

Gap Analysis of Turnaround time in Discharge Process of a Healthcare Delivery Care: A Study of Eternal Hospital

By

Praveen Batra

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2015-2017



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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Praveen Batra student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at EHCC Hospital Jaipur from 6th February to 5th May, 2017.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



Col. (Dr.) Ashok Kaushik

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Praveen Batra** student of **IIHMR, Jaipur** has completed his internship at **"Eternal Hospital, Jaipur"** from **06th Feb 2017** to **05th May 2017**.

During this period, he has successfully completed his project on **"Value Stream Mapping in Discharge Process"** in the **Department of Quality**.

He comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish him all the best for future endeavours.

For **ETERNAL HEART CARE CENTRE AND RESEARCH INSTITUTE, JAIPUR**

Subrata Das

Vice President – HR & Training

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled reshuffled “**Gap Analysis in Discharge Process**” is submitted by **Praveen Batra** Enrollment No. **IIHMR-U/01/2015-17/0321** under the supervision of **Professor Dr. Suresh Joshi** for award of MBA in Hospital and Health of the University carried out during the period 6th February to 5th May embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.


Signature

THE IIMMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled Customer Perception & Buyers Characteristics towards Healthcare Services.



Signature of student

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Apart from the efforts of me, the success of any project depends largely on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this dissertation project.

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The guidance and support received from my Colleague Dr. Priyanka Kundrai has been a vital element in the success of the project.

Praveen Batra

Management
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DISSERTATION

Gap Analysis of Turnaround time in Discharge Process of a Healthcare Delivery Care

INTRODUCTION:

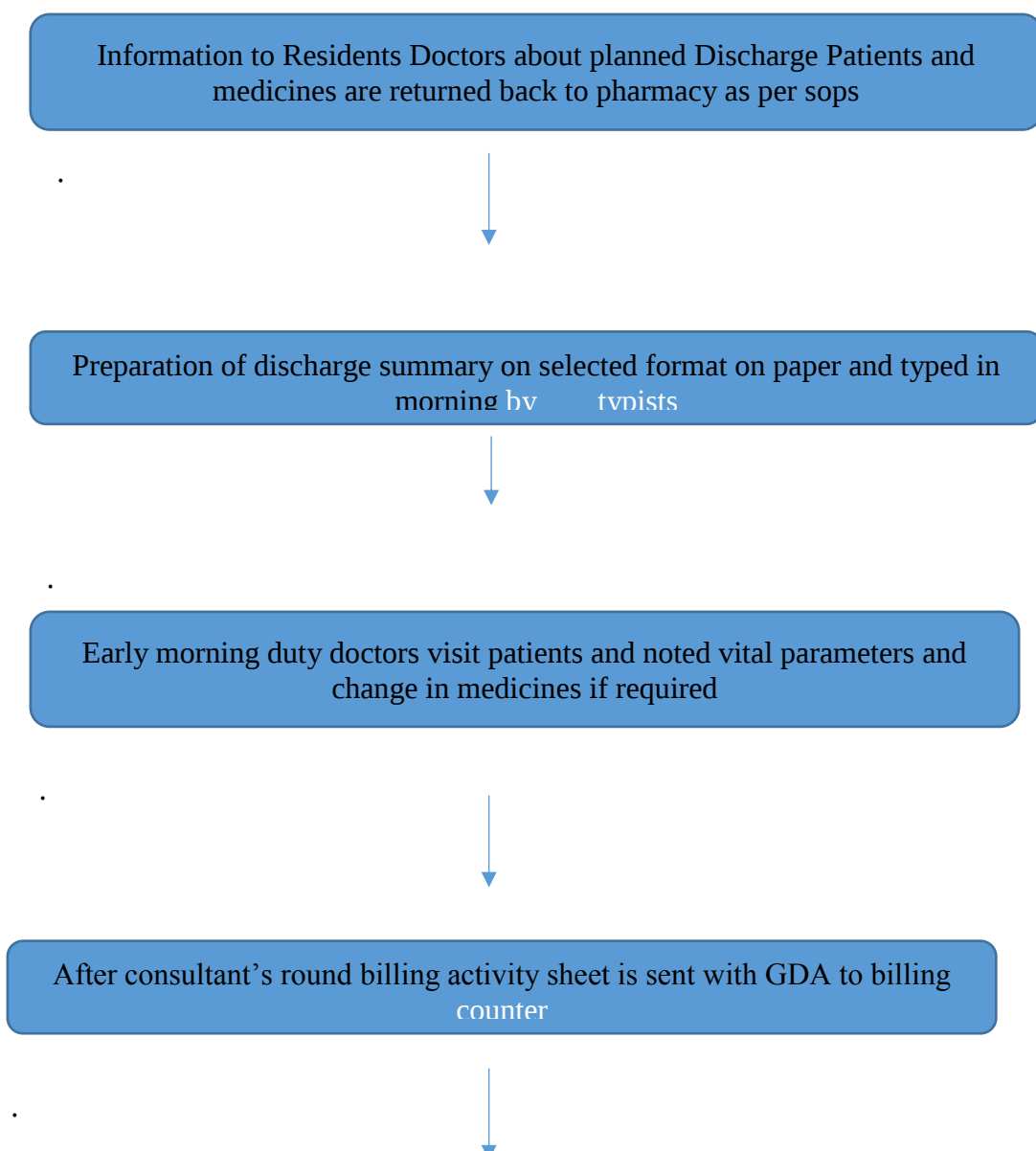
A trip to the hospital can be an intimidating event for patients and their families. As a caregiver, you are focused completely on your family member's medical treatment, and so is the hospital staff. You might not be giving much thought to what happens when your relative leaves the hospital.

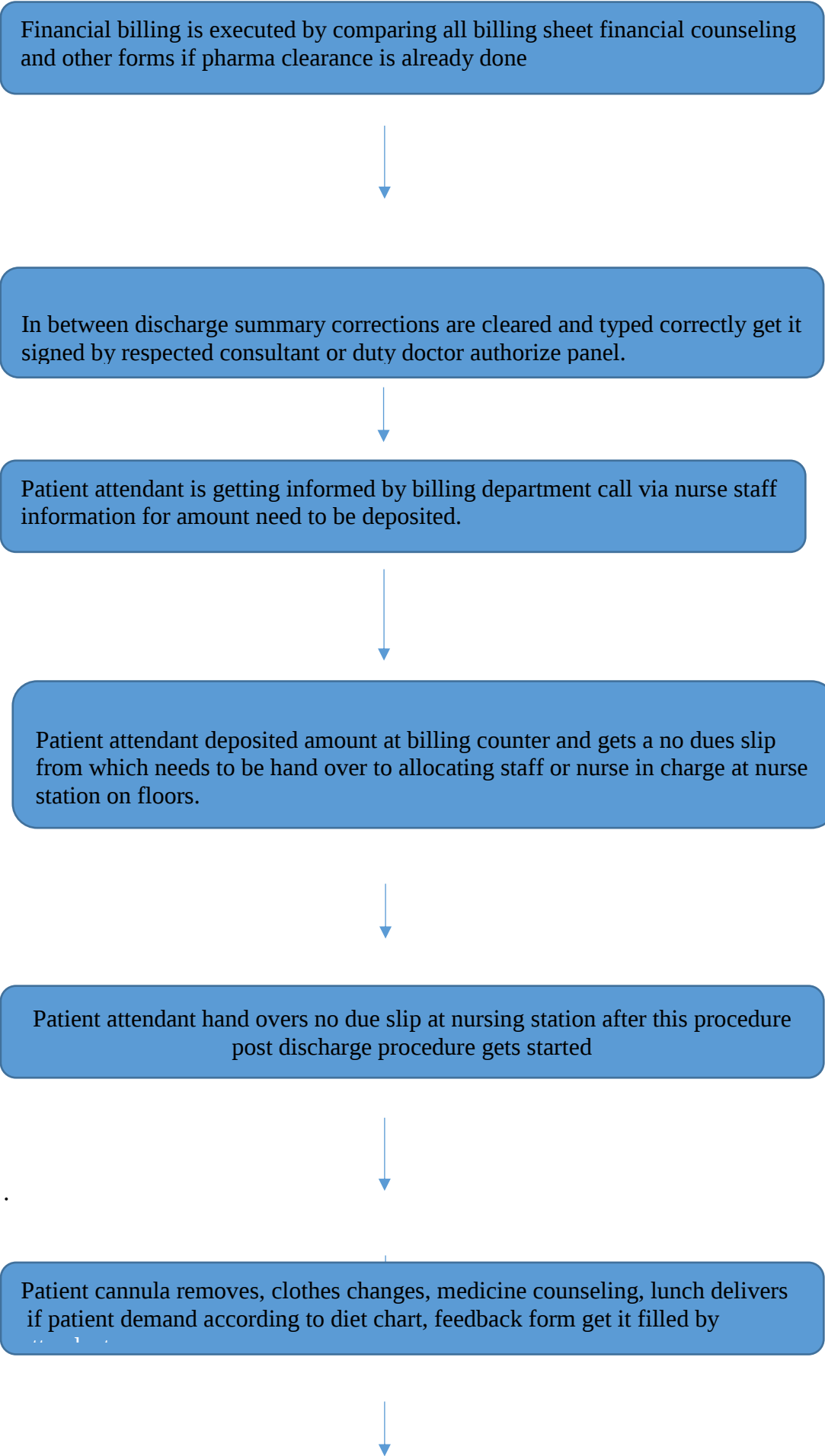
Admission to and discharge from hospital can be a distressing time for individuals, their families and friends. For most people, however, treatment will be successful and they will return to their usual way of life very quickly through the provision of an accurate diagnosis, treatment and rehabilitative service. Some people will need additional help to enable them to do so over their treatment

