Using DMAIC approach to streamline the discharge process at NARAYANA MULTISPECIALITY HOSPITAL, JAIPUR

By

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INTRODUCTION

Study on discharge process using DMAIC approach at **The Narayana Multispecialty hospital Jaipur**.

Discharge can be broadly defined as a process of tools and techniques by which an episode of treatment and care to a patient when he/she is concluded by a health professional, Health provides, organization or an individual.

It involves the development and implementation of a plan to facilitate the transfer of an individual from hospital to an alternative setting. Discharge time has an important implication on the hospital working as it affects patient satisfaction, utilization of hospital resources and revenue generation, timely access to inpatient bed and assured continuous care.

The standard of discharge management impacts on hospital efficiency, quality and safety of patients.

Few factors like loss of communication, delayed communication, which somehow causes the delay in discharges of patient and the poor patient satisfaction. Here, when process of discharge was not streamlined, so it was important to analyze the bottlenecks and take prevention and corrective actions to improve the process.

Each hospital has its own discharge policy according to the treatment plan like here for planned, unplanned and DAMA or Day care patients. The problem of delay or poorly planned discharges or unplanned illustrates the broader challenge of integrating health and social care.

RESEARCH METHODOLOGY

RESEARCH QUESTION

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

➢ **OBJECTIVES:**

- To study the admission and discharge process.
- To study the SOP's related to discharge process.
- To identify the variation in the discharge process.
- To identify the factors causing delays to streamline the process

RESEARCH METHODOLOGY:

The study is conducted within The Narayana hospital, Jaipur based on descriptive cross-sectional study, observational study design and sampling method used is convenient sampling.

The study took three months (i.e., 8 weeks) with a sample size of 300 discharges. Time of observation was patient who got discharges from the wards from 10 am to 2pm (except Sundays) as no planned discharges were schedule for Sundays.

- **Inclusion criteria**: Patient who go through normal discharge, DAMA, CODE Z, Daycare, planned and unplanned.
- **Exclusion criteria**: • Patient who gets discharge from Minor procedures and ED etc.
- **Source of data collection** – The data was collected by observing various wards on each floor, Discharge monitoring data through software ATHMA, Interaction with other IP coordinators.
- Analyzing was done with the help of MS-Excel and root cause analysis was done

