

Assessment of Turnaround Time of Discharge Process at Non-Critical Wards in a Private Hospital, Jaipur: A Study on Adequacy of Discharge Process

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Master of Business Administration (MBA)

in

Hospital and Health Management

by

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Under the Supervision and Guidance of

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2023

Declaration

I hereby declare that this dissertation titled **Assessment of Turnaround Time of Discharge process at non critical wards in a Private Hospital, Jaipur: A Study on adequacy of Discharge process** is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished workof others has been duly acknowledged in the text.

Dr Anushka Agrawal

Date: 02/06/23

COMPLETION CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

Date:01/06/23

This is to certify that Dr Anushka Agrawal in partial fulfilment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur has successfully completed her internship at Mahavir Jaipuria Rajasthan Hospital, Jaipur during March 13 - May 19, 2023 in Quality Department.

Dr Anushka Agrawal has completed her tenure entirely to the satisfaction of the hospital management.


1/6/23
Dr Shruti Sureka

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अपना अस्पताल
राजस्थान अस्पताल

CERTIFICATE

This is to certify that dissertation **Assessment of Turnaround Time of Discharge process at non critical wards in a Private Hospital, Jaipur: A Study on adequacy of Discharge process** is a record of the research work undertaken by **Dr Anushka Agrawal** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

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School Dean
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Date

Date

ABSTRACT

The study describes the DMAIC(Define, Measure, dissect, Ameliorate, and Control) approach within a spare Six Sigma frame for acceptability of discharge process to identify the areas of detention and ameliorate the average turn- around time and increase the chance of planned discharges.

The study data was collected from 19th April 2023 to 15th May 2023, and in 2 inspection cycles, fastening on the part of nursing staff, and drugstore on the discharge process.

Primary data was collected by real time tracking for applicable sub-processes, while secondary data was attained from HIS and Admission Discharge registers.

Within the different DMAIC phases, tools similar as process mapping and cause effect illustration was applied.

Microsoft Excel was used for result analysis and determining the total count, average, maximum, minimal TAT taken by billing counter to admit request or sample, the chance of planned v/s Unplanned discharges, Doctors on preparing conditional discharge summary, detainments by Pharmacy in medicines return.

A comparison on the chance of discharges achieving in inspection cycles is done independently for cash and TPA cases.

The study linked value- added and non-value-added conditioning within the current process. Grounded on the analysis reason of detainments, and interventions were designed to address them. The study handed recommendations for perfecting the living process of discharge at RHL Hospital.

Keywords Ishikawa Analysis, Process Flow, TAT. w, TAT.

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I'm in admiration of all the professionals at at Mahavir Jaipuraia Rajasthan Hospital Jaipur, for being an illustration of fortitude, perseverance, fidelity and offering their valuable services to the public.

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Dr Anushka Agrawal

MBA in Hospital and Healthcare Management

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BACKGROUND

- Discharge planning is critical to ensuring rapid, safe and smooth transition from hospital to another care environment; it involves the social work functions of high risk screening, Counselling, locating and arranging resources, consultation/ collaboration, patient and family education, patient advocacy via chart documentation.
- It is a complex activity requiring a wide range of clinical and organizational skills to address needs of patient, family and health care system, to promote the optimum functioning of patients, families and support systems.
- Delay factors may be internal (waiting for discharge summaries; waiting for clearance from billing department, transfer between nursing staff; lack of documentation of discharge plan, external (lack/delay of access to rehabilitation, home care resources, long term care facility, and psychosocial (waiting for family adjustment to illness, waiting for patient condition to improve, realistic expectations of patient/family and social isolation of patient.

RESEARCH TOPIC

Assessment of Turnaround Time of Discharge process at non critical wards in a Private Hospital, Jaipur: A Study on Adequacy of Discharge process

CHAPTER 1 : INTRODUCTION

Nowadays the healthcare industry is growing day by day with the help of advance technology and healthcare professionals. Hospital is a point where the patients come at the difficult time of their life, struggling with the pain. So, for the healthcare professional it is compulsory to provide the best quality of healthcare facility with minimum cost. Hospital is a social and medical care center which provide the curative and preventive care for the inpatient and outpatient but sometime not provide the long patient stay. Once the patient reaches the hospital, all the hospital staff co- ordinate with each other to achieve a common goal by observing and maintaining the good health of patient to relief them from pain and diseases.

Inpatient care is provided to those patients who are admitted in hospital. Patients are referred to inpatient department from various sources like family doctor, Emergency and trauma center, etc. Patient are admitted in inpatient department when they need special care by healthcare professionals. In inpatient department medical staff provide all the medical facility and special care. When the patient recovers or back to normal functioning then consultant plan to discharge the patient.

Discharge is point where the patient leaves from the hospital or transfer to home, other healthcare center, or rehabilitations center. Discharge is a last process in hospital, so it fixes it into patient mind and it reflects the hospital Image. This process starts when the doctors decides that the patient is physically fit, and he / she is able to take care of him / herself.

Patients are discharged in 3 conditions when they are physically fit, or they take DAMA (Discharge Against Medical Advice) and Death. In this report, the discharge process by applying the DIMAC (Define, Implement, Measure Analysis and control) Tool.

DIMAC is quality tool which is to reduce time in discharge process and improve good quality of work. Discharge leads to patient satisfaction, decreasing time in discharge process increases the patients

The hospital discharge process studied in the project is divided into 4 stages:

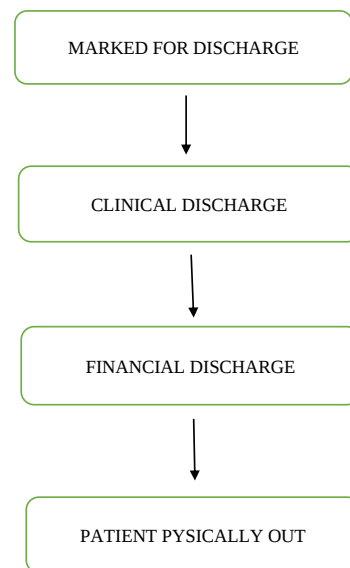


Figure .1

Turnaround Time: It is a term commonly used in various industries, including healthcare, manufacturing, customer service, and logistics, to refer to the time it takes for a process or task to be completed from start to finish.

Data on the duration of all activities, from the physician signing the discharge form to the patient leaving the treatment room, were collected through patient shadowing. These data were analyzed using detailed process maps and cause-and effect diagrams. “Fragmented and unstandardized processes and procedures and a lack of communication among the stakeholders were among the leading causes of long discharge times. Categorizing patients by their needs enabled better design of the discharge processes. Discrete event simulation was utilized as a decision support tool to test the effect of the improvements under different scenarios. Simplified and standardized processes, improved communications, and system-wide management are among the proposed improvements, which increased patient discharge TAT percentage by 45.23% Cultivating the necessary ownership through stakeholder analysis is an essential ingredient of sustainable improvement efforts

QUALITY IN HEALTHCARE:

Health care has followed the example of the manufacturing industry in terms of quality management, initially focusing on retrospective evaluations of goods and results and ultimately doing contemporaneous assessments focused on processes. A healthcare review is critical to such evaluations.

