The study of In-Patient discharge process to streamline the hospital discharge for reducing the delays

A dissertation submitted in partial fulfilment of the requirements for the award of

Post-Graduate Diploma in Health and Hospital Management

by

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Certificate of Internship Completion

Date: April 25, 2013

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This is to certify that **Dr. Krishan Gopal (PT)** has successfully completed his 3 months internship in **Asian Heart Institute & Research Centre, Mumbai** from **January 02, 2013 to April 25, 2013.** During his intern he has worked as Management Trainee in the Customer Services department under the guidance of dedicated team of professionals at Asian Heart Institute, Mumbai. During his tenure he has satisfactorily completed all the tasks assigned to him and has shown complete sincerity and professionalism throughout.

We wish him good luck for his future assignments.

For Asian Heart Institute

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Mr Mukul Sharma

Sr. Manager – Human Resources

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Certificate of Approval

The following dissertation titled "**The study of inpatient discharge process to streamline the hospital discharge and reducing the delays**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory 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

Name	Signature
DR. BRIJENDER SINGH DHILLON	
Kirti Vidyal	2/5/13
Dr Pawan kr Taneja	

Certification from Dissertation Advisory Committee

This is to certify that **Dr. Krishan Gopal (PT)**, a graduate student of Post Graduate Diploma in Hospital and Health Management, has worked under our guidance and supervision. He is submitting this dissertation titled "**To streamline the discharge process at AHI and reduce delays**" in partial fulfillment of the requirements for the award of the Post – Graduate Diploma in Hospital and Health Management.

This dissertation had 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.

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FEEDBACK FORM

Name of the Student: Kishan Gopal

Dissertation Organisation: Asian Heart Institute

Area of Dissertation: Operations

Attendance: 100%.

Objectives achieved: Yes. as per J.D.

Deliverables: ① Handling customer grievances.
② Facilitating co-ord between depts.

Strengths: ① Fast learner
② Customer centric
③ Polite & courteous.

Suggestions for Improvement: ① Needs to work on resistance level ~~he~~ needs to increase threshold to handle pressure.
② Needs to be proactive.

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

Date: 23/4/13.
Place: Mumbai

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It is indeed to great pleasure to recall the role played by a myriad of people in realising my project into reality. First and foremost, I thank to Dr Ramakanta Panda (MD, Asain heart Institute and Research centre) , my hospital mentor Mr Stenny Menezes (customer care Manager) and all my Post graduate teachers who taught me Hospital Administration knowledge and skills especially Miss Anupma Sharma who was my college mentor.

I am immensely grateful to Dr Ramakanta Panda (MD, Asain heart Institute and Research centre) who allowed me to do the project in their esteemed hospital. I thank specially Mr stenny Menezes (customer care Manager) of the Hospital who acted as a mentor, guided me and helped a lot giving out the time form her busy schedule. I reserve my special thanks to Surbhi Rishi, management trainee in the quality department for her unstinted support and cooperation. I also thank nurses of all the wards and all the other staff of the Hospital who have contributed toward the accomplishment of this project.

Finally, I thank God for bestowing the gift of life on me and also providing all the necessary help through his lovely creations in this endeavor of mine. I only hope to lead the life gifted by him properly, so that he can at the end of the journey say “well done my son, you have lived it!!”

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IPD - Inpatient department

RMO- Resident medical officer

TL- Team Leader

Pt – Patient

Lama – Leave Against Medical application

TPA – Third party Administrator

2 . INTRODUCTION

2.1 Background

Patient discharge process is defined as as ‘the final step of the treatment procedure during a patient’s length of stay’, and timely discharge as ‘when the patient is discharged home or transferred to an appropriate level of care as soon as they are clinically stable and fit for discharge’(1). According to Bateni (1995),appropriate discharge processes enable the list of available beds for admission to be kept current and accurate, and in addition, we can obtain useful data by accurate registration of patients in the admission book and calculating there from the admission and discharge dates for each patient (2) .A study on the medical centres of Tehran University of Medical Sciences, Iran and Shahid Beheshti has shown that in most centres complications in the discharge process and unnecessary routines have caused discharge delay and patient dissatisfaction.(3) Scattered information and non integrated database systems had resulted in increased works loads and dissatisfaction among internal and external hospital client .Hospitalization is often a short-term event, so planning for discharge may begin shortly after admission. The physicians, nurses, and case managers involved in a patient's care are part of an assessment team that keeps in mind the patient's pre-admission level of functioning, and whether the patient will be able to return home following the current hospital admission. It is an important component of both the financial viability of the hospital and of the overall quality of care provided to the patient across health care settings

The discharge process represents the 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. Improving the quality of the discharge process should therefore lead to an increase in patient satisfaction. As a result patients are likely to return to a health centre where they have experienced an efficient discharge process when they next seek treatment. In turn, efficiency and productivity are increased at the hospital (Gholipor & Ghomry 2003).(4)Conversely, available beds are a hospital’s most important resource and the length of stay in hospital is an important factor in its efficiency.

