Using DMAIC approach to streamline the Discharge process at Apollo Multispecialty Hospital, Kolkata

By

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Batch of HHM 2020 – 22

Dissertation Submitted for the partial fulfilment of the

MBA Hospital and Health Care Management

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Introduction

- Study on discharge process using DMIAC approach at the Apollo Multispecialty Hospital, Kolkata.
- Discharge can be broadly defined as a process of tools 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 in patient 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 the delay in discharges of patient and the poor and 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 discharge or unplanned illustrates the broader challenge of integrating health and social care .

Research Methodology

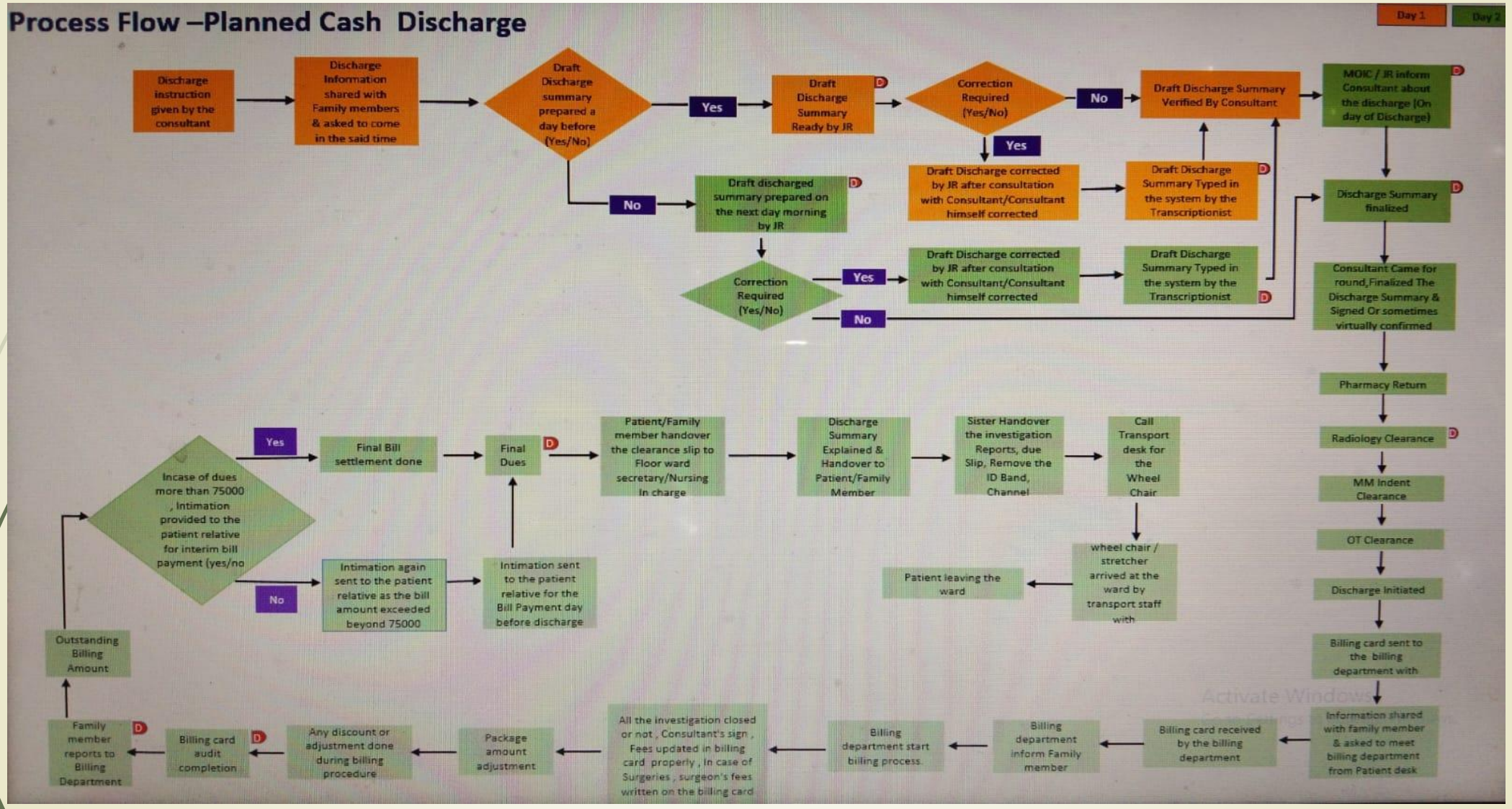
- **Research Question :-**

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

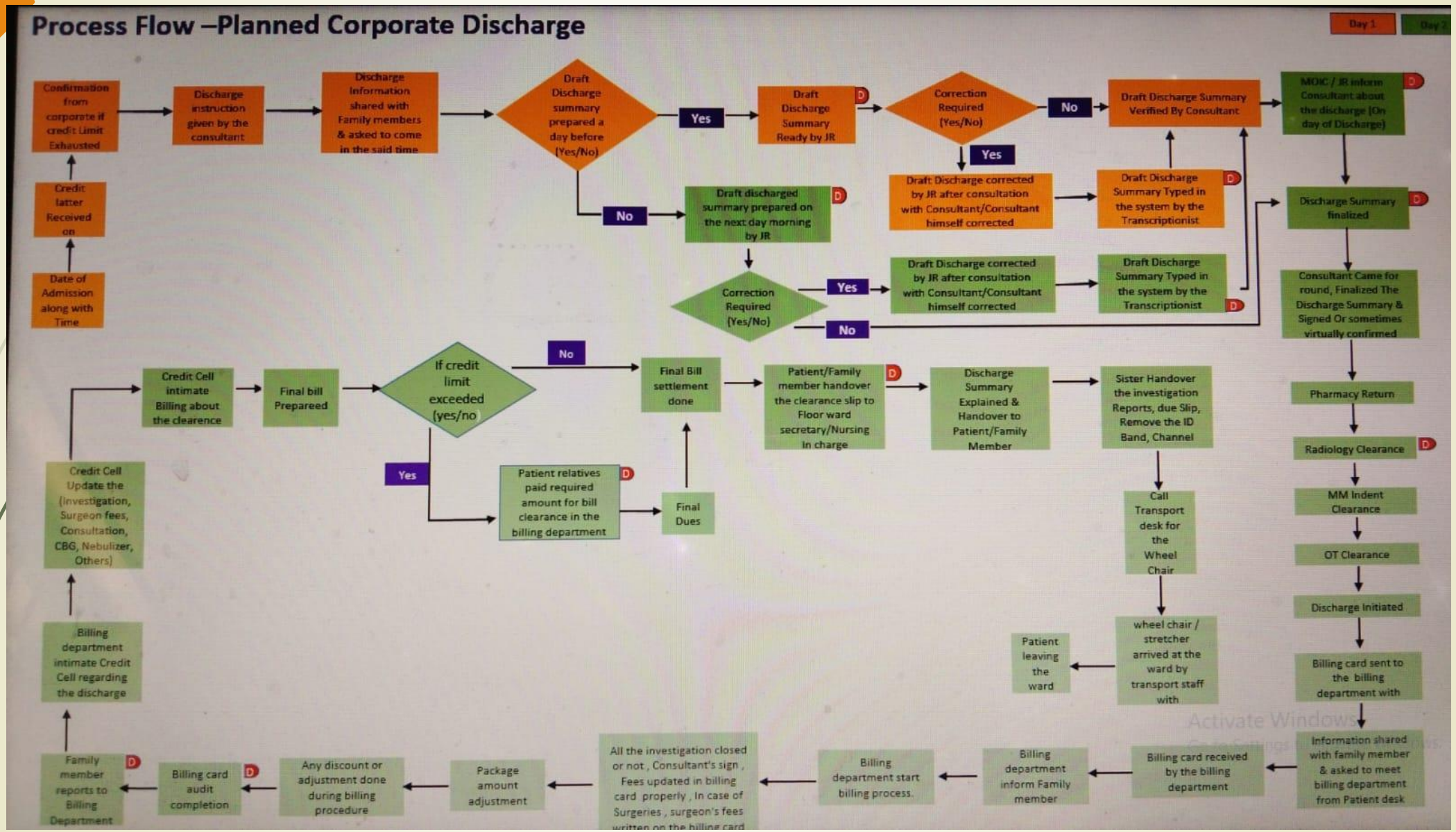
- **Objectives :-**
- To study the admission and discharge process
- To study the SOP'S Related to Discharge process .
- To identify the variation in the discharge process.
- To identify the factors causing delays to streamline the process.

- **Research Methodology :-**
- The study is conducted within the The Apollo Multispecialty Hospital , Kolkata based on descriptive cross sectional study, observational study design and sampling method used is convenient sampling . the study took three months with a sample size of 300 discharges.
- **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.

