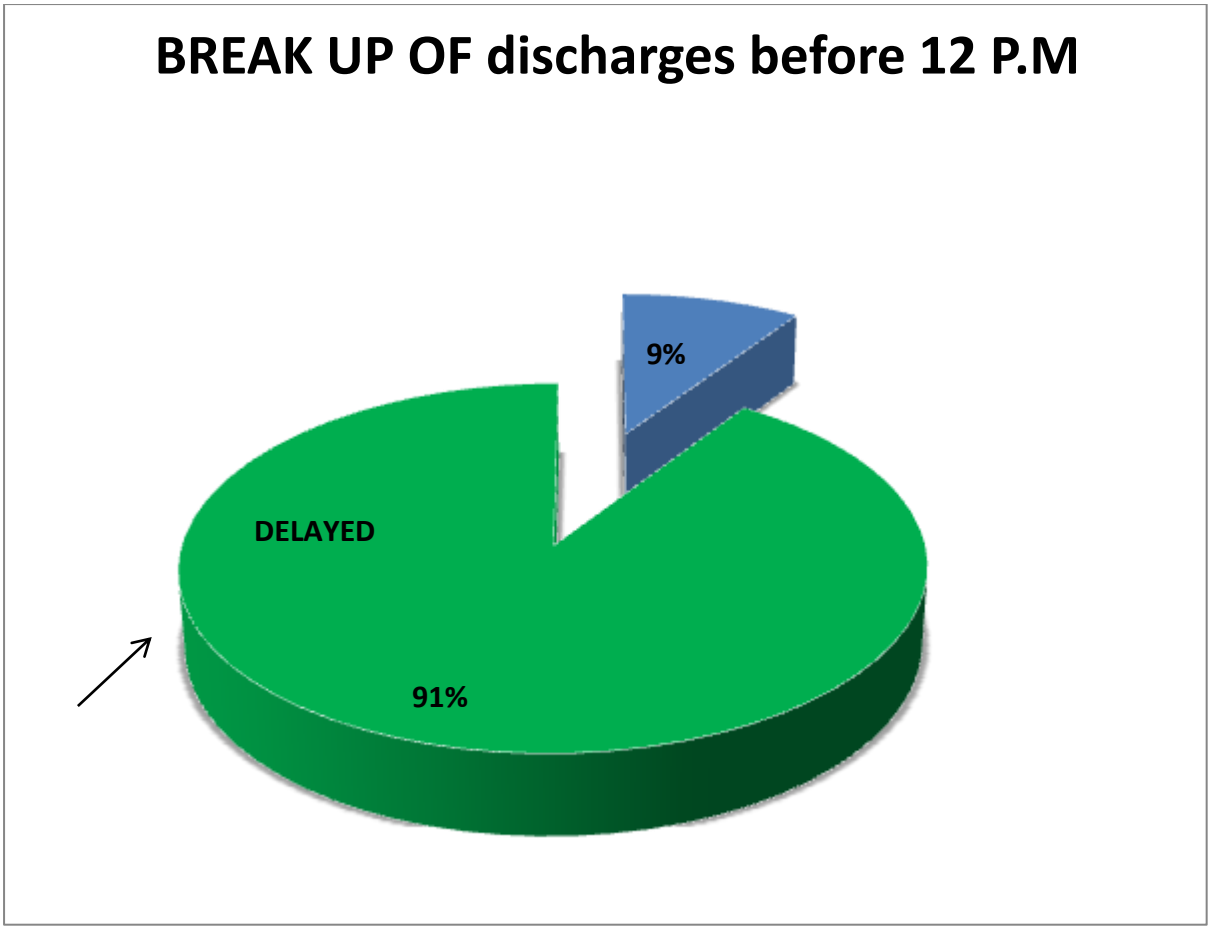
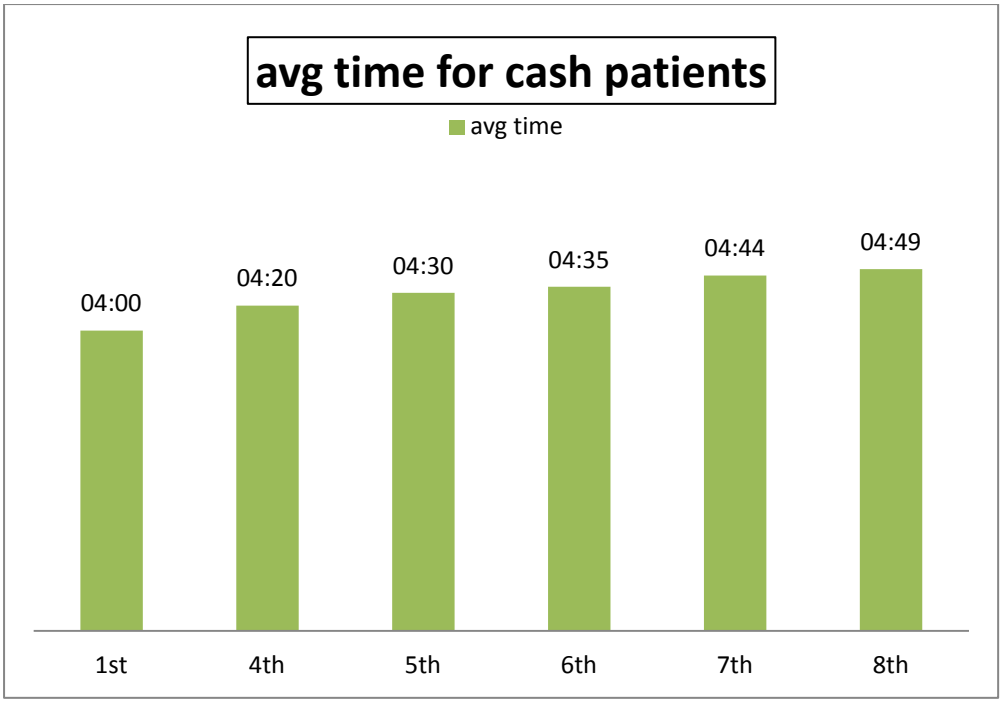