An information system that integrates departmental data into a hospital wide framework, contains objective criteria for assessing procedures and results, and monitors changes to an organization's care delivery processes are used by organisations. The purpose of an integrated, patient-centered information system is to create a continuous loop inside an organisation for enhancing clinical and administrative quality.

Different organisations employ various strategies, tactics, and technologies to undertake quality management and continuous quality improvement initiatives. The programme is likely to go under a different name or label, such as TQM (Total Quality Management), Six Sigma, or something similar. BPR (Business Process Reengineering), Operational Excellence, or Business Excellence are all terms used to describe the same thing.

Regardless of the methodology, strategy, tool, or name of the continuous improvement programmes, each organisation will undoubtedly require a careful selection and combination of many methods, tools, and techniques in its implementation process.

Six Sigma is one of the strategies used for quality improvement of hospital operations processes. It is a collection of concepts and techniques for quality improvement. DMAIC (Define, Measure, Analyse, Improve, and Control) is one such Six Sigma approach used here for quality improvement process. It refers to a data-driven life-cycle approach to Six Sigma projects for process improvement. DMAIC is an abbreviation that stands for five interrelated phases: define, measure, analyse, improve, and control.

AIM

The aim of this study is to enhance the planned discharge process upto 70% in RHL Hospital, Jaipur. The goal of this study is to improve consistency of discharge process and material through standardization and increase effective utilization of Hospital.

OBJECTIVE

1. To define discharge process with responsibilities and timelines.
2. To identify if bills and discharge summaries are being planned ahead.
3. Barriers leading to delay in tentative discharges.
4. Communicating to all the consultants, residents and nursing staff the need to plan tentative date of discharges.
5. To identify number of unplanned discharges in a day.
6. To prepare 100% interim summaries for patients after 48 hours of admission

RATIONALE

A patient visiting a hospital expects complete care from the time of admission to the time of discharge, along with, complete medical care and advice. Discharge Process is a critical part as it sets the precedent on the recovery of patient, which in turn play a part in saving lives. The benchmarks are set to achieve timely discharges , so that patient can be sent home as soon as possible. Delays in the process can lead to prolonged waiting times for bed availability for other patients and effects the effective utilization and interruptions in the smooth functioning of the Hospital

This study will provide valuable insights into identifying the factors causing delays in the delivery process, quantify the average total time consumed, existing challenges and areas for improvement in the discharge process.

The study was taken up as a quality improvement initiative to increase the availability of beds in wards, determine Percentage of discharges achieving TAT and eliminate the reasons causing delay. Improving the efficiency of the Discharge process to have a direct impact on providing patient-centric care.

CHAPTER 2: REVIEW OF LITERATURE

Sr No	Paper Title	Learnings	References	Published On
1.	Hospital discharge and patient safety: reviews of the literature	Hospital discharge and patient safety to suggest that discharge from hospital to community is located within a complex and vulnerable system, involving a diverse range of heterogeneous actors interacting in dynamic and non-linear ways. Policy and research highlight the need for improved integration, especially in discharge planning and care transition; however, given the complex, dynamic patterns of interaction and the variable institutional environments in which caring professionals work, this integration remains problematic. The idea of communication and collaborative decision-making is frequently cited as a basis for integration	Waring J, Marshall F, Bishop S, et al. An ethnographic study of knowledge sharing across the boundaries between care processes, services and organisations: the contributions to 'safe' hospital discharge. Southampton (UK): NIHR Journals Library; 2014 Sep. (Health Services and Delivery Research, No. 2.29.) Chapter 2, Hospital discharge and patient safety: reviews of the literature. Available from: https://www.ncbi.nlm.nih.gov/books/NBK259995	2014
2	Identifying discharge process factors causing an increased length of stay	A fundamental measure used in health services research is the mean length of stay (LOS) for a defined set of patients in a specific institution. In many cases, this average LOS (ALOS) is used to compare different health facilities or changes within a single facility and plays a central role in the evaluation of resource utilization. The continuous quality improvement (CQI) 4c lists bed occupancy rate and ALOS. LOS is a term used to measure the duration of a single episode of hospitalization. Inpatient days are calculated by subtracting the day of admission from the day of discharge. ALOS is computed by dividing the total number of inpatient hospital days, in the	Kulkarni, Meenal, et al. "Identifying discharge process factors causing an increased length of stay." <i>The Journal of National Accreditation Board for Hospitals & Healthcare Providers</i> , vol. 3, no. 1, Jan.-June 2016, p. 39. <i>Gale Academic OneFile</i> , link.gale.com/apps/doc/A460355844/AONE?u=anon~e072c82f&sid=googleScholar&xid=106af95a.	2016

		hospital, counted from the date of admission to the date of discharge by the total number of discharges (including deaths) in the hospital during a given year. A hospital day (or bed-day or inpatient day) is a day, during which a person admitted as an in-patient is confined to a bed and stays overnight in a hospital.	Accessed 31 May 2023	
3	Role of discharge planning and other determinants in total discharge time at a large tertiary care hospital	The key factors that affect the hospital discharge time. We found that clearance time by different departments, planned/unplanned discharge, patients being insured or uninsured as well as final bill settlement were all the different variables which affect the delay in discharge process for inpatients. Many processes were being designed and developed. After the pilot study, emphasis on planning the discharges was increased so that activities like discharge summary preparation and return of medicines to pharmacy can be completed well in time.	1. Ministry of Health and Long-Term Care, Discharge of Hospital Patients. Ch. 3-Section 3.02. Available from: www.auditor.on.ca/en/reports_en/en10/302en10.pdf [Last accessed on 2013 Nov 11]. 2. Young GJ, Meterko M, Desai KR. Patient satisfaction with hospital care: Effects of demographic and institutional characteristics Med Care. 2000;38:325–34 3. Allen TT, Shih-Hsien T, Swanson K, McClay MA. Improving patients discharge process in hospitals by using six sigma approach. World Academy of Science, Engineering and Technology Qual Eng. 2010;22:13–20 4. Brown JG. Medicare Hospital Discharge Planning. Inspector	2015

			General. Department of Health & Human Service December. 1997 Available from: http://oig.hhs.gov/oei/reports/oei-02-94-00320.pdf [Last accessed on 2013 Dec 5]. 5. Hospital Admission and Discharge Process . Oahai Manual. October 1999 Available from: http://74.213.160.105/oahai/Acrobatfiles/Hospadmis.pdf [Last accessed on 2014 Mar 04].	
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CHAPTER 3: RESEARCH METHODOLOGY

3.1 Study type: Prospective Cross-Sectional Study.

3.2 Research questions:

What are the factors that may contribute to delays in the discharge process of patients.