Discharge means to formally terminate a person's care in, and releasing from, a hospital or healthcare facility. Elderly patients are potentially more vulnerable to prolonged hospital stay as they frequently require additional resources to facilitate their discharge. In many studies it is found in delay discharge proceedings not only patient to be bear a financial cost but also a physical cost in terms of hospital acquired infection and readmission episodes sequentially. It is mandatory to access turn around time for making executional plan to prohibit delay in discharge as Possible Lean process maintain a standard protocol of each activity on time and procure to remove process from waste time to provide a financial and psychological relief to patient. (1)

Discharge process is an important process which is very much associated with patient satisfaction. EHCC Hospital is situated in heart of Jaipur city on Jawahar nagar circle EHCC Started in 2013 as a core focus on to relief cardiac care to patients at minimal damage on domain of physical, mental and psychological barriers. Today it is well

executing its core services to next level like first Hospital to transplant Heart in Rajasthan recent time before. I Was allotted to study gaps in discharge process between organization Sop and real time analysis and to found issues which could be solved via probable discussions with management. I observed this process very carefully and prepared a instrument to meet daily requirement in fulfill with, in order to execute this I started to track vital events in process with their time being. Limitation wit study as to be a limited time frame and some month study didn't showcase a real picture of a organization work process. I tracked this process on two floors only and found a serious gap in vital episodes which immediately to deal with and I thought with some imitative this important process could get rid of delay possible. On my project completion I had a meetings of minute with my senior executives then I introduced my points of concern and mine opinions on which they responded well.





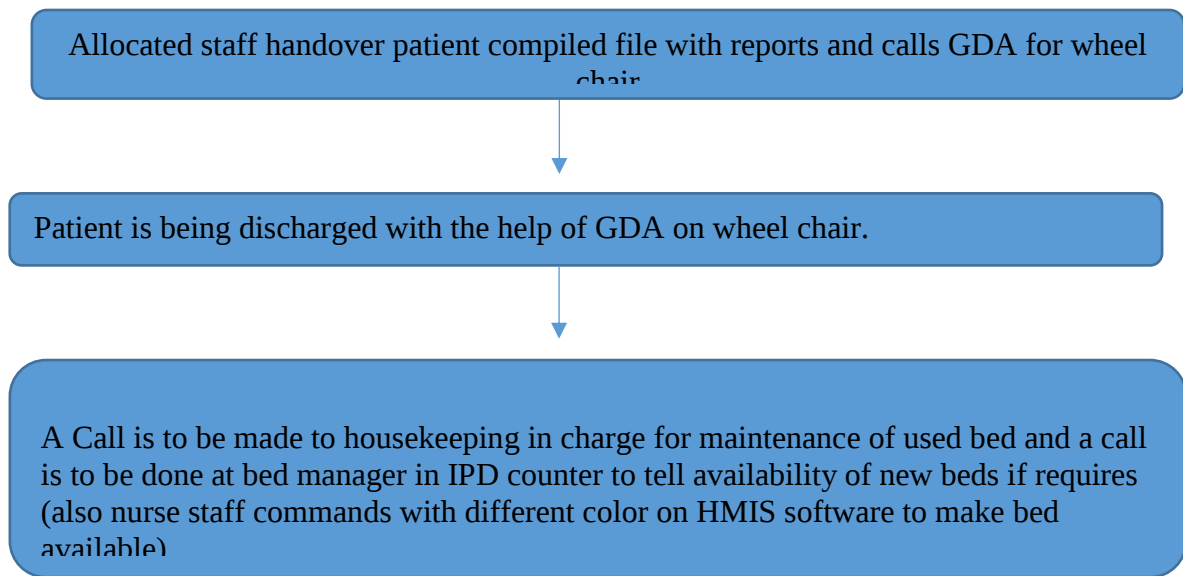


Fig:1 Discharge Work flow

REVIEW OF LITERATURE:

Hospital-based medication reconciliation (MedRec) is defined as the process of identifying the most accurate list of a patient's preadmission medications—including the name, dosage, frequency route, last dose taken and assessment of adherence, comparing them to the current medication orders, recognizing and addressing discrepancies, and documenting any changes, thus resulting in a 'Best Possible Medication History (BPMH)'. MedRec is a component of medication management, which involves the wider and more important evaluation of diagnoses, contraindications, patient values, and evidence for comparative cost-effectiveness of medications to craft and communicate the most appropriate medication regimen for the patient.

In response to a perceived medication safety crisis, MedRec was mandated by national hospital accreditation bodies in Canada and the USA in 2006 as a Required Organizational Practice (ROP), and has been recommended by the National Institute of Health and Care Excellence in the UK.^{1 2} This major change in system responsibility, work flow and healthcare professional priorities, without accompanying personnel or information technology support, was based entirely on literature using avoidance of 'potential medication errors' as a primary outcome.

MedRec ROPs in the USA had to be scaled back due to the failure of proponents to recognise the complexity and costs of the process, and hospitals' inability to meet requirements for widespread MedRec across the continuum of care. Similarly, Canadian hospitals are struggling to meet ROPs for admission MedRec with 57.4% overall compliance, are even further behind on discharge MedRec, and are not yet documenting MedRec on transfers.^{1 3} While studies have documented medication discrepancies based on MedRec, noted suboptimal communication strategies around medication management, or offered commonly held views as to why MedRec is not reaching its goals,⁴⁻⁹ no studies were identified in our literature review that carefully detailed current processes to understand barriers preventing success, or to document resource usage.

At least seven systematic reviews summarize randomized controlled trials (RCTs) and non-RCTs examining the impact of MedRec, either alone or as part of a more comprehensive medication management intervention on reducing adverse drug events and healthcare usage across multiple settings (hospitals, primary care, long-term care).¹⁰⁻¹⁶ The conclusion of each review is remarkably consistent - well done MedRec reduces unintended medication discrepancies but the impact on clinical outcomes is uncertain. After restricting studies to those with a lower risk of bias, there is no evidence of beneficial effect on mortality or hospital readmission, although low-quality evidence suggests a trend towards decreased emergency department (ED) contact.¹⁵

This has led to a strong recommendation that medication reviews be undertaken only as part of a well-designed randomized trial, and include expert physicians able to directly determine and implement appropriate changes.¹⁵ Given that MedRec is carried out primarily to inform and improve the quality of medication review/management, these cautions bear heeding given the many competing priorities for healthcare resources. Meanwhile, resources (largely pharmacy and medicine) are being deployed to meet the forthcoming accreditation demands for widespread MedRec at all hospital transitions. Even if MedRec has a small and as yet unproven benefit on clinical events or resource usage, its cost-effectiveness may well be highly unattractive. Understanding the actual value for money spent for MedRec compared with competing priorities requires a detailed knowledge of the processes and people involved in those processes.

Usage of process mapping techniques in the context of healthcare is a relatively recent concept. The Multi-Center Medication Reconciliation Quality Improvement Study (MARQUIS) strongly recommends process mapping (a toolkit component) to understand the current state of MedRec processes and to perform gap analysis.¹⁷¹⁸

Until now, only one study has used a process mapping technique to address MedRec. An evaluation of four community hospital EDs in Washington identified common problems that inhibited high-quality and efficient MedRec, which led to the development of an improved workflow.¹⁹ However, the process mapping was only done in focus groups, so represented what clinicians believed to happen, rather than what was actually observed to happen.

We set out to directly observe, document and evaluate local MedRec processes for internal medicine patients from ED triage to discharge. Our objective was to identify gaps in efficiency and safety, and to provide recommendations to improve the process. units (CTUs) in Hamilton, Ontario, Canada. Each hospital is affiliated with McMaster University's Faculty of Health Sciences, and each maintains quality of care and patient safety committees.