Fig1.8 shows there is delay in the discharge of patients



IG 1.9 **shows floor wise analysis of the avg time of discharge of patients for cash patients**

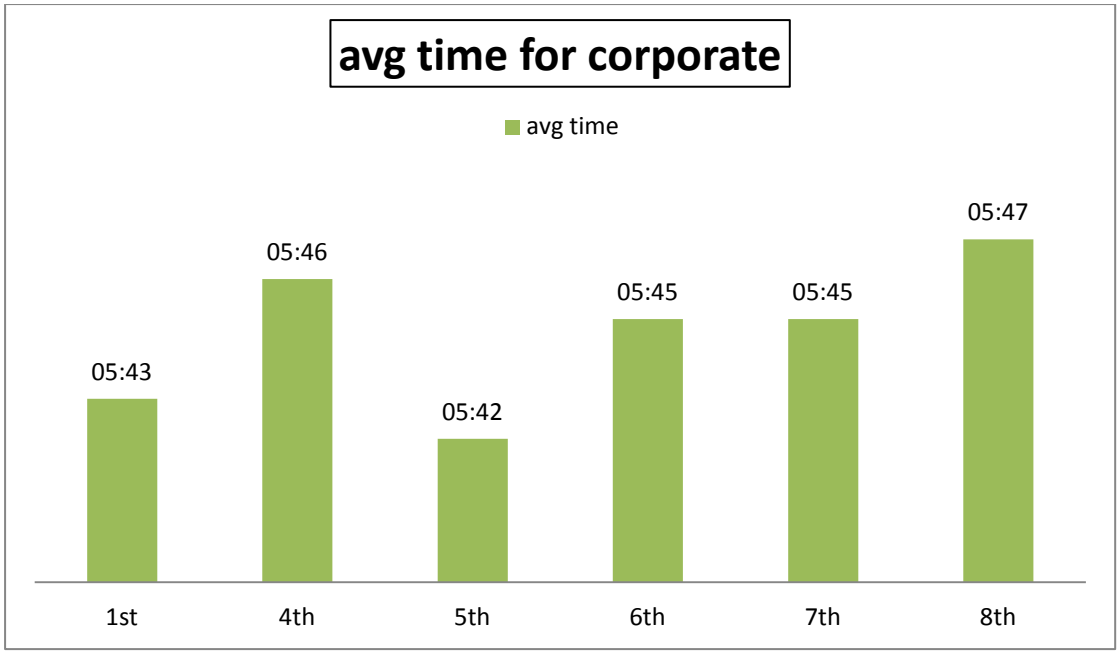
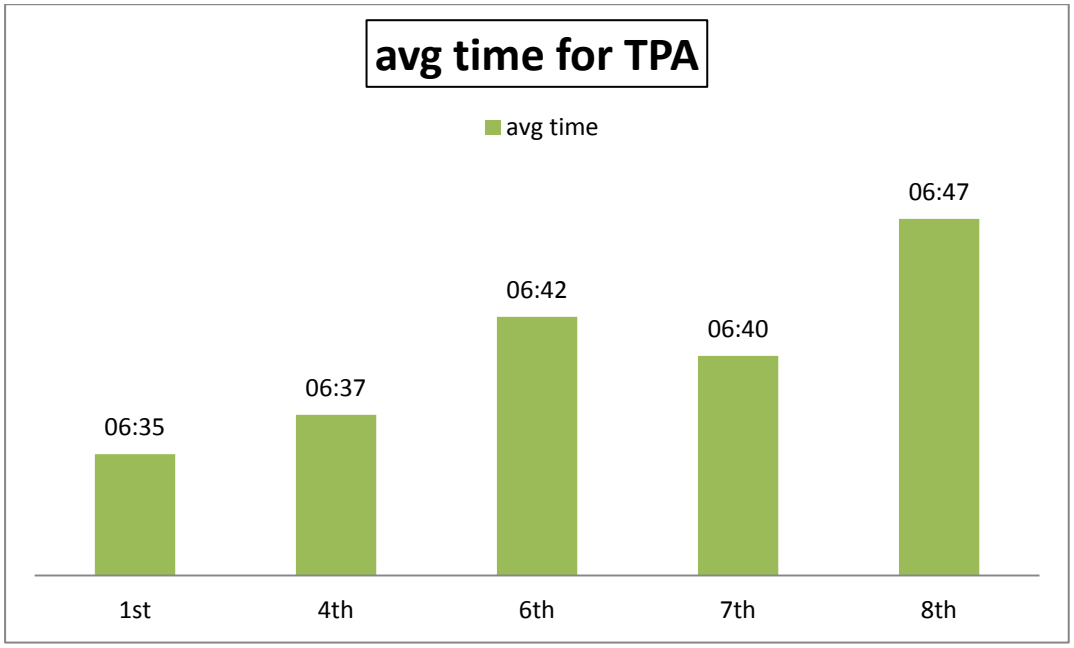


FIG 2.0 Shows Average time of discharge for corporate patients

Fig 2.1 shows avg time of discharge for TPA patients



FLOOR WISE ANALYSIS of average discharge time of patients is shown in figures 1.9 fig 2.0 fig 2.1