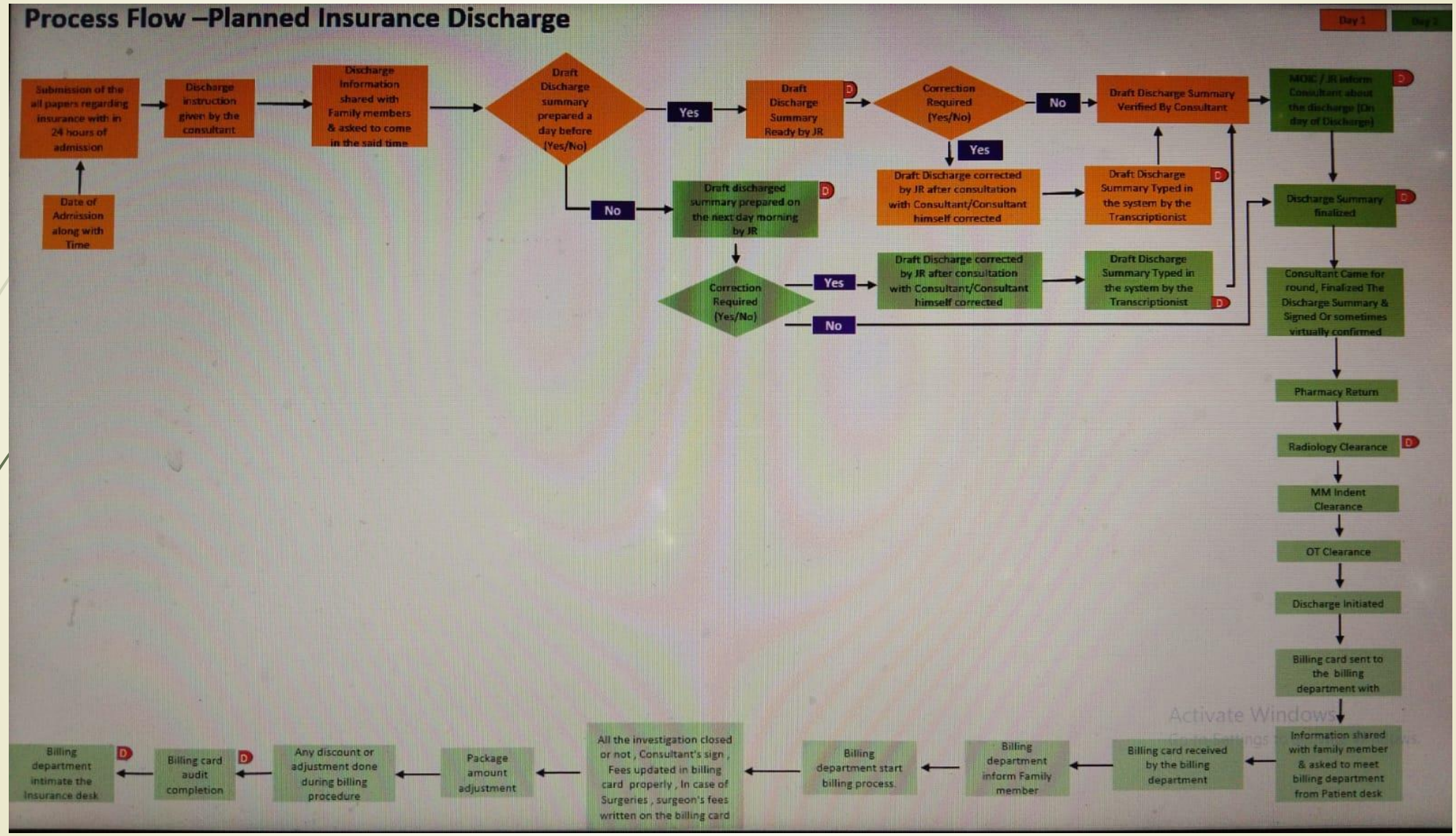
Process Flow cash Discharge :-

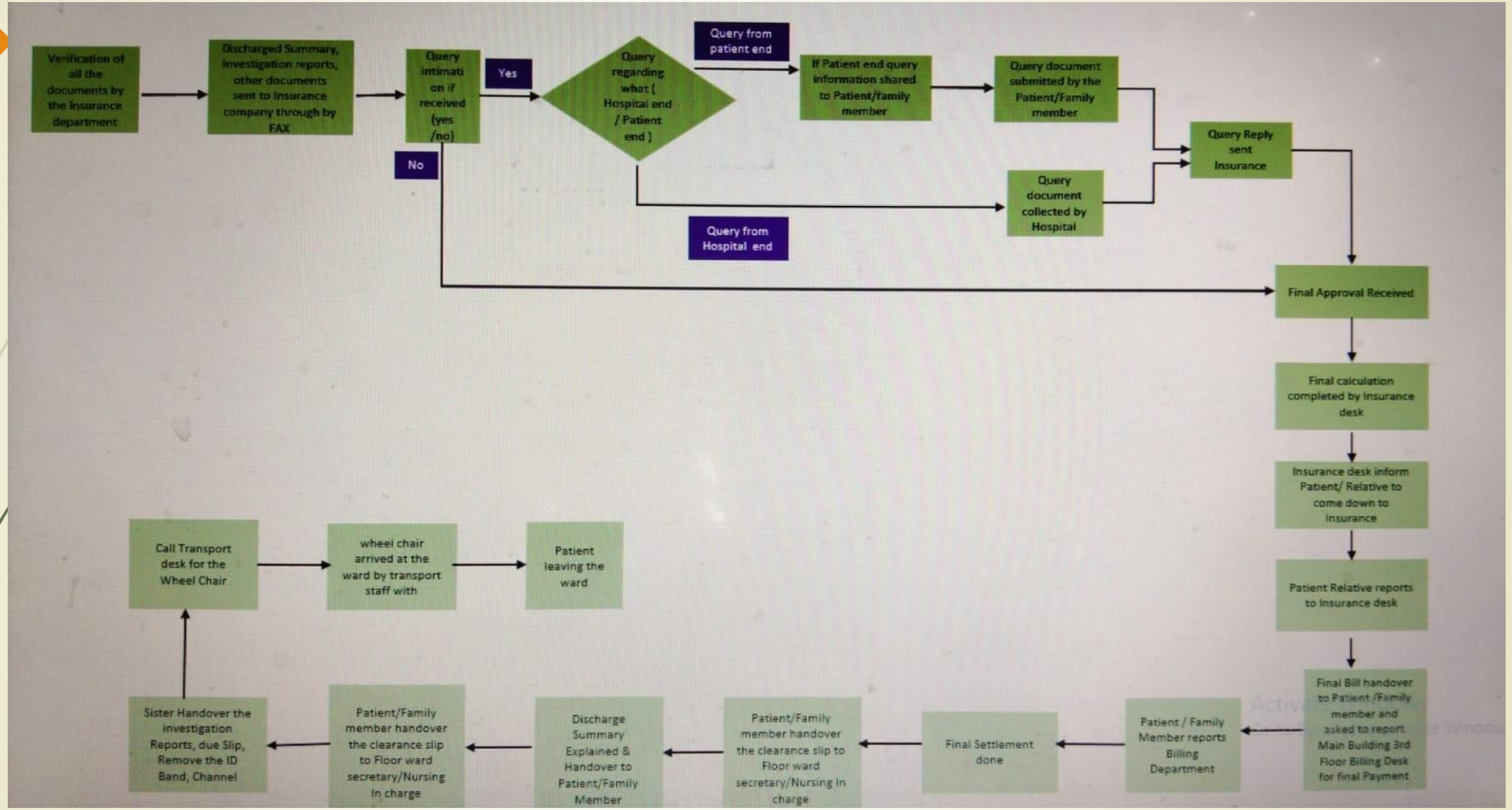


Process flow for Planned Corporate Discharge :-



Process flow for Planned Insurance Discharge :-




Verification of all the documents by the Insurance department
Discharged Summary, Investigation reports, other documents sent to Insurance company through by FAX
Query intimation if received (yes /no)
Yes
No
Query regarding what (Hospital end / Patient end)
Query from patient end
If Patient end query information shared to Patient/family member
Query document submitted by the Patient/Family member
Query from Hospital end
Query document collected by Hospital
Query Reply sent Insurance
Final Approval Received
Final calculation completed by Insurance desk
Insurance desk inform Patient/ Relative to come down to Insurance
Patient Relative reports to Insurance desk
