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At
ADITYA BIRLA MEMORIAL HOSPITAL,
PUNE

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A Report

A study on identification of major bottlenecks in discharge process and suggest recommendations to reduce time lag.

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ABBREVIATIONS

1. ABMH: Aditya Birla Memorial Hospital
2. TAT: Turnaround time
3. T2: Physical discharge
4. T3: Settlement Desk
5. T2: Financial Invoice
6. T1: Marked for discharge
7. T2-T1: Difference between Financial invoice and marked for discharge time
8. T3-T2: Difference between settlement time and financial invoice time
9. T4-T3: Difference between Physical discharge and Settlement time
10. T4-T1: Total time taken for discharge
11. TPA: Third party Administrator
12. D/C: Day and Care patients
13. A & E: Accident and emergency
14. O & G: Obstetrics and Gynecology
15. CCU: Critical care unit
16. ICU: Intensive care unit
17. HDU: High dependency Unit
18. NICU: Neonatal ICU
19. CVTSR: Cardio vascular thoracic surgery and recovery

PART 1

OBSERVATIONAL LEARNING

OBSERVATIONAL LEARNING

Section 1

1.1 Brief Introduction of ABMH

Aditya Birla Memorial Hospital (ABMH) is a multi-specialty medical Centre in the Pune suburb of Pimpri-Chinchwad, Maharashtra, India. The hospital is conveniently located near the Mumbai-Pune and Mumbai-Bangalore expressways and is easily accessible by road, rail, and air. The quaternary healthcare Center provides high-quality, low-cost medical care. The centrally air-conditioned hospital, which has 500 beds and 13 operating theatres and is spread across 16 acres of land, is equipped with cutting-edge technology. It operates in a digital environment that is filmless and paperless.

Mrs. Rajshree Birla is the chairperson of the Aditya Birla Foundation, a public charitable trust founded in 1995 in memory of Mr. Aditya Vikram Birla.

It organizes medical camps in rural communities, as well as health education and awareness workshops.

- VISION: Excellence first and always.
- MISSION: Compassionate quality health care

1.2 Specific Objectives

- TPA and billing department observation
- Performing the assigned field work.
- Working on the given projects at organization and giving a presentation at the end of internship.

Section 2

2.1 Mode of data collection

For data, the ABMH RHIS system was used, and manual entries were made daily to record patients being discharged and reasons for delays. Data was entered into Excel in tabular format with the following column headers: patient name, MRN number, Ward, Organization, and Marked for Discharge time, financial invoice time, settlement time, and physical discharge time. For analysis, the average time taken for each step of discharge was calculated using a formula, a pivot table was used to calculate the frequency of discharges, and a simple formula was used to calculate percentage discharges. A descriptive analysis was performed using Excel to determine the number of discharges from specific departments and organizations, as well as the minimum, maximum, and average time was noted.

Section 3

3.1 TPA Department

A third-party administrator (TPA) is a professional organization that coordinates the claim settlement process in a premium, fast, acceptable, and trouble manner. The TPA department at ABMH works with the respective insurance companies, the billing department, the patients, the settlement desk, and the doctors. When a patient is admitted to the hospital, the TPA team sends the necessary documents to insurance companies for initial approval and notifies the patient. The interim bill is sent to the companies for final approval during discharge. The TPA team sends necessary documents to insurance companies for initial approval and notifies the patient. The interim bill is sent to the companies for final approval during discharge. The team informs the patients of the net amount paid by the sponsor and the amount to be paid by the patient. In the event that a query is generated, the team resolves it internally by coordinating with hospital departments, and in the case of an external query, the patient's relatives are notified.

3.1.1 Factors affecting the functioning of department:

- Availability of discharge summary for final approval from insurance companies.
- Presence of relatives to convey messages or queries generated by company.

- Doctor assistance in case of internal queries.
- CGHS, ECHS sites should be functioning for approval of credit bills.

3.2 Billing Department

Billing is the process of creating an invoice in order to recover the cost of a sale or service from the customer. The billing department at ABMH prepares the interim and final bill for all patients. They use pink sheets received from wards to do so, which contain information about all wards, length of stay, consulting doctor visits, and surgery codes, if any. The TPA department receives an interim bill for final approval. For cash patients, the final bill is saved, and the patient's relatives are notified. The final bill for TPA patients is saved after final approval from TPA.

3.2.1 Factors affecting the functioning of department:

- The speed of the network and RHIS system is critical for quick updates and billing entries.
- Bills raise patient concerns and questions.
- Delays in sending the pink sheet from the wards, as well as incomplete information on the sheets, add to the time lags in discharge.

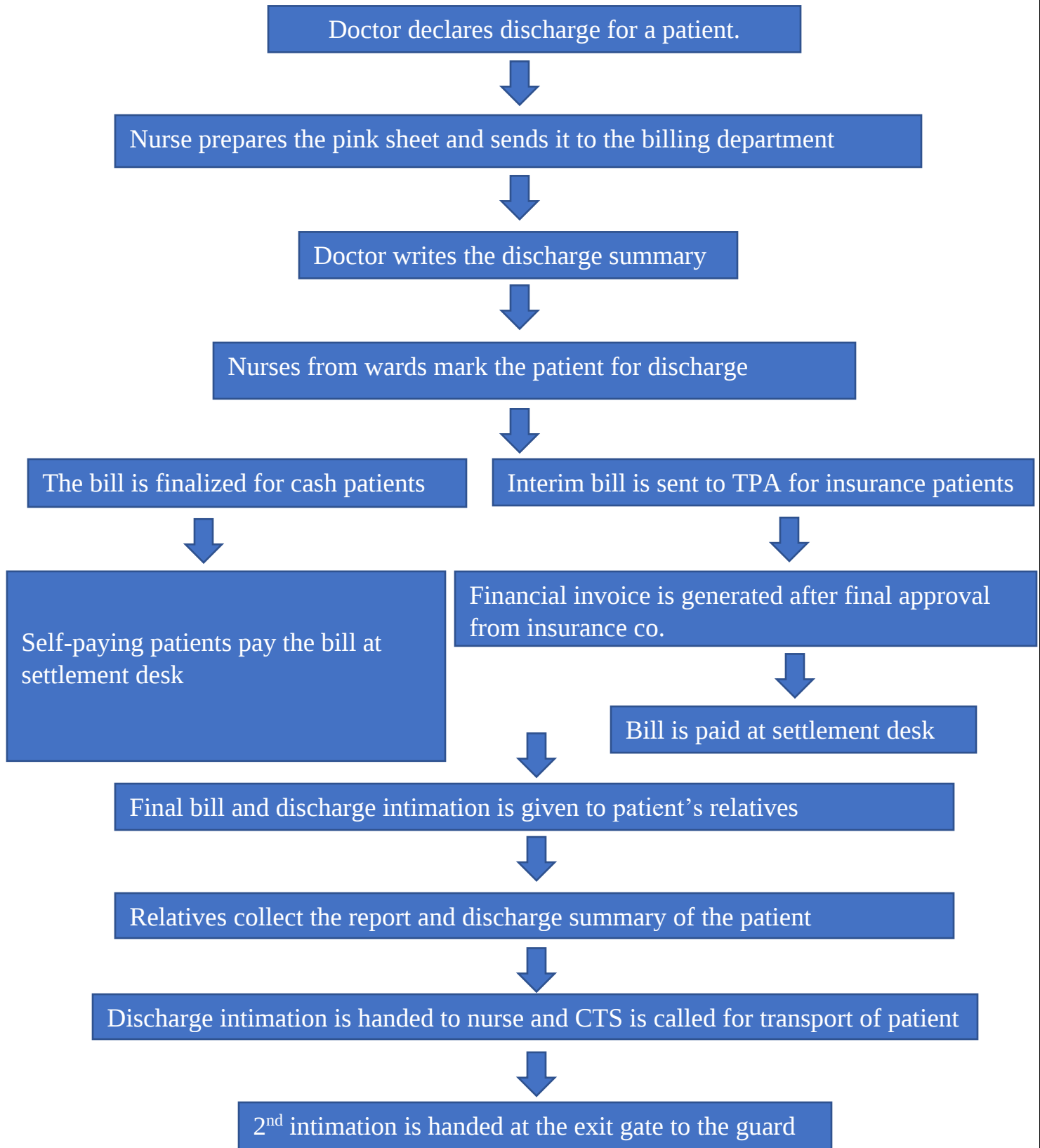
3.3 Settlement Desk

The settlement desk is the location where patients settle their bill amounts. The settlement and admission desks at ABMH are the same. Patients from various wards come to settle their final bills before being discharged. The patient is given a detailed bill for the duration of his or her stay.

3.3.1 Factors affecting functioning of department:

- All of the patients rush to the same desk to settle their bills and receive notification of their discharge.
- At the same time, patients are admitted and those who require a pass converge at the same desk.
- There are fewer employees working.

