Dissertation Report on

Delays in Discharge Process & post evaluation of discharge process at Gulf Medical Centre Hospital and Research Centre, Ajman, UAE

Submitted By

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(PG/13/053)

Under the Guidance of:

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INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT & RESEARCH NEW DELHI

Internship Training

At

Gulf Medical Centre Hospital & Research Centre, UAE

Delays in Discharge Process & evaluation of discharge process at Gulf Medical Centre Hospital and Research Centre, Ajman, UAE

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PG/13/053

Under the guidance of

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Post Graduate Diploma in Hospital and Health Management

2013-15

International Institute of Health Management Research

New Delhi

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr. RENU BALI student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at GMCHRC, AJMAN from 18.03.2015 to 29.05.2015.

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.

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Certificate of Approval

The following dissertation titled **"DELAY IN DISCHARGE PROCESS & EVALUATION OF DISCHARGE PROCESS"** at **"GULF MEDICAL CENTRE HOSPITAL & RESEARCH CENTRE, AJMAN, UAE** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

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Dr VEENA SINGH	Veena Singh
DR Ashok K Agarwal	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Renu Bali,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. He/ She is submitting this dissertation titled " Delay in discharge process " at "GMC Hospital , AJMAN UAE" in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

27/May/2015.

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This is to certify that **Dr. Renu Bali** holder of Indian Passport Number M3750474 was working in our institution as Management Trainee from 18th March 2015 till 29th May 2015, as a part of dissertation of her PGDHM program .She has completed the assigned project.

We wish her all the best.

For **Thumbay Hospital, Dubai**

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Objectives achieved: MET.

Deliverables: Shown keen interest ensuring implementation of the project. Had taken initiatives in removing bottlenecks & briefing staff involved in the project.

Strengths: Communication, Dedication, Sincerity, Sound knowledge of Quality tools.

Suggestions for Improvement: Multi-tasking & Time management.

27/May/2015.

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date: 27/May/2015.

Place: Ajman, U.A.E.

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

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This is to certify that the dissertation titled Delay in discharge process & evaluation of discharge process in GMCHRC, AJMAN and submitted by (DR. RENU BALI) Enrollment No. PG/13/053 under the supervision of DR. VEENA SINGH for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 18.03.2015. to 29.05.2015 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.

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Abstract

The discharge process represents final contact between the patient and the hospital health professionals, and the outcomes of all procedures undergone by the patient are recorded at this stage. One of the factors on which the image of the hospital depends is the overall time taken in this process. As a patient is discharged, they expect a timely and quality discharge process from their care providers. Delay in this step results in longer waiting time for the next patient. Currently due to the delay in discharge process at Gulf Medical Centre Hospital & Research Centre (GMCHRC), AJMAN, UAE the divert rate of the emergency department (including OBG emergency) and Recovery unit is disrupted as patients stack up in these areas due to non-availability of beds in the wards and eventually the hospital has to turn people away. Delayed discharge of patients has led to the increased length of stay and consequent low hospital bed turnover rate which in turn has led to increased organizational costs. Also the hospital was receiving complaints from the patients for slow

and inefficient discharge process in the Hospital.

Thus, an observational prospective study (Phase 1) was conducted over a period of 18 days, the primary data collected gave a sample size- n= 650 (In-patients). Starting with the Discharge Process Mapping, two flowcharts were prepared, one for self-payment patients and second for insurance patients. Discharge tracking tool was designed and the nurses, patient affairs department and concerned pharmacy staff collected the data on a daily basis. Prior to data collection, the nursing staff in In-patient department was trained on the usage of the tool. The two variables taken for data analysis were time taken and number of cases. Analysis was done keeping the confidentiality aspect and ethical considerations in purview with respect to the patient details. Then, the 2nd part i.e. evaluation of the recommendations given in 1st phase were done over a period of time & first 25 patients of self payment cases were selected in right wing of GMCHRC.

Results of the study (Phase 1) were found out to be; prolonged discharge time, for self-payment patients- 5 hours 18 minutes and for insurance patients- 6 hours 3 minutes. Maximum time delay was found out to be in signature and approval of discharge summary by physicians, in medication delivery of discharge drugs to the nursing station. Recommendations such as preparation of probable discharge list 12 hours prior shall be made. E-prescription & concept of e-discharge summaries were laid down.

In phase 2 of study i.e. evaluation of the post interventions were carried out & results were matched. A tremendous change was seen & the recommendations given were proved appropriate & helpful for the organization. It was found that after applying the interventions the total time reduced to 2.38 hrs which was earlier 5 hrs 18 minutes.

This dissertation enumerates and describes the key reasons for the delay in discharge process of In-patient & evaluation, at GMCHRC, Ajman. Improving the quality of the discharge process therefore lead to an increase in patient satisfaction As a result patients

are likely to return to a healthcare facility where they have experienced an efficient discharge process when they next seek treatment.

Acknowledgements

It gives me an immense pleasure to show my gratitude to great many people who helped me and supported me during my dissertation at Gulf Medical College Hospital and Research Center.

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I owe my sincere gratitude to my mentor Dr. Veena Singh (Professor, IIHMR) & Dr. A.K. Agarwal (Dean Academics& student affairs IIHMR, New Delhi) and the complete IIHMR Team New Delhi for their sincere efforts & kind support.

Dr. Renu Bali

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List of Symbols and Abbreviations

S. No.	Symbol/Abbreviation	Full Form
1	DHC	Discharge Hospitality Centre
2	EMR	Electronic Medical Records
3	ED	Emergency Department
4	GP	General Practitioner
5	GMCHRC	Gulf Medical College Hospital and Research Center
6	HIMS	Hospital Information Management System
7	IPD	In Patient Department
8	MO	Medical Orderly
9	OPD	Outpatient Department
10	OBG	Obstetrics& Gynecology

11	PACU	Pediatric Acute Care Unit
12	PAD	Patient Affair Department
13	UCL	Upper Control Limit
14	DPTS	Discharge Patient Tracking Sheet
15	COW	Computer On Wheels

Appendix

1. Introduction

The discharge process represents final contact between the patient and the hospital health professionals,and the outcomes of all procedures undergone by the patient are recorded at this stage.One of the factors on which the image of the hospital depends is the overall time taken in this process. As a patient is discharged, they expect a timely and quality discharge process from their care providers. Delay in this step results in longer waiting time for the next patient. Improving the quality of the discharge process therefore lead to an increase in patient satisfaction. As a result patients are likely to return to a Healthcare facility where they have experienced an efficient discharge process when they next seek treatment.

Currently due to the delay in discharge process the divert rate of the emergency department (including OBG emergency) and Recovery unit is disrupted as patients stack up in these areas due to non-availability of beds in the wards and eventually the hospital has to turn people away. Delayed discharge of patients has led to the increased length of stay and consequent low hospital bed turnover rate which in turn has led to increased organizational costs. Also the hospital was receiving complaints from the patients for slow and inefficient discharge process in the Hospital. So Management decided there is a need to streamline the discharge process and find out the reasons for the delay.

The discharge process is a critical bottleneck for efficient patient flow. In fact, the discharge process is ranked as the biggest factor impacting wait times for in-patient beds..

Hence, the study of reasons of delay in discharge process of patients at GMCHRC, Ajman, UAE becomes critical. The post evaluation of the interventions done in phase 2 will be evaluated for the process & was checked that the recommendations given in phase 1 of study was actually useful to organization or not

1.1 Aim: To determine the delay gaps and feasible practices in order to reduce variability in discharge cycle time at GMCHRC Ajman, UAE.

1.2 General Objective

To identify the reasons for delay in discharge at GMCHRC AJMAN, UAE by process mapping of the whole discharge process, using appropriate tools.

1.2.1. Specific Objectives

1. To determine average time taken for the entire discharge process, self-payment patients & insurance patients.
2. To find out the delay points in discharge process& the areas of improvements in current discharge process.
3. To provide appropriate recommendations/ suggestions for improving the discharge process.
4. To evaluate the post interventions results in phase 2 of study.

2. Literature Review

Policies for reducing delayed discharge from hospital**Karen Bryan**[*(1)]

This study states that a number of cross-institutional complexities contribute to delayed discharges. Policy measures have contributed positively to reducing delayed discharges. Investment in intermediate care services has provided a range of services to promote maximum independence for older people after acute hospital admission.

Joint working between health and social services is necessary to prevent delayed discharges.

Delay in discharge and its impact on unnecessary hospital bed occupancy Muhammad UmairMajeed(2)

The study states that elderly patients experiencing acute surgical admission and discharge to community hospitals had prolonged LOS due to significant delays associated with care of the elderly provision. The financial considerations behind bed capacity in primary and secondary care and the provision of care of elderly services need to be balanced against unnecessary occupancy of acute hospital beds with its associated health and economic implications.

The Hospital Discharge: A Review of a High Risk Care Transition With Highlights of a Reengineered Discharge Process Jeffrey L. Greenwald, MD,(3)

The study describes that by using multimethod analysis, the group described the principles thought to be important to the discharge process and delineated what they call the reengineered discharge, ie a set of 11 discrete and mutually reinforcing components that they believe should be consistently part of every hospital discharge.