3.3 Setting of the Study: Mahavir Jaipuria (RHL) Hospital, Jaipur

3.4 Study Period: The study was conducted in hospital from 19th April to 15th May.

GANTT CHART:

	13th marc	15th Marc	17th marc	21st Marc	31st Marc	10th April	18th April	25th april	29th April	2nd May	5th may	13th may	15th may
Departmental orientation													
Sessionwith stakeholders regarding the process and their impolmntation in HCO													
PSQ meeting													
Discussion on study topic													
Approval process of study													
Designing of discharge process flow													
Approval of discharge process													
Collection of data cycle 1													
Analysis of collected data													
Discussion of results and obsevation with stakeholdes													
Implemntation of interventions													
Collection of Data cycle 2													
Analysis of collected data													
Discussion and results													
Implementations													

Figure. 2

3.5 Sample Size:

1. Inclusion Criteria:

- Data collected of all the Non critical wards, namely MDU-A,B,C, C2 and B2 with Patients going for discharges in working hours (9:00 AM to 6:00PM)

2. Exclusion Criteria:

- Discharges from Critical areas namely NICU, HDU and ICU's
- Discharges form ER and Day-care
- Discharges from Dialysis and Chemotherapy centre

3.6 Sampling Method: The sampling technique was Stratified sampling

Discharges from non critical care wards from 9:00 AM to 6:00 PM are tracked. Discharges are divided into groups – Critical and non critical care and then sample is collected.

3.7 Study Procedure:

The research applied the six-sigma approach to identify and improve the quality of process by:

- Identify and remove the cause of defect (errors) and variation.
- Identify and eliminating the factors that are causing process steps to be repeated.
- Concentrating on the outcomes that are essential for the quality improvement process.

To achieve the above-mentioned objectives, the approach used in the study is DMAIC. The acronym stands for five phases: Define, Measure, Analyze, Improve, and Control. DMAIC is a data driven, problem-solving methodology used in the field of process improvement and quality management. DMAIC is commonly associated with the Six Sigma approach, which aims to reduce defects and variability in processes.

The simplified definition of each phase is:

D - Define: Clearly state and understand the problem or opportunity for improvement. Set goals and identify stakeholders involved.

M - Measure: Collect and analyze data to measure the current state of the process. Identify key performance indicators (KPIs) and establish the scope of parameters and their performances.

A - Analyze: Analyze the data collected to identify the key causes of the problem.

I - Improve: Develop and implement solutions to change the process and optimizing performance.

C - Control: Establish controls and monitoring systems to ensure that the improvements are sustained.

Description of DMAIC Approach:

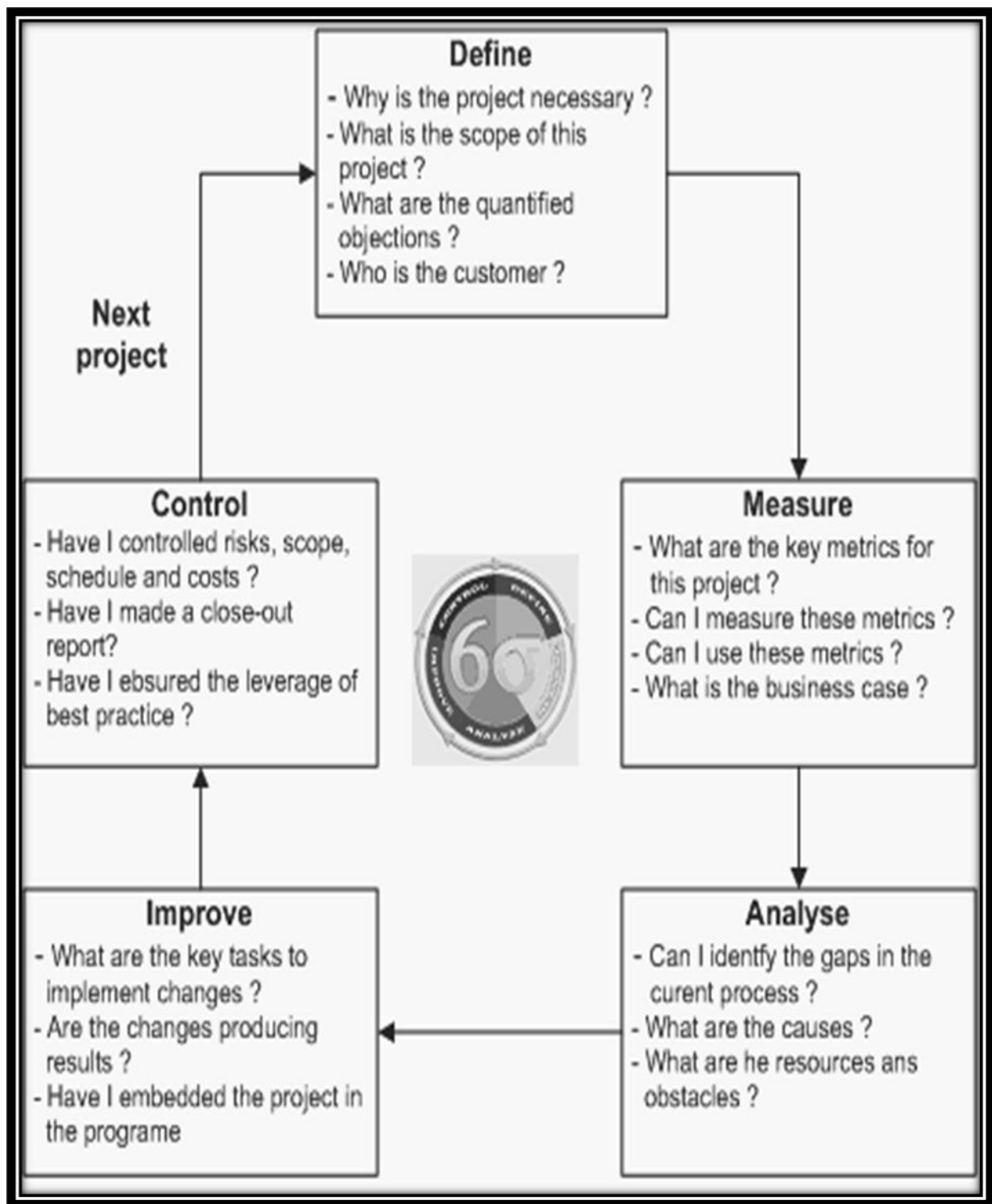


Figure 3

3.7(a) DEFINE:

This phase was about clearly defining the scope of the problem. It focuses on quantifying the problem and the underlying process to define how performance would be monitored. It involves identifying the stakeholders involved. The process was mapped to understand the existing sub-processes involved in the Discharge of a patient from the time discharge request is put up by nursing staff in HIS to the time the patient is Physically out of the Hospital.

The problem was clearly defined by the administrative head of the hospital based on the following criteria:

- 1) Patient satisfaction index survey
- 2) Past patient complaints
- 3) Through internal audit process.

This helped to define the scope of the problem. The main aim of the phase is:

- 1) Describe the problem quantifiably.
- 2) Defining the process to determine how the performance will be measured.