3.4 Discharge Process at ABMH



3.5 SWOT analysis of ABMH

Strength:

- Systematically arranged OPD layout.
 - Ophthalmology OPD connected to day care of IPD building via bridge
 - Cardiology department to Cath lab via bridge.
 - Ortho OPD near to Physiotherapy department and casualty and radiology department
 - Separate receptions for OPD's
 - For easy availability of doctors in emergency.
- Educating patients/visitors about the various facilities at OPD via brochures available at respective OPD receptions.
- In order to attract and retain customers in a highly competitive market, management is committed to a patient-centric approach, which includes hiring qualified and trained staff to provide standard services to patients.
- Infrastructure.

Weakness:

- Staff shortages can make it difficult to provide healthcare services to a large number of patients.
- Inadequate coordination among various departments.
- Unawareness of functions of different wings among the employees.

Opportunity:

- With an increasing population, the healthcare industry is rapidly expanding.
- As diseases become more prevalent, people place a greater emphasis on their health and treatment.
- People are becoming more health conscious as literacy rates rise.
- Globalization aids in the adoption of new technology in healthcare services for people.

Threats:

- Offering the same services as ABMH at a lower cost in well-established competitors at Pune such as Dinanath Mangeshkar Hospital, Sahyadri Hospital, and others.
- Competitive Hospitals in Pune are implementing new technology in healthcare services for patients.
- Recessions and economic downturns can stifle health-care growth.

Section 4**4.1 Conclusive learnings**

The department operates according to a standard protocol. The ultimate goal is to provide care in a hassle-free manner, with patient satisfaction being of the utmost importance. Following the declaration of the patient's discharge, there are four major steps: marking the patient from discharge from wards, preparing the final bill followed by insurance approval if any, final settlement of bill and collection of detailed bill and reports, and physical discharge.

4.2 Limitations

Because the hospital has 500 beds, it is not possible for a single person to be present at each location where the patient is leaving the ward to record the reasons for the delay. Due to the time constraints of working hours, not all causes of delay could be noted at the settlement desk. When manual entries are made, they are prone to human error.

4.3 Suggestions for improvement

The discharge procedure is a vicious cycle. Any delay will increase the TAT in the long run. As a result, an efficient system with an improved user interface can solve a wide range of issues. An accountability sheet can be created to show who is responsible for informing the patient about his or her questions and preparing the final bill.

PART 2

PROJECT LEARNING

PROJECT LEARNING

Section 1

1.1 Introduction

Outpatient and inpatient services are the most common services provided by hospitals. An outpatient is someone who is given noninvasive treatment in a hospital but. An inpatient is someone who is admitted in hospital for more than 24 hours. An inpatient usually goes through three distinct stages: admission, followed by intervention, and physical discharge respectively.

During the patient's discharge a series of events take place. In the final stage the patient gets discharged and goes to home or other hospital for further care.

Discharge is defined as, "a release of a hospitalized patient from the hospital by the admitting physician after providing necessary medical care for a period deemed necessary ⁽¹⁾.

Discharge process involves various steps such as discharge summary preparation, pharmacy clearance, insurance approval, collection of reports and bill settlement.

Physical discharge is the final step for inpatients, in which patients leave with or without the permission of their doctors. As a result, the discharge process becomes a critical factor in patient satisfaction. Any dissatisfaction in a patient's mind can lead to a hospital's reputation deteriorating. The discharge process is the patient's final interaction with the hospital system. As a result, it is the most crucial stage. However, it has been discovered that one of the most common reasons for dissatisfaction is a delay in discharge.

Delayed discharge is a common issue in hospitals and must be reviewed in detail so as to increase the availability of beds.

To reduce delays, the current study monitors and records the time spent in each department, such as billing department, TPA, settlement desk, and ward. Major bottlenecks were identified in the discharge process. The turnaround time was measured against NABH standards. Factors influencing discharge and their causes were identified in this study, and recommendations were made to improve quality of care and patient satisfaction.

1.2 Rationale

Bed blocking is a common issue that can be found in almost any hospital. A delay in the discharge process raises the bed occupancy automatically. Delayed discharge jeopardizes the efficient delivery of healthcare to patients. As a result, research in this field is required. This study was conducted at ABMH hospital for two months in order to meet that specific need.

The study is an attempt to reduce discharge time in order to increase patient satisfaction. The covid pandemic affected almost everyone and everything. There was a surge in the number of patients seeking admission to hospitals. During this time, there was a strong need to accelerate the discharge process.

The goal of this study is to make recommendations so that beds are available as soon as possible during this pandemic. Not only will the end user be satisfied, but the workload of employees will be reduced.

1.3 Research Question

What are the major bottlenecks in the discharge process, and to understand how many discharges occur according to NABH standards, in order to make recommendations to reduce time lag?

1.4 Aim & Objectives

To study the discharge process and determine the causes of delays in the discharge process for self-paying and insured patients and comparing it with NABH standards.

- To study the discharge process at ABMH.
- To identify major bottlenecks in the discharge process that cause delays.
- Comparing the obtained results with NABH standards.
- Propose measures to increase bed availability by reducing discharge time.

1.5 Review of literature

A similar study was conducted in Narayan General Hospital to study the reasons for delay in discharge process and time taken for the discharge process, 12% of patients opined that the process was <3hrs, 17% of the patients opined the process was 3-6hrs, 35% of patients was opined that the process was 6-12hrs, 16% patients opined that the process was 12-24hrs and 20% of patients opined that the process took more than one day for cash bills. ⁽¹⁾ Another study had been conducted by Harmanjot Kaur, Roopjot Kocharin in 2017 on 270 patients admitted at a multispecialty hospital, Ludhiana to understand the flow of discharge process. The study results revealed that maximum turnaround time of 9:07 hours was consumed between discharge intimation to handover to patient and on an average 5:07 hours' time has been taken between discharge intimation to room preparation for the next patient. Minimum turnaround time of 18 minutes had been recorded for updation of billing card on floor and its receipt at IP billing. ⁽²⁾ In 2018 A Singh, P Ravi, K Lepcha (2018) did a study to track the time for discharge process using shadowing technique with the objective of finding out the major causes of delay, and to recommend solutions for reducing them. The turnaround time for the same was 374 minutes ⁽³⁾.

A study done in A tertiary care hospital in 2018 observed discharge for 710 patients. According to the findings. The findings also showed that the majority (54%) of discharged patient's relatives observed minutes. A majority of patients relatives opined that the delay was because of unavailability of doctor to write summary and due to long queue outside medical records department. ⁽⁴⁾ Another study was carried out in a teaching hospital, where the discharge process for 69 patients was noted. The findings showed that the time required was 5hours 41minutes. The time elapsed from discharge declaration to leaving the hospital was 6hours. 18.8%) were discharges as per NABH standards. The main reason for delay was pending discharge summary ⁽⁵⁾. Another study was done in Tamil Nadu for a period of 3 months. It showed that approximately 6hours were required for completion of discharge process for cash patients and it took about 7hours and 290 minutes for insurance patients. It took time for the patient to physically discharge hence the bed was not empty and remained blocked for a lot of time, leading to unavailability for other patients. ⁽⁶⁾.

Section 2

2.1 Research methodology

A descriptive study was conducted at a 500-bed hospital in Pune for approximately two months, from May 10th to June 25th. This was an observational study on patients who had been discharged from the hospital. All discharges that occurred between 9 a.m. and 5:30 p.m. were documented. various details were recorded, including the patient's name, MRN number, admitting doctor, ward, marked for discharge time, financial invoice time, settlement time, physical discharge, and mode of payment. All patients admitted to wards, various departments, and D/C patients were included in the study the time it took from sending the pink sheet (the sheet with the patient's information) to the billing department to physical discharge was recorded. simultaneously, major causes of delay were identified.

2.1.1 Research approach:

Deductive study

2.1.2 Research design:

Observational study, Prospective cohort

2.1.3 Study area:

Inpatient department of ABMH

2.1.4 Data Collection Method:

For data, the ABMH RHIS system was used, and manual entries were made daily to record patients being discharged and reasons for delays

2.1.5 Issues to be explored:

- Major bottlenecks in the discharge process that cause delays.
- determine measures to shorten the discharge time.
- comparing the obtained results with NABH standards.

2.1.6 Types of respondents:

All inpatients admitted in wards or various departments.

2.2 SAMPLING

2.2.1 Sample size:

1622 patients

2.2.2 Sampling procedure:

Systematic sampling

2.2.3 Exclusion criteria:

Patients discharge against the normal process of discharge

Section 3

3.1 Data analysis

As previously stated, data on 1622 patients was collected. The analysis was performed for both months, as well as for May and June separately. The analysis also includes the average time required for patient discharge by ward and the total number of patients discharged from each department. For both months, a detailed hour-by-hour analysis is performed. A why-why analysis is also performed to identify major bottlenecks in the discharge process.