Opportunities for Informatics to Improve Discharge Planning: A Systematic Review of the Literature (Rhonda Renee Archie, MBA, MT (4)

It shows the evaluation report that the association of information sharing among patients, caregivers, and health care providers and the impact on the discharge process. The authors identified reports of the discharge planning process through systematic electronic database searches. The eligibility criteria were 1) usual discharge planning process, and 2) patient, caregiver, or provider perception or feedback. Of the eligible articles, all voiced concern about a broken discharge planning process that affected the information

exchanged among all involved in patient care. Outcomes related to satisfaction, knowledge transfer, and communication was identified. The initial evidence suggests information sharing through interdisciplinary patient care can play a significant role in the future.

A Tool for Improving Patient Discharge Process and Hospital Communication Practices: the Patient Tracker (Christopher G. Maloney, MD PhD,[1] Douglas Wolfe, MBA,[2] Per H. Gesteland, MD MS,[1] Joe W. Hales, (5)

They developed and implemented a web-based software application called "Patient Tracker" to manage the discharge process, minimize delays in admission and reduce surgical procedure cancellations. They also tested the effectiveness of the software on the workflow by comparingoutcomes between the pre-implementation control group (2002–2003) and the post-implementation experimental group (2003–2006). During the same period, the average number of inpatient admissions increased (5725 vs. 6120), and the median emergency department LOS decreased (247 vs. 232, $p<0.01$).

Improving the Discharge Process by Embedding a Discharge Facilitator in a Resident Team (Kathleen M. Finn, MD, MPhil1*,Rebecca Heffner, MD2) (Journal of Hospital Medicine 2011)(6)They assessed whether embedding a nurse practitioner on a medical team to help physicians with the discharge process would improve communication, patient follow-up, and hospital reutilization & result came out to be that patients had more discharge summaries completed within 24 hours (67% vs 47%, $P < 0.001$). Similarly, they had more follow-up appointments scheduled by the time of discharge (62% vs 36%, $P < 0.0001$) and attended those appointments more often within 2 weeks.

A Multidisciplinary Care Pathway Significantly Increases the Number of Early Morning Discharges in a Large Academic Medical Center (Durvasula, Raghu MD, MHA) (7)

This study demonstrates that a multidisciplinary approach using prescribed order entry and medication reconciliation is a low cost, safe, and effective way to increase early morning discharges and improve patient flow for large hospitals with high volumes of scheduled patient admissions. Itinvolved moving rate-limiting steps to earlier in the discharge process, specifically medication reconciliation to the night before discharge and "discharge to home" order entry before 9:00 AM the morning of discharge.

Real-Time Demand/Capacity Management to Improve Flow (8)

Communicate the discharge schedule with hospital disciplines through the use of white board on the unit, an extranet, or a dedicated phone line.Hold daily (or more frequent) bed huddles to coordinate planning across units/departments for linking admissions and transfers to planned discharges out of the hospital.Use a consistent method to communicate bed availability and distribute beds throughout the day, such as a designated person ("bed czar"), a manual bed board, or an electronic or web-based tool.

A reimagined discharge lounge as a way to an efficient discharge process (BMJQualityImprovementProgramme)(9)

In this study they proposed a new project, called the "Discharge Hospitality Center (DHC)." This multidisciplinary group made the final decision about eligibility for the DHC, and took responsibility for distributing the list of eligible patients to the acute care nursing floors immediately after their early morning meeting. Using the list of patients appropriate for the DHC, the acute floor nursing teams developed standard work for prioritization of DHC eligible patients for discharge, which more reliably allowed those

patients to leave their inpatient beds earlier in the day. We found there was no need for dedicated staff at our DHC, as after discharge all outpatient procedures and policies applied.

Improving Inpatient Discharge Process To Reduce ReadmissionVanda Ametlli;(10)

Implemented a24-hour continuous bed rest evaluation to evaluate patient's action to reduce delays caused by therapist consultations. To provide an excellent patient care experience and minimize readmission reimbursement costs; a hospital needs to evaluate their current discharge process, role of process stakeholders and current EMR system electronic submissions. While, not every readmission can be avoided, there is opportunity in decreasing preventable patients and adverse events.

3. Methodology

4.1 Type of study: Observational, prospective . The data was recorded from the Hospital Information Management System to analyze the discharge process. In the phase 2 of study ie the post evaluation of the interventions applied the first 25 patients of self payment category were monitored & time was noted down manually from the time the doctor gave the orders for discharge till the time patient left the room .

4.2 Location of study: In two wings of the Hospital – Left Wing and Right Wing.

4.3 Duration of study: period of 18 days (26.03.2015- 12.04.2015) & post evaluation ie phase 2 of study was 2nd May 2015 to 25th May 2015.

4.4 Sample Size,(n= 650) A total of **1013** patients were discharged from the hospital from 26th March to 12th April 2015. A sample of 650 was selected from the total sample, out of which 461 were self-payment and 189 were insurance patients.

Data was collected from the Patient records and from HIMS to identify the time taken from the time the physician on rounds said that the patient can be discharged till time the patient physically left the room. In phase 2 of study 25 patients of self payment category were selected & monitored personally & time was noted down .

4.5 Data collection tools: Hospital information management system (HIMS)of GMCHRC and Patient Record Files. Interviews with the involved staff in the Process Mapping.**(Refer to Table 1 –Discharge Process Tracking Sheet)**

3.6 Method of Collection: Real time monitoring and personal observation.

3.6.1. Data (information) to be collected include:

- Current discharge process
- Speciality/ Departments
- Elective / Emergency (Booked / Un-Booked in case of OBG Cases)
- Insurance/ Self Payment Cases
- Duration of rendered service at different services
- Time of arrival at and departure from stations
- About causes of delay in discharge process
- Length of stay in GMC hospital.
- Viewpoints and attitudes of hospital personnel

3.7 Methods Employed

3.7.1 A data tracking sheet was prepared for the data collection; this sheet was provided to Nursing, Patient Affair Department (PAD), Pharmacy and

Housekeeping to collect the data at their respective stations. (*Refer Page 29, Table 1)*

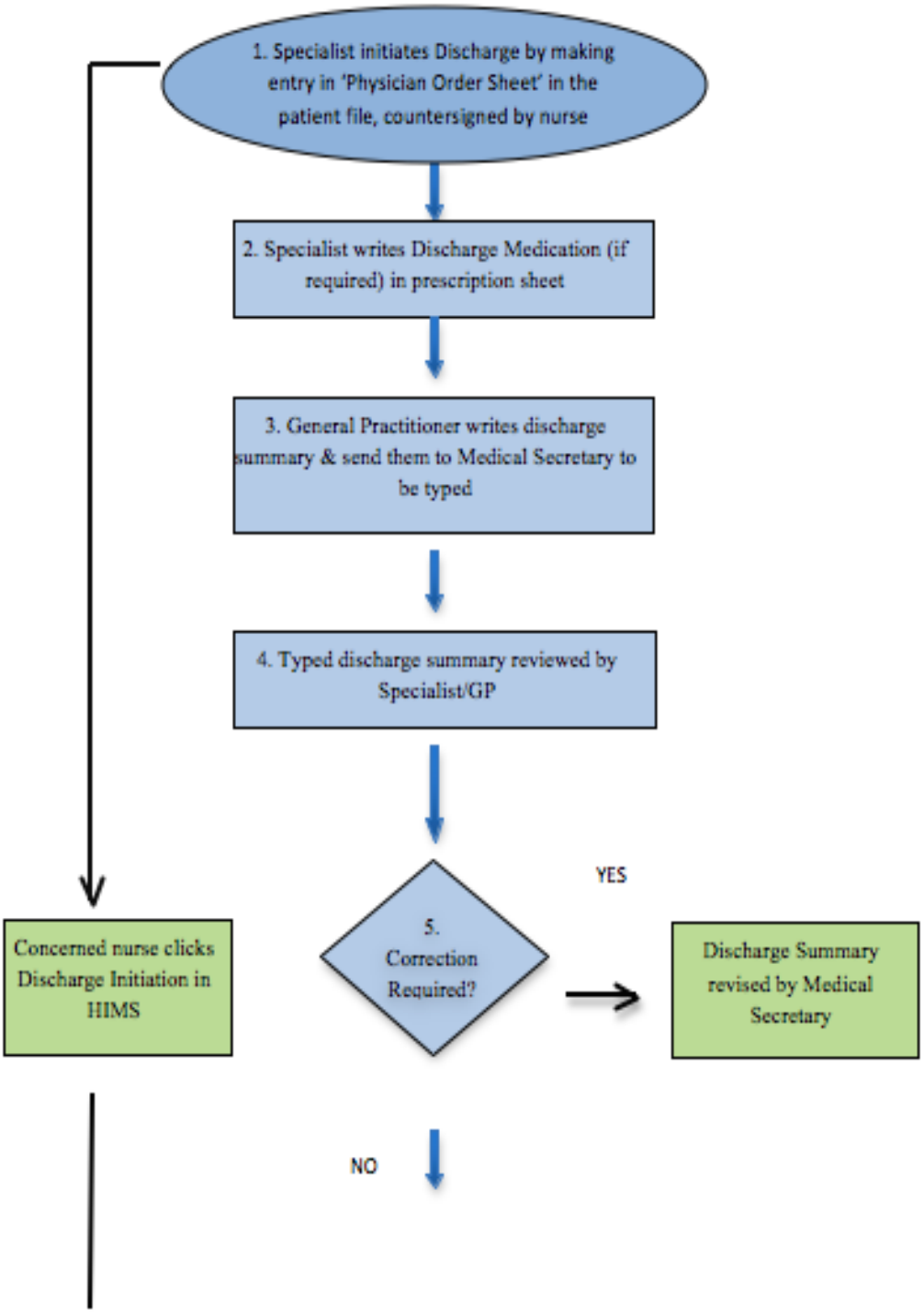
3.7.2 Data was collected from the Patient Records and Hospital Information Management System to identify the time taken from the time, the physician on rounds gave the discharge orders, till time the patient physically left the room.