Final Bill handover to Patient /Family member and asked to report Main Building 3rd Floor Billing Desk for final Payment
Patient / Family Member reports Billing Department
Final Settlement done
Patient/Family member handover the clearance slip to Floor ward secretary/Nursing In charge
Discharge Summary Explained & Handover to Patient/Family Member
Patient/Family member handover the clearance slip to Floor ward secretary/Nursing In charge
Sister Handover the investigation Reports, due Slip, Remove the ID Band, Channel
Call Transport desk for the Wheel Chair
wheel chair arrived at the ward by transport staff with
Patient leaving the ward

Phase 1 Define the Problem :-

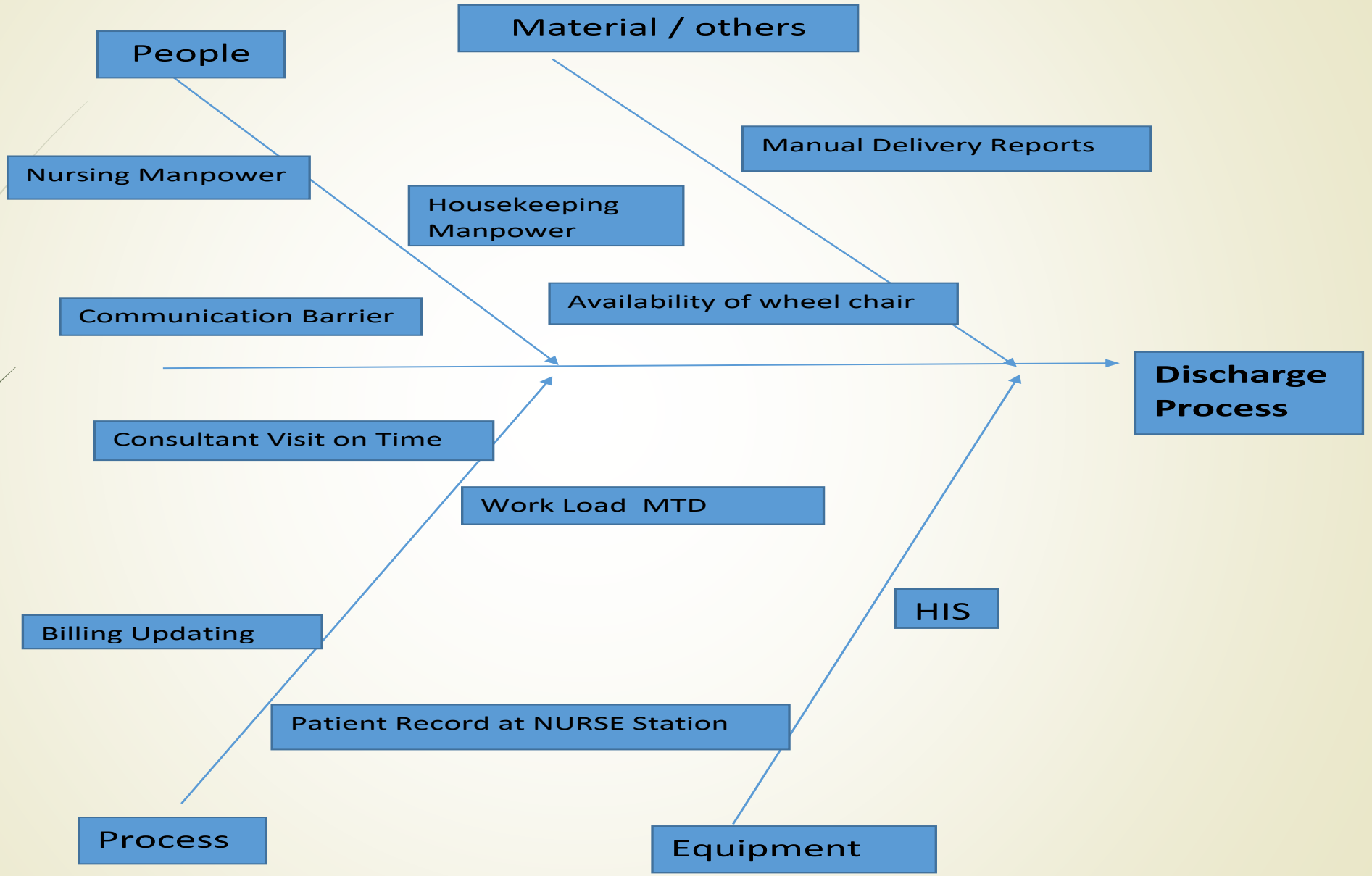
Discharge process in hospital is a complex process an important role in dissatisfaction of the patient as it increase patient length of stay , wastage of hospital resources , unavailability of bed . Delay in new patient admission etc.