The current process was documented involving the discharge of a patient from the time doctor decides the patient should be discharge to the time patient leave the room. To understand the current process discharge Process Mapping tool was used. It is the technique used to follow the detailed flow of product through a manufacturing cycle. A process map is a pictorial representation of the sequence of action that compromises a process. The resulting process map depict the input, the performance, the sequence of action the Performance take, and the output of work process in a matrix or flow chart, usually combining both words and simple graphics. Process mapping is typically knowledge about process.

The primary objective of the project is to improve and optimize the patient discharging process and the initial target was fixed to Prepare the discharge summary the night before the discharge is planned by the attending Physician or Surgeon.

DISCHARGE PROCESS MAP

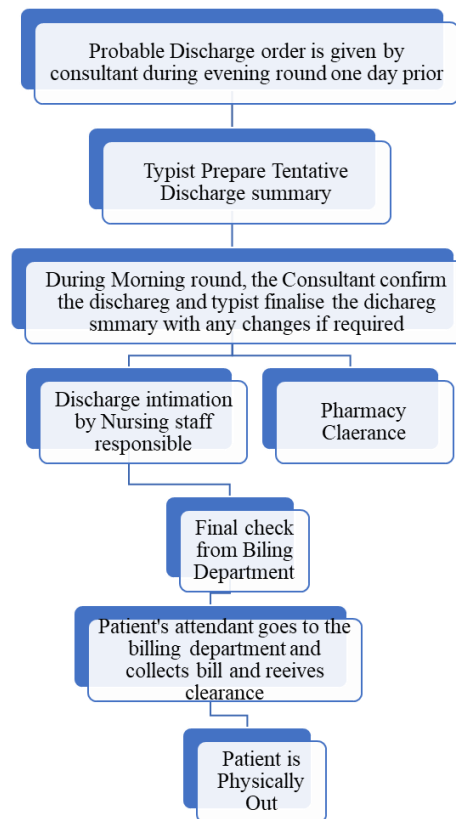


Figure.4

The above Process Map diagram depicts process flow for Discharge. The process comprises of various phases or sub-processes.

The consultant, Junior doctors, nurses, Pharmacy, Billing counter, TPA and Patients are the stakeholders responsible for discharge process.

The sub-processes are as follows:

- **DISCHARGE SUMMARY FINALIZATION:** Discharge orders given by the consultant during the rounds which is informed to the staff and in charge nurse. The duty doctors start typing the discharge summary along with file completion by the doctor and nursing staff. After completion of rough summary, the summary is sent to consultant to finalize the summary.
- **PHARMACY CLEARANCE:** Once the discharge is finalized and file is taken to the pharmacy to all the medicines disposable are returned to the pharmacy once the request of return is put in the HIS system by the nursing staff. The unused medicine is labelled, packed and then sent to IPD pharmacy and then the discharge intimation is being raised by the assigned nurse.
- **FILE PREPARATION:** Discharge file is completed by Doctors and assigned nurse.

- **FILE CHECK-UP:** The file is checked by billing department. The status in the HIS is updated as bill ready.
- **BILL CLEARANCE:** After the bill is updated the patient is informed about the same and asked to clear the bill.
- **PHYSICALLY OUT:** Once the discharge slip is submitted to the nursing counter, Nurse explains the discharge summary to the relatives and the patient is left at the ground floor with help of wheelchair.

3.7(b) MEASURE:

This is the data collection phase of the study.

The focus was on measuring and describing the problem using process and performance data and metrics. The main objective was to understand the current state of the process, also known as the baseline, before implementing any changes. This baseline served as a standard against which any improvements resulting from interventions could be measured. This is a key step as the data collected will be used throughout the life of the project.

The main aim of this phase is to measure the problem by describing it with process and performance, fact, data.

A audit checklist was used to collect data for discharge Patients.

[illegible]

Figure 5

Overall, the Data Collection Phase focused on quantitatively assessing the problem by capturing relevant metrics and establishing a baseline for comparison and improvement.

Study Tool: The blood request form and blood issue form are used as reference tools and data collected using tracking sheet in MS Excel.

The data used in the study was entered into a defined Excel sheet.

This phase will determine the baseline before making any changes. The determined baseline will become the standard against which any improvement after the implementation will be measured.

The baseline of measurement was defined as the turn-around time for the entire discharge process starting from the time physician decide that the patient can be discharged till the time the room was vacated by the patient. This time was defined as the Total Cycle Time.

The benchmark time was taken as 120minutes for cash, 240 minutes for TPA patients since this was the desired turnaround time were defined after studying the process map which despite the various sub- process.

DATA COLLECTION

Primary Data: Data was collected for the 4 parameter - Summary Finalization, Pharmacy Return, File Preparation, Bill clearance, Patient Physical out sample for 100 patient discharges from IPD Floor was collected in First Audit Cycle on the basis random Sampling. The investigation recorded the start time and TAT of every sub parameter for the daily discharge.

3.7(c) **ANALYZE:**

The phase seeks to isolate the problem by analyzing current performance. The root cause of the problem is determined through analysis (both quantitative and qualitative).

In this phase analyses of current performance are calculating to identify the problem and root cause is formulated.

The following steps are undertaken to formulate the root cause:

1. Calculating the percentages of discharges above those were within the benchmark TAT of 120minutes for cash and 240 minutes for TPA patients.
2. Cause and Effect Analysis was done using the concept of cause and Effect of diagram.
3. Analysis of the Mean Cycle Time for each parameter to rate the problem areas a per their contribution to the total cycle time

The Benchmark for Cash/RGHS Patients is 120min and for TPA Patients is 240 Minutes

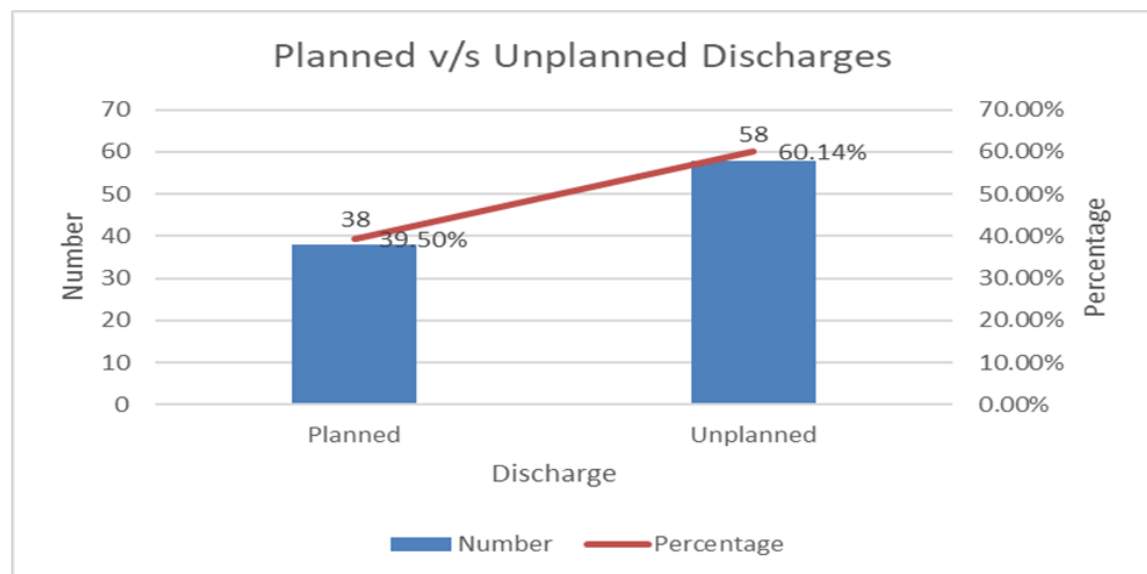


Figure 6

The above figure shows the Percentage of Planned V/s Unplanned discharges in Hospital. The planned discharges were around 40% while unplanned discharges were about 60%.