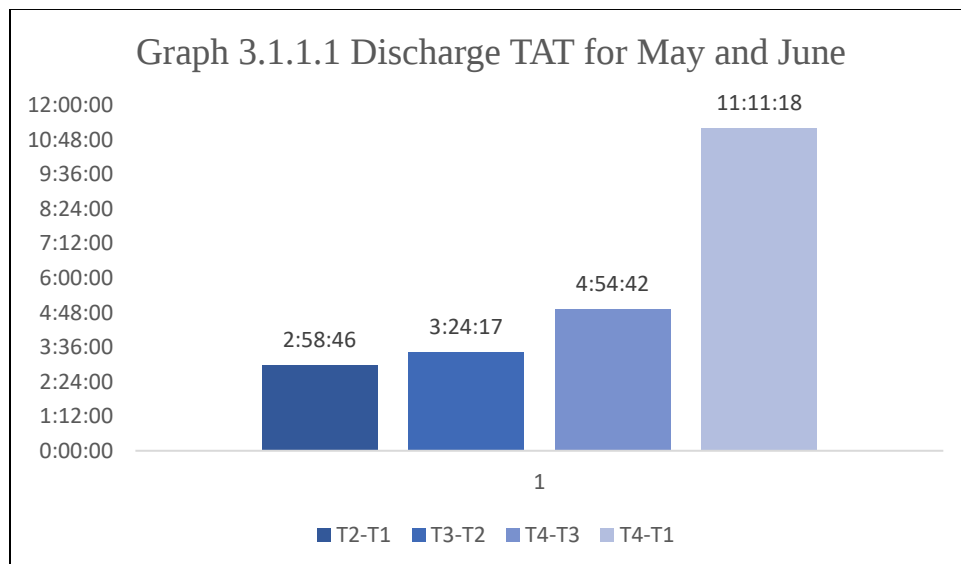
In the following graphs T1, T2, T3 and T4 represents:

1. T1- Marked for discharge
2. T2- Financial Invoice
3. T3- Settlement Desk
4. T4- Physical discharge

3.1.1 Discharge TAT:

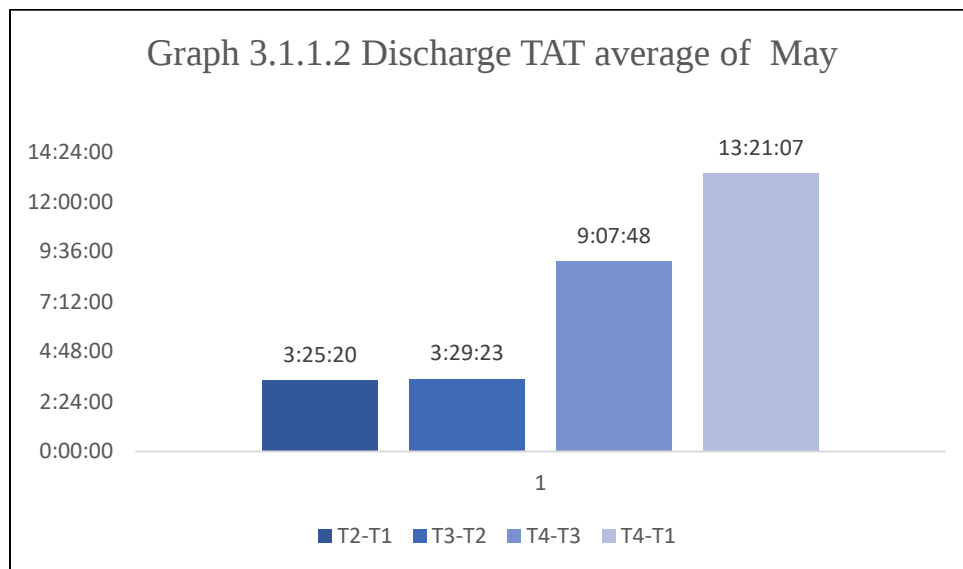
3.1.1.1 Discharge TAT for May and June:

Table 3.1.1.1 Discharge TAT for May and June			
T2-T1	T3-T2	T4-T3	T4-T1
2:58:46	3:24:17	4:54:42	11:11:18



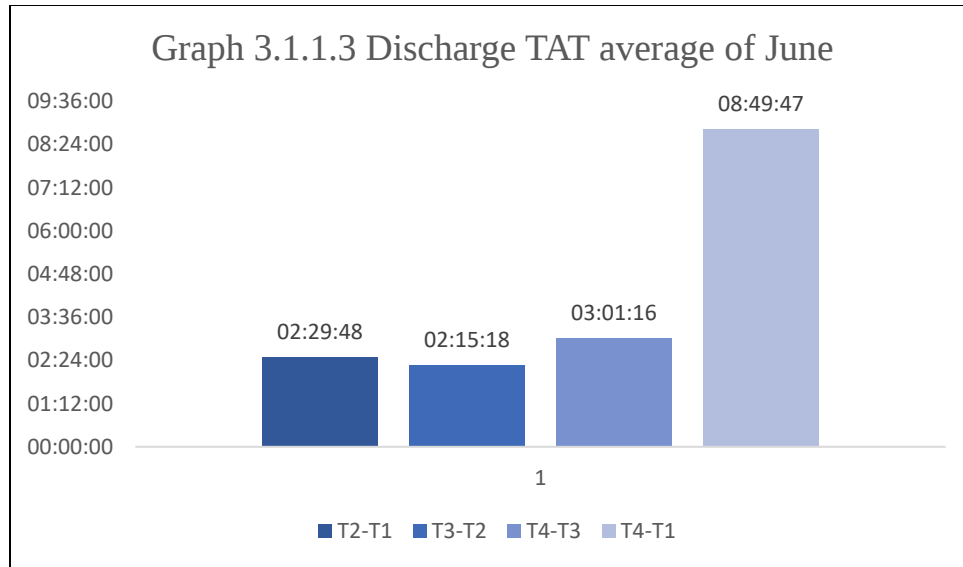
3.1.1.2 Discharge TAT average for month of May:

Table 3.1.1.2 Discharge TAT average for May			
T2-T1	T3-T2	T4-T3	T4-T1
3:25:20	3:29:23	9:07:48	13:21:07



3.1.1.3 Discharge TAT average for June:

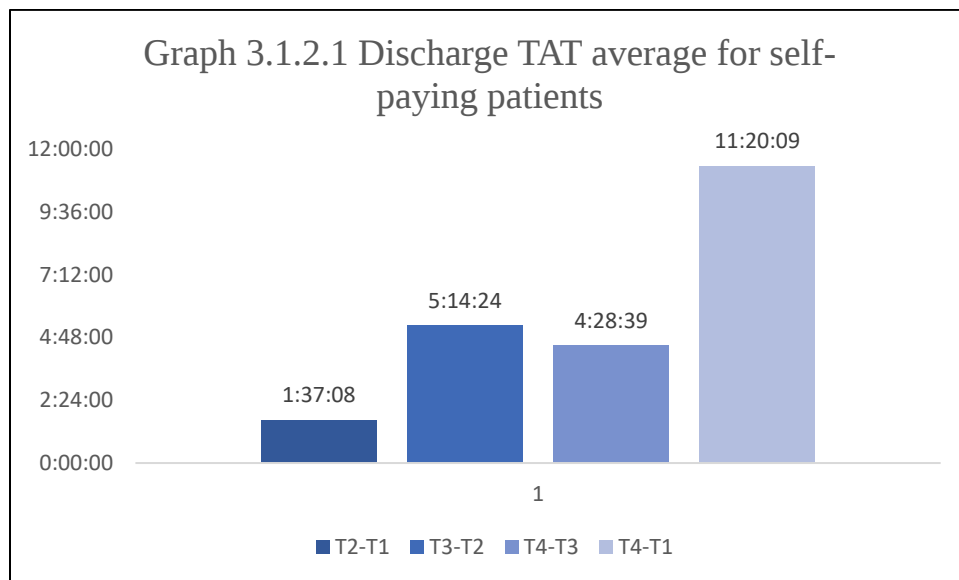
Table 3.1.1.3 Discharge TAT average for June			
T2-T1	T3-T2	T4-T3	T4-T1
02:29:48	02:15:18	03:01:16	08:49:47