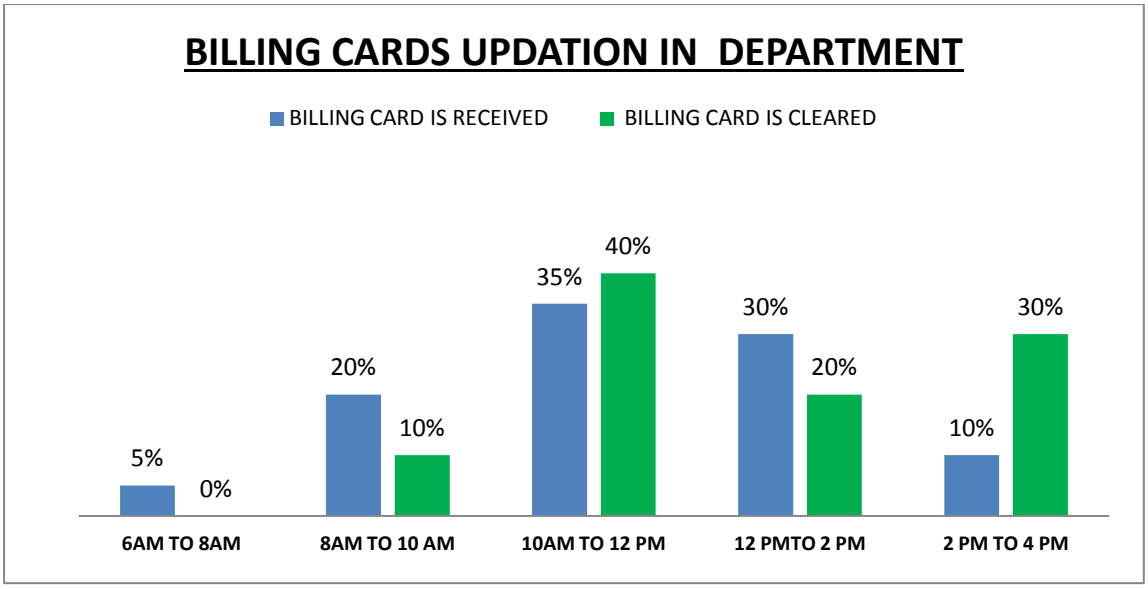


Fig 2.2 shows billing cards received by departments and after that clearance from department