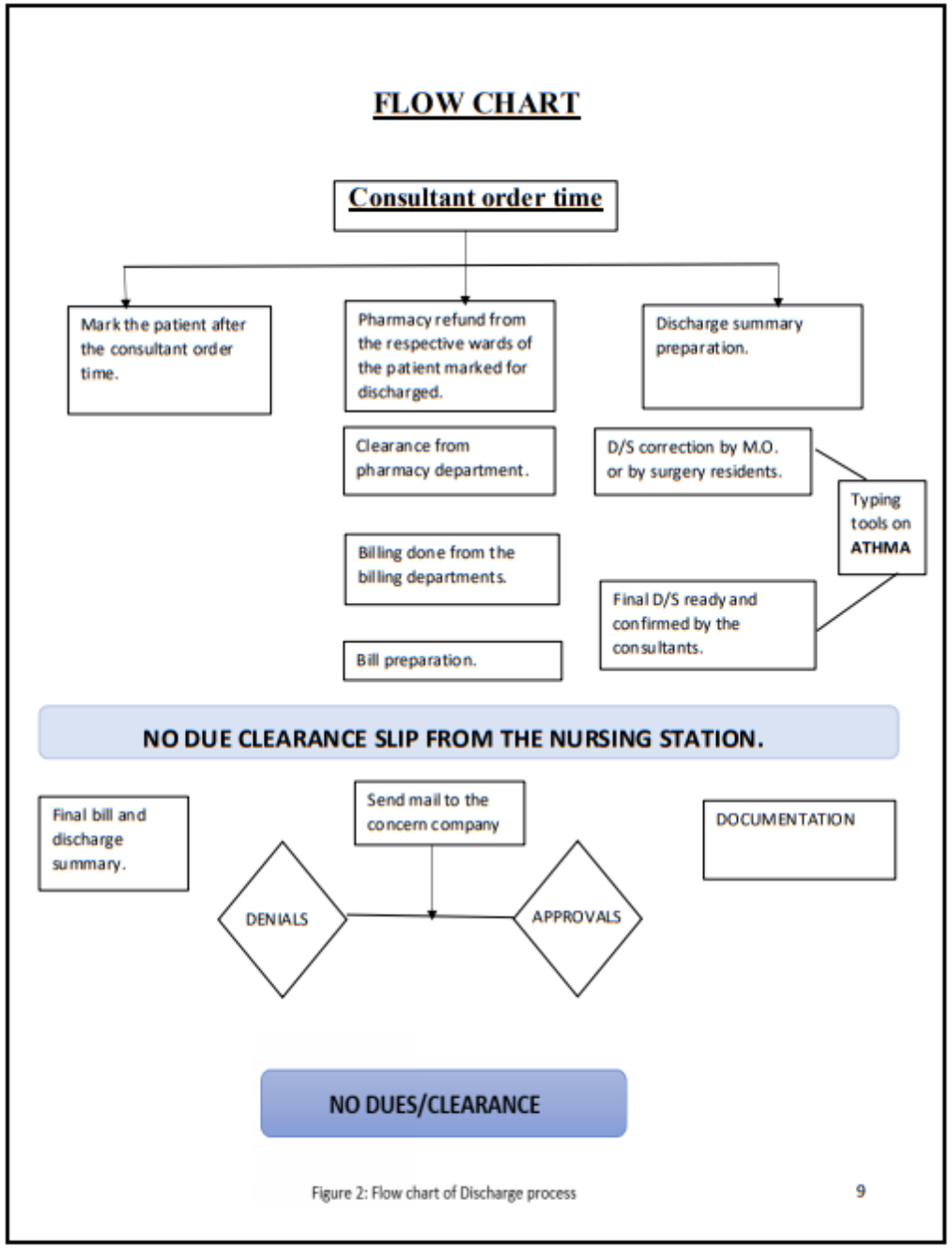


Figure 2: Flow chart of Discharge process

Phase 1- Define the problem

Discharge process in hospital is a complex process and plays an important role in dissatisfaction of the patient as it increases patient length of stay, wastage of hospital resources, unavailability of bed. Delay in new patient admission etc.

Phase II – Gap identified in existing manpower

- Nurse time calculation: - Time taken by nurse to initiate the patient family about discharge.
- IP coordinator time calculated: - Time taken by coordinator from the time taken by doctors.
- Signed discharged summary to the discharge summary received by wards.
- GDA time calculation: - Time taken by GDA in transferring a discharge summary from wards to TPA desk.
- Billing time calculation: - Time taken by billing department in clearance of planned discharge patients.

TABLE 3.2: AVERAGE TIME CALCULATED FOR VARIOUS STEPS IN DISCHARGE PROCESS

Average time calculated for various steps in discharge process		
1.	Average time taken to mark the patient after consultant order time.	15-30 Minutes
2.	Average time taken to finalize discharge summary after doctor correction.	45 mins
3.	Average time taken by GDA staff for transferring summary to TPA desk.	10 mins
4.	Average time taken by patient to clear all the bills in for cash patients.	30mins -2 hours
5.	Average time take by the nursing staff to make the returns.	16:5 mins
6.	Average time taken by the TPA for clearances.	1-2 hours
7.	Average time taken by billing department to send the bill to TPA for TPA patients.	3:30