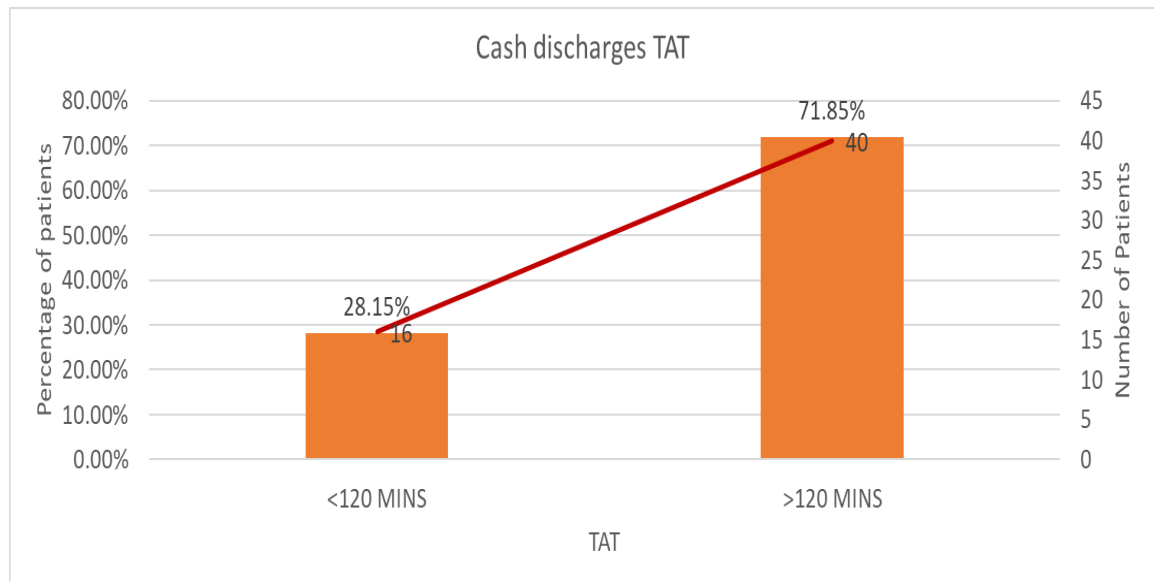


Figure 7

As the above figure shows the Percentage of discharges under benchmark is 28.15% and the discharges crossing the benchmark for Cash patients is 71.85%.

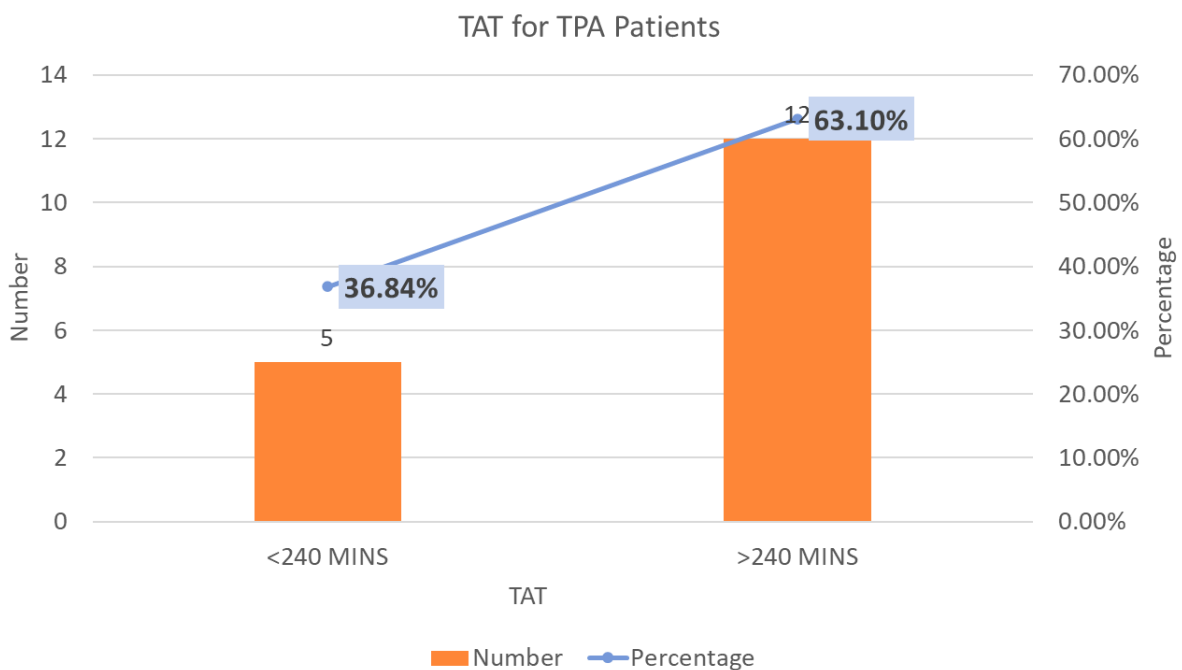


Figure 8

As above figure shows the TAT for TPA patients was achieved in only 36.84% and 63.10% could not achieved TAT.

ISHIKAWA ANALYSIS

A Cause -and -Effect Diagram is a tool that help identify, sort, and display possible cause of a specific problem or quality characteristic. It graphically illustrates the relationship between a given outcome and all the factors that influence the outcome. This type of diagram is sometime called an” Ishikawa Diagram” because it was invented by Kaoru Ishikawa, or a “Fishbone diagram” because of it looks. A cause-and-Effect Diagram is a tool that is useful for identifying and organizing the known or possible cause of quality, or the lack of it. The structure provided by the diagram helps team member think in a very systematic way. Some of the constructing a cause- and-Effect Diagram are:

It helps to determine the root cause of a problem or quality characteristic using a structured approach. It is easy-to- read format to diagram cause-and effect relationship. Indicates knowledge of the process by helping everyone to learn more about the factors at work and how they relate. It helps to identify areas where data should be collected for further study.