The CTUs are managed by the service of general internal medicine (GIM) and staffed by Royal College-certified specialists and their trainees. At the time of the study (early 2014), GIM received 400–500 new patient referrals each month from ED physicians at each of three sites. The mean age of these patients was ~70 years; more than 90% were admitted with 74.2% of admissions occurring in 'non-business' hours between 19:00 and 07:00 on weekdays or anytime on weekends. Clinical pharmacy resources at each of the three hospitals include non-prescribing pharmacists supported by pharmacy technicians, fewer than one per medical team, and with coverage only during daytime hours.

In preparation for the process mapping, a large multidisciplinary study team including physicians, pharmacists, nurses, administrators and researchers representing each site met regularly to discuss local challenges and opportunities for improvement of MedRec. This revealed that each hospital had different MedRec processes, largely dependent on the availability of pharmacy resources to the EDs and the inpatient internal medicine CTUs. This varied from a pharmacy technician-led collection of BPMH after admission for seniors, to pharmacist-led MedRec only when requested by a physician or nursing staff. Since perceptions of activities, roles and coverage might vary from reality, we engaged an external process mapping private consultant group. This group provided three observers to simultaneously observe MedRec processes at each site consecutively for a week each.

The process mapping stage of the project was completed following stepwise strategy as summarized below.

Defining patient values

Patient value statements were defined based on literature reviews, conversations with front-line staff and patients, and the consultants' experience in the industry. A value statement described what a patient *values* in the process, to ensure that improvement interventions are aimed towards increasing patient satisfaction in the process.

Mapping the processes

The full current process was mapped by shadowing front-line staff in order to document all MedRec-related activities from ED triage to discharge. The goal was to capture what *actually* happened in the process as opposed to what was supposed to happen, or

what clinicians think happens. The processes were observed long enough to see that the same steps occur multiple times

. Actions which happened 80% of the times were considered the norm, and the less frequent actions were recorded as 'variations' in the process. While observing, questions were regularly asked of the staff to clarify the details of the work being done. Tasks were timed by observation when possible. When available, relevant process statistics, such as hours of staff availability, activity volume and frequency, and number of staff available were collected. As a last resort, if a step or action could not be observed, information was collected through a staff interview during the observation period. At the end of each day, the three process mapping consultants met to draft maps and resolve discrepancies, continuing over several more days.

Validating the process maps

The completed process maps were presented as large physical posters at workshops and day-long open house sessions at each of the three hospitals, with invitations targeting the hospital staff that performed or were directly involved with management of the MedRec-related tasks. Feedback and change ideas were encouraged from all, particularly those directly engaged in the MedRec-related processes on a daily basis. All feedback was tabulated, and suggested corrections to current processes were validated by members of the research team, then incorporated into the final maps.

Planning change

Draft process maps and key observations were reviewed with the research team using a grounded theory approach, to develop key themes of gaps in the processes. The final maps, key observations and change ideas were then presented to the study team as well as healthcare professional and patient safety leads from all three sites. Value-added-activities were identified as those currently undertaken which contributed to the patient value statements (see the Step 1: Defining patient values section).

Results

Directly observed care took place sequentially across the three sites in the last quarter of 2013, with the final Drafting Change process taking place in early 2014. Fifty-two staff members provided feedback on the draft process maps. Seven final process maps, each describing 5–14 different processes,

First, improving the timeliness of the pharmacy-led BPMH, to be completed as soon as possible when a potential admission is identified. This would require additional pharmacy staff or restructuring of current activities or further prioritization of patients who require a BPMH. To assist, an automated system of secure request and receipt of community pharmacy profiles, as well as expansion of the coverage of patients included in the province's Drug Profile Viewer, is recommended.¹³

Second, a standardized record, and location for the BPMH, as well as a mandated co-signature by the patient's medical team, is recommended. An accurate BPMH available at the time of the patient's admission could become part of the admission orders, improving timeliness and accuracy.

Third, computerization of the MAR (present at one site), although not measured in this study, was judged to be a major time-saver for physicians completing a discharge prescription, given that the CTU patients are frequently taking more than 12 medications. However, a mandatory display and assessment of preadmission medications would also be required for accurate discharge MedRec.

Fourth, it was noted that patients or their caregivers are rarely aware of the changes made to their medications through the hospital admission to discharge process. While patient and caregiver education was felt to be valuable throughout, given the lack of resources available, it was decided that it should be focused on discharge where self-management was going to be key. This is now mandated at two hospitals as part of a discharge checklist.

RATIONAL: During day to day observation it was noted discharge delay created lots of psychological cost with patient also staff stress load was also high because planned and self category not able to discharge at right time. It was also found nursing staff was going through a hectic schedule due to no proper planning or not executing plan wells. Patients were good at treatment and hospitality side but are not satisfied at discharge side due to a large gap of timings between organization sops and real time track vital episode timings

Objectives:

To assess current discharge process for gaps analysis with standard operational protocols

To assess issues related with Discharge process

Research Question:

What is gap analysis between organization sops with studied turn around time.

Hypothesis:

Does there a co-relation between real time monitoring data with existing Sops

METHODOLOGY:

Study Design: Cross-sectional analytical study

Setting: EHCC Hospital

Duration of study: Three Months

Sample Size: 224 Patients

Sample Area: 3rd Floor & 4th Floor (WING A & C), General Ward, CTV

Sample Technique: Random Sampling

Sample Selection:Inclusion- 224 Patients are collected in which 163 Patients are of self-category and 61 Patients are of TPA category.

Data collection Procedure:

A questionnaire is designed to assess organization process and staff assessment level of discharge process.

A checklist is also being prepared to record each step of discharge process and random data are to be filled to assess selection bias.

Data Analysis Procedure:

Calculation of questionnaire and checklist events or selected option score of each respondent or events and average score describe subjective perception of study and by preparation of suitable graph indicates gap area needed to fulfil with. Checklist results are calculated and find an average score of each event by software could be Ms excel.

Patient Distribution:

Category	No of Patients
SELF	163
TPA	61

Table 1 : Patient category distribution

<u>FLOOR</u>	<u>CATEGORY</u>	<u>NO OF PATIENTS</u>
<u>3 rd Floor</u>	<u>SELF, TPA</u>	<u>39,22</u>
<u>4 th Floor</u>	<u>SELF, TPA</u>	<u>125,38</u>

Table 2: Patient category distribution floor specific

RESULTS

Turn Around Time Analysis: -

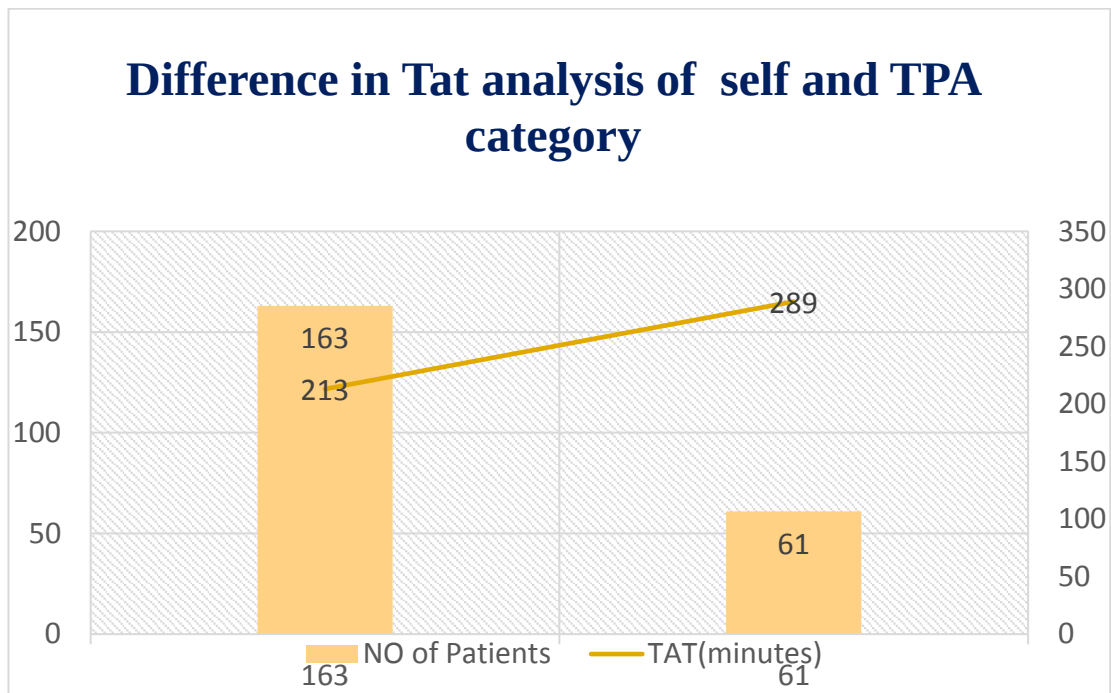


Fig 2: Self and TPA Patient Turn Around Time comparing Median Time Study

It is quite clearly interpreting Self Per Patient Tat Average is 3.33 min Hrs. as Compared to TPA Per Patient discharge almost reaches 5 hrs. than.