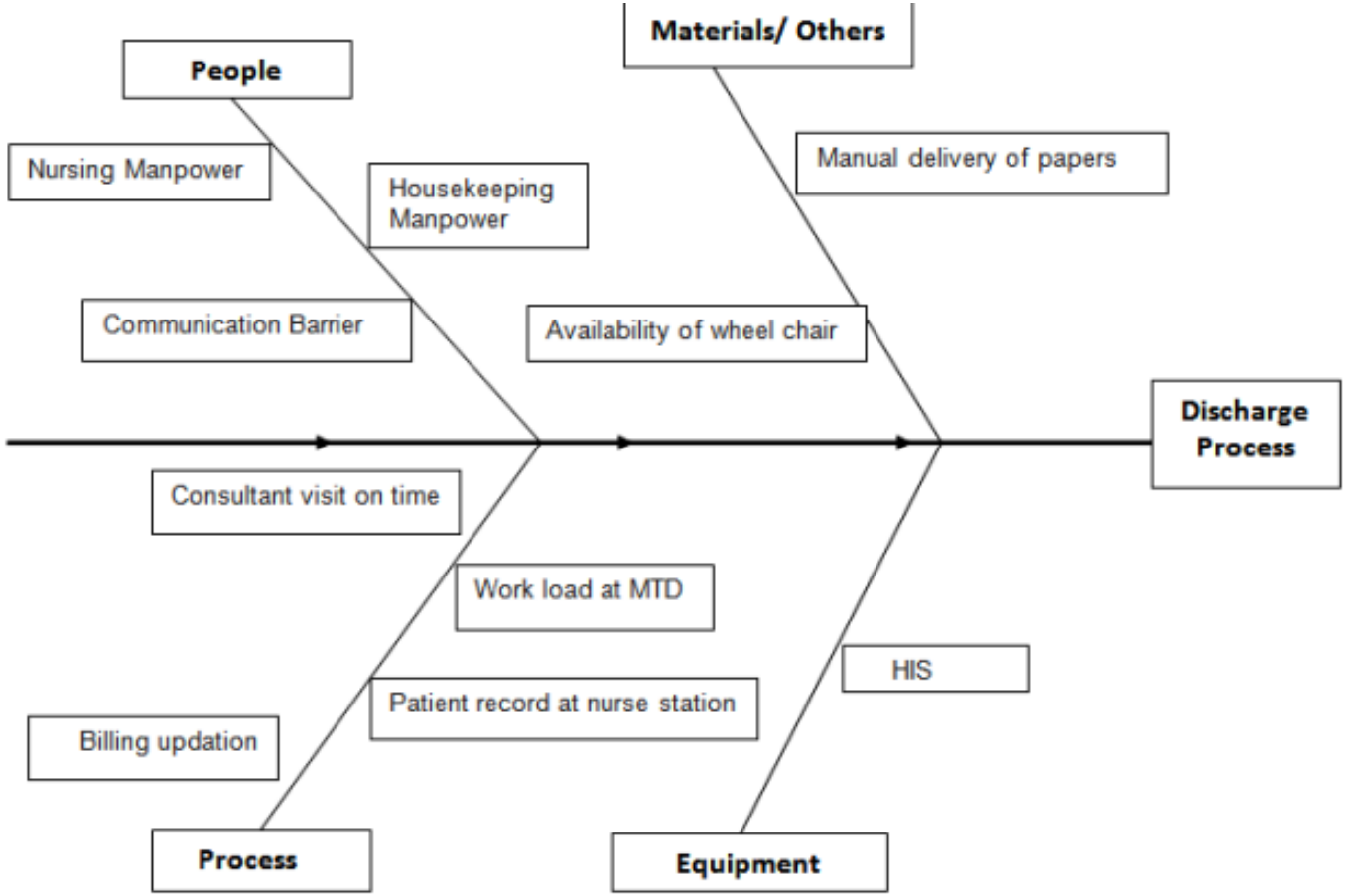


FIG. 1: FISHBONE DIAGRAM

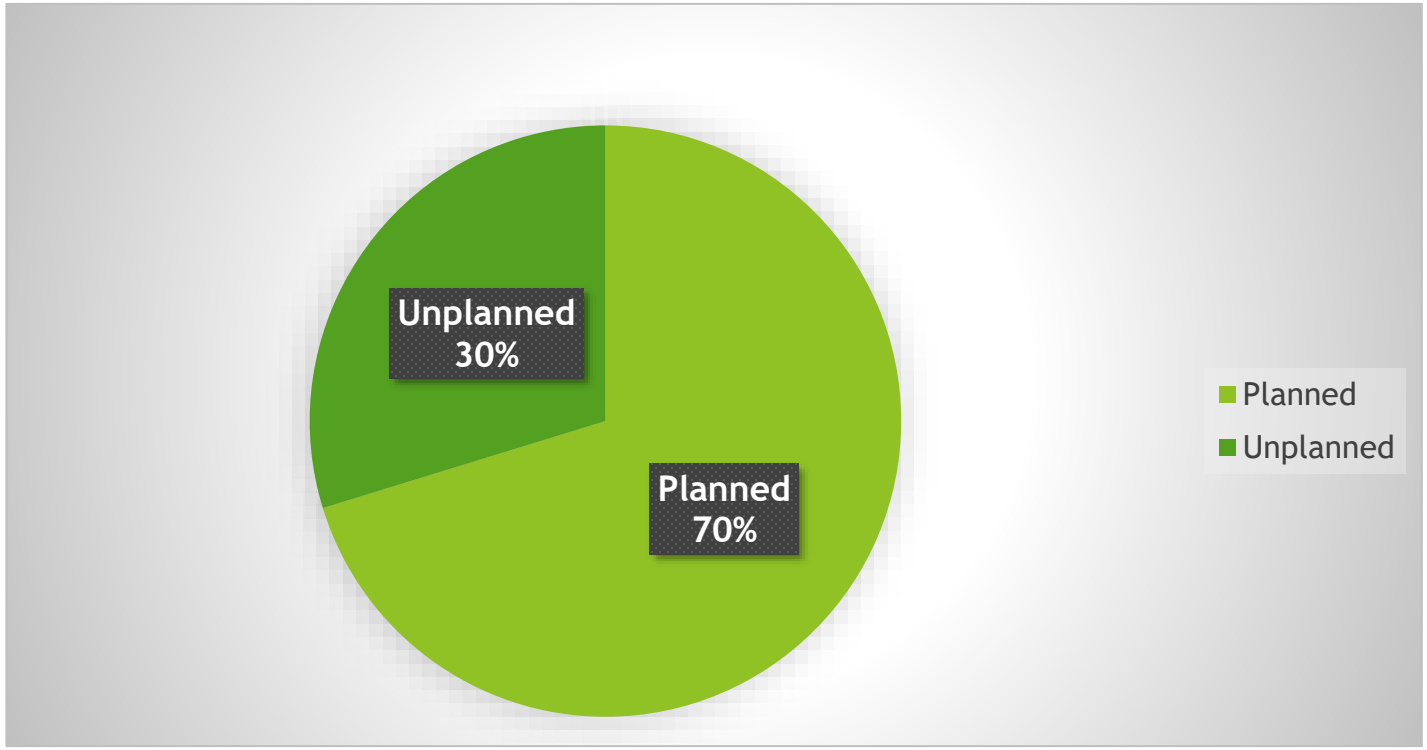