- **Phase 2 – Gap identified in existing manpower**

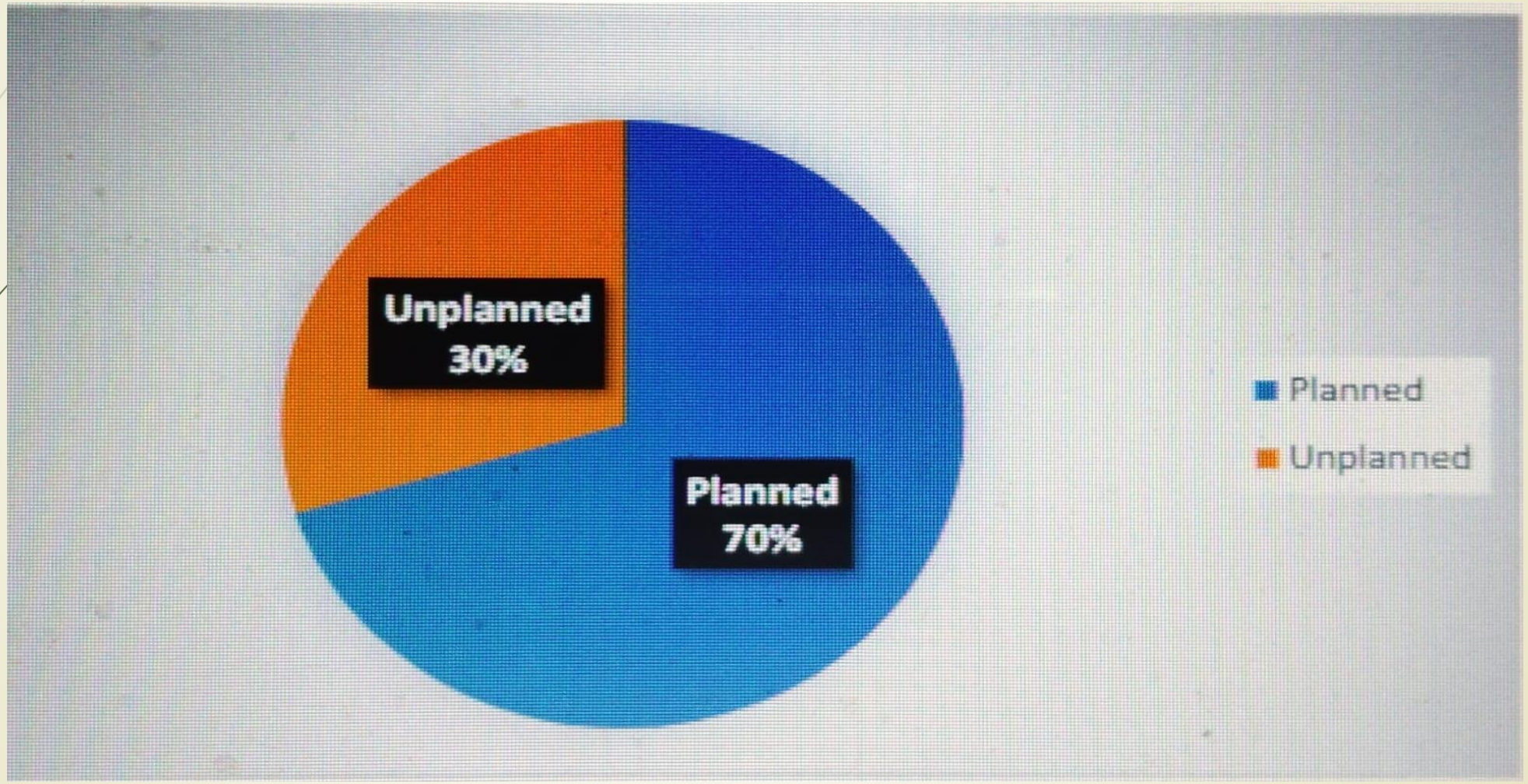
- Nurse time calculation : – Time taken by nurse to initiate the patient family about discharge .
- IP Coordinator time calculated : Time taken by coordinator from the time taken by doctors .
- Signed discharged summary to the discharge summary received by wards
- GDA time calculation :- time taken by 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