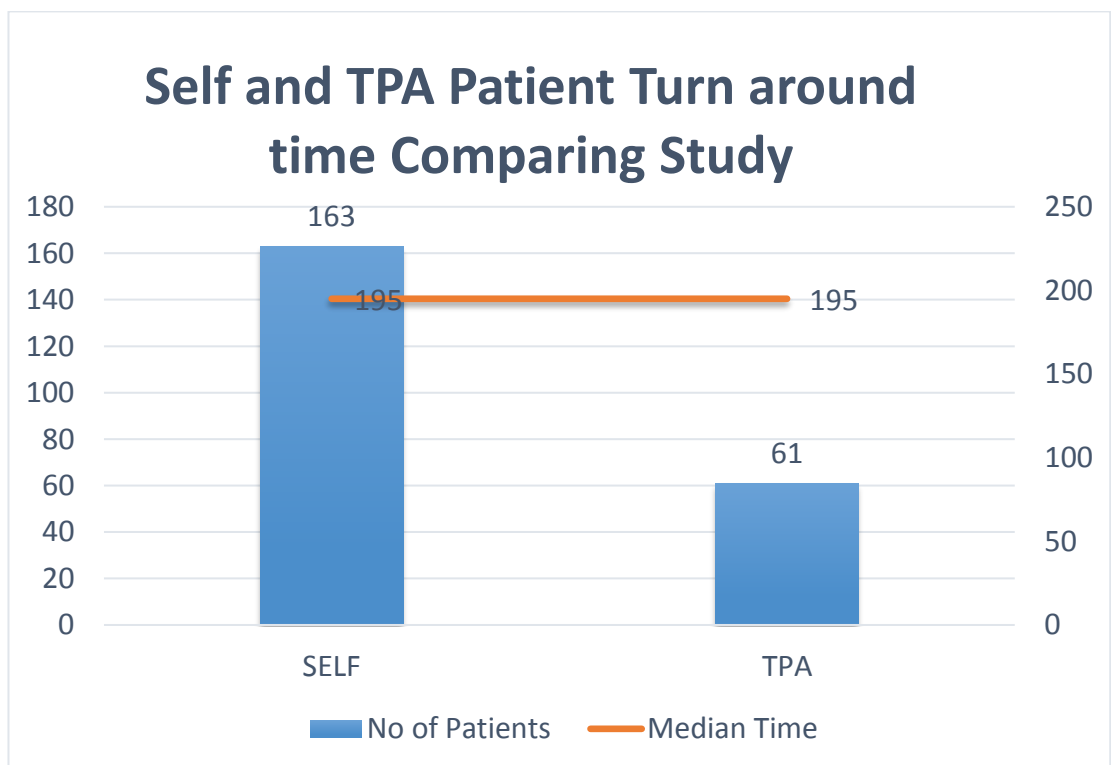


Fig 3: Self and TPA Patient Turn Around Time comparing Median Time Study

- It interprets here median time is same for both self and TPA patient.

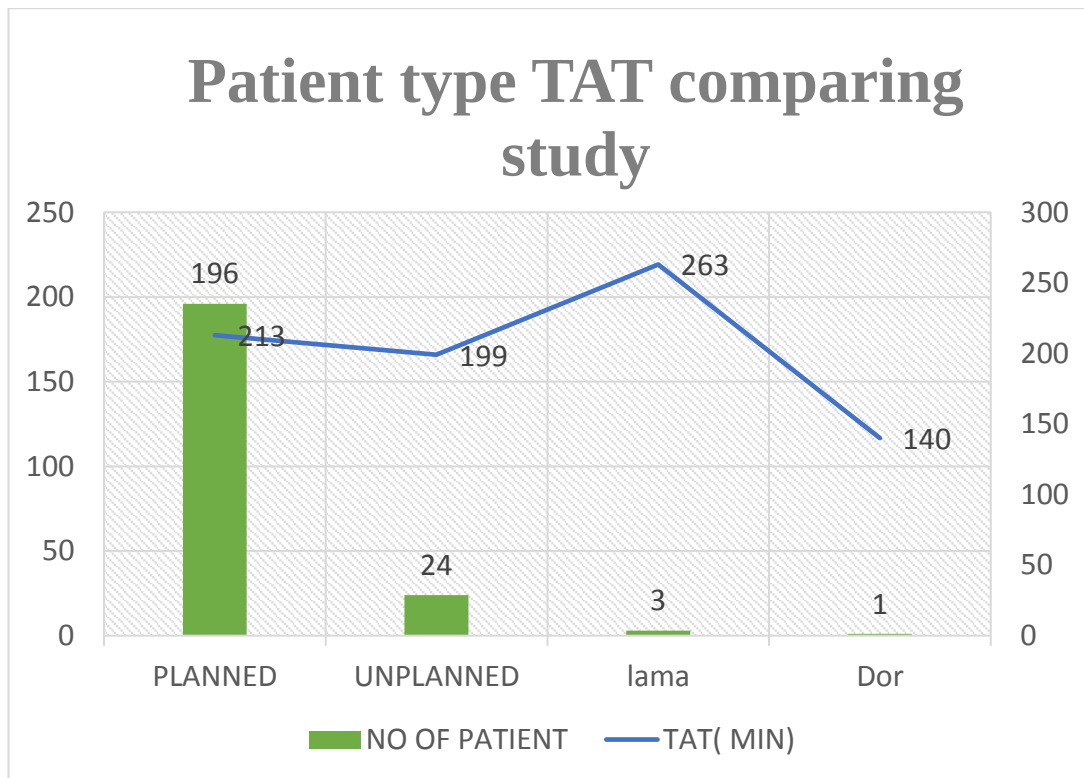


Fig 4: Patient type Turn around Time Average time study

- It interprets unplanned discharge patient avg. Tat is 199 min as comparing to planned discharge patient avg. TAT is 196 min.

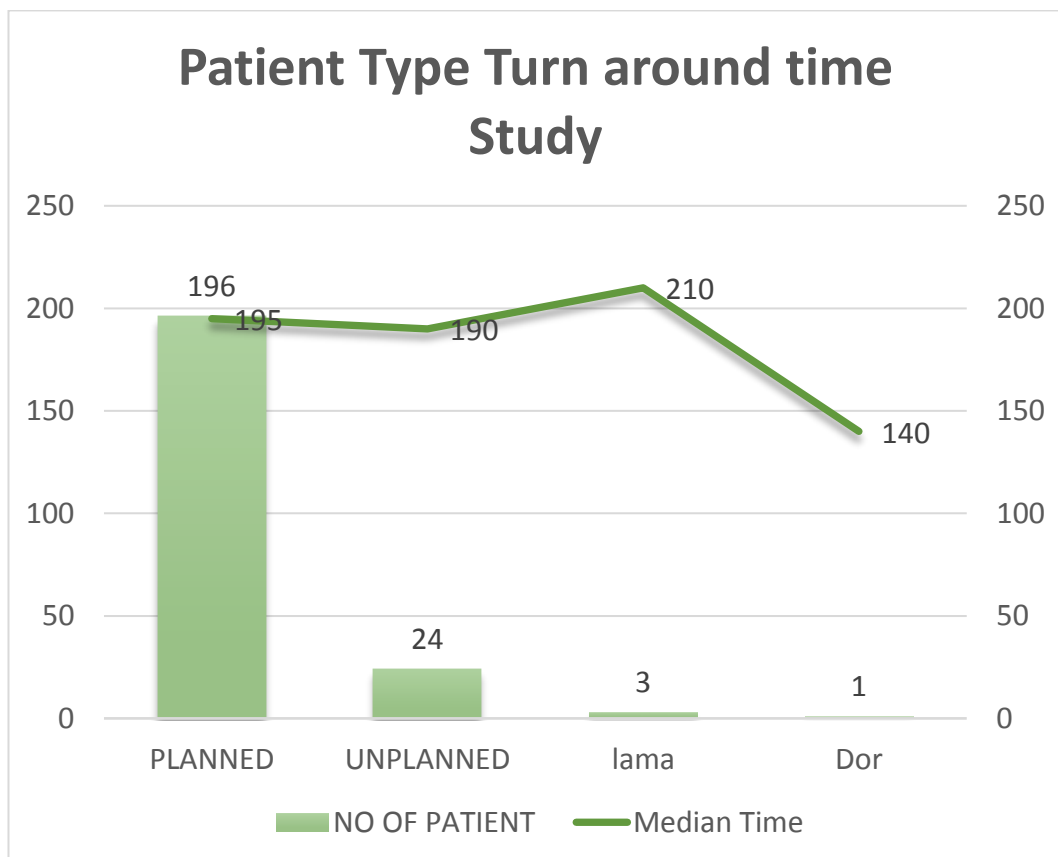


Fig 5: Patient Type Turn Around Time Median Time Study

It interprets here 195 median time(min) for planned discharge patients where as 190 median time(min) for unplanned patient type which is quite high as their sample is low also.