Cause effect diagram for discharge process

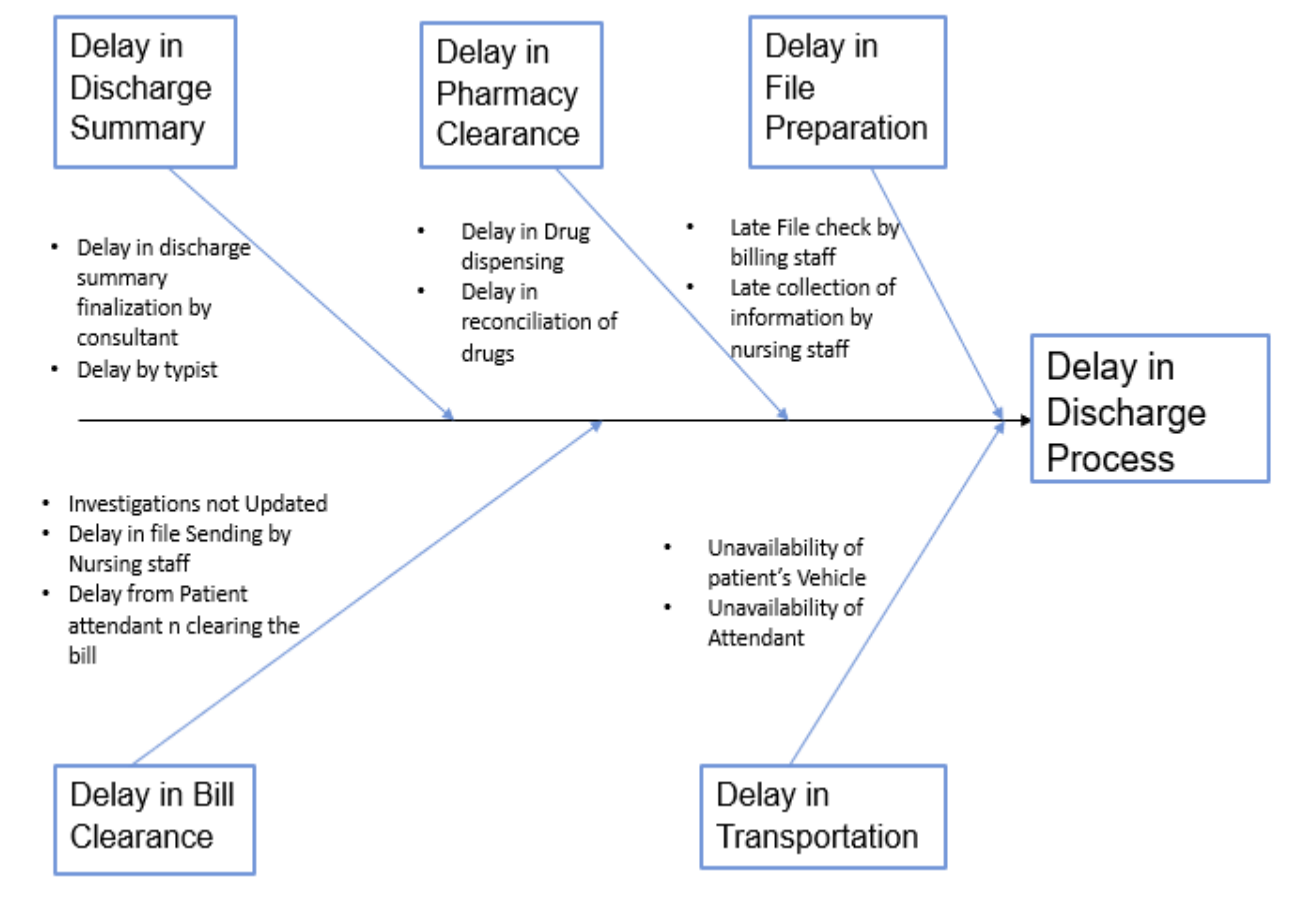


Figure 9

It was observed that the following were the major cause of delay in the discharge process is:

Delay in Discharge Summary:

This cause could be further an effect of one or more of the following reasons

Delay by Typist

In completing the tentative discharge summary, after the decision of discharge by the doctors on morning round.

Delay by consultant

In finalizing the made by the resident and the typist, due to being occupied in the morning rounds of patient process.

Delay in Transporting Finalized Discharge Summary

After the discharge summary is finalized by the consultant, the delay is caused due to non-availability transport summary to nursing station.

Delay in Summary Finalized

After completion of rough discharge summary, the summary is delay is caused to consultant busy in OT, OPD, and in emergency.

Delay in Pharmacy Return

The sub- cause of this effect could be:

- Incomplete Return is sent by the Nurse and is not accepted in the pharmacy.
- Pharmacy department taking too long time in acknowledging the return sent from the ward and updating the clearance in the HIS.
- Housekeeping department taking too much time to collecting drug from Nursing station and returning to pharmacy department.

Delay in File Preparation

- Housekeeping not available on the floor.
- Documents in the file not updated in the routing. All the reports updated in the file at the time of discharge preparation.
- Incomplete Notes by RMO

Delay in Bill Clearance

- Delay in informing the patient relative to clear the bill.
- Delay caused by the attendant in reaching the billing desk for bill clearance due to delay in arranging money or waiting for relatives.
- Wrong billing identified by the relative at the time of bill clearance, as the detailed

provisional bill is given to the relative prior the final payment, this further leads to confirmation of the doubles in billing regarding wrong entries from the ward and cancellation of services wrongly changed in the bill.

Delay in Patient Physically Out

- Delay by Nurse in removing the cannula or doing dressing before reliving the patient and explaining the summary to the patient.
- Delay in availability of Wheel chair to transport the patient from the ward to the hospital exit.
- Wait for pending investigation report the need to be given to the patient.
- Wait for Discharge Summary.

Analysis of the percentage contribution of various MEAN CYCLE TIME of the sub process to the discharge process.

For all the cause identified in the identified in the diagram, the sub- Process were divided into 2 categories:

Correctable Factor- are the factor which can be not controlled by intervention and are dependent on the situation or the external factor.

Non – Correctable Factor – are those which can be controlled by introducing intervention as these are independent of the external factor.

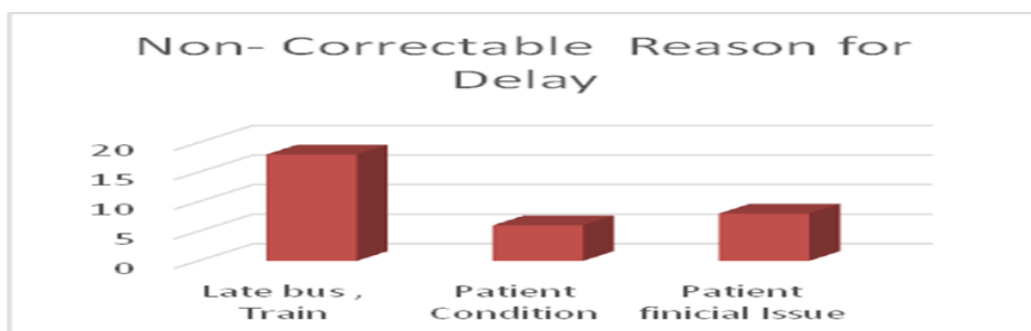


Figure 10

The above figure shows the non correctable reason of delay in discharge process which are from patients side:

1. Late Bus/Train- The most significant reason for delay is often late train or bus timings are late so they don't clear the bill until its time for leaving
2. Patient condition- often at the time of discharge, because of anxiety or other reason patient's complain of nausea, Headache which also delays the discharge
3. Patient financial issue- At times patient need some time to arrange the amount for bill left after TPA/RGHS clearance.