3.1.2 Discharge TAT average for cash, TPA and corporate patients:

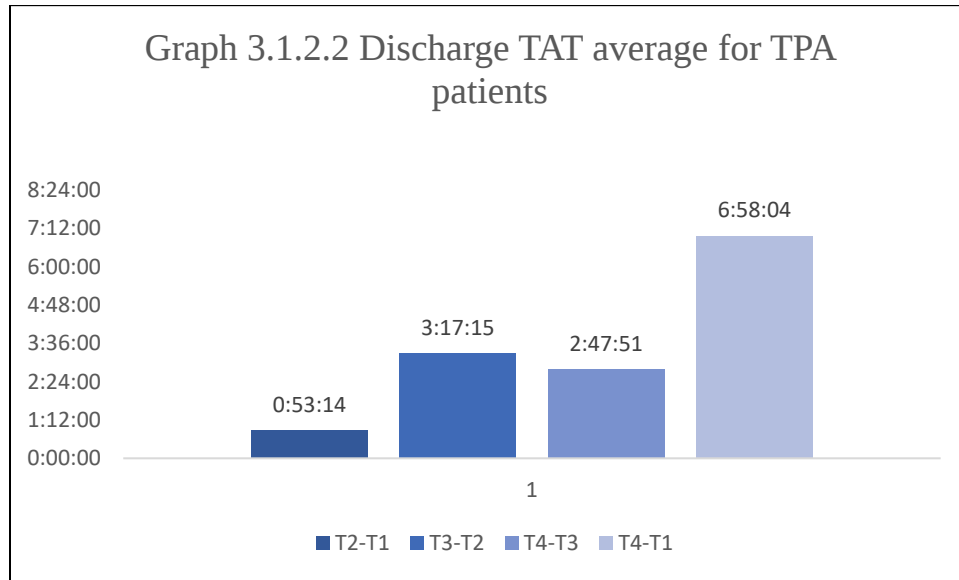
3.1.2.1 Self- paying:

Table 3.1.2.1 Discharge TAT average for self-paying patients			
T2-T1	T3-T2	T4-T3	T4-T1
1:37:08	5:14:24	4:28:39	11:20:09



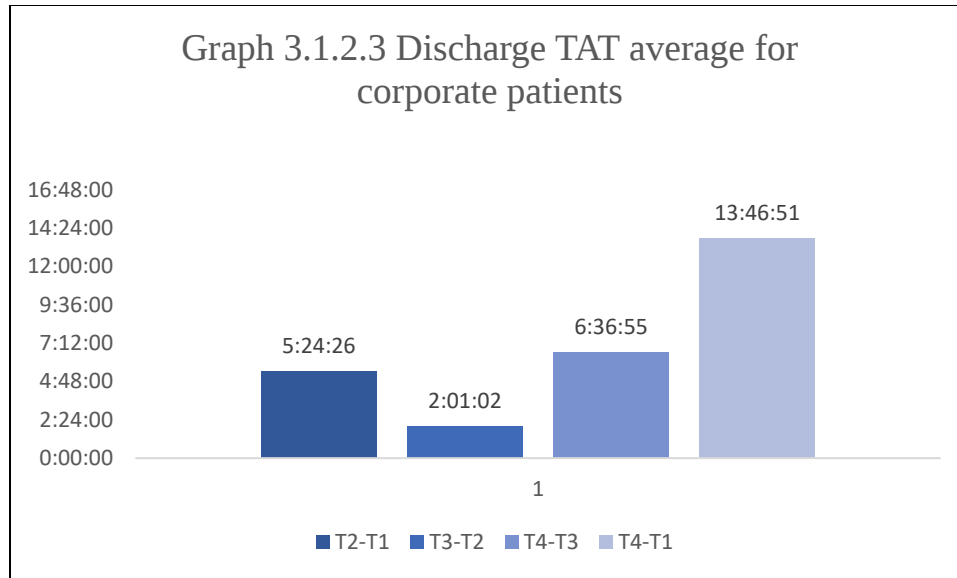
3.1.2.2 For TPA:

Table 3.1.2.2 Discharge TAT average for TPA patients			
T2-T1	T3-T2	T4-T3	T4-T1
0:53:14	3:17:15	2:47:51	6:58:04



3.1.2.3 For Corporate:

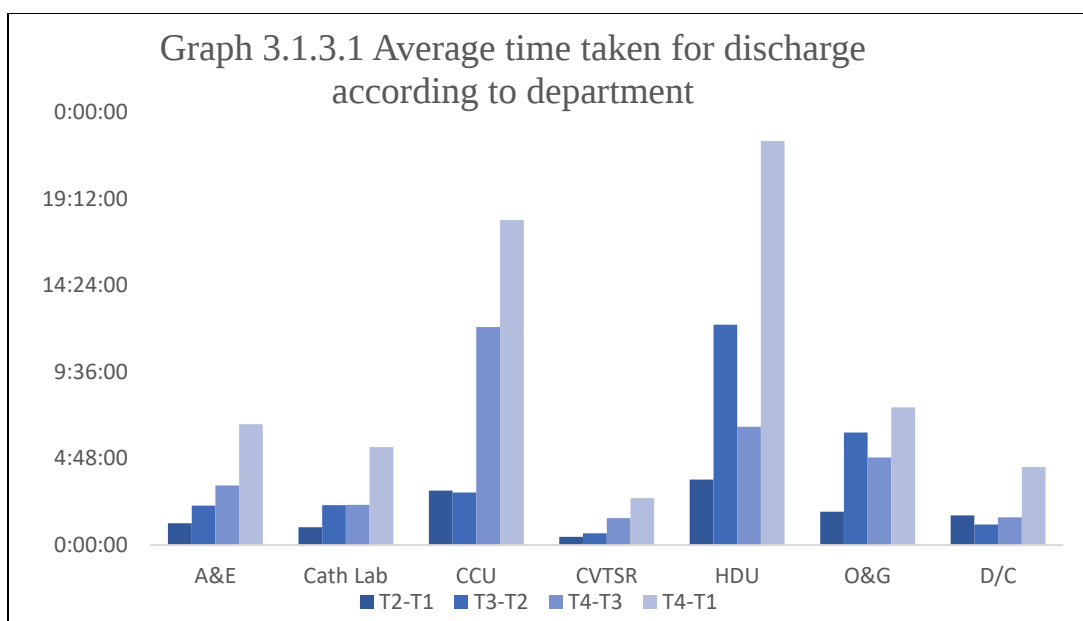
Table 3.1.2.3 Discharge TAT average for corporate patients			
T2-T1	T3-T2	T4-T3	T4-T1
5:24:26	2:01:02	6:36:55	13:46:51



3.1.3 Average time taken for discharge; classification based on departments:

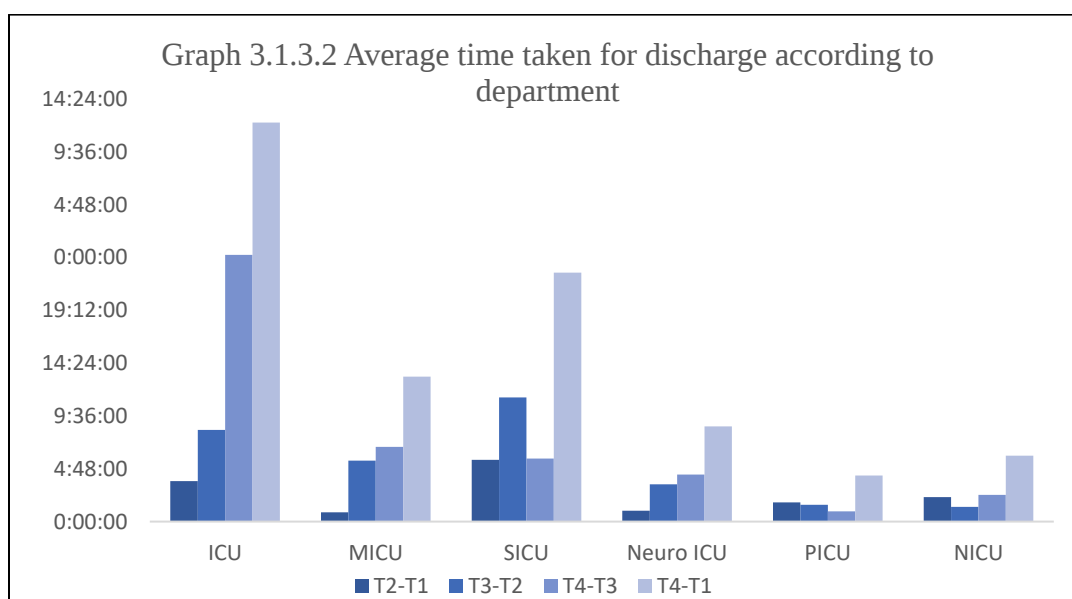
3.1.3.1 Average time taken for following departments:

Table 3.1.3.1 Average time taken for discharge according to department				
Department	T2-T1	T3-T2	T4-T3	T4-T1
A&E	1:12:37	2:11:15	3:18:39	6:42:31
Cath Lab	0:59:25	2:12:44	2:14:14	5:26:23
CCU	3:01:08	2:54:57	12:05:38	18:01:43
CVTSR	0:27:40	0:38:59	1:29:34	2:36:14
HDU	3:37:51	12:13:14	6:33:33	22:24:38
O&G	1:51:12	6:14:49	4:51:23	7:38:20
D/C	1:38:50	1:08:39	1:32:43	4:19:52



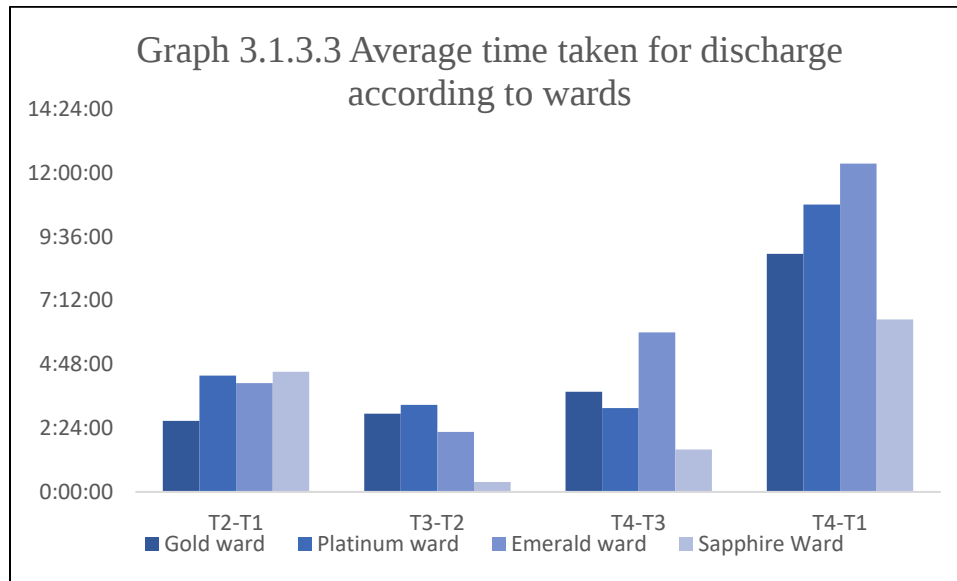
3.1.3.2 Average time taken for discharge for following departments:

Table 3.1.3.2 Average time taken for discharge according to department				
Department	T2-T1	T3-T2	T4-T3	T4-T1
ICU	3:40:50	8:20:00	0:14:23	12:15:13
MICU	0:50:26	5:31:56	6:47:25	13:09:48
SICU	5:36:35	11:16:40	5:43:30	22:36:44
Neuro ICU	0:59:27	3:23:08	4:16:47	8:38:43
PICU	1:44:20	1:31:16	0:55:33	4:11:09
NICU	2:13:17	1:20:04	2:25:59	5:59:10



3.1.3.3 Average time taken for discharge in wards:

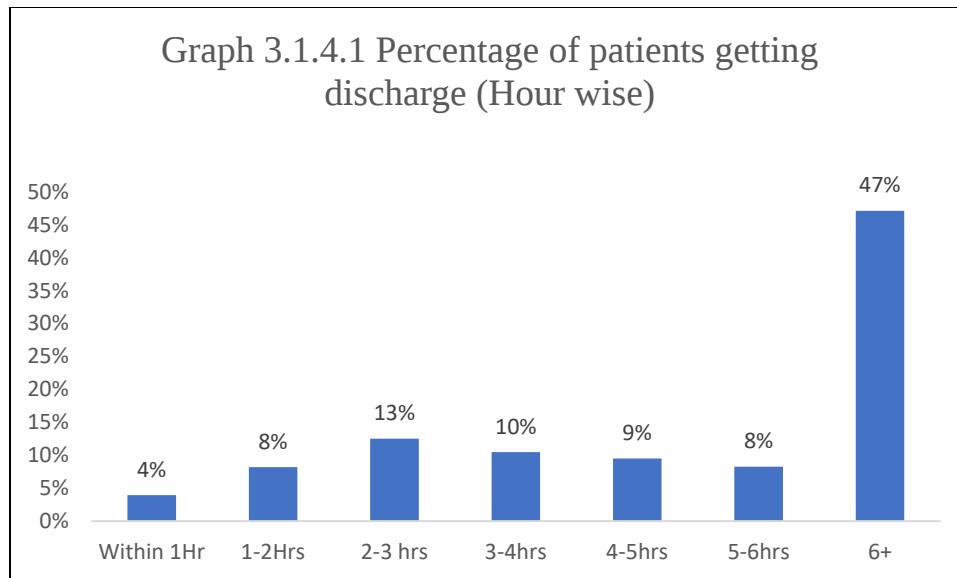
Table 3.1.3.3 Average time taken for discharge according to wards				
Department	T2-T1	T3-T2	T4-T3	T4-T1
Gold ward	2:40:26	2:56:24	3:46:00	8:57:11
Platinum ward	4:22:30	3:16:28	3:09:11	10:48:10
Emerald ward	4:05:19	2:15:28	5:59:40	12:20:28
Sapphire Ward	4:30:56	0:22:19	1:35:39	6:28:54



3.1.4 Percentage of discharge based on no. of hours required:

3.1.4.1 Percentage discharges for both the months:

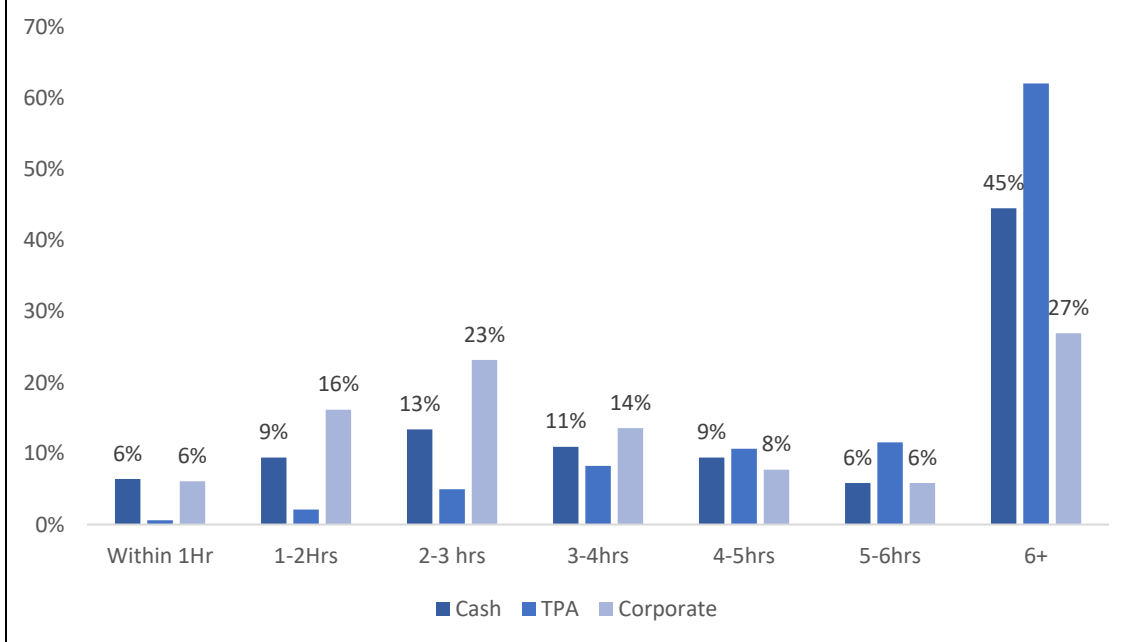
3.1.4.1 Percentage of discharges based on hours required							
	Within 1Hr	1-2Hrs	2-3 hrs.	3-4hrs	4-5hrs	5-6hrs	6+
Frequency	64	133	203	170	154	134	764
Percentage	4%	8%	13%	10%	9%	8%	47%



3.1.4.2 Percentage of discharge for cash, TPA and corporate patients:

Table 3.1 4.2 Percentage of discharge for cash, TPA and corporate patients								
		Within 1Hr	1-2Hrs	2-3 hrs.	3-4hrs	4-5hrs	5-6hrs	6+
Cash	Frequency	34	50	71	58	50	31	236
	Percentage	6%	9%	13%	11%	9%	6%	45%
TPA	Frequency	4	14	33	55	71	77	413
	Percentage	1%	2%	5%	8%	11%	12%	62%
Corporate	Frequency	26	69	99	58	33	25	115
	Percentage	6%	16%	23%	14%	8%	6%	27%