3.8.3 Discharge time was calculated for each inpatient and charted on the control charts to portray those cases, which are beyond the control limits.

4. Process Mapping

Process Mapping

Figure 1. Current Discharge Process for 'Self-Payment' Patients



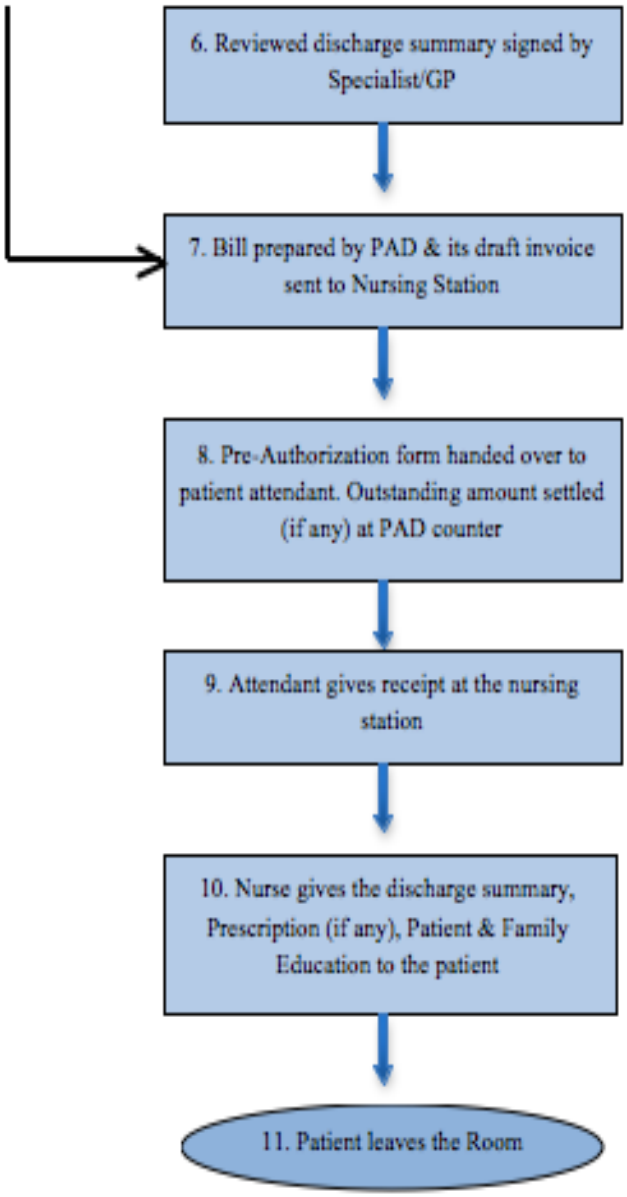
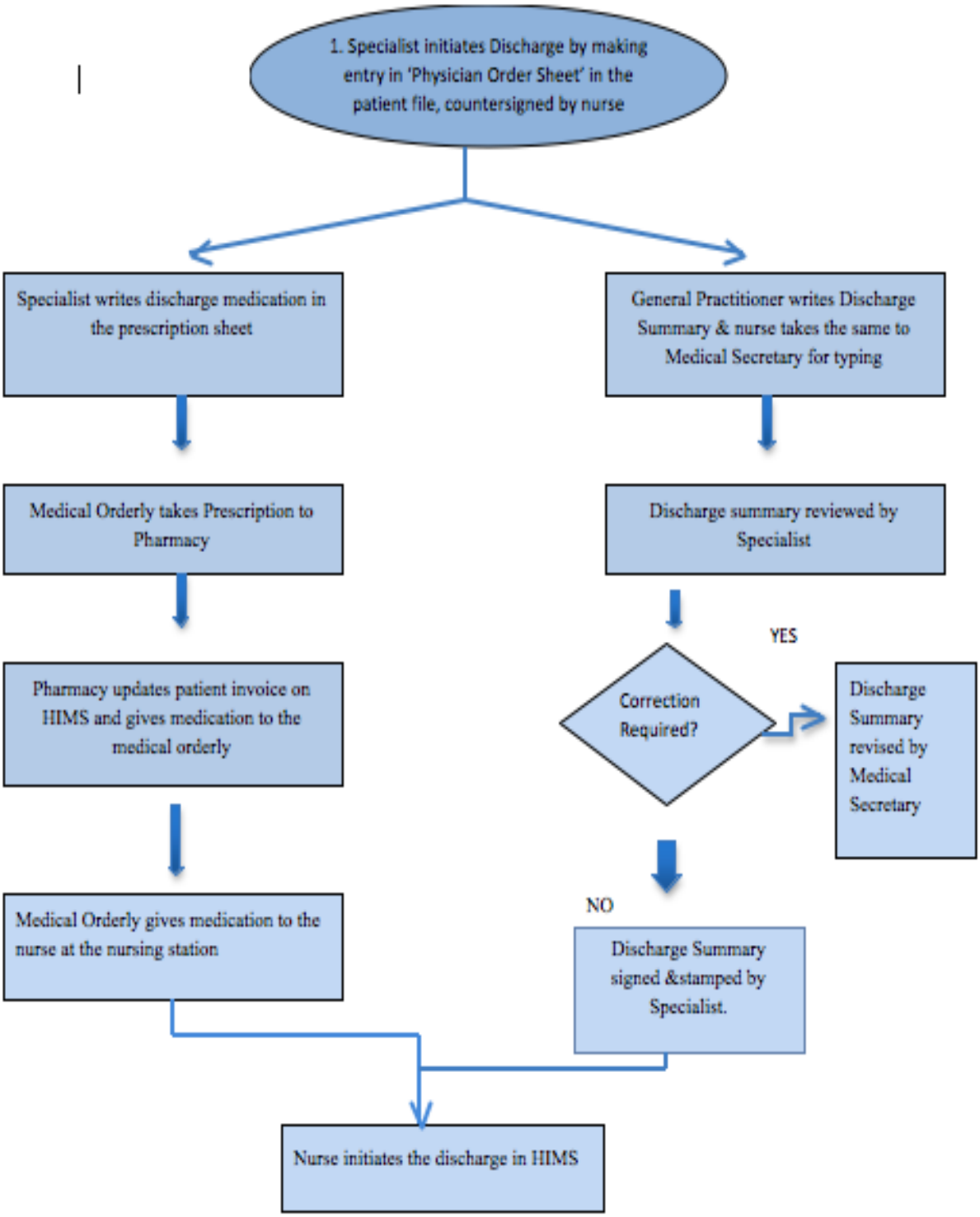
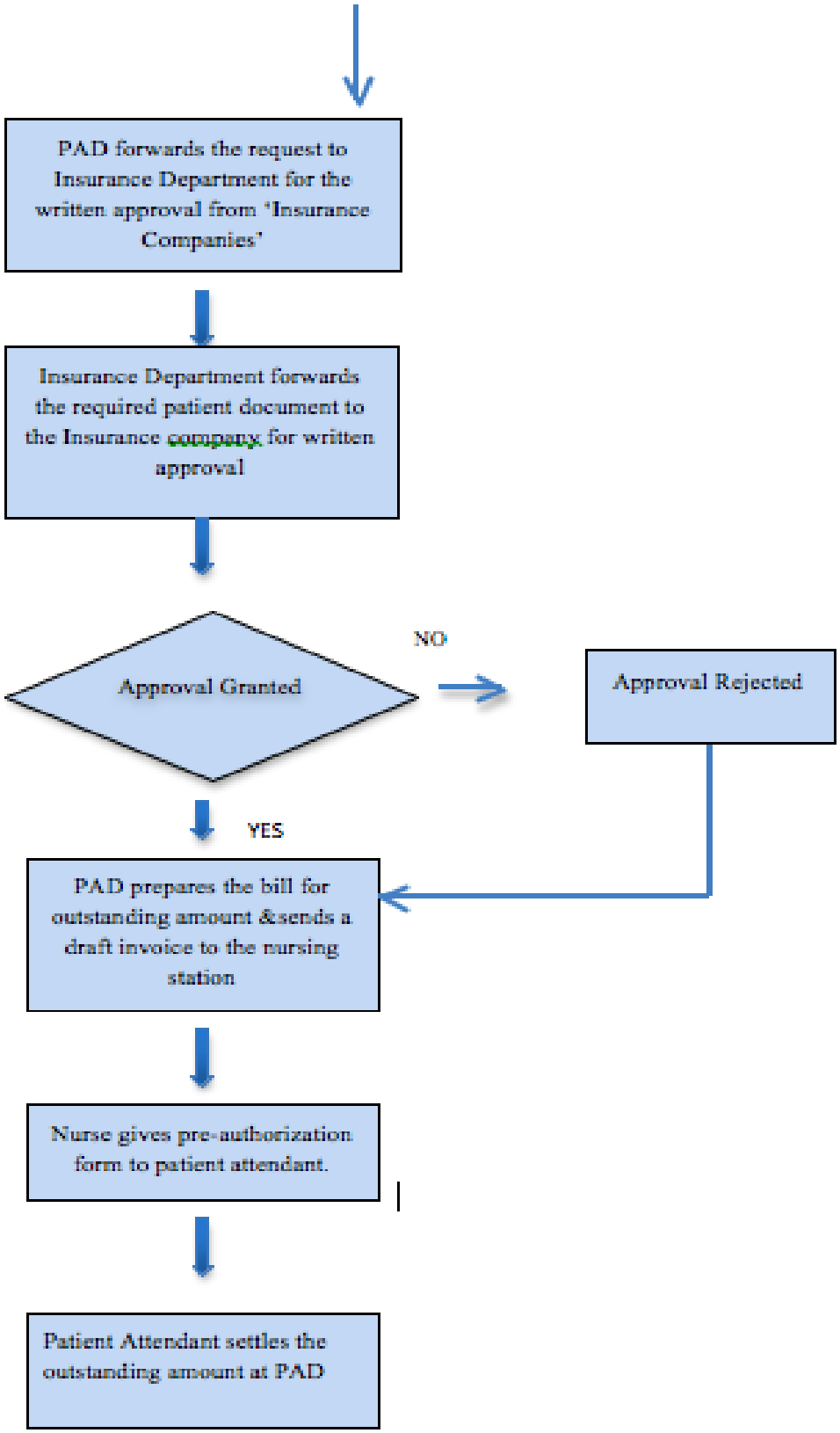
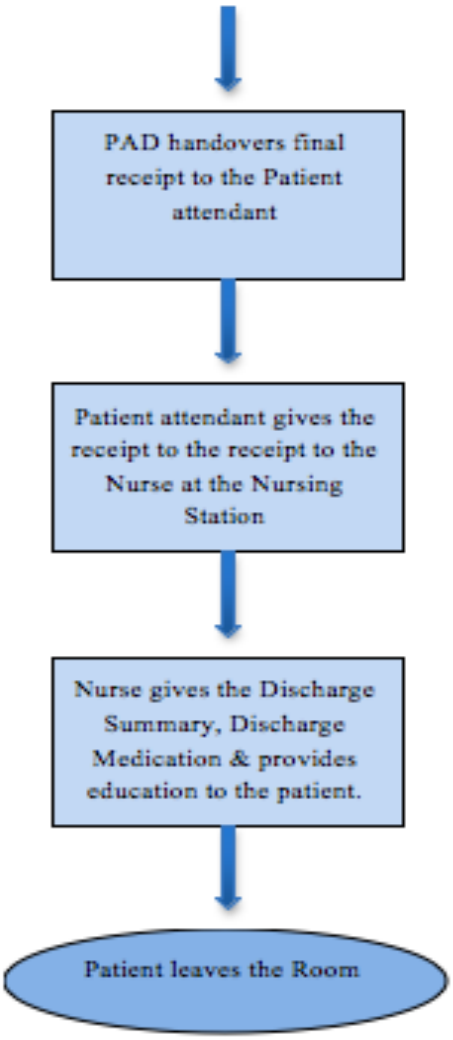