Average time calculated for various steps in Discharge process :-

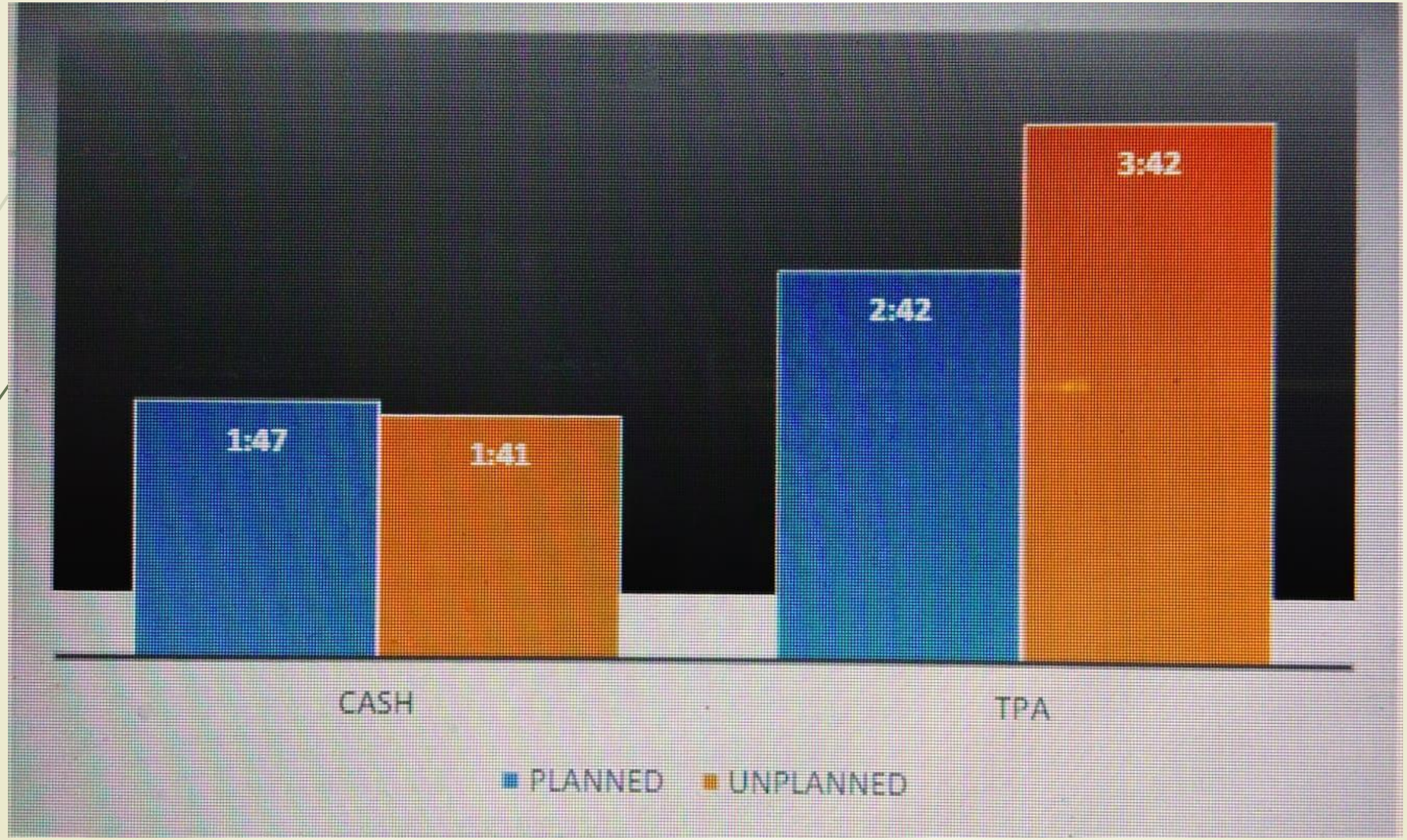
01.	Average time taken to mark the patient after consultant order time	15 to 30 mins
02.	Average time taken to finalize discharge summary after doctor correction	45 mins
03.	Average time taken By patient clear all the bills in for cash patients	30mins to 2 hours
04.	Average time taken by the nursing staff to make the returns	20 to 30 mins
05.	Average time taken by the TPA for clearance	3 to 4 hours
06.	Average time taken by the billing department to send the bill to TPA for TPA patients	1 to 1.30 hours


People
Material / others
Nursing Manpower
Manual Delivery Reports
Housekeeping Manpower
Communication Barrier
Availability of wheel chair
Discharge Process
Consultant Visit on Time
Work Load MTD
HIS
Billing Updating
Patient Record at NURSE Station
Process
Equipment

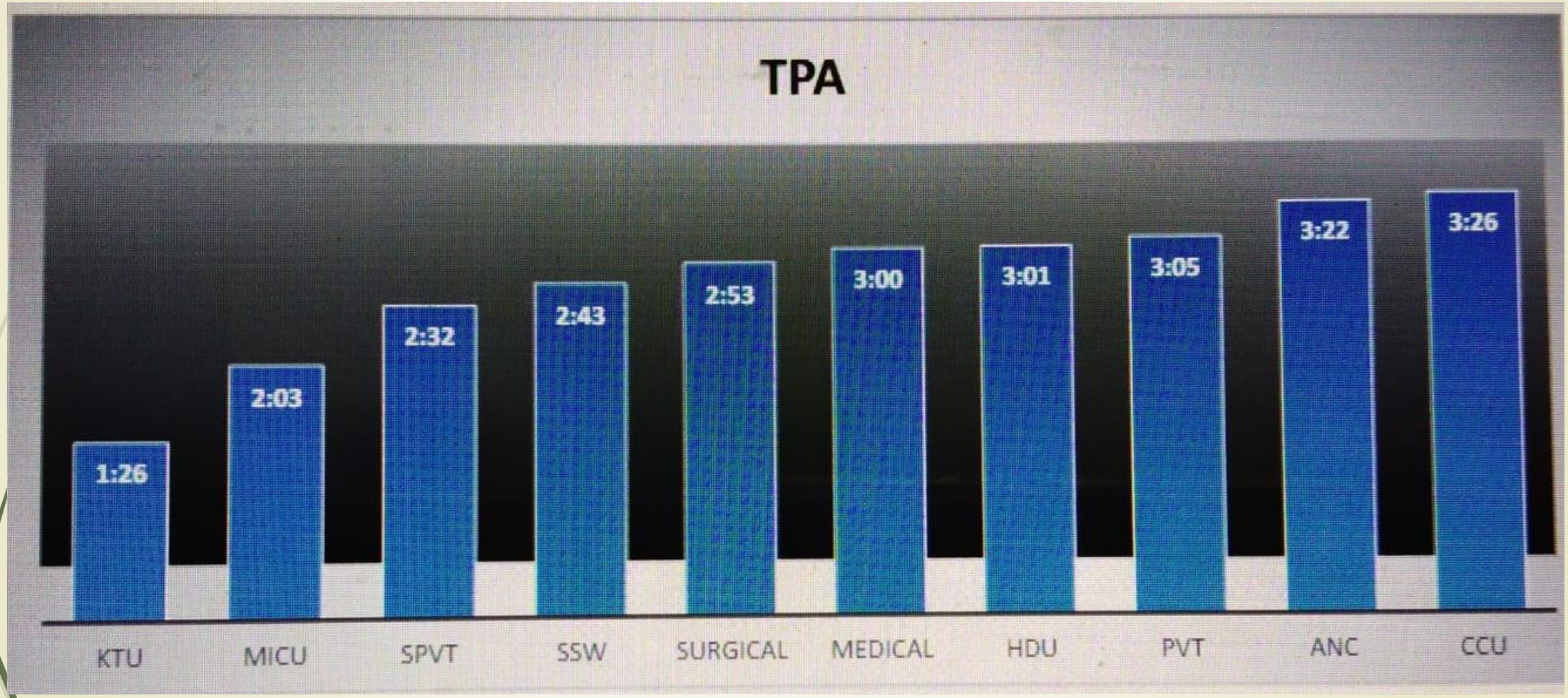
- Number of Discharged Planned or unplanned