Graph 3.1 4.2 Percentage of discharge for cash, TPA and corporate patients



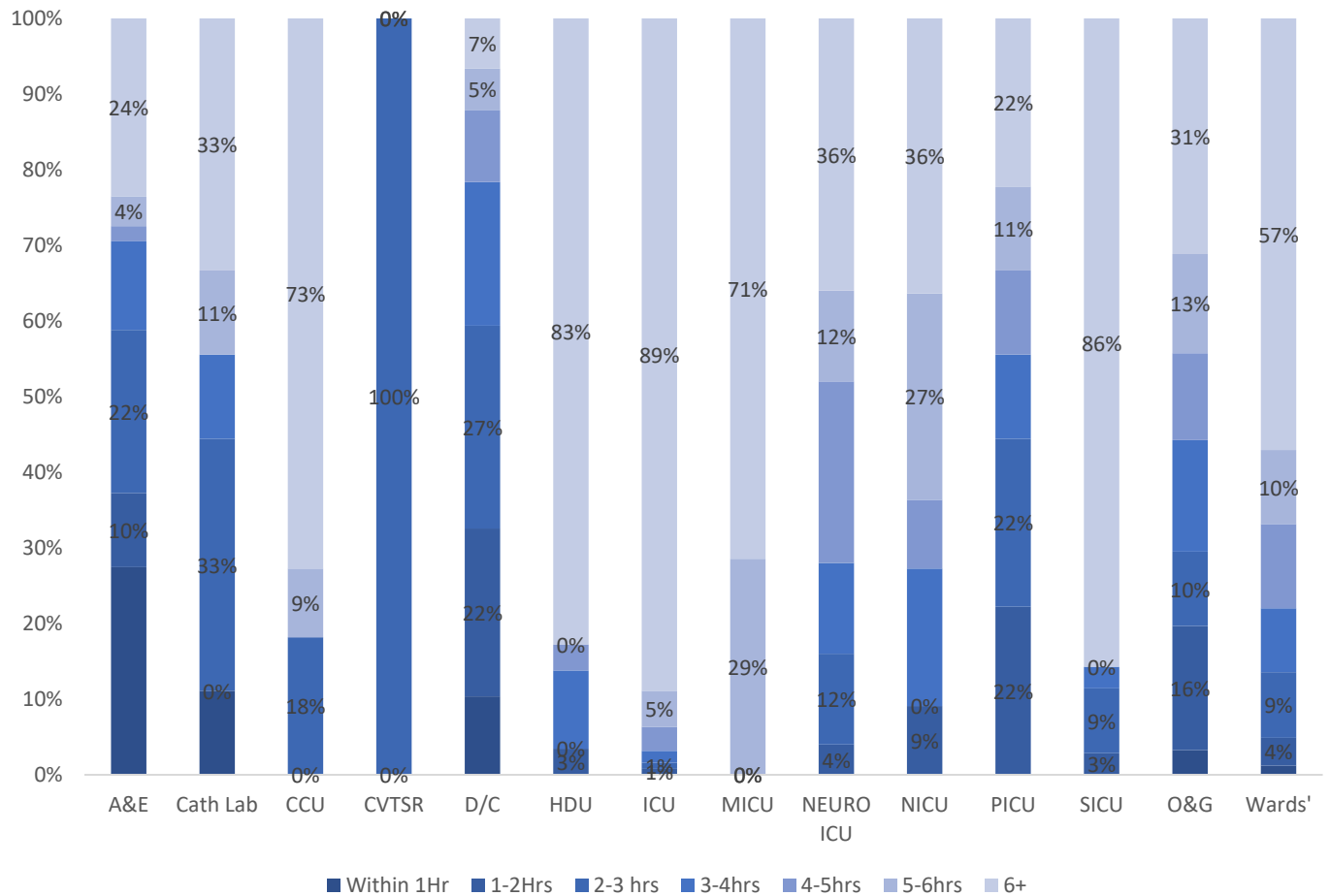
3.1.4.3 Percentage of discharges based on departments:

Table 3.1.4.3 Percentage of discharges based on departments

Departments		Within 1Hr	1-2Hrs	2-3 hrs.	3-4hrs	4-5hrs	5-6hrs	6+
A&E	Frequency	14	5	11	6	1	2	12
	Percentage	27%	10%	22%	12%	2%	4%	24%
Cath Lab	Frequency	1	0	3	1	0	1	3
	Percentage	11%	0%	33%	11%	0%	11%	33%
CCU	Frequency	0	0	2	0	0	1	8
	Percentage	0%	0%	18%	0%	0%	9%	73%
CVTSR	Frequency	0	0	2	0	0	0	0
	Percentage	0%	0%	100%	0%	0%	0%	0%
D/C	Frequency	36	77	93	66	33	19	23
	Percentage	10%	22%	27%	19%	10%	5%	7%
HDU	Frequency	0	1	0	3	1	0	24
	Percentage	0%	3%	0%	10%	3%	0%	83%
ICU	Frequency	0	1	1	2	4	6	112
	Percentage	0%	1%	1%	2%	3%	5%	89%
MICU	Frequency	0	0	0	0	0	2	5
	Percentage	0%	0%	0%	0%	0%	29%	71%
Neuro ICU	Frequency	0	1	3	3	6	3	9
	Percentage	0%	4%	12%	12%	24%	12%	36%
NICU	Frequency	0	1	0	2	1	3	4
	Percentage	0%	9%	0%	18%	9%	27%	36%
PICU	Frequency	0	2	2	1	1	1	2
	Percentage	0%	22%	22%	11%	11%	11%	22%
SICU	Frequency	0	1	3	1	0	0	30
	Percentage	0%	3%	9%	3%	0%	0%	86%
O&G	Frequency	2	10	6	9	7	8	19

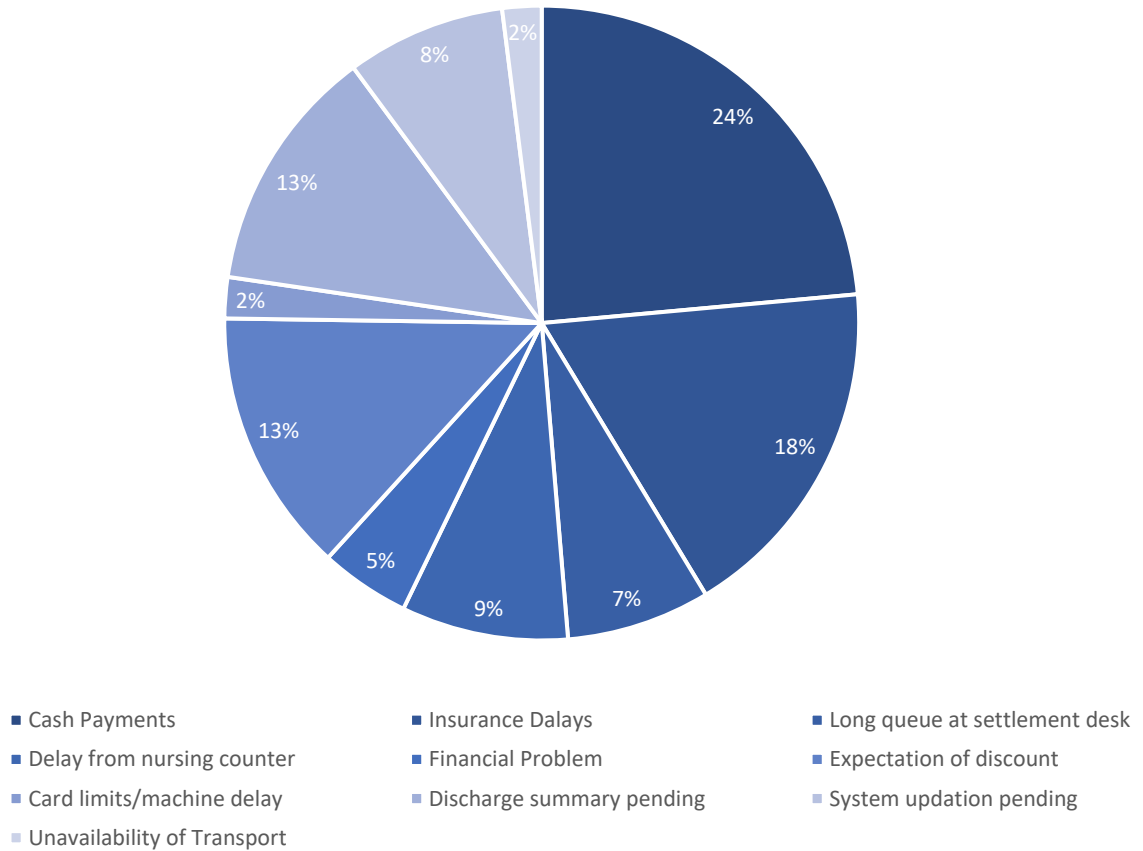
	Percentage	3%	16%	10%	15%	11%	13%	31%
Wards	Frequency	11	33	78	76	100	88	513
	Percentage	1%	4%	9%	8%	11%	10%	57%