6. Reviewed discharge summary signed by Specialist/GP
7. Bill prepared by PAD & its draft invoice sent to Nursing Station
8. Pre-Authorization form handed over to patient attendant. Outstanding amount settled (if any) at PAD counter
9. Attendant gives receipt at the nursing station
10. Nurse gives the discharge summary, Prescription (if any), Patient & Family Education to the patient
11. Patient leaves the Room

Figure 2. Current Discharge Process for Insurance Patients



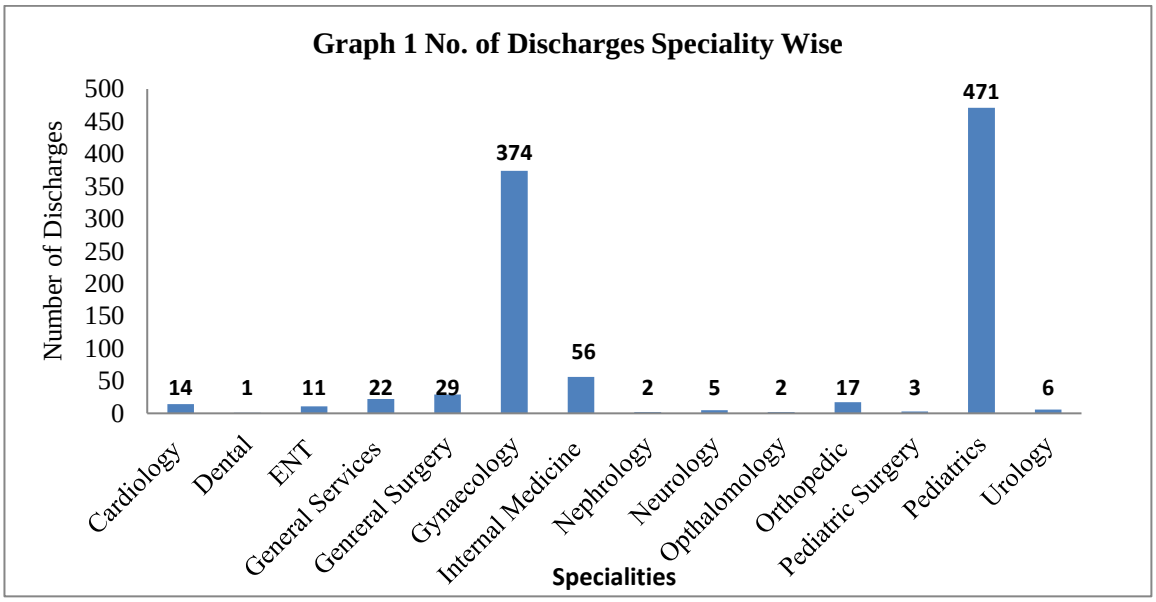

PAD forwards the request to Insurance Department for the written approval from 'Insurance Companies'
Insurance Department forwards the required patient document to the Insurance company for written approval
Approval Granted
NO
Approval Rejected
YES
PAD prepares the bill for outstanding amount &sends a draft invoice to the nursing station
Nurse gives pre-authorization form to patient attendant.
Patient Attendant settles the outstanding amount at PAD


PAD handovers final receipt to the Patient attendant
Patient attendant gives the receipt to the receipt to the Nurse at the Nursing Station
Nurse gives the Discharge Summary, Discharge Medication & provides education to the patient.
Patient leaves the Room

5. Analysis and Results

Results are presented in the form of text, figures and tables, Analysis is shown by-Control Charts and Line Graph Charts which are used for Data Analysis.

5.1 Average Discharge Time Specialty Wise



Interpretation (Graph 1)

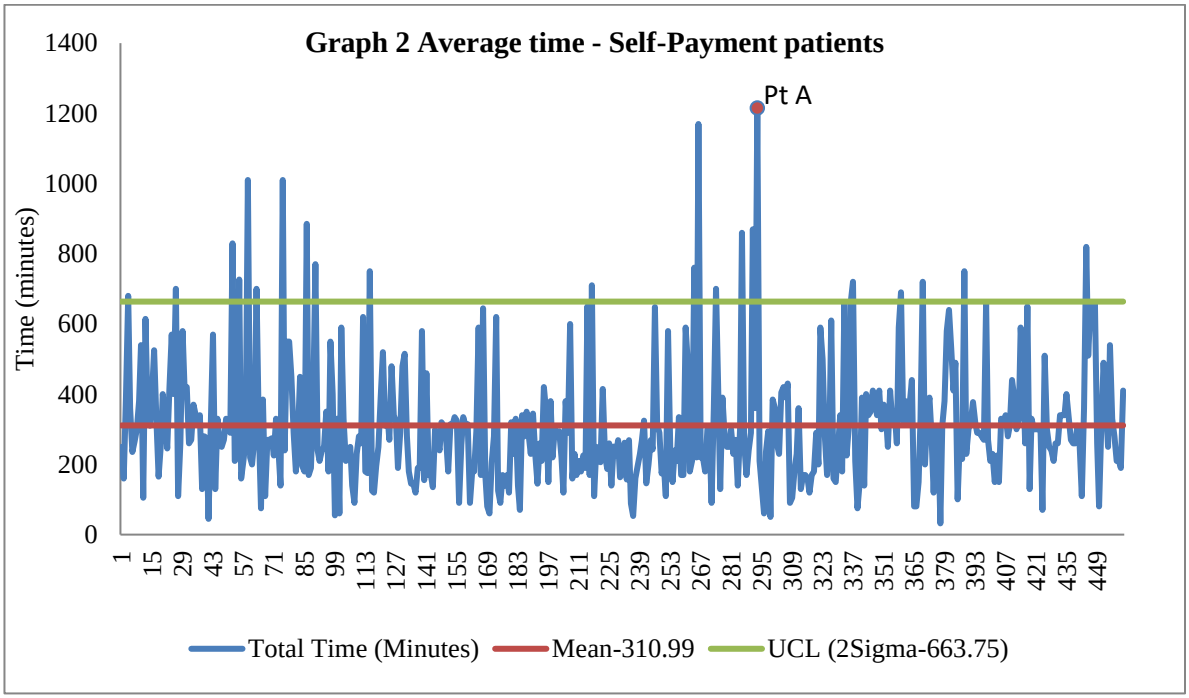
1. Graph 1 shows that the maximum number of cases discharged in the stipulated time were from two specialties-

   a. Pediatrics (471)

   b. Gynecology (374)