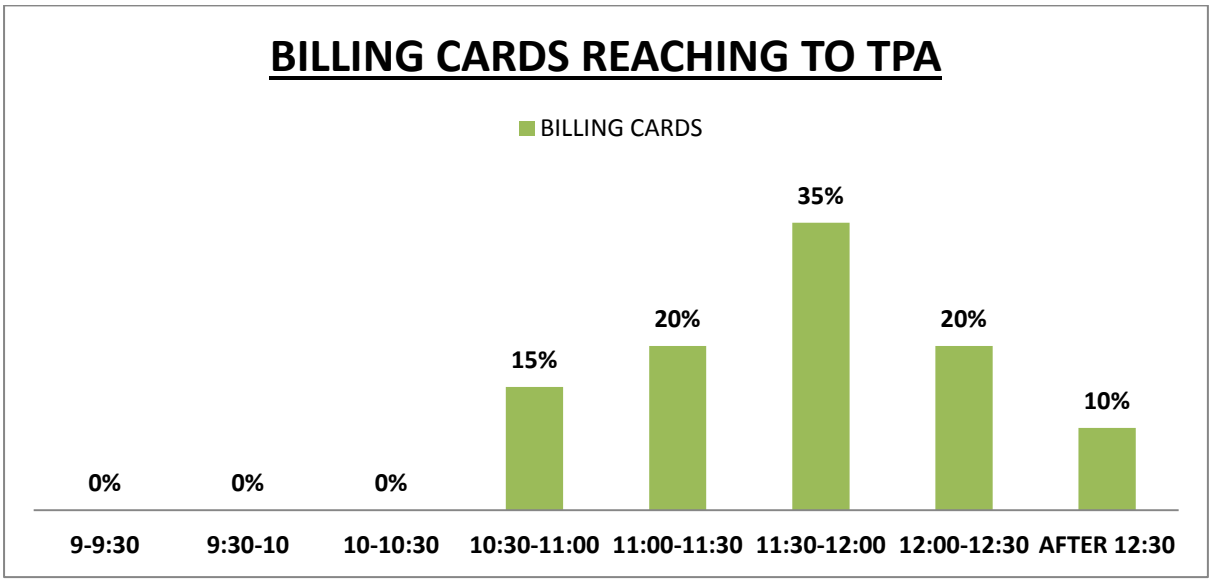


Fig 2.3 shows time at which billing cards intimation reaching to the TPA desk

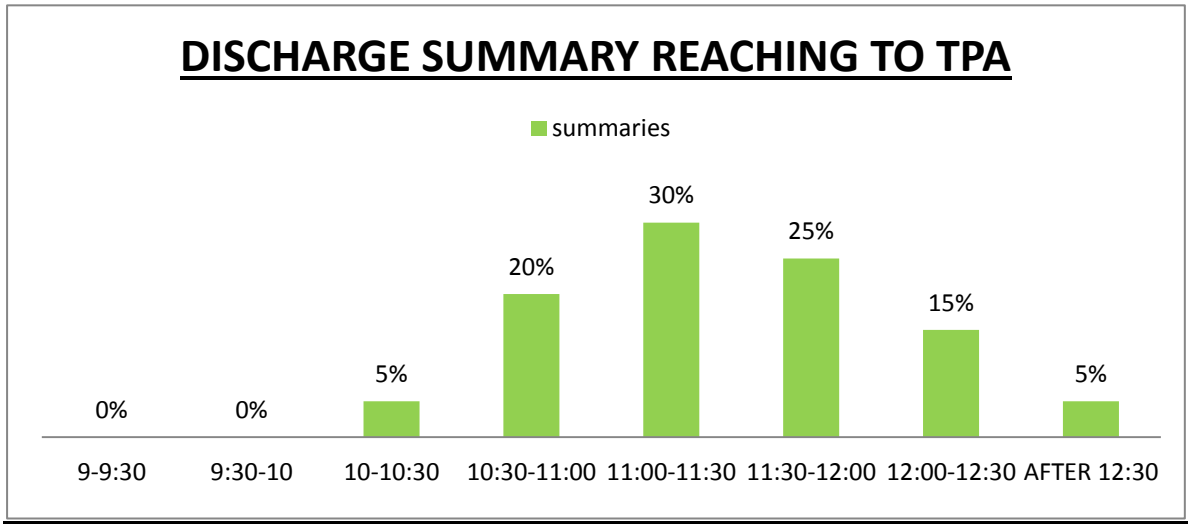


Fig 2.4 shows discharge summaries reaching time to TPA

IMPROVE PHASE

Recommendations In for improvement in the discharge process

- Discharges should be planned by doctors 48hrs in advance to avoid same day preparation of summary and hurdles on same day of discharge and make discharge smooth.
- Same day diagnostic examinations of planned discharges should be avoided as far as possible. In the day of discharge order of echo , X-ray .CT SCAN or lab test should be avoided this causes delay in the discharge process
- The referrals should be avoided on the day of discharges…..referral on the day of discharge to other specialty for follow up or medicine note by other doctor this increases unnecessary delay in discharge and summary preparation
- Unplanned discharges should be avoided (unplanned discharges are more as comparison to planned on survey we observed that this is due to financial reasons of patients)
- Constant reminders (e-mail, SMSs) for correction in discharge summary to Consultants as they are always busy in OT or their OPD so constant reminder for their discharge patients should be given and .
- Consultant rounds to be finished by 10 am (if consultant takes round late then ultimately signing of discharge final report got delayed)
- Present strength of typists of typing pool is poor as compared to the workload. Therefore, number of typists should be increased.(1 typist for cardiology ,1 for cardiac surgery and 2 for multispecialty discharges with .unplanned summaries)

For Staff(Nursing, RMOs, Co-ordinators

- Initial Discharge summary to be prepared on day to day progress and compiled night before discharge.

- Sister-In-Charges to coordinate with the RMOs for informing discharge after order of discharge of patient by doctor(Ideally RMO should be in round with DOCTORS)
- Quality of Discharge summary should be pondered.(Typing pool staffs find difficulties while writing the discharge summaries due to inadequate details and complex handwritings in the summaries and most of the time summaries come without physiotherapy advice, medicinal advice, OT details without findings.)
- Rough case sheet to be corrected by the consultant and then sending it to typing pool simultaneously by which time motion can be reduced so that 5 to 10 papers will be saved.
- Pharmacy and billing clearance should be done by 10 am.
- Pneumatic chute should be utilized for sending summary for all wards except FF(M/F)general wards.(presently available container 17 in number)
- Re-engineered process flow for planned discharge to facilitate discharge before 12 for cash and TPA

All cancellation of investigation and procedures which are pending should be done on day today basis because last day cancellation and searching X – ray,

- ray or CT of patient causes delay .
- Concept of Discharge Co ordinator -Skilled Personnel(a person deployed from system to take care of each patient discharges from the time of order of discharge and repair the loopholes in each and every step)

- Admitting consultant should "ADVICE DISCHARGE 48 HRS / 24 HRS BEFORE by 10 a.m. every morning after doctor's round.
- He / she should order for relevant investigations pre-emptively, considering the turn-around time of the tests.

For Next to Kin-

- Patient relatives should be communicated one day prior.
- -morning at 10 am –Cash and TPA patients and
- -Evening reminders-All patients
- Packed Lunch for TPA.
- Provision of special seating arrangement for TPA and corporate patients
- Concept of discharge lounge for the patients
-
- Inter-Floor Competition –This improves the overall activities of a floor .

-Discharge Process-Before 12 am

"WALL OF FAME" concept in weekly basis.

- **For Cardiac cases**

medicine should be written one day prior by doctor and typed before the OT of concerned doctor for signing of reports

(Note – for cardiac cases PT-INR test ,sample should be given at 5 a.m.so that before rounds of consultant reports are ready if in case any deviation is present concerned nursing staff will inform consultant to decide their discharge)

- **PEDIATRIC CASES**

Discharge Summary Should be prepared before 10 A.M . Before starting pediatric wards rounds doctor writes their simmaries by themselves so after taking morning rounds of all patients he start writing summaries so it causes delay.

For management

- To introduce "PATIENT TRACKER" system(**Patient** Tracking **Portal** was developed specifically for nurses and unit staff as a better way to quickly and comprehensively access patient information, easily perform patient flow tasks, and keep track of critical clinical patient information).
- Online application to access reports of patients to concerned doctors and staff through Applications. Or better HMIS system
- Electronic medical records should be introduced

Recommendations Billing department

- Billing card should be updated on day to day basis.
- While shifting a patient from critical care areas to wards billing card and medicine card should be updated to avoid the cancellations on the day of discharge
- All updated billing cards should reach to the billing dept. by 9 am and should be verified by the 10 am.(billing cards of the TPA patients should be given 1st priority)
- Prioritization of billing cards to speed up verification process.
- All the coordinators of respective floors should call and get the follow ups for their updated billing status from the billing dept. by **10 am**.
- Discharge list would be shared (**SHARED FOLDER**) day before discharge by 5 pm to initiate the billing update process.