Graph 3.1.4.3 % discharges based on departments



3.1.5 Major bottlenecks in discharge process:

Graph 3.1.5 Major bottlenecks in discharge process



3.1.6 Classification of discharges in various departments:

Department	Number of Discharges	Minimum Time	Maximum Time	Average
A&E	51	0:09:54	90:02:32	11:13:43
Cath Lab	9	0:57:44	15:25:25	10:06:42
CCU	11	2:38:48	48:07:02	11:04:53
CVTSR	2	2:21:11	2:51:17	13:46:07
D/C	347	0:05:37	86:38:56	11:13:50
Emerald	152	1:29:34	59:38:39	11:11:34
Gold	402	0:28:14	120:18:10	11:13:11
Platinum	336	0:51:23	117:06:23	11:12:57
Sapphire	9	3:58:25	10:58:43	11:25:30
HDU	29	1:02:28	71:17:05	11:21:57
ICU	126	1:57:29	168:44:35	11:24:55
MICU	7	5:01:31	20:50:53	10:24:13
Neuro ICU	25	1:34:45	73:48:05	11:14:34
NICU	11	1:21:42	12:50:53	11:21:41
PICU	9	1:48:40	8:49:05	11:00:09
O&G	61	0:19:17	73:47:58	11:12:31
SICU	35	1:44:19	105:44:06	11:17:01

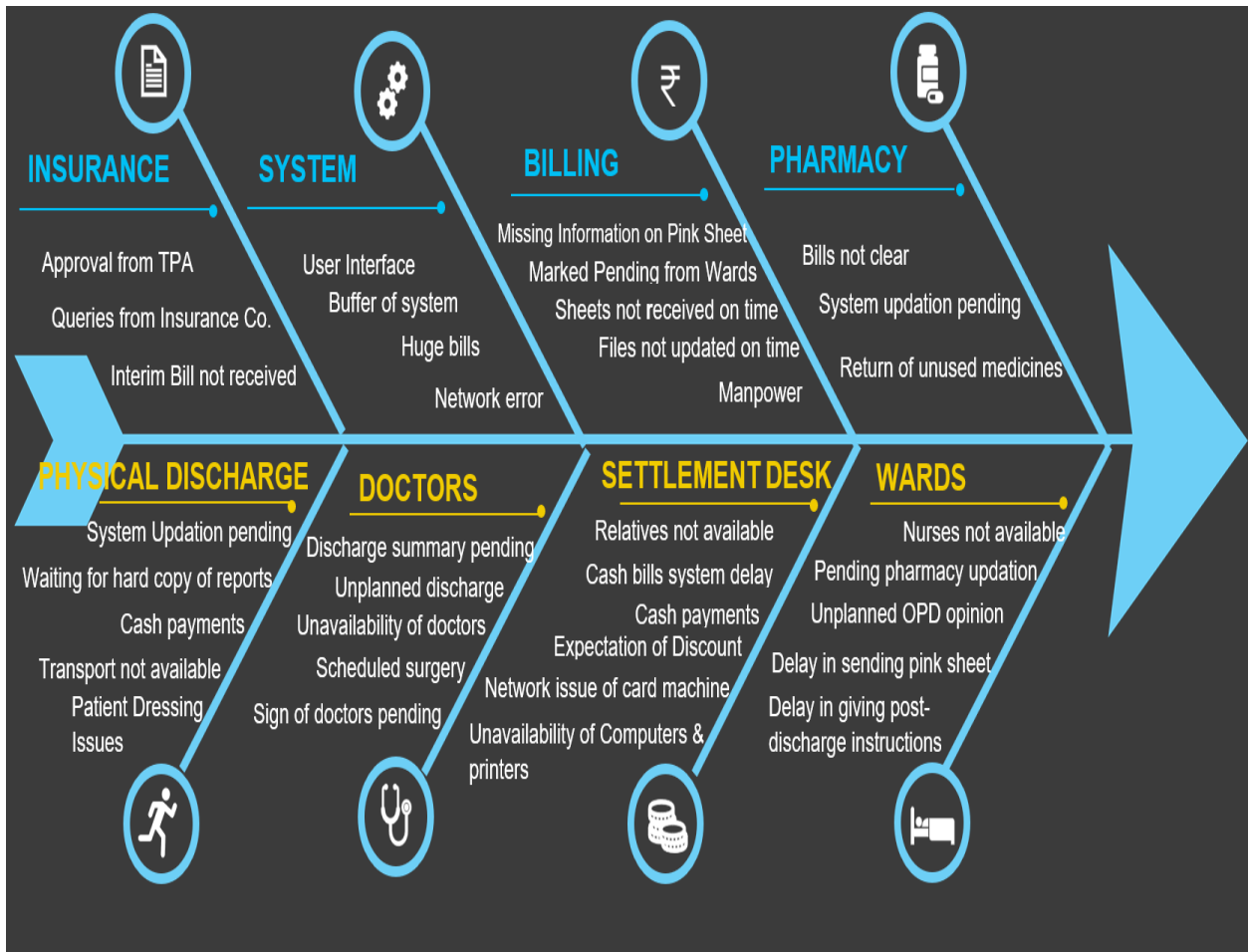
3.1.7 Classification of discharges based on organization:

Organization	Number of Discharges	Minimum Time	Maximum Time	Average
ABMH international patient	3	0:46:56	2:05:05	9:14:52
Aditya Birla health insurance company limited	16	4:45:12	35:18:21	10:37:30
Aditya Birla health services-staff dependents	1	1:44:23	1:44:23	1:44:23
Air India Ltd.	1	2:58:39	2:58:39	2:58:39
Bajaj Allianz Insurance Co. ltd	43	3:11:04	66:57:48	11:13:29
Cash	524	0:04:25	132:52:31	11:11:58
CGHS Employees & Beneficiaries	15	0:32:30	73:20:38	11:44:16
CGHS Pensioner & Beneficiaries - Utiitsl	52	0:09:54	38:32:38	11:13:04
Cholamandalam MS (General Insurance)	10	1:51:12	37:21:20	9:56:19
Dhanwantari Swasthya Yojana PCMC	110	0:54:52	111:31:33	11:16:31
ECHS	147	0:18:57	76:21:27	11:12:50
Employees State Insurance Corporation	69	0:38:28	19:03:23	11:15:07
Employees State Insurance Corporation, Sro Pune	1	2:10:22	2:10:22	2:10:22
Family Health Plan Ltd.	55	2:14:12	105:44:06	11:13:32
Future Generali India Insurance Company Limited	5	4:03:14	33:58:49	10:05:32
Genins India Ltd.	2	19:35:42	34:09:27	20:23:59
HDFC Ergo General Insurance Company Ltd	14	4:06:22	62:23:55	9:53:03
Health India	15	3:37:48	22:08:01	10:50:11
Health Insurance TPA Of India Ltd.(Ipd)	4	6:38:16	19:24:58	10:37:44
Heritage Health Insurance TPA Pvt. Ltd.	1	8:04:12	8:04:12	8:04:12
ICARE Good Health Plan Limited	2	5:54:56	13:58:32	8:09:04
ICICI Lombard	29	2:29:05	96:29:38	11:11:08
ICICI Prudential	1	5:45:31	5:45:31	5:45:31
IFFCO Tokio General Insurance Limited	1	6:56:50	6:56:50	6:56:50
Indigent Patient Fund (IPF)	11	0:46:34	95:51:05	11:20:18