5.1 Average discharge time as per the payment method.

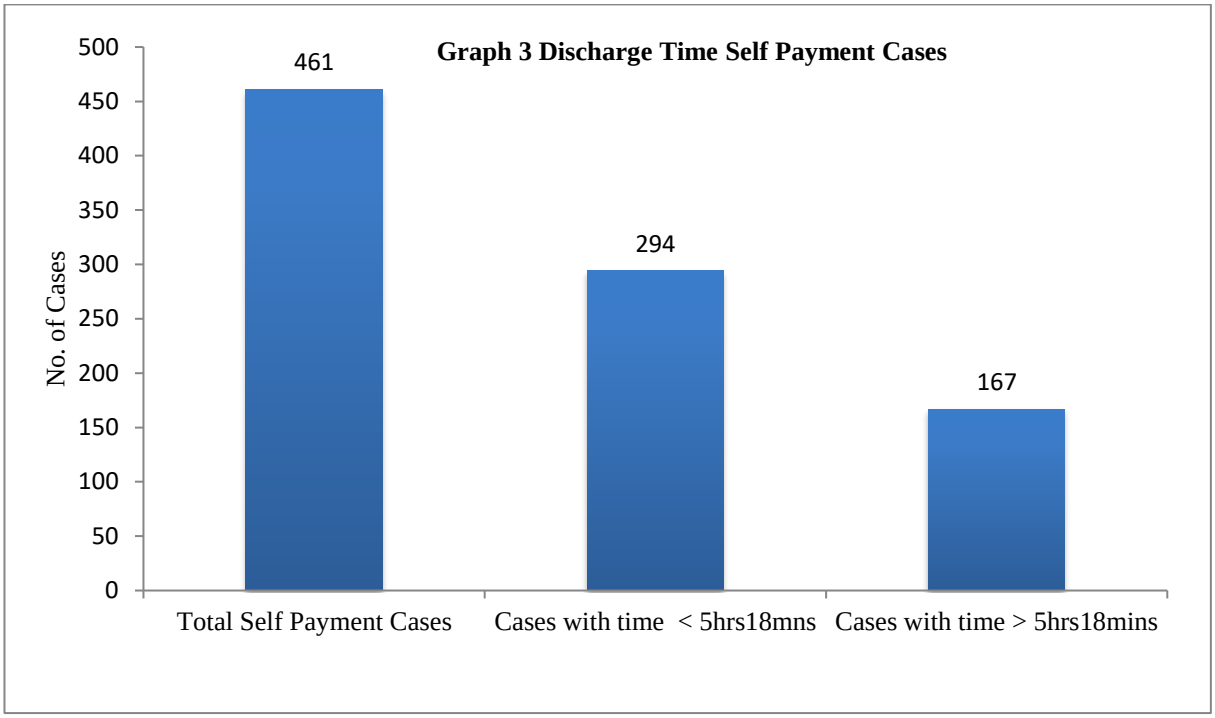
5.1.1 Self Payment Patients- 461



Interpretation (Graph 2)

1. The average time taken for discharge of Self Payment patients came out to be 5 hours 18 minutes,with maximum time recorded as 20 hours and 25 minutes **(Point A).**
2. This graph shows that the majority of cases lie above the average line which shows that it takes more time than 5 hours,18 minutes.
3. 23 self-payment cases were found out to go beyond the Upper Control Limit (Green Line in Graph 2) i.e. 663.75 minutes.

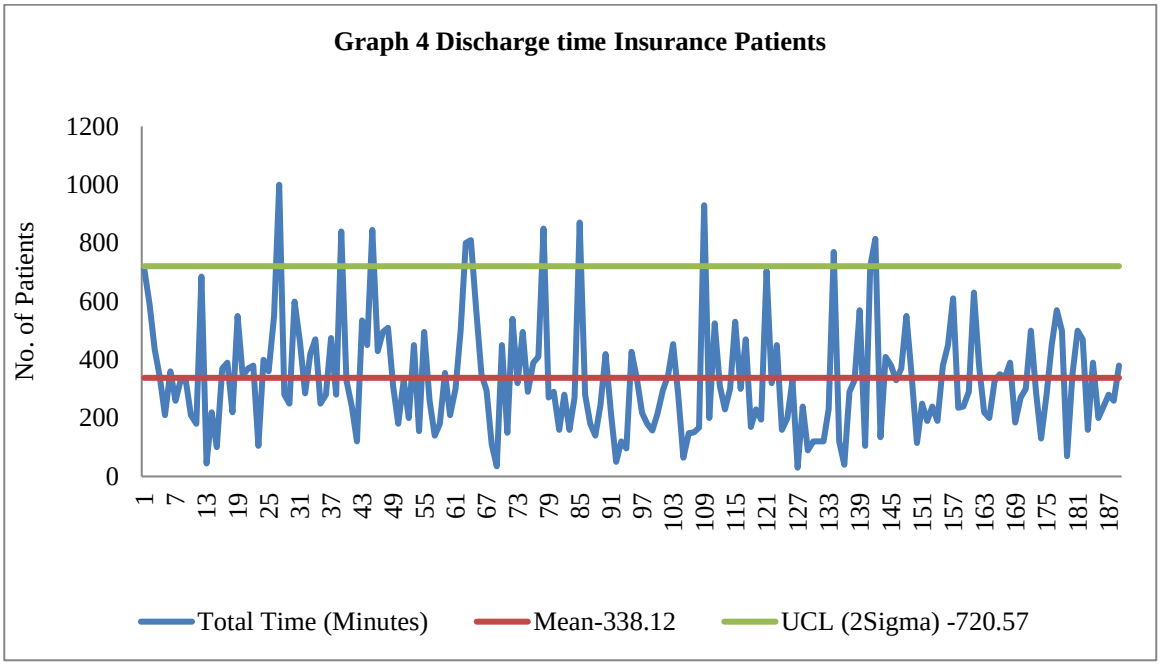
5.2.2.1



Interpretation (Graph 2.1)

1. Graph 2.1 shows that in more than ~63% of self-payment cases the discharge time was below 5 hours, 18 minutes.
2. Graph 2.1 also shows that in more than ~36% of Self Payment cases, discharge time was beyond 5 hours and 18 minutes.

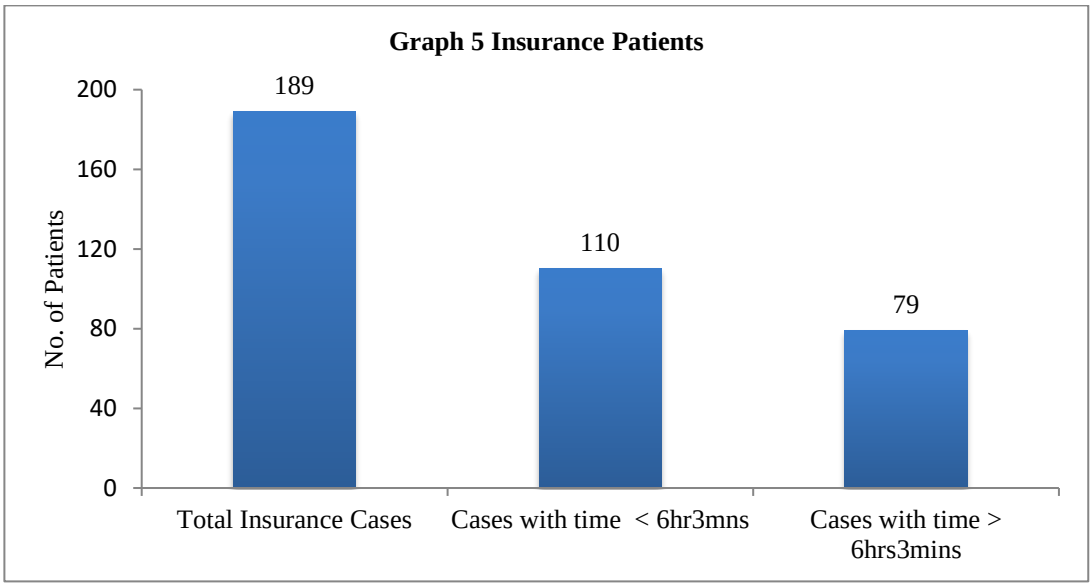
5.1.2 Insurance patients- 189



Interpretation (Graph 4)

1. Average Discharge Time for Insurance in-patients came out to be 6 Hours 3 Minutes.
2. For the study period of 18 days for Insurance In-patients (189), discharge time for 10 patients was more than 720. 57 minutes (~12 hours) Upper Control Limit (Green Line).
3. In the case of 79 Insurance Patients, the discharge time is found to be more than 6 hours 3 minutes (Average time).

5.2.2.1.