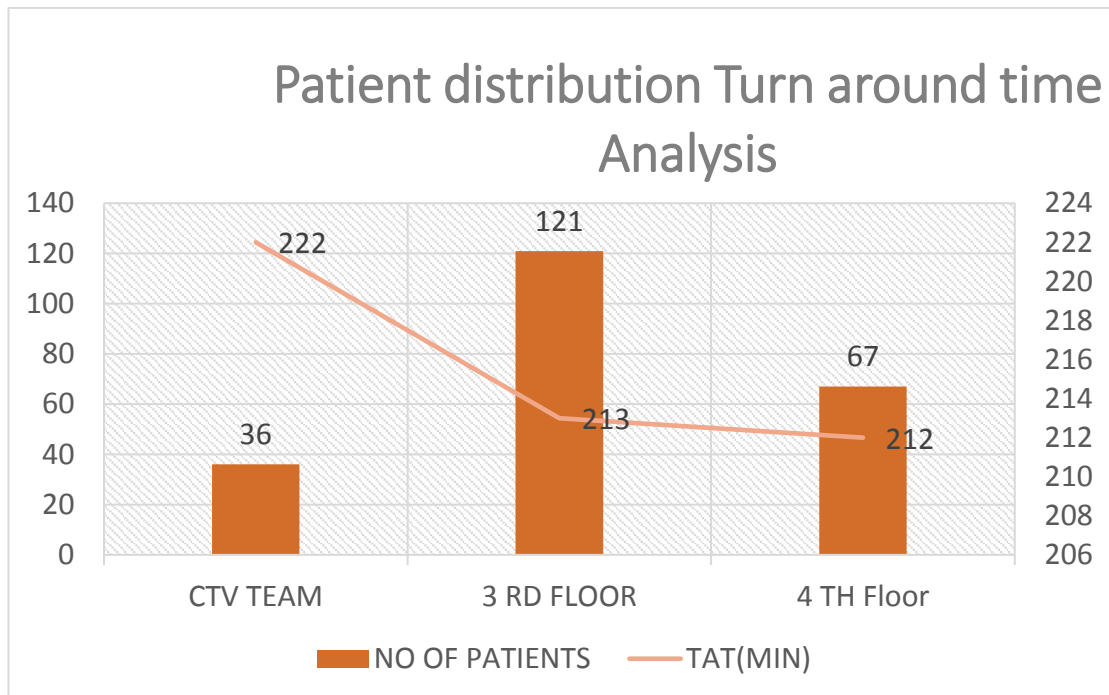


Fig 6: Distribution of Patients Turn Around Average Time Study

It interprets here TAT score of various floors where more focus is needed to given to make process value stream.

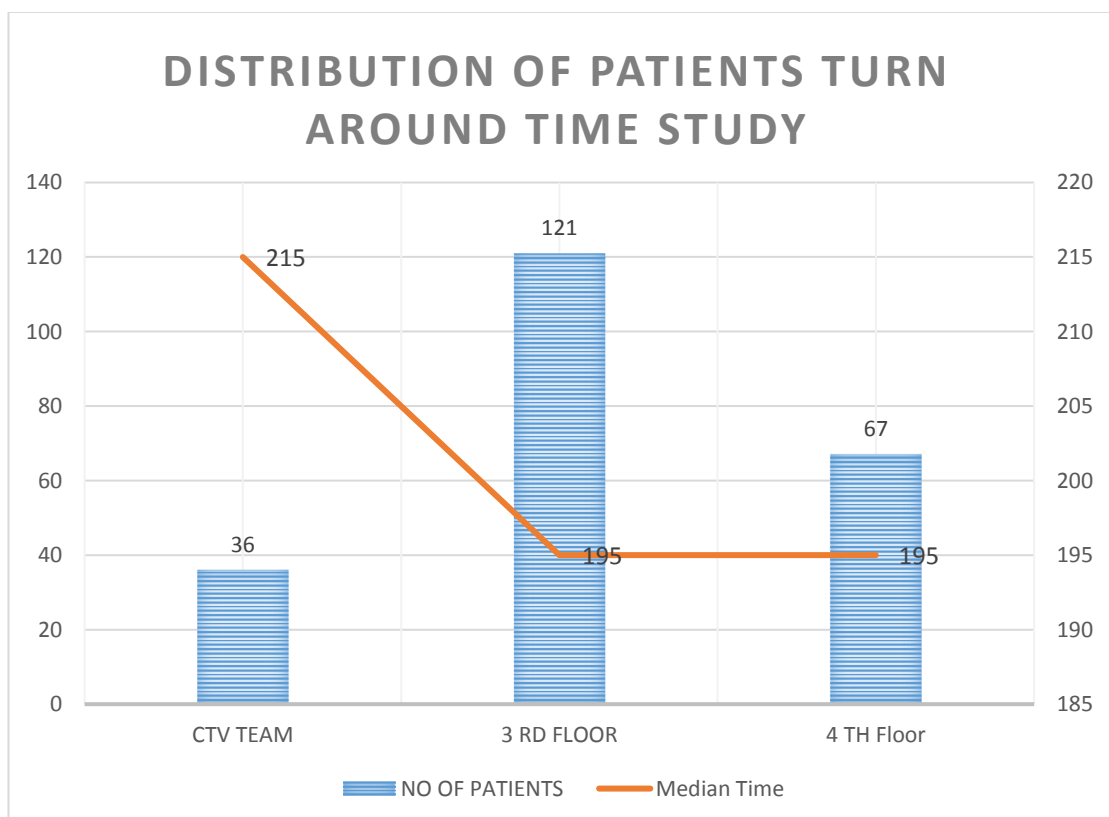


Fig 7: Distribution of Patients Turn Around Median Time Study

It interprets here still patient sample size of 3 rd floor and 4 th floor are different but median is same 195 min where as ctv patient size is small but median time is 215 min

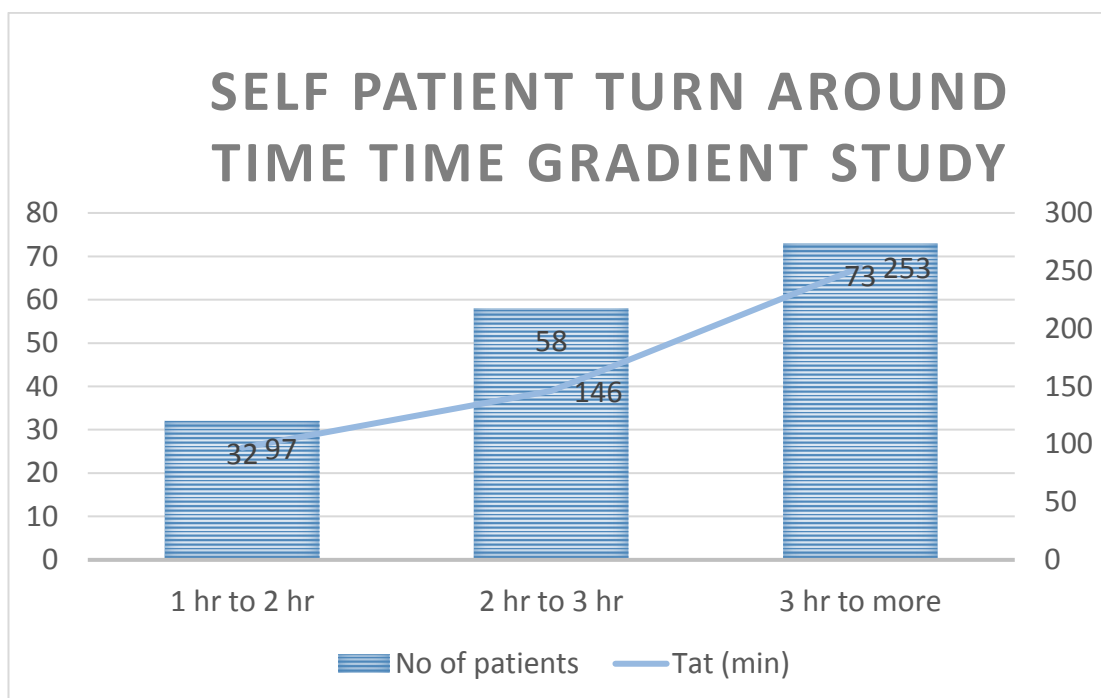


Fig 8: Study of Self Patient Turn Around Time Gradient Average Time Study

It interprets here 32 patients discharge under only 2 hr. i.e. 97 min on average, needed to focus more on 73 patients discharge more than 4 hrs. i.e. 253 min on average.