Figure 5: No. of discharges – Planned and Unplanned

CASH
TPA
PLANNED

UNPLANNED

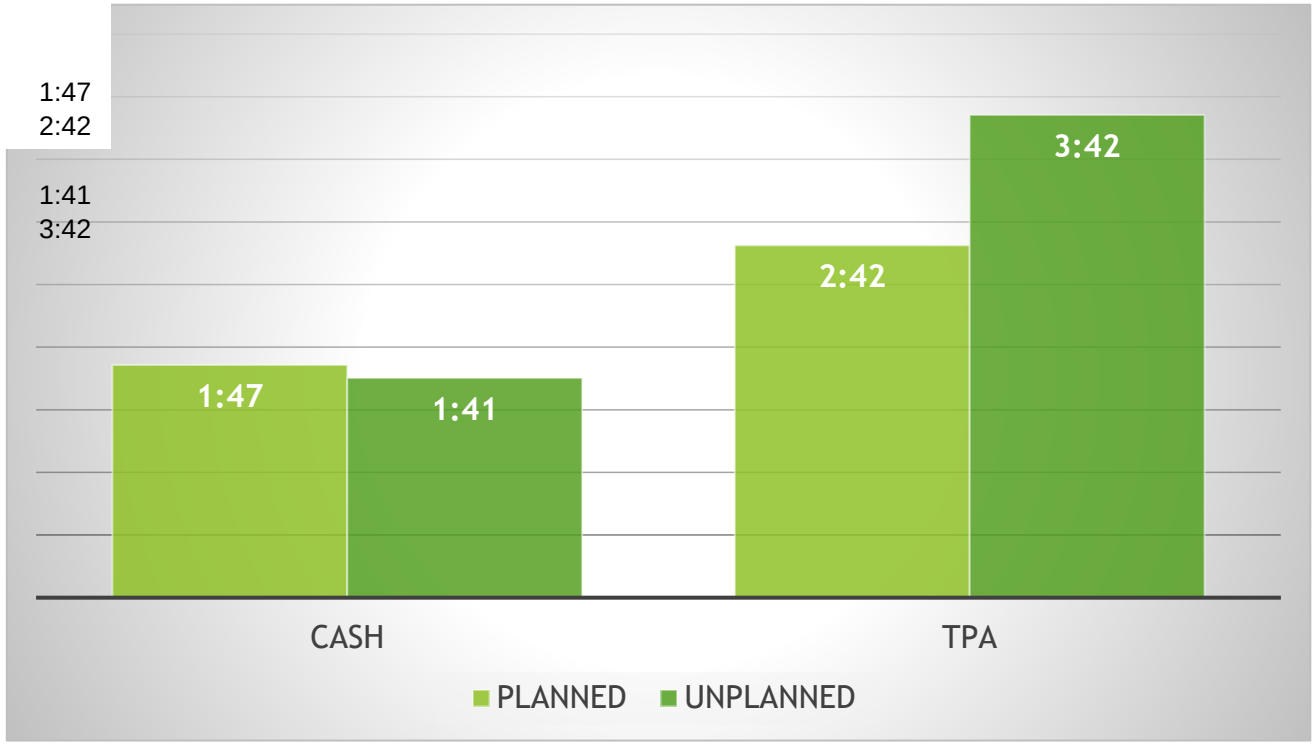