Recommendations for pharmacy

- The doctors have to write the final "medications at discharge" in the patient's file during rounds a day prior to discharge
- Hence indenting of the required medicines can be done a day prior to discharge .thus there would be no dependency on the discharge summary for sending the pharmacy returns.
- The pharmacy returns should be processed a day prior to the actual discharge (keeping behind sufficient quantity of medicines that patient requires till his physical discharge)
- Thus pharmacy clearance will be given to the billing counter a day prior to discharge which would help to speed up the billing process on the day of discharge.
- This would be beneficial for the Corporate/TPA patients who need to get approvals from the respective companies by mailing them the provisional bills since they get billing clearance only after the bill amount is approved by the insurance companies

After this recommendations and implementations

DISCHARGE BREAKUP AFTER INTERVENTION

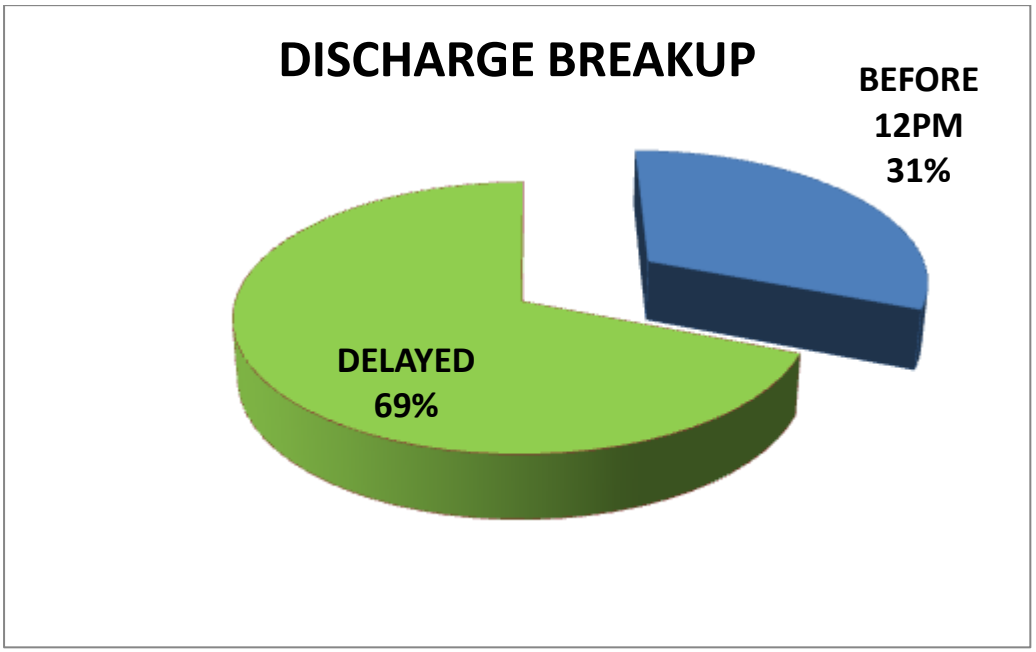


Fig2.5 depicts that after interventions the discharges were 31% before the 12 P.M before there was only 9% discharges so there was improvement in the discharge process

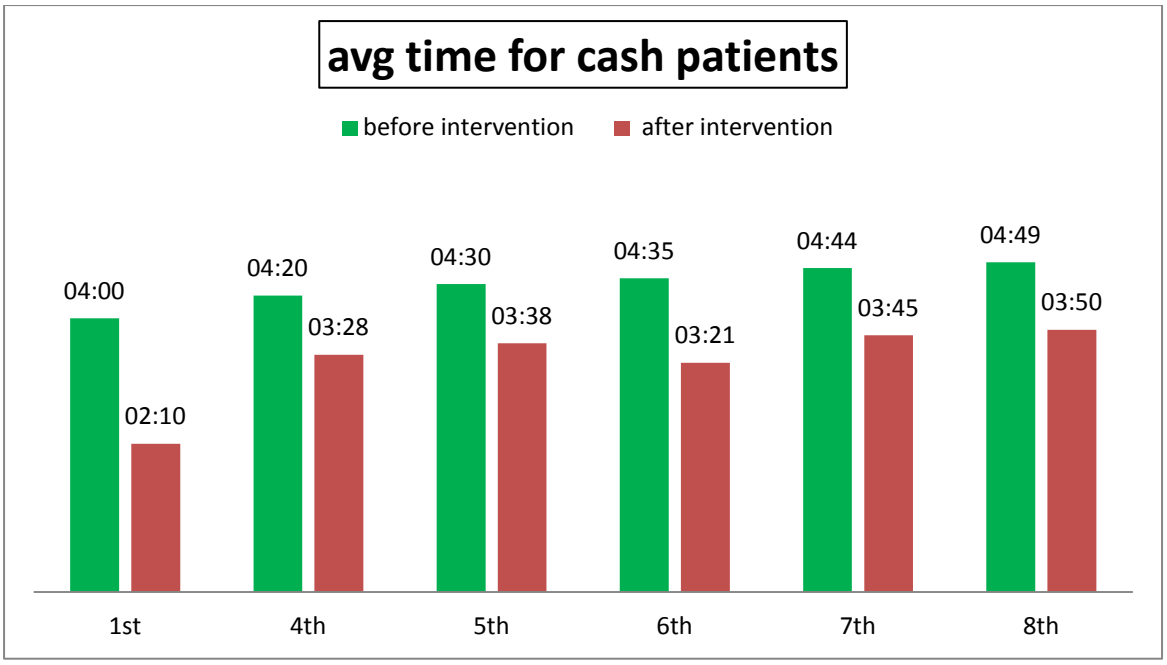


FIG 2.6 Shows avg time of cash patients discharges earlier and after intervention