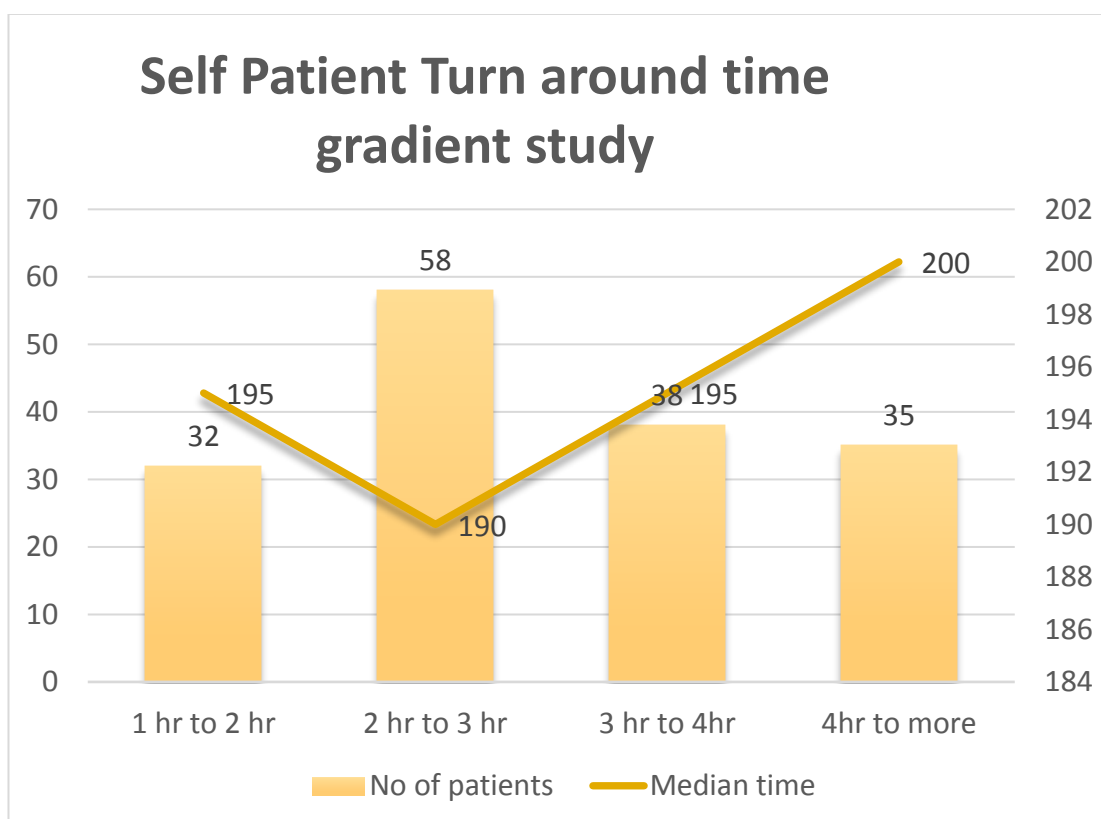


Fig 9: Study of Self Patient Turn Around Time Gradient Median Time Study

It interprets here maximum median time is 200 min which is in range of 4 hr. to more, still other time range median time is almost similar (195,190,195) min

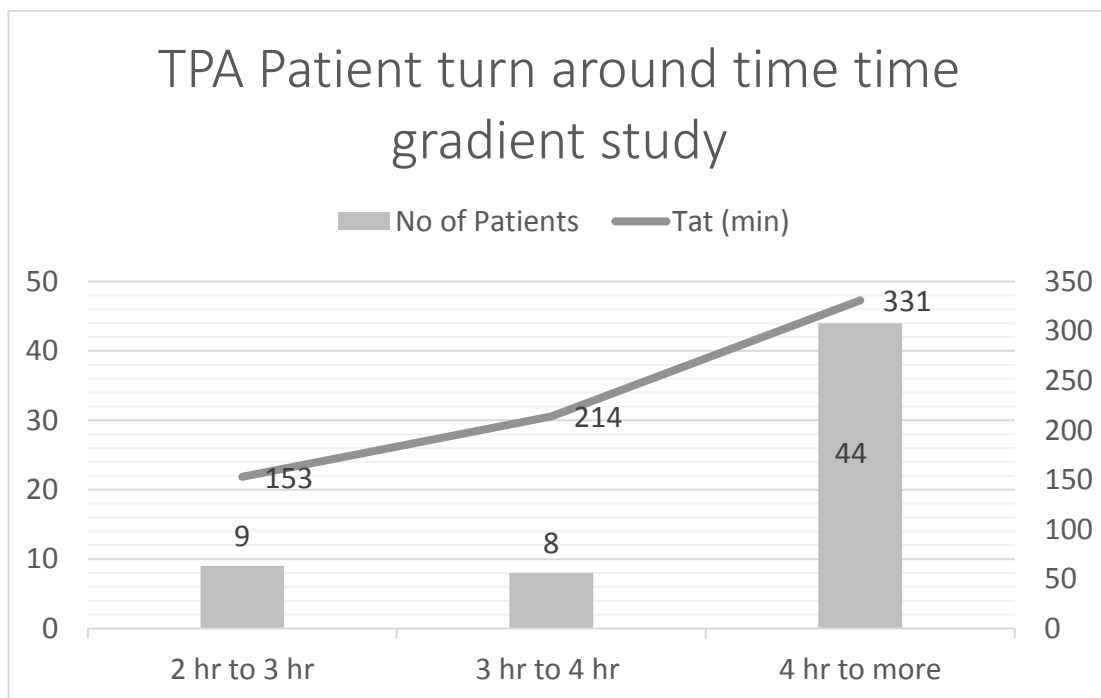


Fig 10: Study of TPA Patient Turn Around Time Gradient Average time study

It interprets clearly 17 Patients clearly discharge under 4 hr. which is quite good, more focus of 35 patients which consumes more than 5 hrs. on average.

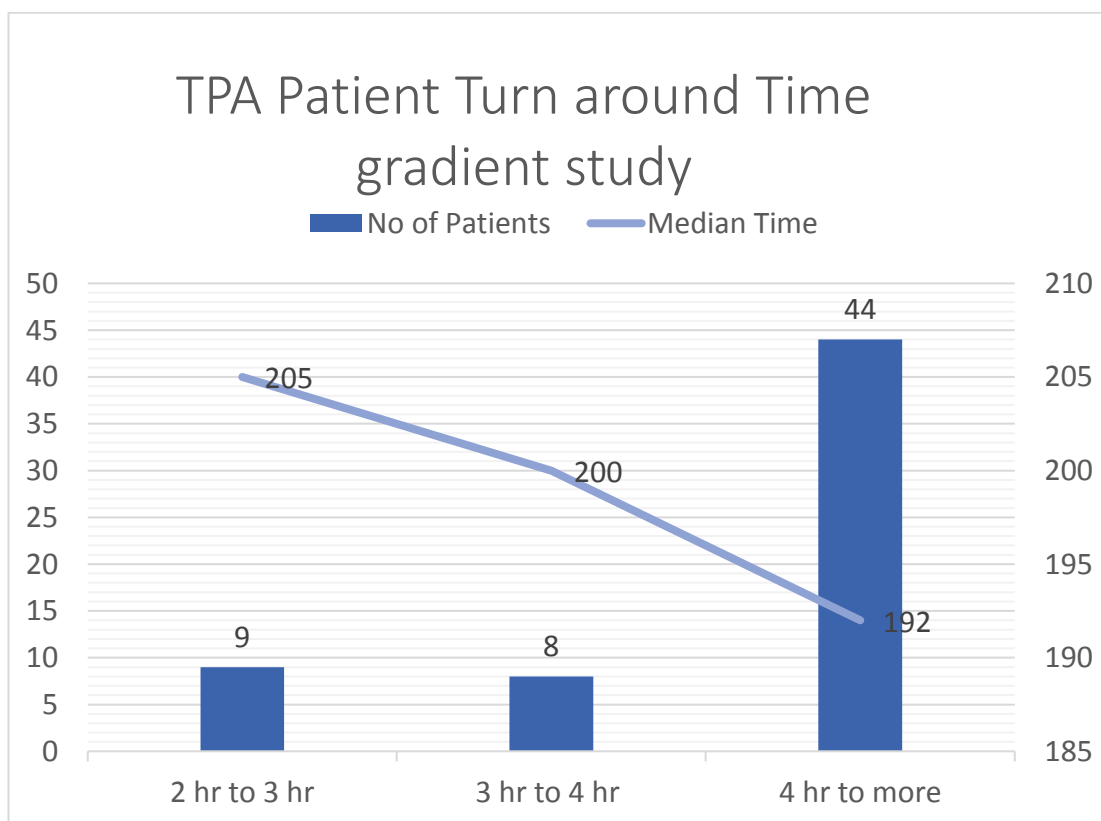


Fig 11: Study of TPA Patient Turn Around Time Gradient Median time study

It interprets here minimum median time is 192 min in time range of 4 hr. to more cases of TPA patient discharge