Interpretation Graph 5

1. Graph shows that in more than ~41% of Insurance patients there was an issue of delayed discharge.

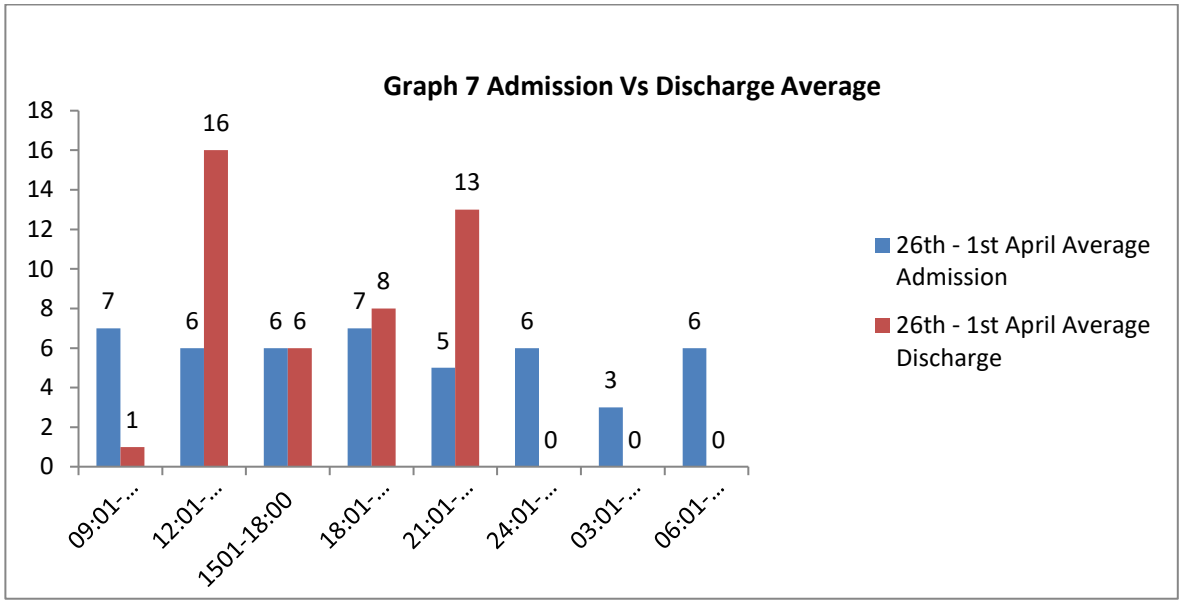
   Reasons -1. Prolonged delay, by the Medical Orderly in getting the medicines prescribed as discharge drugs from Pharmacy.

   2. The Insurance companies took more time on their side in Insurance approval/rejection, resulting in discharge delay.

5.3. Admission Times Vs. Discharge Times

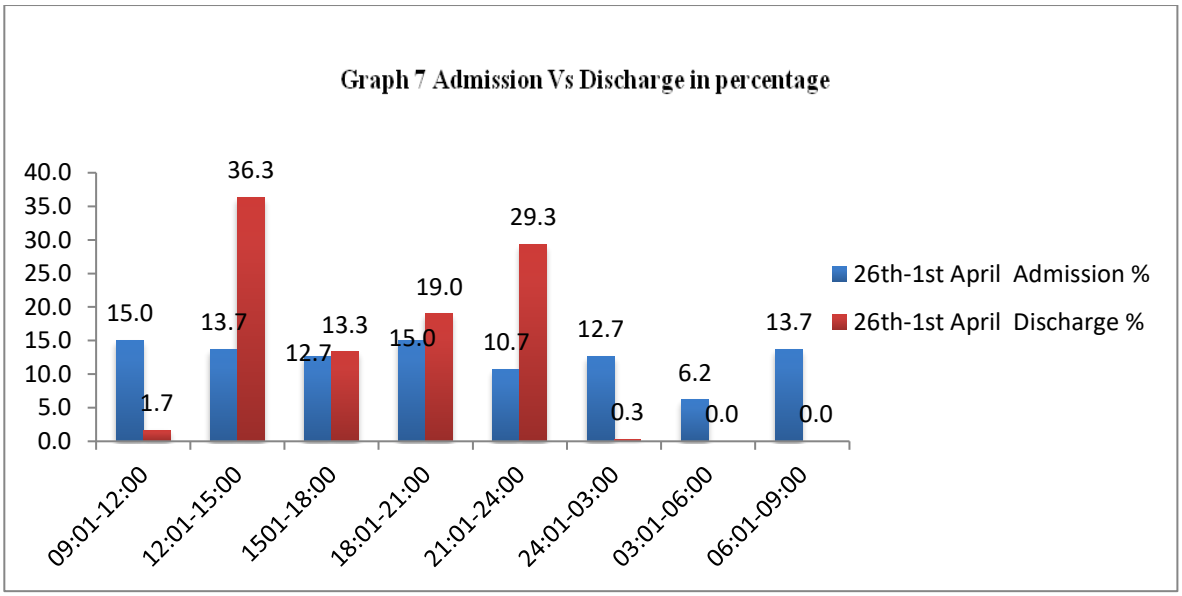
- Admission and discharge times for a week were plotted on the excel sheet. Entire day was categorized into 8 time intervals; admissions and discharges were segregated into these 8 time intervals.
- Average Number of admissions and discharges for 7 days were calculated and plotted on the bar graphs.

5.3.1



Refer Appendix 2 Page No.- 28

5.3.2

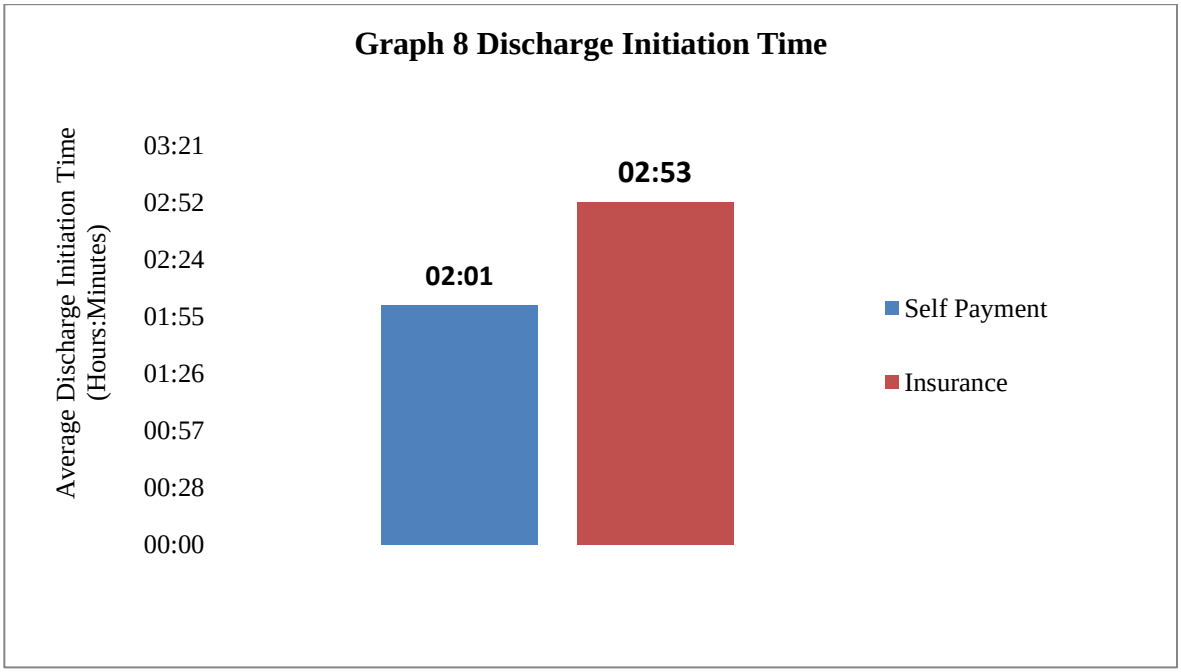


Refer Appendix 3 Page No.-29

Interpretation (Graph 7)

1. One striking observation came from comparing admission times to discharge times. The numbers of admissions are almost uniformly distributed throughout (except between 3am-6am).
2. On the other hand the case in not same for Discharges, as discharges are maximum between 12pm-3pm and 9pm-12am).
3. In other words there is demand for rooms even before rooms are generally being made available for the new admissions. During these times, rooms are full, backing up patient flow in PACU in the emergency department (ED) and sometimes patient leaves the facility without using the services.