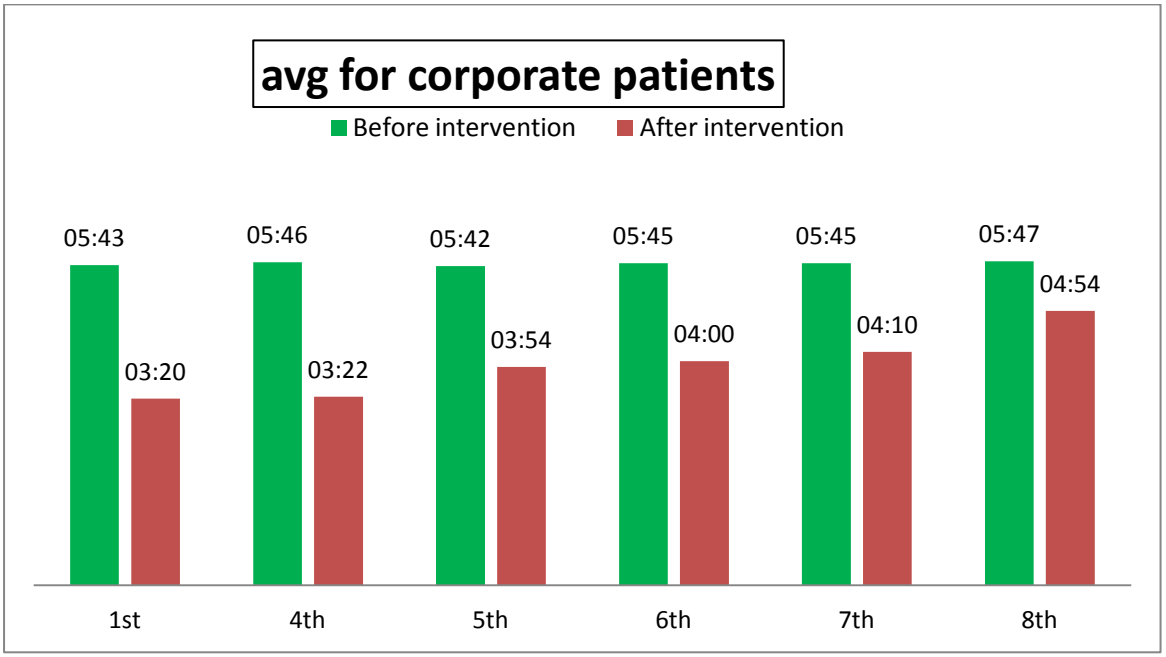


Fig 2.6 shows avg time of corporate patients discharges before and after intervention

Fig 2.8shows avg time of TPA patients discharges before and after intervention

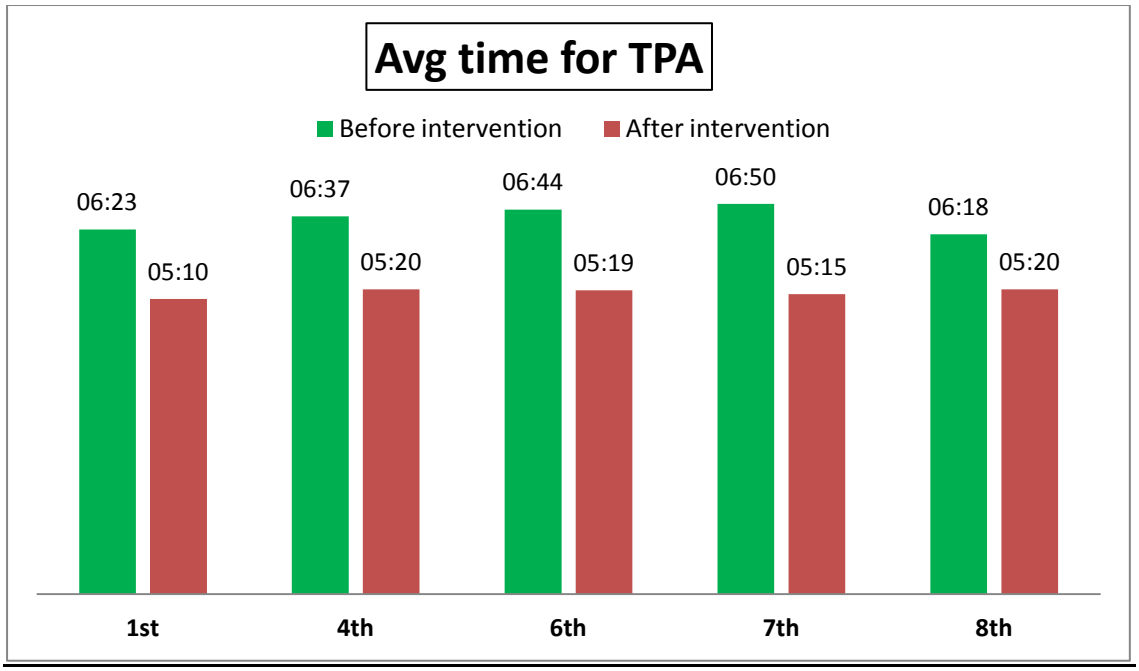
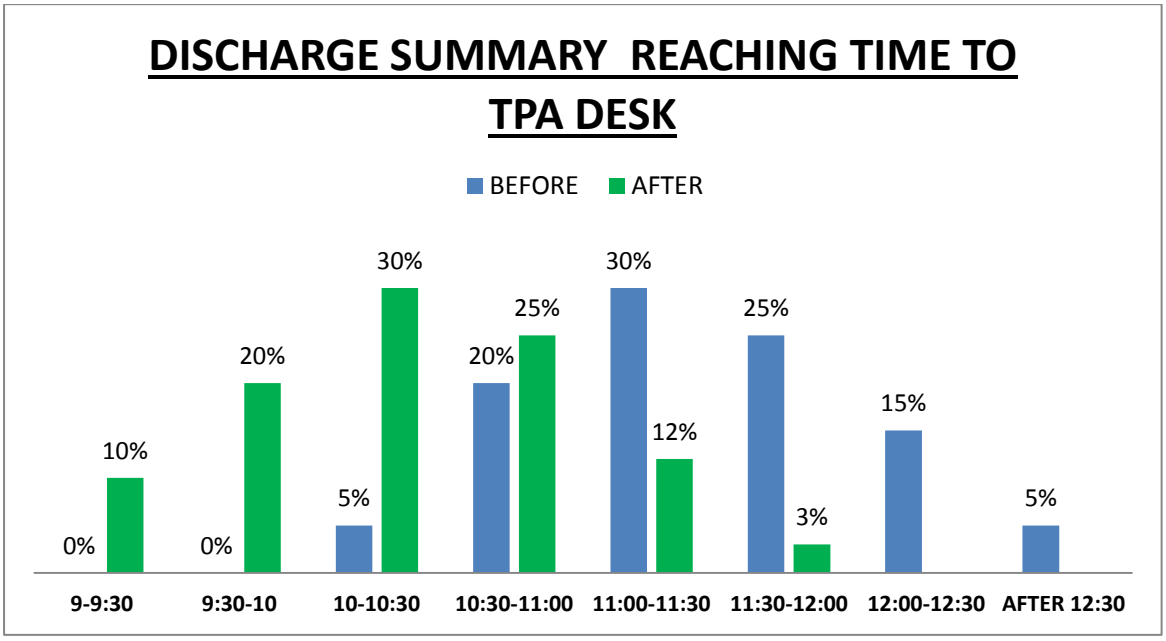