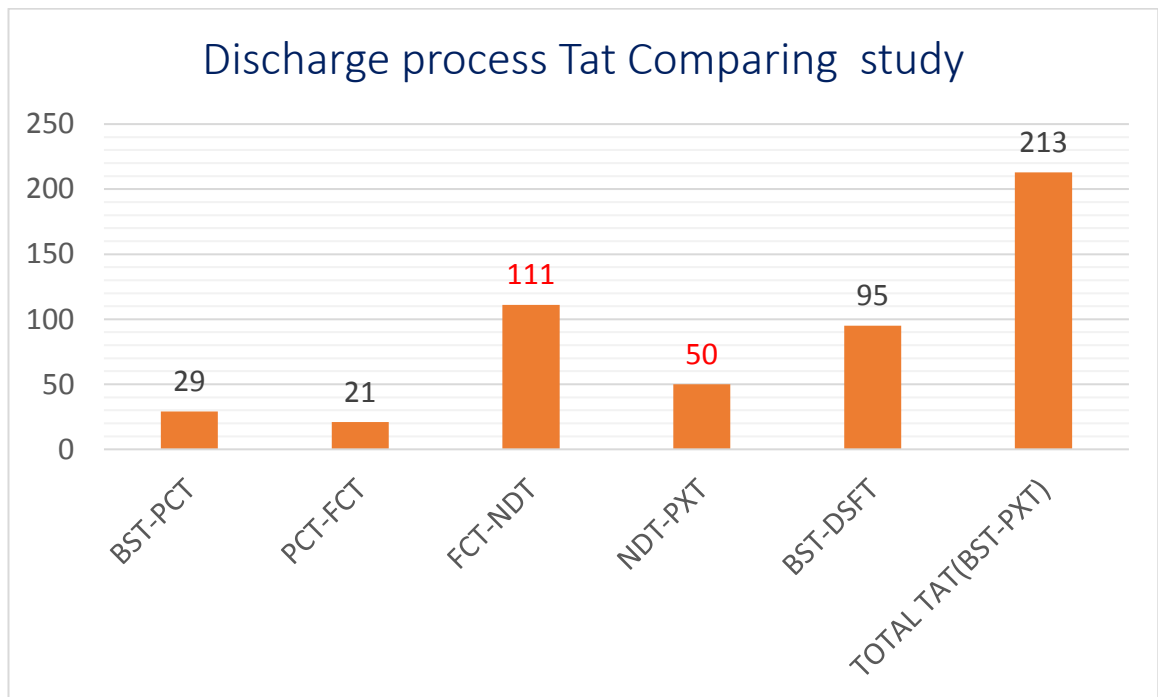


Fig 12 : Study of Discharge Process Average time

Where BST = billing sent time, BRT = billing ready time, DSFT = discharge summary final time, NDT = no dues time, PXT = patient exit time FCT= Finance Clearance Time
 It interprets clearly two concern areas here billing ready to no dues generation slip (111 min) and no dues to patient exit (50 min) on average consume lot of Tat.

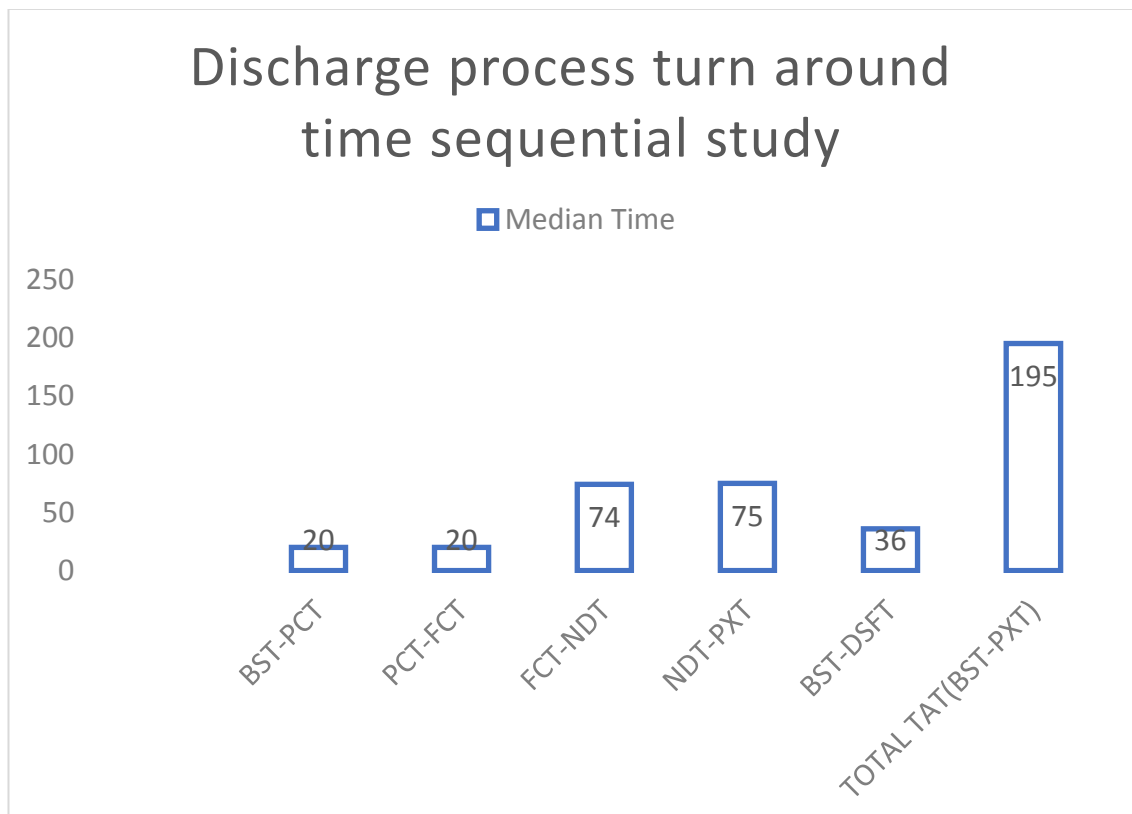


Fig 13: Study of Discharge process turn around median time

It interprets here higher median time is seen in two activities i.e. 74 min and 75 min in final billing to no dues generation and no dues to patient exit

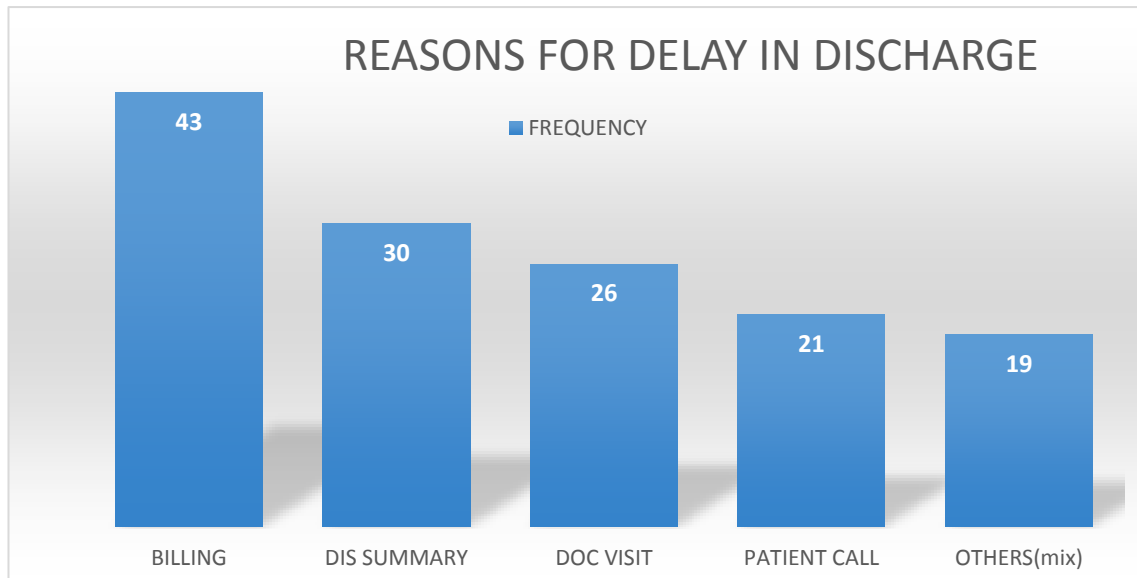


Fig 14: Reasons in Discharge delay via its Frequency Distribution

It interprets three reasons i.e. Billing, Discharge Summary, Doctor visit almost covering 71 percentages in patient discharge delay in which maximum shares cover up with billing part instead patient side delay only one sixth of total patient i.e. 15 percentages only.