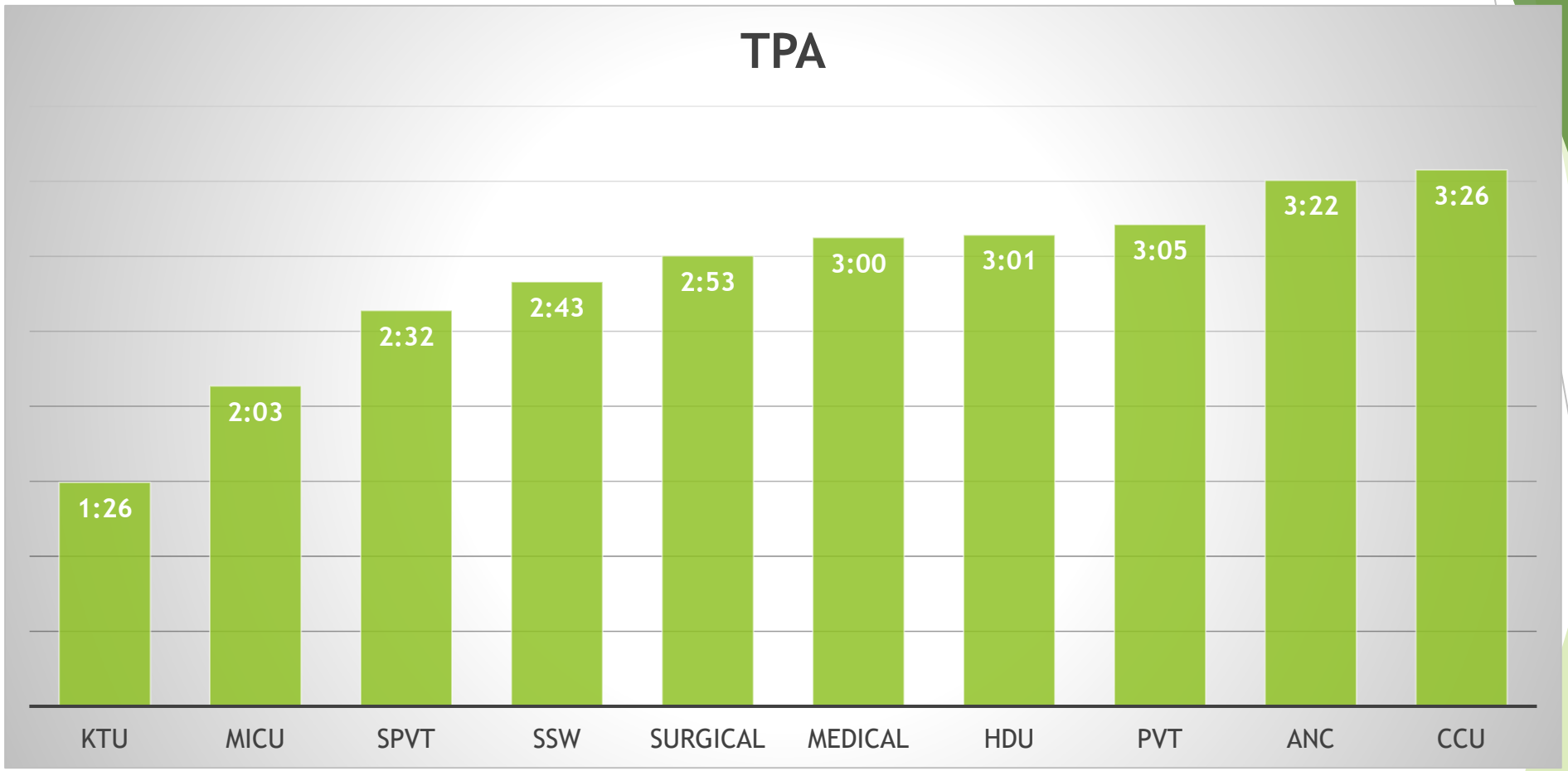


Figure 6: TAT for planned and unplanned patients.