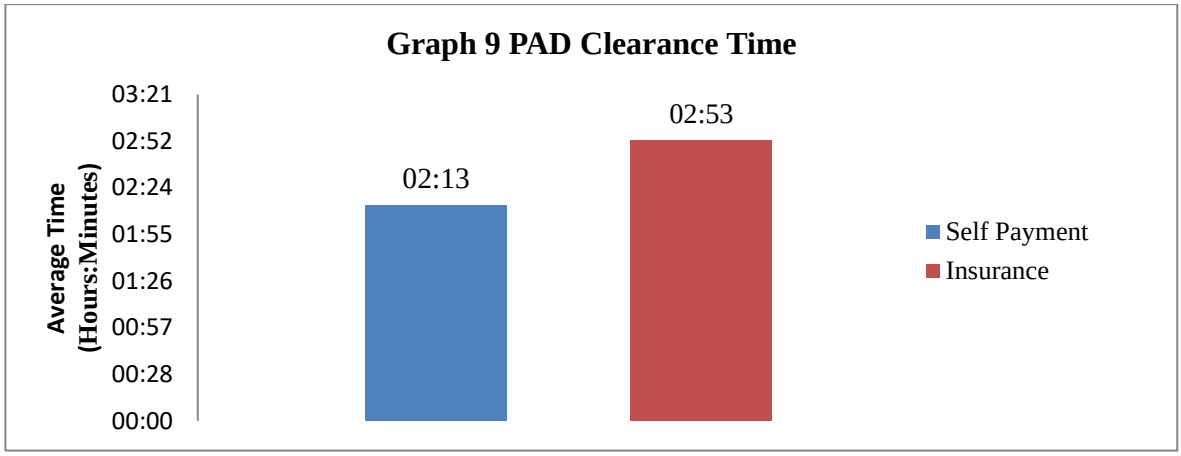
5.4



Interpretation (Graph 8)

1. Discharge initiation time is calculated from the time physician gives the discharge orders to the time concerned nurse initiates the Discharge in the HIMS, intimating the PAD department to start the process on their end.
2. In case of Self Payment patients it is 2 hours 1 minute. During this time interval, doctor/s writes the discharge summary that may take more time if, the discharge summary was not prepared in advance, when nurses get occupied in other duties.
3. In case of Insurance Patients this initiation time is even more, i.e. 2 Hours 50 Minutes. In this case it is more, because the discharge medications are to be provided to the patient and to be added in the records before initiating in the HIMS. It is the duty of the on duty Medical orderly to get the medicines from the Pharmacy. There is only 1 Medical Orderly per shift each wing and with 80% IPD occupancy on an average, MO is preoccupied in various tasks, in addition to getting medicines from the Pharmacy. Hence, leading to increase in the Discharge Initiation time.
4. There is delay because sometimes the mother gets discharge orders but the baby of her didn't received the discharge orders so the mother opt to stay there in hospital & doesn't leave the room.

5.5



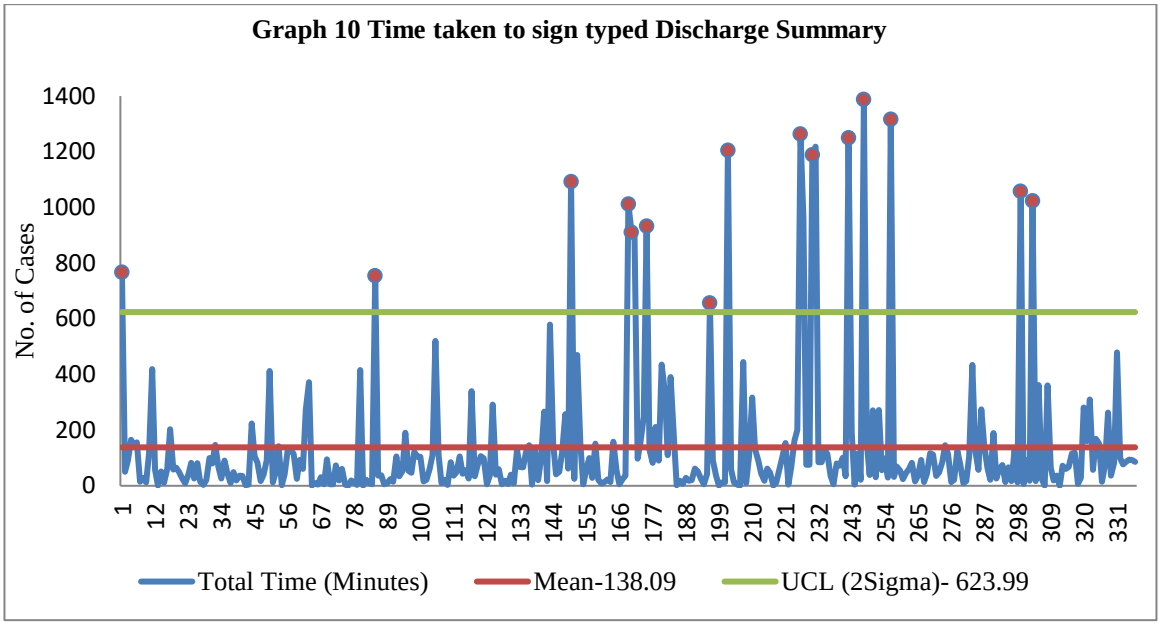
Interpretation (Graph 9)

- There is delay in PAD clearance, for self-Payment patients is 2hours 13minues and for Insurance patients is 2 hours 53 minutes.

  Reasons:

  1. The nurses are occupied and tend to forget to add the final bill of medications.
  2. It is sometimes the insurance companies, which take longer time to give approval.
  3. Once the initiation for the final bill is done, the delay takes place from the patients' side in payment of the outstanding amount, as they turn-up to PAD late for payments.

5.6



Interpretation (Graph 10)

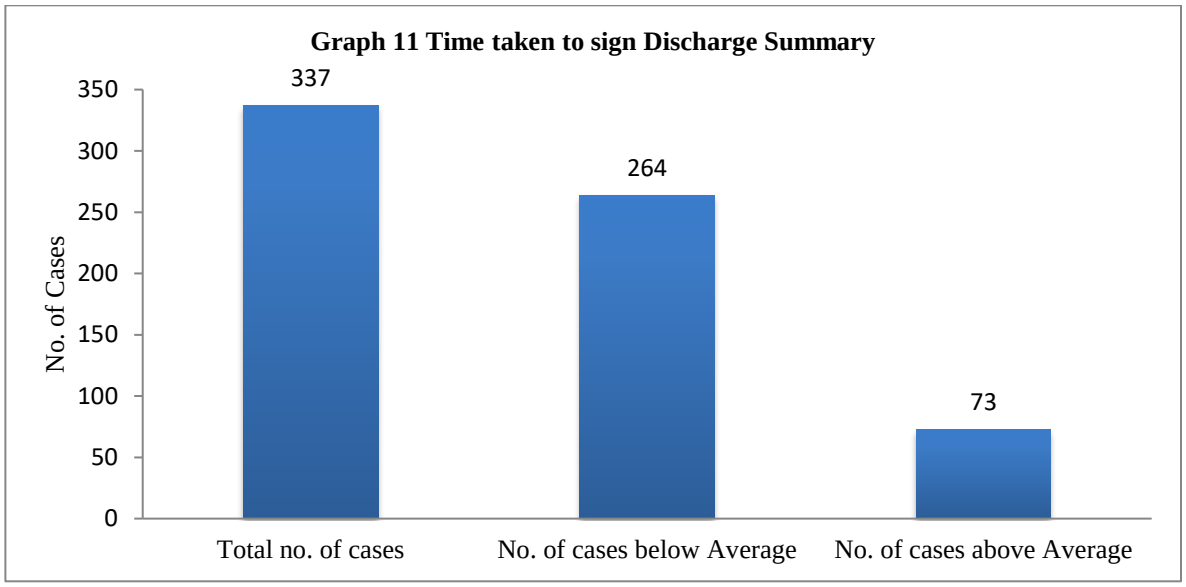
Average time for a doctor to sign a discharge summary came out to be **2.38 (Hrs.Minutes)**and the Upper Control Limit is **10.39(hrs. Minutes)**from the time the discharge summary is typed till the time it was signed by the treating Physician (Consultant/General Practitioner).

Reasons:

1. Doctors' rounds (morning and evening) are the busiest for all the staff in IPD. The **Nurse is to Patient Ratio** at GMCHRC, Ajman is **1:8,** which gives us the picture ofnursing staff shortage in IPD areas, because only the concerned nurse collects the typed discharge summary from the Medical Secretary and gets it signed from the GP/Consultant.

2. Many a times doctors are occupied in OPD consultations, hence leading to delay in signing the Discharge Summary, finally adding to the delay in the Discharge.

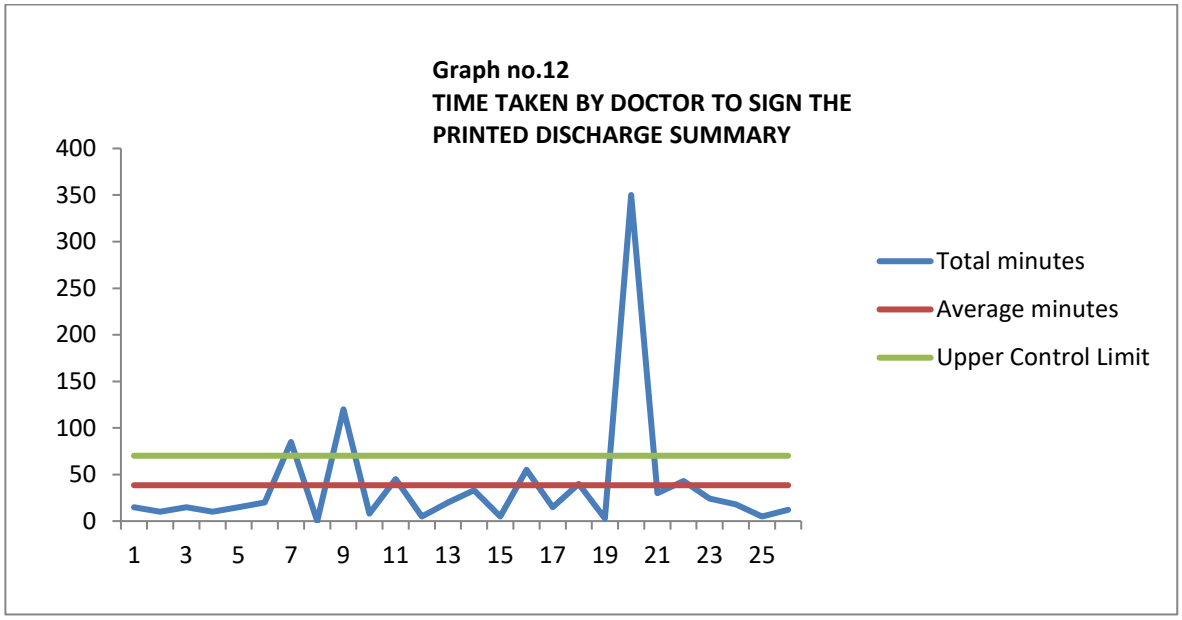
5.6.1



Interpretation (Graph 11)

1. The total number of cases taken for this analysis is 337 (after removing the data with discrepancies).
2. In the case of more than ~21% patients time to sign the discharge summary was **2.18 (Hours Minutes)** which is exceptionally high.