Timely discharge patients and TAT patients reasons of delay are excluded here. Pareto Analysis of discharge process interprets billing delay discharge summary delay and doctor consultation delay are just 20% factors which are affecting 80 % delay in turnaround time

Discussion:

In review it was observed there are sequential planning of discharge process and identified value process and non value part identified by various analysis as qualitative analysis, Root and cause analysis like Fish bone diagram of causes and recommended some changes in discharge process for early discharge process, here checklist is planned and compare discharge vital events with time being and compare with standard sops to identify time gaps on average scale and median scale only in between some issues identified on some data or process observation some discussion are to input for management it depends on them to implement it or not.

Some observation suggests here Discharge Tat analysis interprets maximum share of billing delay as this reason covering maximum frequency so the most priority of concern to reduce delay of discharge. Whereas discharge summary also arises a major reason in delaying discharge even doctor visit and billing sum up at right time.

Tat patients as expected consuming most of time compared to standard level of timings which patients are excluded in final tat analysis as these are of third party control which difficult to deal with. It is also very clear if Self Category Patients would be discharge under standard sops organization will not to face los issues beside per minute cost will also save or earn on the other side psychological cost associated with patient will also decrease

LIMITATIONS:

- Low time frame (month) study
- Limited amount of time period per day
- Sample size only covered from two floors only
- Patients are excluded due to cancellations or postponed of discharge
- Many a times it is with patient side delay not solving organization objectives
- No ready to talk on cost point implementation during discussion.

CONCLUSIONS:

On interpretation of questionnaire result 75 percentage of efficiency are generating it means staff which part of study are 75 percent are efficient.

In TAT Analysis it interprets TAT is high for both category of patients In which self-patients are on 3 hr. 33 minutes of 163 patients on average where 61 TPA patients are on 4 hr. 49 minutes on average.

It is an alarming sign TAT score for self category patients as such which discharge process under control in organization decisions as compared to third party TAT.Unplanned discharge Turn around time is also high. Median score differentiate with average score to interpret skewness or outliers position and also details where maximum no of patient discharge time shares

RECOMMENDATIONS:

- There should be more planned discharge needs to happen for control Turn Around Time.
- Medicines need to be returned before consultation round better it to be returned in night.
- All reports for planned discharge patients to be compiled in patient file in early morning.
- A Separate folder will need to prepare for collection of all billings and discharge summary of planned discharge patient for making process faster
- A Change in panacea HMIS system if possible for planned discharge patient with TPA and self patient coding with different color highlights for quick actions in discharge process.
- A telephone call is to be made as no dues generate slip of patient to nurse in charge.
- A request is made visit early to system follow TPA planned discharge or critical first patient to self planned discharge patient
- TPA patient signed summary as early with TPA breakout would needed to reach on TPA cell in early hours or also convey TPA patient attendant to converse TPA party or TPA agent as early as possible so clearance be on time.
- More than one register needs to use send billing activity sheets to avoid delay.
- Design CME sessions for typist for better understanding with medical terminology to avoid spelling mistakes which demands multiple correction in dis summary gets delayed process.
- Clear discount policy fast bug free HMIS system to avoid day to day billing delay process.

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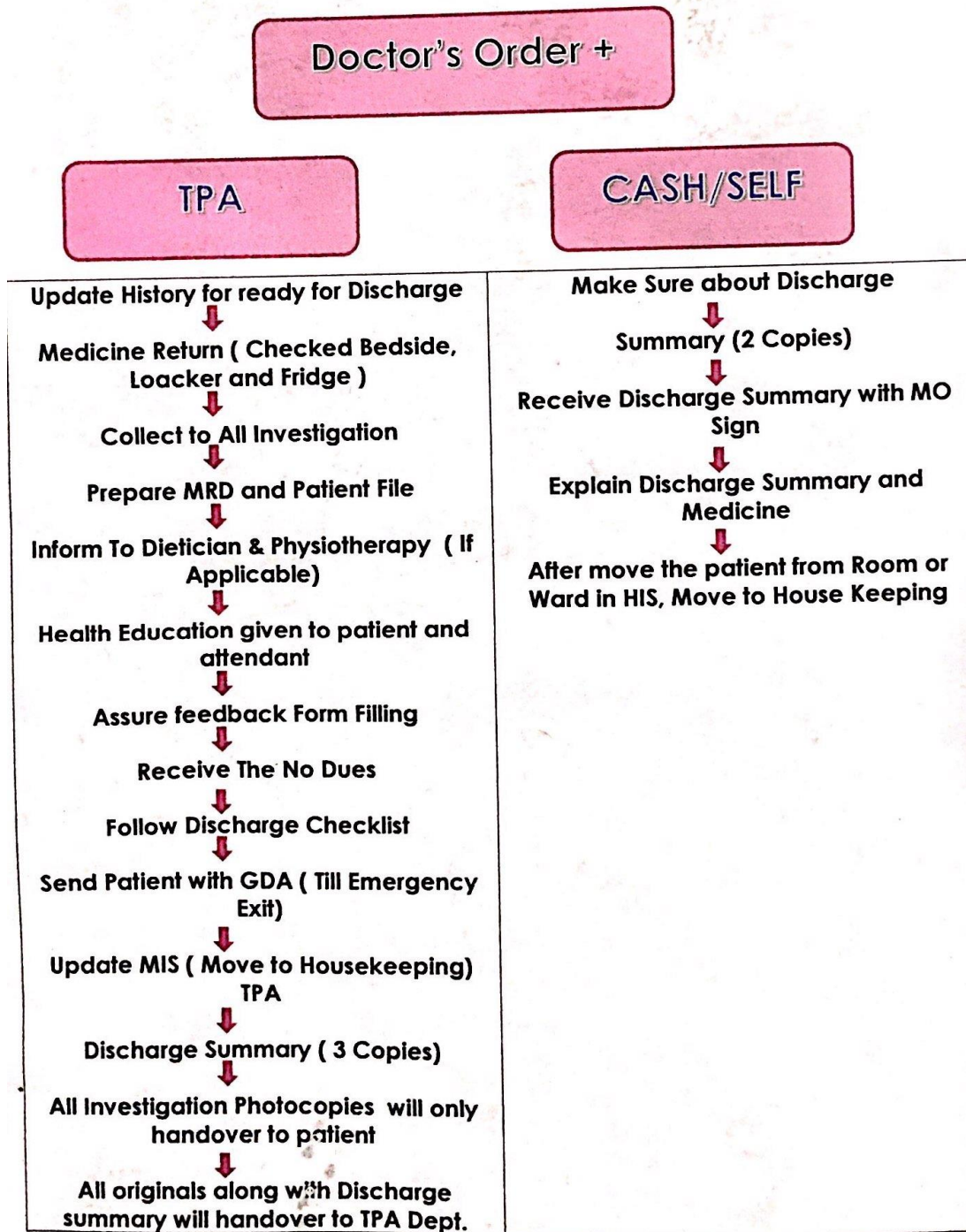
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Annexures

Hospital Discharge process

Flow Chart

Discharge Process



Discharge Summary Format

DISCHARGE SUMMARY

Patient's Name

UHID/IPD

DOA-

DOD-

Consultant-

DIAGNOSIS-

•	
•	
•	
•	
•	
•	
•	
•	
•	
•	

PRESENTING COMPLAINTS-

Medical History :

Surgical History :

Family History :

Allergy History :

Personal History :

EXAMINATION-

Pulse-..... B P-Resp Rate-.....Temp- SO2-.....

CNS-

CVS-

Resp.- B/L Air entry

Abdomen-

Others-

PROCEDURE PERFORMED-

TREATMENT GIVEN-

COURSE IN HOSPITAL-

CONDITION ON DISCHARGE-

ADVICE ON DISCHARGE-

MEDICATIONS-

S No.	DRUG NAME	DOSAGE	FREQUENCY & TIMINGS	ROUTE
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				

OTHER ADVICE-

REVIEW-

NAME DUTY DOCTOR

SIGN DUTY DOCTOR

DATE & TIME