Infosys Limited	3	0:37:43	1:49:33	9:59:13
Maharashtra Police Kutumb Arogya Yojana (Medi-Assist)	15	1:01:19	120:18:10	11:24:08
Mahindra Vehicle Manufacturers Ltd	2	5:17:04	24:52:43	10:36:33
Max Bupa Health Insurance Company Limited	7	3:42:09	26:37:45	10:22:29
MDINDIA Healthcare Services (P) Ltd.	37	2:40:30	66:17:56	11:29:29
Medi-Assist India Private Ltd	247	1:23:09	100:24:04	11:11:30
Medsave Healthcare	1	5:38:17	5:38:17	5:38:17
Neighbourhood Card	9	2:01:11	37:50:55	9:54:16
NTPC Ltd.	3	2:41:46	9:53:15	10:19:34
Ordnance Factory Dehu Road	6	0:57:44	20:15:31	11:17:39
Paramount Health Services Pvt. Ltd.	38	2:10:48	100:06:56	11:05:49
Parekh Health Management Pvt. Ltd	3	7:32:30	94:59:50	9:36:57
Park Mediclaim Pvt. Ltd	1	9:12:02	9:12:02	9:12:02
PowerGrid Corporation of India Ltd.	2	5:42:32	6:17:34	9:43:43
Pune Mahanagar Parivahan Mahamandal Ltd (PMPL)	5	13:03:21	1:57:29	11:51:01
Pune Municipal Corporation Employees & Retired Staff	3	2:30:36	9:52:44	10:50:46
RAKSHA TPA	3	4:09:33	8:45:35	8:53:51
Reliance General Insurance Co Ltd	12	2:43:51	20:26:35	11:40:31
Reliance Health Insurance Limited	2	6:28:24	12:45:10	10:03:45
Religare Health Insurance Co.Ltd	21	3:38:42	168:44:35	11:13:56
SKF India Ltd.	2	15:55:51	28:53:12	15:16:39
Skoda Auto Volkswagen India Pvt Ltd	1	1:21:24	1:21:24	1:21:24
Tata Institute Of Fundamental Research	6	0:15:03	19:51:54	12:02:25
Tata Motors Limited	23	3:03:46	90:02:32	11:15:11
Thalassemia/Sickle Cell/Hemophilia Patient	3	1:29:34	7:28:28	9:35:02
Thermax Workmen's Medical Trust	2	3:26:13	8:16:29	12:43:50
TTK Healthcare TPA P Ltd - Vidal Health Ltd	18	7:01:25	43:23:48	10:22:47

United Healthcare India (Pvt.) Ltd.	1	5:41:40	5:41:40	5:41:40
Vipul Medcorp Ltd	14	4:23:48	35:44:59	11:04:53

3.1.8 Why-Why analysis to identify causes of delay:



Section3

3.2 Discussion

Individuals, their families, and friends may experience distress as a result of their hospitalization and discharge. However, thanks to the provision of an early detection, therapeutic interventions, and treatment and rehabilitation service, the significant proportion of people would be able to revert to their normal lifestyle very quickly. Impactful hospital discharges can only be achieved when the organization works together to deliver care, including a firm knowledge of respective departments.

In the present study discharge process was observed for 2 months and the data was analyzed.

A. Discharge process time:

The overall TAT for both months was 11:11:18, with an average difference of 4:54:42 between physical discharge and settlement, 3:24:17 between settlement and financial, and 2:58:46 between financial and marked. Similar findings were found in a study conducted at Narayana General Hospital, which revealed that it took nearly a day for cash patients to settle their bill ⁽¹⁾. The average TAT in another study conducted in Ludhiana was 4:05 ⁽²⁾. For the months of May and June, the average TAT was 13:21:07 and 8:49:47, respectively. For the months of May and June, the average TAT was 13:21:07 and 8:49:47, respectively. May's higher average may be due to a higher number of covid admissions and discharges. In June, the intensity decreased, and as a result, the average TAT decreased by about 4 hours.

TAT by department: Departments, including A&E, CCU, ICU, MICU, SICU, and wards, had similar average TATs ranging from 10:00:00 to 11:35:00.

B. Hour wise analysis:

- i. Self-Paying: Only 13% of patients were discharged in 2-3 hours, as per NABH's standard guidelines. Similar findings were found in a study conducted by Jenyz M Mundodan, KS Sarala, and V Narendranath, in which 18% of discharges were within the time frame of NABH standards. ⁽⁵⁾
- ii. TPA: 62 percent of patients took more than 6 hours to complete the discharge process, while only 15 percent were discharged within 4-6 hours according to

NABH standards. Similar findings were found in a study conducted by A Singh, P Ravi, and K Lepcha, in which it took 374 minutes, or 6 hours, for insured patients to be discharged ⁽³⁾. Another study conducted at one of the most prestigious hospitals in Tamil Nadu revealed that it took 7:20 for patients with insurance to be discharged. ⁽⁶⁾

- iii. Corporate: Corporate: While 23 percent of patients were discharged within 2-3 hours, 27 percent took longer than 6 hours.

C. Department Wise analysis of TAT:

Patients being discharged from ICU took the longest, more than 6 hours, to leave the room, followed by HDU (88%), and SICU (86%). Following this, 73 percent of patients discharged from CCU and 71 percent of patients discharged from MICU took more than 6 hours to leave the room. Patients from CVTSR, on the other hand, were discharged in 2-3 hours. Furthermore, 27 percent of patients were discharged from the A&E department in less than an hour. 22 percent of D/C patients took 2-3 hours to leave the room, while 22 percent took 1-2 hours. Only 2% of Neuro ICU patients needed 4-5 hours to be discharged, but 36% needed more than 6 hours. Similarly, 36% of NICU patients required more than 6 hours. In the PICU department, 22% of patients were discharged within 1-2 hours, 2-3 hours, and 6+ hours. 57 percent of patients discharged from wards including gold, platinum, emerald, and sapphire required more than 6 hours, while 11 percent required 3-4 hours. Another study conducted in a teaching hospital found that patients discharged from the cardiology department took the most time, followed by urology and medical oncology. ⁽⁵⁾

D. Reasons for Delay:

In this study, the most common reasons for discharge delays were cash payments (24%), insurance delays (18%), and pending discharge summary (13%).

The reasons for the delay were investigated at each stage, as detailed below:

- i. Reasons for Financial and Market Delays: The majority of the time, the delay comes from the nursing counter, either due to a marked pending or a delay in sending the pink

sheet. Also, a few times, the information on pink sheets was insufficient, resulting in the file being returned to the department. The additional time was also influenced by the fact that pharmacy clearance was pending for insured patients, final approval from insurance companies took a long time, followed by queries from them, and there was sometimes a delay in sending the interim bill to the TPA department from the billing department.

- ii. Reasons for settlement and financial time delays: The primary cause of increased discharge time was a failure to provide information to the patient's relatives. When relatives were unavailable, it was difficult to communicate the details of ready bills.
- iii. Reasons for delay in physical and settlement: Cash Payment of huge bills was the most important bottleneck in delay. Long queue for settlement of bill, collection of reports and discharge summary were other reasons for delay. System delay occurred in cases of huge bills.
- iv. General reasons for the delay: Delay in explaining post-operative instructions to patients from the nursing counter, system update pending (8 percent in this study), resulting in results showing an occupied bed when the patient had physically left. 2% of the time, the Central Transport System was unavailable for patient transport. In the current study, a significant number of patients (13%) expected a hospital discount. Few people were experiencing financial difficulties. Patients' relatives were concerned about their bills and were unsure who to turn to for assistance. Few patients put off paying their bills because they were dissatisfied with the hospital's services.

Section 4

4.1 Conclusion

Time and the exhausting discharge procedure all contribute to patient dissatisfaction. To identify the causes of bottlenecks and challenges in procedure execution, hospital administration should organize a periodic time motion study of all concerned departments. Patient discharge is critical areas in the hospital

The discharge TAT in this study was 11 hours for both months. However, the time decreases by about 4 hours in June compared to May, where the TAT was 13 hours. Patients requiring discharge from ICU, HDU, or CCU required a more than 6 hours. Patients with O&G and D/C were discharged within 4 to 6 hours. It took more than 6 hours for 47 percent of patients to complete their discharge process.

According to NABH standards, only 13% of self-paying patients and 12% of insured patients were discharged. Cash payments, discharge summary delays, insurance delays, and a lack of communication were the major bottlenecks. Recommendations were made to address the difficulties encountered during the discharge process.

4.2 Recommendations

- **Inform:** Inform patient relatives prior to discharge about the bill till date. This will be very beneficial for cash patients because they will be able to pay a certain amount prior to discharge. Also, if the patient is informed about the insurance process long in advance, the delay caused by ignorance will be reduced.
- **Apt protocol for insurance delays:** In the event that an insurance department query is raised, an Apt process can be initiated, and patient relatives can be notified as soon as possible.
- **Planned discharges:** Encourage scheduled discharges. It will not only benefit the patients, but it will also reduce the delays caused by a pending discharge summary.
- **Delegation of responsibility:** Nurses can be delegated responsibility for explaining post-operative instructions, medications, and follow-up treatment. Responsibility of sending pink sheet on time with full information can also be delegated.
- **Timely updation:** Regular file updation can be done by both the billing department and the nursing station, particularly for ICU patients, and can be communicated to patients' relatives on a timely basis.
- **Pharmacy clearance:** Unused medications or medications that are no longer needed by patients should be returned to the pharmacy as soon as possible. In the case of scheduled discharges, it can be returned the day before.
- **Transport Availability:** Assign one person from the central transport system to escort the patient to the exit gate in order to avoid delays caused by internal transportation. To avoid delays, the accountable person should be prepared with a wheelchair or stretcher.
- **Consultants:** Consultants can be asked to plan discharges a day beforehand . The discharge summary can be kept ready by the team. Not only will the pharmacy clearance be completed advance, but the patient will also be prepared to pay the bill.

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