TPA
1:26
2:03
2:32
2:43
2:53
3:00
3:01
3:05
3:22
3:26
KTU
MICU
SPVT
SSW
SURGICAL
MEDICAL
HDU
PVT
ANC
CCU

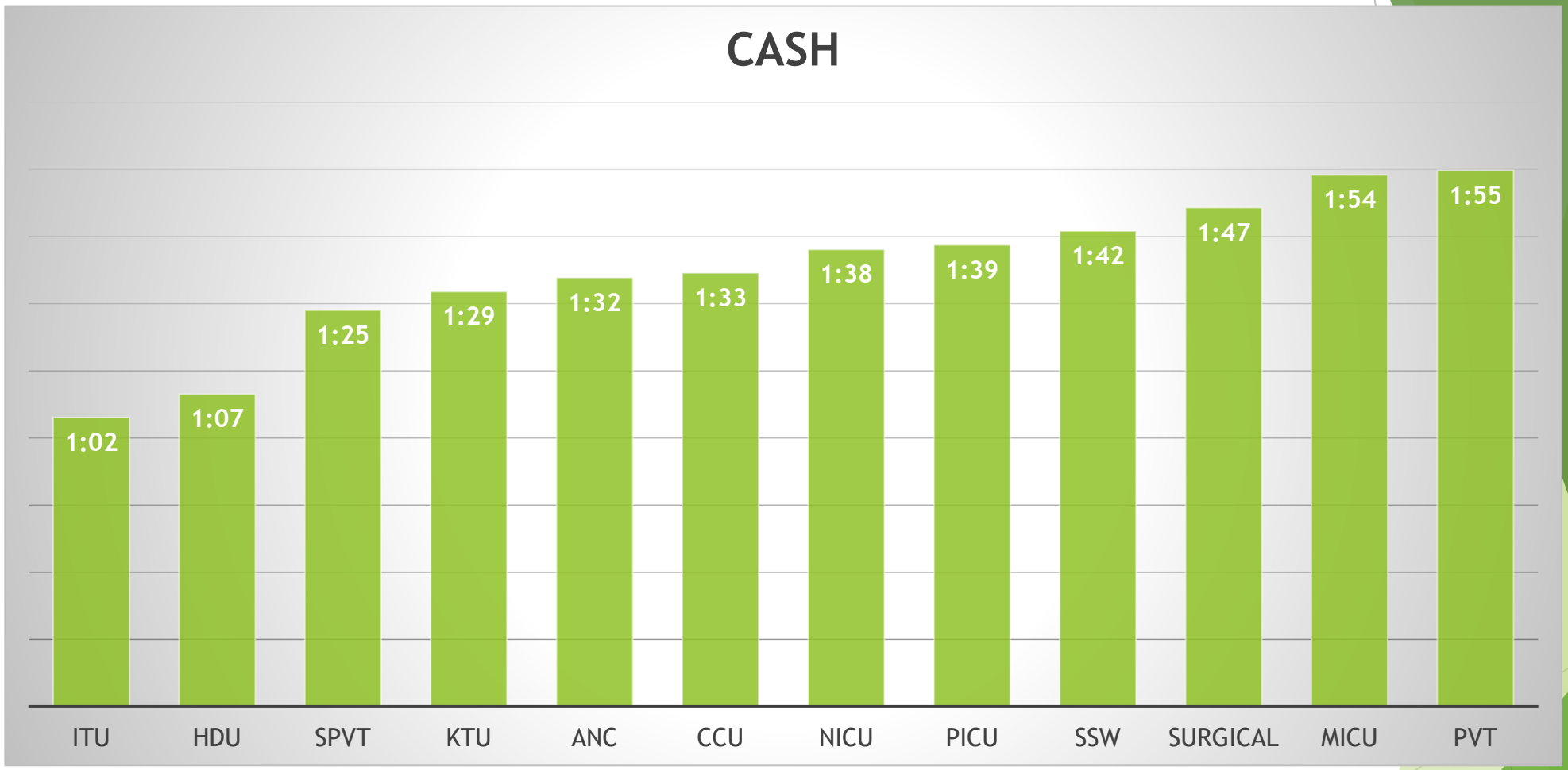


Figure 8: WARD WISE TAT OF TPA PATIENTS

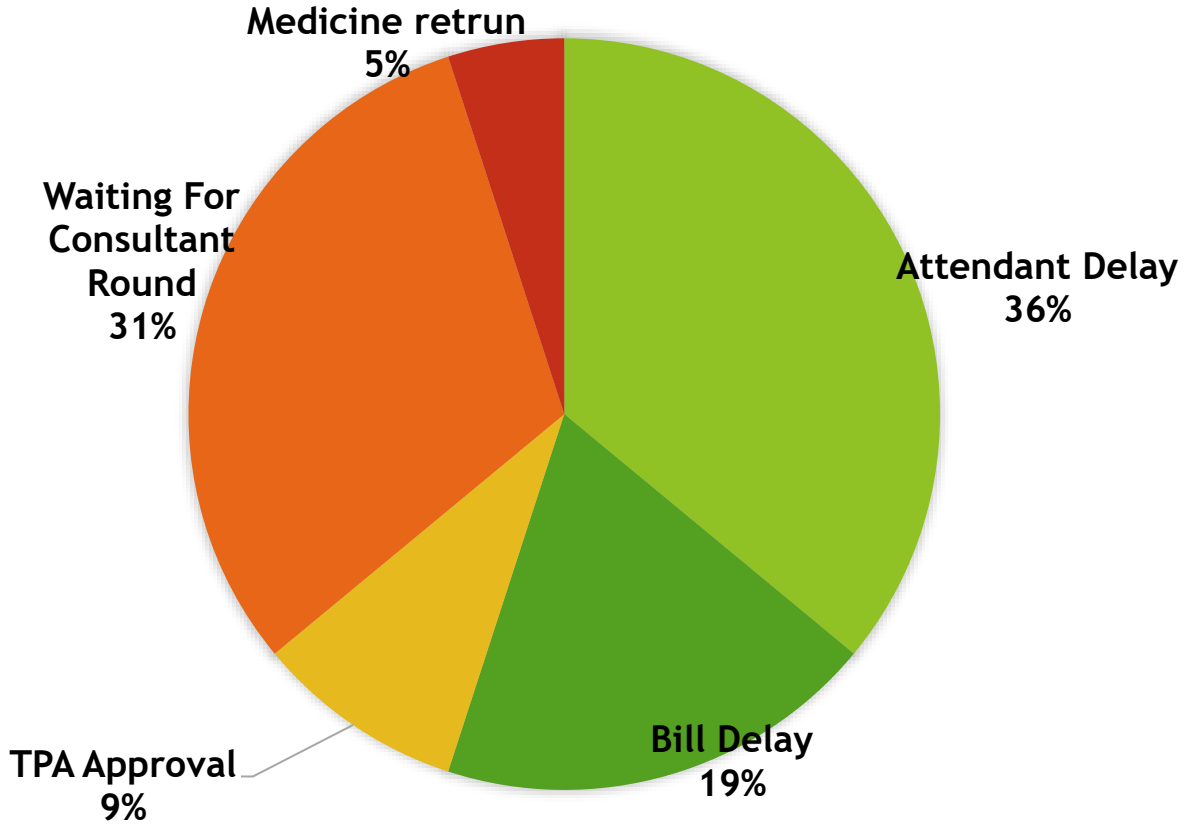


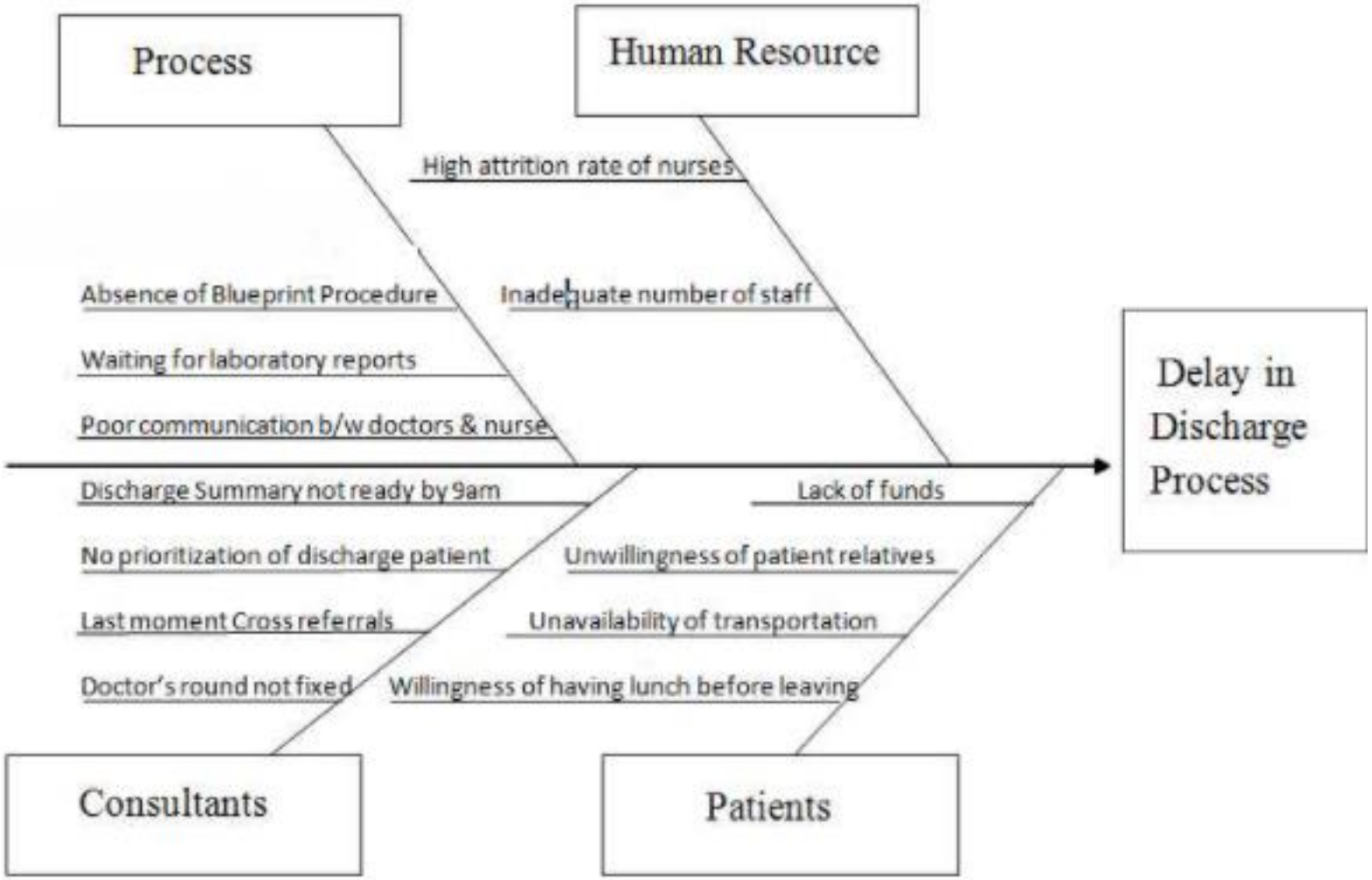
Figure 9: Delay reasons for discharges

INTERPRETATION

- On an average the discharge time for a cash patient is 1:45 mins.
- The maximum time taken to discharge a patient is of TPA.
- The shortest time taken to discharge a patient is of CODE Z or when a patient is from CCU or MICU (based on observations as well).
- Time taken for discharge patient is less in planned patients than unplanned patients.

TABLE 1: Reasons for delay in discharge process

S.no.	Reasons	Solutions
1	Discharge summary is prepared by surgery residents and it causes delay when they are busy in OT.	A different standard pattern can be made with the help of EMR.
2.	Multiple corrections of discharge summary at the time of discharge and it frequently occurs at the time of unplanned patients and TPA patients.	Cross referrals can provide update with the help of an application and it can directly be updated in the final discharge summary.
3.	Unplanned discharges in case of TPA and cash.	They can be converted into planned discharges.
4.	Last minute cross referrals.	It can be done digitally as patients don't have to wait for the doctor visit physically.