- TAT for Planned and unplanned patients

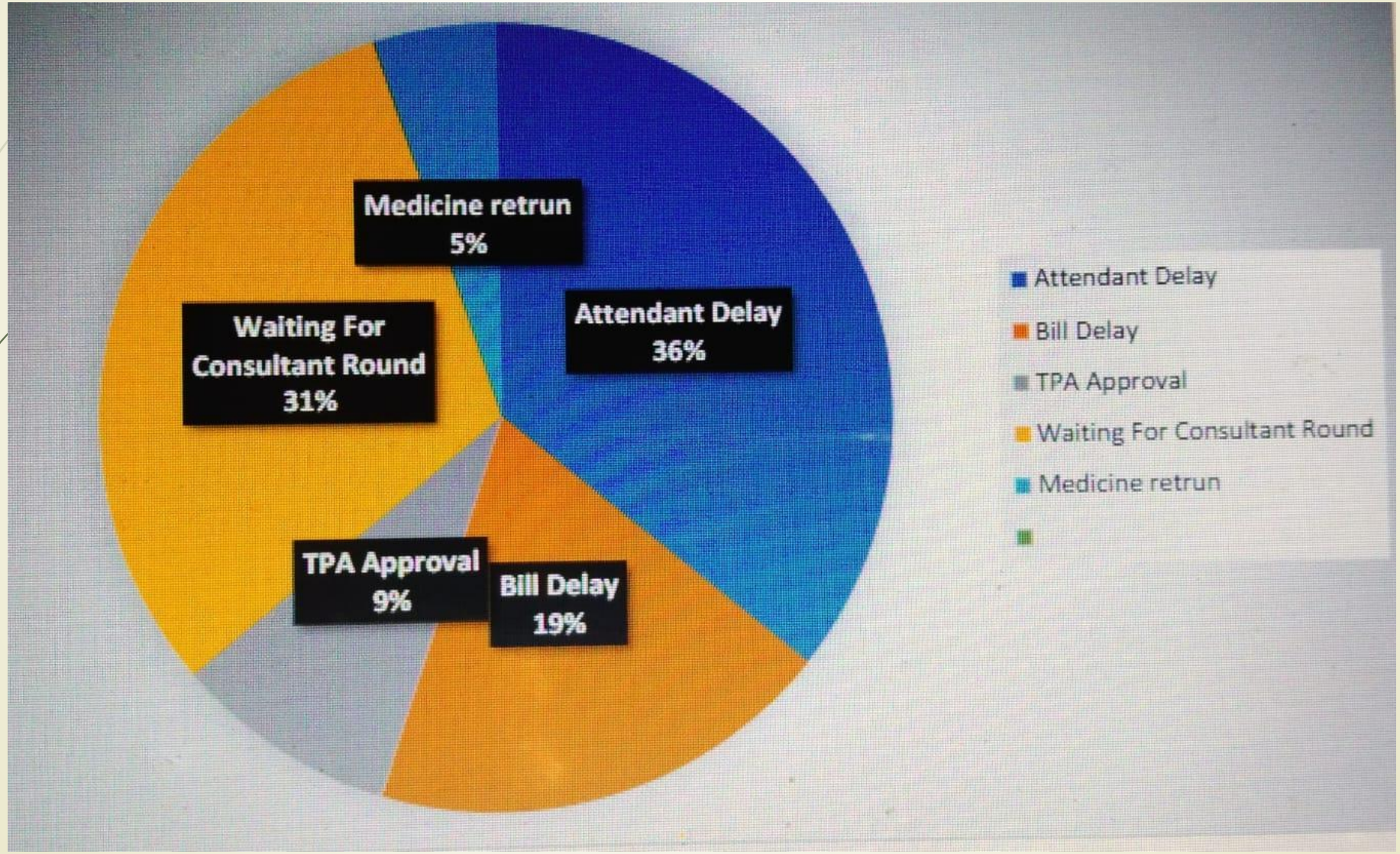


- TAT for TPA patients



- TAT for CASH patients

- Delay reasons for Discharge :-

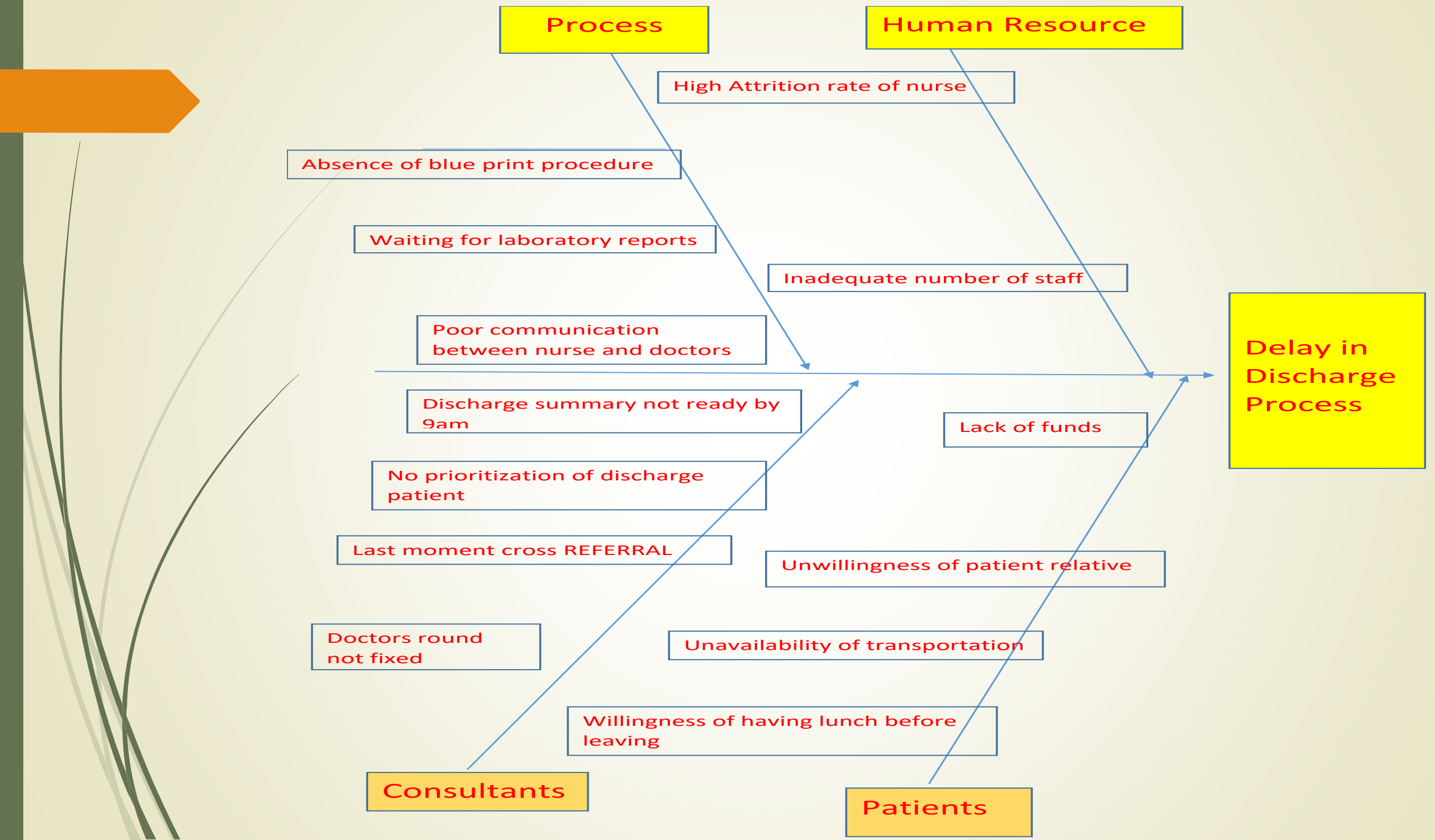


Interpretation : -

- On an average the discharge time for a cash patient is 2 to 3 hours
- The maximum time taken to discharge a patient is of TPA
- The shortest time taken to discharge a patients is of Corporate patients
- Time taken for discharge patient is less in planned patients than unplanned patients

Reasons For Delay In Discharge Process :-

Serial Number	Reasons	Solutions
01.	Discharge summary is prepared by surgery residents and it causes delay when they are busy in O.T	Discharge summary is prepared by surgery residents and it causes delay when they are busy in O.T
02.	Multiple correction 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 in the final discharge summary
03.	Unplanned discharge in case of TPA and cash patients	Unplanned discharge in case of TPA and cash patients
04.	Last minute cross referrals	It can be done digitally as patients don't have to wait for the doctor's visit physically
05.	Delay summary preparation by the resident doctor or rmo	Resident doctors should prepare the summary on previous day instead of next day, so that on next day consultant can verify the discharge summary during round


Process
Human Resource
High Attrition rate of nurse
Absence of blue print procedure
Waiting for laboratory reports
Inadequate number of staff
Poor communication between nurse and doctors
Delay in Discharge Process
Discharge summary not ready by 9am
Lack of funds
No prioritization of discharge patient
Last moment cross REFERRAL
Unwillingness of patient relative
Doctors round not fixed
Unavailability of transportation
Willingness of having lunch before leaving
Consultants
Patients

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 , consultant , patients relative and other staff to get early discharge as miscommunication leads to delay in whole process
- Duty roaster 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
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Conclusion :-

- The discharge process in a hospital is as important as other process not only for the patient but for the hospital as well. As it holds commercial value as well. This process involves multi faces and many people at a single point of time and creates many bottle necks which further causes delays.
- These bottle neck are identified and solutions can be implemented in pathway to reduce the wastage of time and improving the process. Other steps which are followed in the pathway is value stream mapping. Altogether , DMIAC also helps in taking the right decision and making the process smooth and effective.
- In discharge process , many time events have been identified like at billing point , drug return , TPA processing and further taking the right decision and reducing time wastage to smooth the process .

Following Recommendation were implemented :-

- All the process owner of patient discharge process were given training to utilize the information technology to generate up to date information about the patients to be discharged.
- 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 Programme 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.
- The discharge summary preparation process has been decentralized and the reports are generated in each department
- Necessary manpower has been recruited for the purpose. After implementation of the improvement strategies for the period of 2 months , the data on patient discharging time was again collected in the specific departments .

Thank You