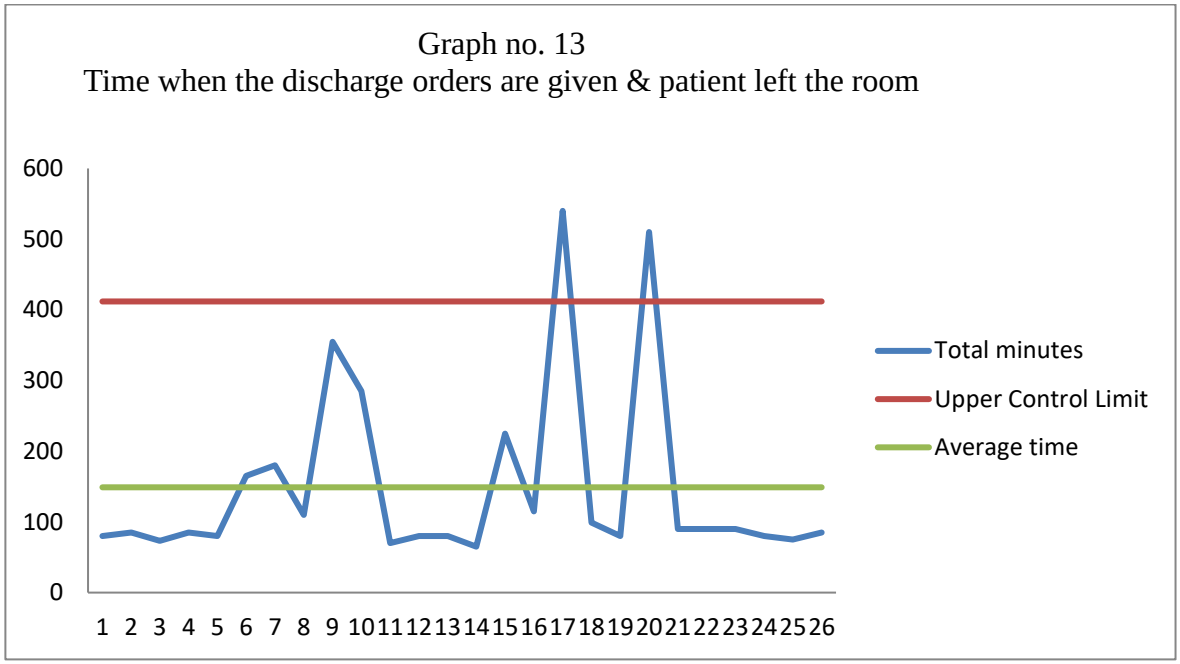
5.7



Interpretation (graph no.12)

This is the post intervention phase graph which shows that the average time taken by doctor to sign the printed discharge summary is approximately 39 minutes. The upper control limit that is the highest time taken was 70 minutes .

5.8



Interpretation (graph no. 13)

This is post intervention phase which shows that the average time for the discharge process now comes out to be approximately 2 hrs 48 minutes. The upper control limit comes out to be approx. 411 minutes ie 6 hours

6. DISCUSSIONS

- In reference to graph no .1, it is recommended in order to reduce the average discharge time, the initial focus for improvement should be on Pediatric and Gynecology in-patients.
- In reference to graph no. 2 such prolonged delays lead to further increase in waiting time for admission.
- In reference to graph no. 3 during the study period 23 self-payment cases were found out to go beyond the Upper Control Limit (Green Line in Graph 2) i.e. 663.75 minutes. Thus, there is a great probability that in the period of one year **(365 days)** on an average as many as **466** cases will take more than **11 hours 6 minutes** (663.75 minutes) which is not at all beneficial to the hospital. The cases, which took more than 5 hours 16 minutes, were 167 (Ref graph 3), from which it can be concluded that for **365 days** approximately there will be **3345** Self-Payment patients whose discharge will take more than 5 hours 18 minutes, which in turn in the terms of **revenue and time** will be a big loss to the hospital.
- In reference to graph no. 4 for the study period of 18 days for Insurance In-patients (189), discharge time for 10 patients was more than 720. 57 minutes (~12 hours) Upper Control Limit (Green Line). If this trend continues, for **365 days** there will be ~202 patients. In the case of 79 Insurance Patients, the discharge time is found to be more than 6 hours 3 minutes (Average time), which comes out to be **1601** Insurance patients for **365 days.** These many patients for a year beyond Average time will be a loss to the hospital both in terms of Revenue and Time.

- In the graph no. 12 which is the post intervention phase it is shown that the average time taken by doctor to sign the discharge summary is 38 minutes now which was earlier 2 hrs 38 minutes. It shows that the recommendations given in the pre phase were applied effectively & positive results came out which is beneficial for reducing the actual delay which were occurring earlier.
- In the graph no. 13 it shows that the actual time for discharge process in self payment patients comes out to be 2 hrs 49 minutes which was 5 hrs 18 minutes earlier. It shows a tremendous improvement in post evaluation phase which is highly beneficial for the organization in terms of time & revenue.
- Current system is people oriented and now it should be system driven so that improvement can be seen. Hence, it is concluded, in order to reduce this discharge delay, various actions need to be taken.

8. Recommendations

Keeping into consideration the factors, which can be controlled in order to reduce the Discharge time, following suggestions and Recommendation can be given:

A. Discharge Scheduling System:

List of probable patients who will be discharged in next 12 Hours can be prepared one day/night prior to the discharge of patient.

B. E- Prescription System

i. During the ward round or at the end of the ward round, doctors can be provided with iPads/tablets, in which they can make an e-Prescription which will notify the OPD Pharmacy to prepare the required medication and arrange to dispense to the ward through a medical orderly.

ii. E-prescription will save a lot of time and this would enable nurse to initiate the discharge process well on time once she receives the discharge medications from the pharmacy.

iii. Doctors can be provided with iPads/tablets. The issue of accountability for any Pilferage and damage can be monitored with the help of CCTV's present or can be set up in IPD areas.

C. Increasing the Medical Orderly Staff

i. Two new Medical Orderly staff can be given to Pharmacy department, in order to reduce the workload of the Medical Orderlies of Left and Right Wing. This will reduce a lot of time in Discharge Delay.

ii. This recommendation will also solve the issue of Discharge delay due to the Delay in sign and stamp by the doctor, as he/she can get the discharge

Summary signed from the consultants in OPD areas only, because GMCHRC is a **horizontal** set up.

D. Benchmark

Target oriented approach should be followed and for that new internal benchmarks should be set, separately for both Insurance and Self-Payment in-patients. The benchmarks must be revised annually.

- Self- Payment In-patient Cases- 4 hours
- Insurance In-patient Cases- 5 hours

E. Discharge Summary

The discharge summary will be updated as and when required using the COW/Working station at nursing station by the GP. The discharge summary will be completed by the GP (typed)during the ward rounds or after the ward rounds.

Once the discharge summary is completed the GP will call the specialist/a notification will be sent to specialist informing him/her about the completion of the discharge summary .The specialist will take out a printout ,sign& seal the discharge summary & send it to the ward .

9. Appendix

Appendix 1 Table 1 Discharge Patient-Tracking Sheet

Discharge Process Tracking Sheet															
S. No.	Date	Hospital ID.	Dept / Specialty	Admission Type- Elective/ Emergency (In case of OBG Patients - Booked / Un-Booked)	Self-payment / Insurance	Admission Date & time	Date & time at which the doctor gave the order for discharge	Time at which the Discharge Summary was typed by Medical Secretary	Discharge Summary signed and stamped by Specialist	Time at which medication dispensed	Time at which discharge was initiated by the Nurse in the HIMS (Discharge Initiated)	Time at which clearance was obtained from PAD.	Time at which the patient left the room (Discharge authorization)	Bed ready time	Remarks
1															
2															
3															
4															

Appendix 2 Table 2– Average no. of Admissions & Discharge from 26th-1st April Graph 6

26th-1st April

Time Intervals	Admission	Discharge
09:01-12:00	7	1
12:01-15:00	6	16
1501-18:00	6	6
18:01-21:00	7	8
21:01-24:00	5	13
24:01-03:00	6	0
03:01-06:00	3	0
06:01-09:00	6	0

Appendix 3-

Table 3- Percentage of Admissions and Discharge 26th – 1stApril 2015 for Graph 7

Percentage 26th-1st April		
Time Intervals	**Admission %**	**Discharge %**
09:01-12:00	15	2
12:01-15:00	14	36
1501-18:00	13	13
18:01-21:00	15	19
21:01-24:00	11	29
24:01-03:00	13	0
03:01-06:00	6	0
06:01-09:00	14	0

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