The correctable reasons for delay in discharge is shown in this Pie chart

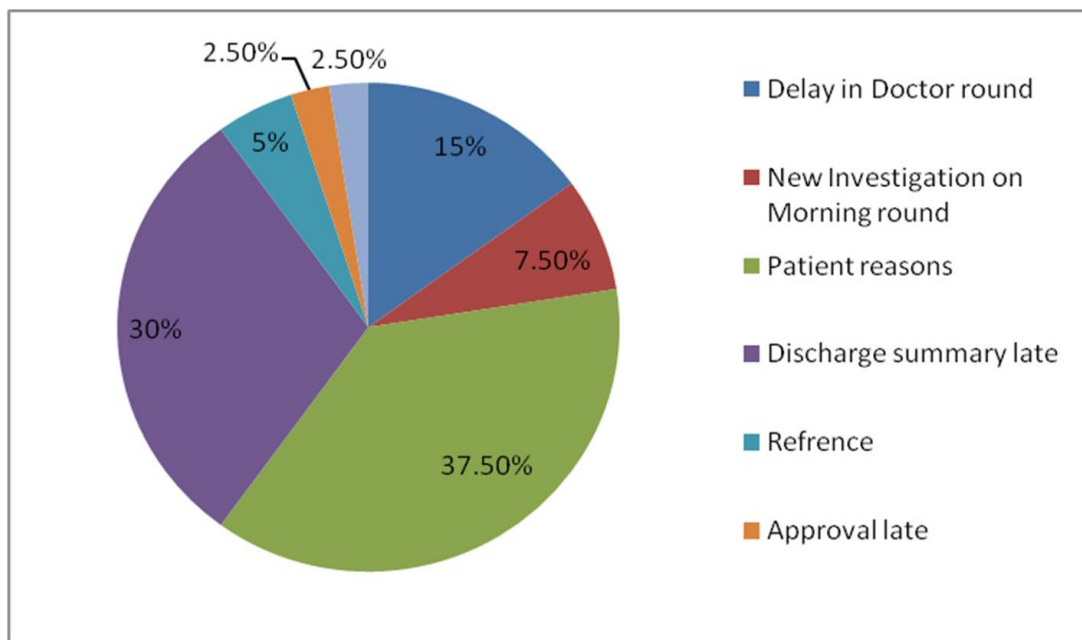


Figure 11

As the above data shows, the discharge process was mostly delay because of late summary finalization. Another main reason for delay is late Patient's Personal Reasons.

3.7(d) **IMPROVE:**

The results of the analyse phase are applied in the improve phase to develop preliminary design change recommendations. During the control phase, these recommendations are tested, confirmed, and institutionalised. Consideration was given to improvements, and brainstorming was done to find solutions to the problem statements that were among the most controllable reasons of delay.

In the implementing phase, the result of the analyses phase is used to make tentative design change recommendations. These recommendations are then piloted, confirmed, and institutionalized in the control phase.

To discuss the factors found during the analysis phase meeting was conducted including all the stakeholders' members responsible for errors and delay in delivery system are as follows:

Discussions

1. The discharge summary should be updated a day prior to the expected date by the

doctor and typist, such that when the doctor go on rounds they are able to complete the process of discharge summary and Sign it in the nursing station, immediately after the rounds.

2. After the assigned nurse has finalized the pharmacy to be returned, the in charge should counter check and sign the return material. This will decrease the waste of time in returning medicine several times due to minor error such as coming.
3. The suggestion is on this after requesting for drug return the housekeeping go collect the drug from the Nursing station.
4. The daily updating the service not performed by the assigned nurse and processing the cancellation was put forward.
5. The documents were recommendation to be update in the file n daily basis by typist.
6. Another suggestion is doctors should file investigation and treatment on daily routine.
7. The attendant should be provided with a printed provisional bill a day prior to the expected date of exchange, so that the verification at the consumers end are done and any correction to be done can be completed before the time for final bill clearance.
8. Counselling of Patient's attendant regarding the possibility of discharge next day and he should make necessary arrangements.
9. The assigned nurse should take responsibility to coordinate with Patient and billing department.

3.7(e) CONTROL:

In the control phase the interventions suggested as recommendations in the improve phase can be applied to the existing process. Control phase focuses on the measurement of improvement after the interventions are applied. The same parameters should be recorded and analyzed to find the level of improvement with the interventions done.

This phase also monitors the continuous implication of the interventions for quality improvement of the discharge process.

In the control phase the interventions suggested as recommendation in the improve phase can be applied to the existing process. Control phase focused on the Lope hole of the problem. The Control process was done on 106 patients.

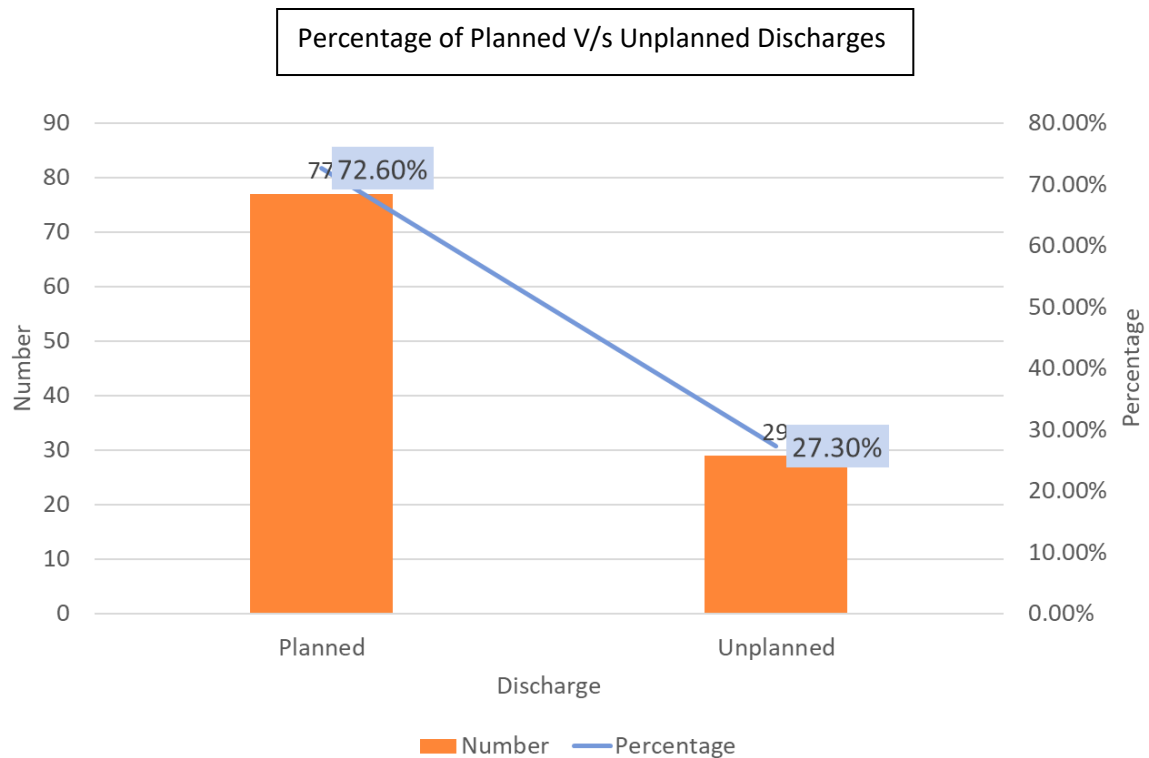


Figure 12

As the above figure shows the planned discharges Percentage is increased to 72.6% from 39.4% after the implementation. The incremental increase is 84.26%