Fig shows earlier TPA patient avg discharge time is more then after improvements it decreased

Fig 2.**9 shows time in which most of summaries reaches to TPA desk**



This fig shows earlier most of the discharge summary are reaching at 11 to 12 and no summary was reaching at 9 to 11 but after interventions summaries are reaching at 9 to 12.

Fig 3.0 shows billing cards reaching to TPA

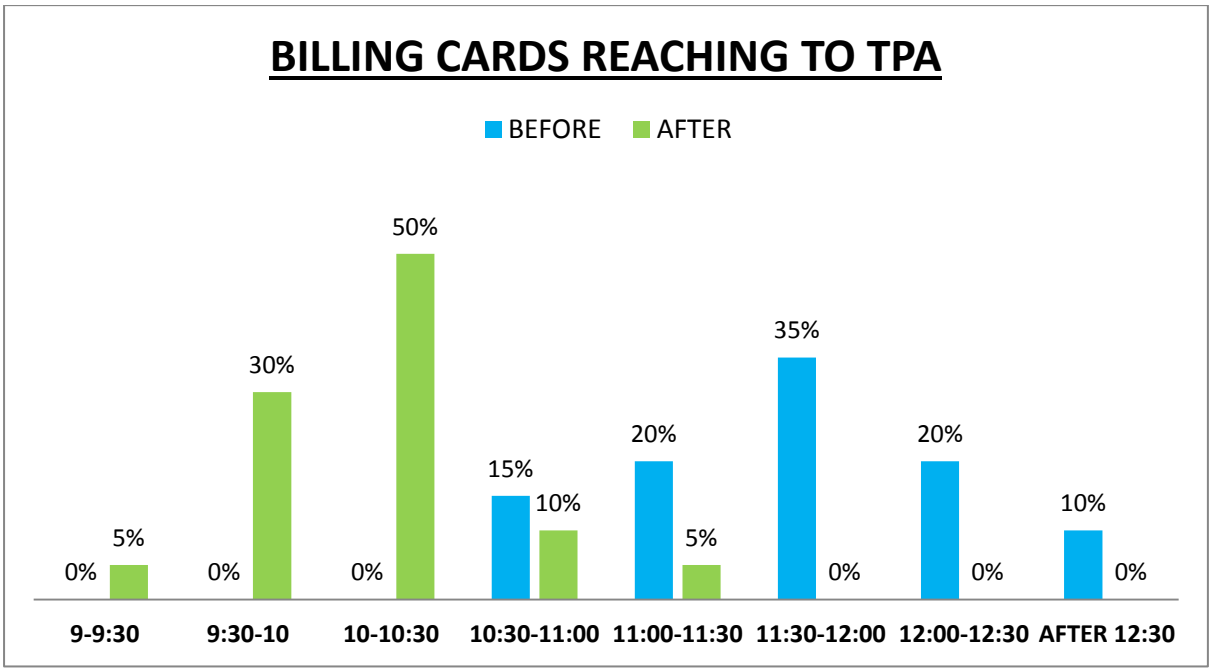


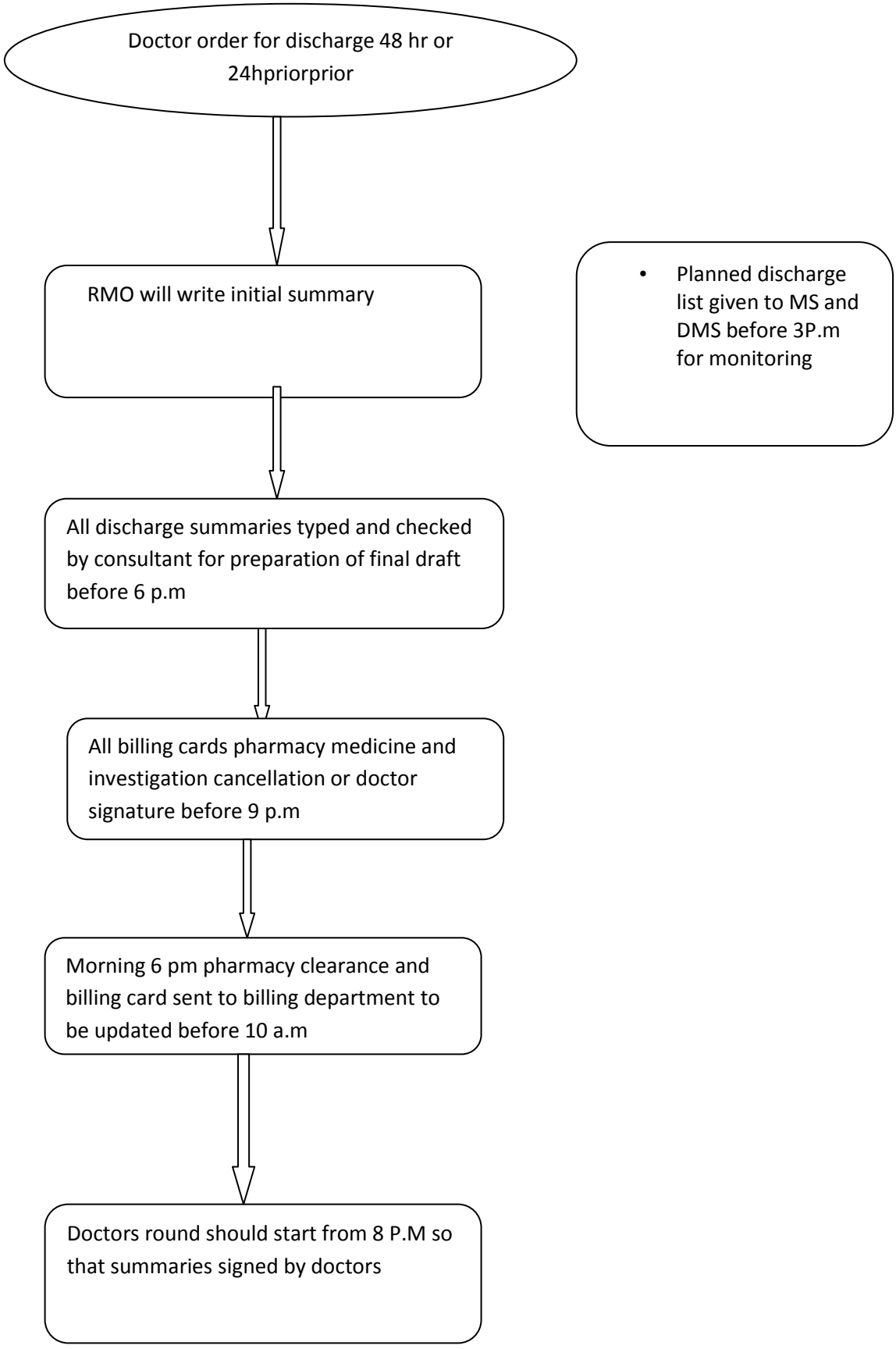
Fig 3.0 depicts that earlier most of the billing card intimation reaching to TPA is 11 to 12 but after improvements most of the cards intimations reaching At 9 to 12

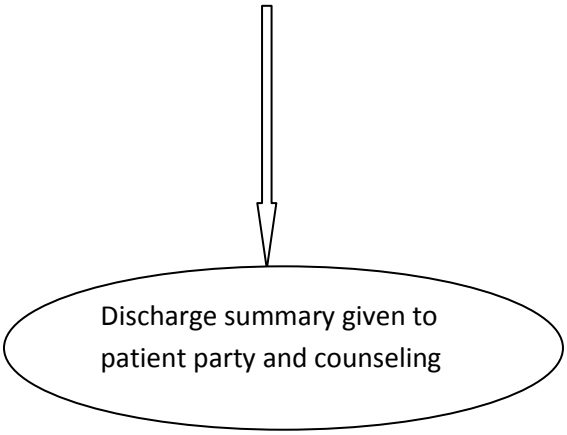
Control Phase-

The recommendations which are piloted, and implemented during the improve phase were standardized, confirmed and institutionalized in the Control Phase. The Process improvements obtained during the improve phase will only work if it leads to long term changes in Performance. A control plan and a check list was made and circulated among the process owners of the Patients discharge process in each department to track results and to ensure the improved process remains improved over long run

- Further To control the discharge process for the patients we introduced sharing folder of discharge patients which is visible to all wards and departments after the order of discharge of patients it is updated by me two times one at 2 P.M and other at 6 p.m
- I worked as discharge co-ordinator to facilitate discharge process in the hospital by identifying loop holes and correcting them immediately
- introduced checklist for TPA to facilitate process more fastly
- weekly wall of fame for floors performing best in discharge process
- Patient party is informed two times one day prior to take his patient before 12AM and other at evening 6 P.M
- Billing cards are made ready before 8 AM in morning
- Updation and cancellation of investigation done one prior