5.	Delay in Lab reports. – In covid	Planned discharges can be done more swiftly because patients need to wait for their negative report.


Process
Human Resource
High attrition rate of nurses
Absence of Blueprint Procedure
Inadequate number of staff
Waiting for laboratory reports
Poor communication b/w doctors & nurse
Discharge Summary not ready by 9am
Lack of funds
No prioritization of discharge patient
Unwillingness of patient relatives
Last moment Cross referrals
Unavailability of transportation
Doctor's round not fixed
Willingness of having lunch before leaving
Delay in Discharge Process
Consultants
Patients

The Process check list to sustain and control Improvement for long run

Process /Activity Steps	Processing time		Target Time	Task completion status (C-Completed; P*-Pending)	Signature of the Employee
	Start time	End Time			
Processing & Completion of the discharge notes by the primary physician					
Processing & completion of discharge notes by the ward secretary					
Processing and typesetting of the discharge summary by the Editor					
Completion of final discharge summary by the Editor after proof read by the Physician or Surgeon					
Time of handover of discharge summary to the Patient					

Suggestion

- Policy of a streamlined discharged process should be formed and implemented.
- Trainings should be conducted for staff to make them technology friendly.
- Clear communication should be encouraged among nurses, consultants, patients' relatives and other staff to get early discharge as miscommunication leads to delay in whole process.
- Duty rosters should be made for consultants for their visits at a fixed time.
- All reports should be timely verified and cross consultants' visits should be timely planned.

conclusion

During the Analyze phase of DMAIC, a root cause analysis was carried out with each process owners in charge for the preparation of various components of the discharge summary report.

Following recommendations were implemented.

(i) All the process owners of patient discharge process were given training to utilize the Information Technology to generate up-to date information about the Patients to be discharged.

(ii) Job Specialization technique was adopted to train specific ward secretaries in each department to process the discharge summary of the Patients. Also, a Process Design Program Chart (PDPC) was prepared depicting the patient discharging process customized to each department and made readily available to the ward secretary.to facilitate the process.

(iii) The Discharge summary preparation process has been decentralized and the reports are generated in each department itself.

(iv) Necessary manpower has been recruited for this purpose. After implementation of the improvement strategies for the period of 2 months, the data on patients discharging time was again collected in in the specific departments.

THANK YOU