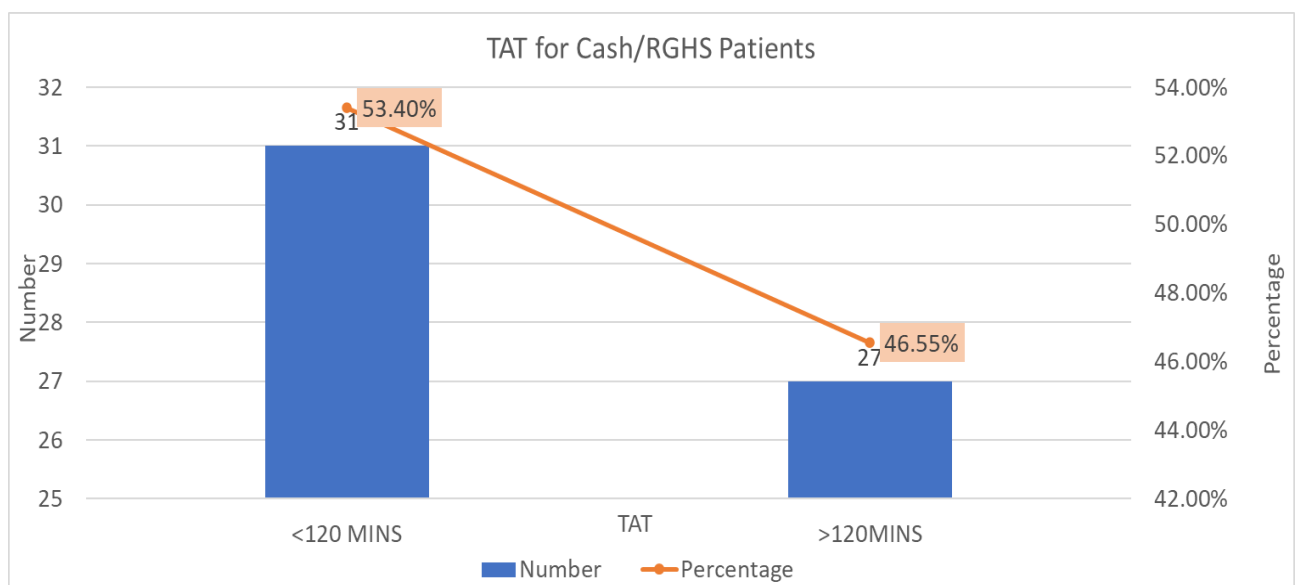


Figure 13

The above figure shows the Percentage of Patient's discharge achieving TAT for cash patients is 53.4% which was earlier 28.15%. The incremental increase is 89.7%

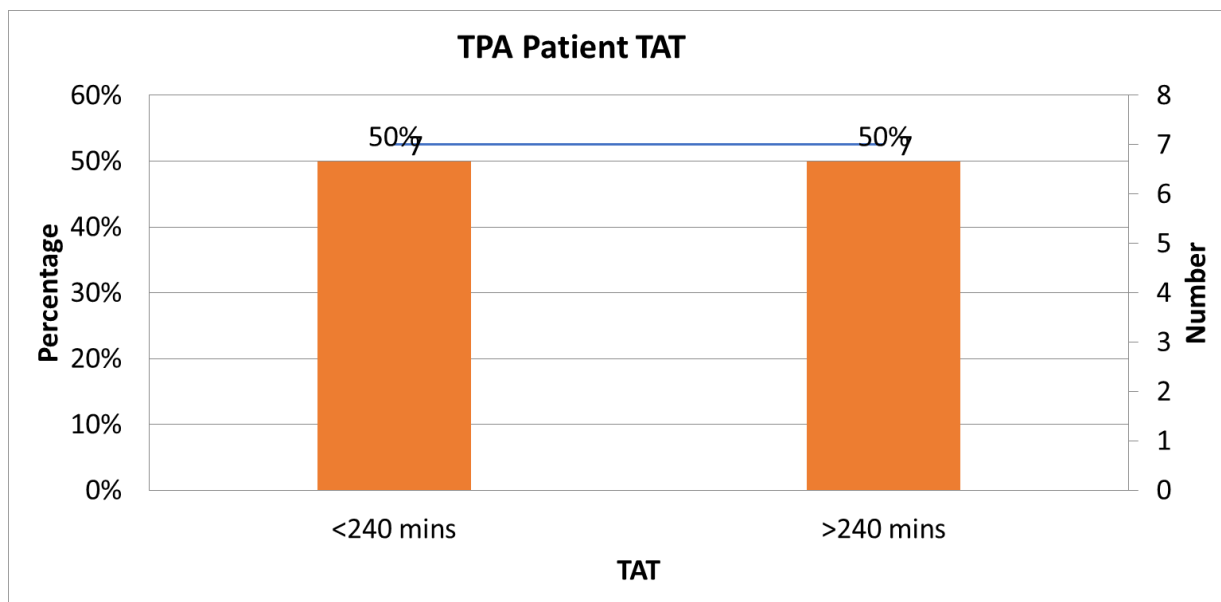


Figure 14

The above figure shows the Percentage of Patient's discharge achieving TAT for TPA patients is 50% which was earlier 36.8%. The incremental increase is 35.87%

CHAPTER 6: CONCLUSION

The study was conducted at a multi-specialty hospital to optimize turnaround time of the Discharge process system using the Six Sigma DMAIC technique. The first five phases of DMAIC were successfully completed, and various tools such as process mapping and Ishikawa analysis were employed. The six-sigma method was used with an aim to improve the efficiency of the delivery process.

The standard time of discharge process in Hospital is **2hrs for cash patients and 4 hrs for TPA patients** . but actual turn around time for completion of process was not achieved even in 50% of total discharges, After implementing the DMAIC in the discharge process the time taken for completing the discharge process **i.e. TAT is achieved in 54% in cash patients and 50% in TPA patients**, difference between pre-analysis and post analysis is **45% more**. Also the Percentage of planned discharges is increased to 72% which was earlier 39.4%.

CHAPTER 7: REFERENCES

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