- List of discharge patients given to MS and DMS office before 3 p.m
- If any discharge summary not repaired one day prior MS and DMS takes action immediately and get it done by RMO as they are higher authority to control over RMO's
- If consultant gets late to sign summary or in OT or outreach clinic for OPD then MS DMS takes responsibility of discharge of that patients.

Fig 3.1Redesigning of process flow for controlling discharge process




Discharge summary given to
patient party and counseling

Conclusion

This study validated the application of Six Sigma DMAIC methods to reduce and optimize the patients discharge process and on average there was decrease in the 4 hours to 2 hours for cash patients and 5hr to 4 hr for corporate patients and 6 to 5 hr for TPA patients As result of this breakthrough improvement, more patients will be managed in the particular department which indirectly increase the number of admissions, turnover of the rooms, increase hospital profitability and will also enhance Patient satisfaction. This study also demonstrated the contribution of the multidisciplinary team members of the hospital in reducing Patients there are several stakeholder in the discharge process. it is not only dependent upon the consultant or RMO to control discharge process .every department and person related to the discharge process has its own role to enhance discharge process for example billing department pharmacy, IT dept for timely cancellation of pending services or medicine return in pharmacy or add of further bill before discharge.

Limitations

The study limitation was only for two months and control phase is still in process. This study will help the Hospital administrators and policy planners in expediting decision about the implementation of six sigma Methods to improve the Quality of care in Hospitals.

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