The unnecessary occupation of hospital beds and rooms and consequent low hospital bed turnover at represent a waste in health care resources, and result in heavy associated organisational Costs .(Porhasani 1995) (5). A fast discharge process can ensure early availability of patient beds, which in turn, can reduce the waiting time of patient admissions or even reduce the incidence of patient rejection due to unavailability of beds before leaving the hospital

2.2 About Discharge process in the Asain Heart institute and research centre Hospital

There were two types of discharges that are planned and unplanned discharge

1 Planned Discharges: Planned discharge includes cases admitted for packages where in the stay of patient in the hospital is predetermined

2 Unplanned Discharges: Unplanned discharges includes medical cases, non medical cases packages etc, where the stay in not predetermined

Further there were three types of discharges that is Corporate, TPA and self paying discharges. The Discharge process consists of different steps. In the hospital discharge divided into phases that are:

1 Marked for Discharge
2 Clinical Discharge
3 Financial Discharge
4 Physical Discharge

1 Marked for Discharge : After Doctor instructed the Patient for discharge . The nurses sent the Billing docket which consisted of Admission form of the patient to the billing department by Pneumatic Shute and then also told the billing verbally though phone as well as. Billing department checked all the entrees of the patient treatment and then entered all the charges of the patient treatment on the system i.e. SRIT and called back the nurses again to mark for the discharge in the system.

2 Clinical Discharge : The nurses told the IPD pharmacy department to clinically discharge the patient . The Pharmacy checked about all the medicines returned or there were some pending medicines with patient. The pharmacy returns of the medicines took place in the night. Person from the pharmacy came to the patient and checked with the prescribed medicines and if needed then return it . so in the morning when nurses told to clinically discharge the patient the pharmacy checked the medicines and marked the patient clinically discharge in the system

3 Financially Discharge: The Billing Department called the Patient relative for the payment of the bill which was to be paid at the Axis Bank counter adjacent to the billing counter. As the relative paid the bill the billing department discharged the patient financially in the system .Three copies of the Paid bill generated one remain with billing counter, one with the patient and one with the nurses.

4 Physically Discharge: This was the last phase of the discharge. When the patient relative deposited the paid copy of the bill to the nurses. Nurses also checked in the system for the verification and marked the patient physically discharge in the system. RMO explained the discharge summary and all the reports handed over to the patient and the patient at last then patient exit from the Hospital

3 .Review of literature:

1 An analysis of the average waiting time during the patient discharge process at Kashani Hospital in Esfahan, Iran: a case study by Ajami S, Ketabi S College of Management & Medical Informatics Esfahan Medical Sciences University, Iran. Ajami@mng.mui.ac.ir Studied Strategies for improving the patient discharge process have a beneficial effect on many hospital activities. The main objective of this research was to analyse the discharge process at Kashani Hospital in Esfahan, Iran in the fall of 2004. This study took the form of a case study in which data were collected by questionnaire, observation and checklist. SPSS and Operations Research (O.R.) methods were used to analyse data. The results showed that the average time for patients to complete the discharge process was 4.93 hours. The hospital personnel involved identified the main factors affecting average waiting time as patients' financial problems and distance between different wards. The longest hospital stay was 5.7 days in the Neurology ward. Findings showed there was a queue in completing medical records at the nursing and medical equipment stations.

2. This study was set in a 900-bed university affiliated hospital of the National Health Service, near Barcelona (Spain). The aim of this study was to evaluate how hospital capacity was managed focusing on standardizing the admission and discharge processes Primary administrative data was obtained from the 2007 and 2009 Hospital Database.The results was he median patients' global length of stay was 8.56 days in 2007 and 7.93 days in 2009 ($p < 0.051$). The percentage of patients admitted the same day as surgery increased from 64.87% in 2007 to 86.01% in 2009 ($p < 0.05$). The number of cancelled interventions due to lack of beds was 216 patients in 2007 and 42 patients in 2009. The median number of planned discharges went from 43.05% in 2007 to 86.01% in 2009 ($p < 0.01$). The median number of emergency patients waiting for an in-hospital bed at 8:00 am was 5 patients in 2007 and 3 patients in 2009 ($p < 0.01$).In conclusion, standardization of admission and discharge processes are largely in our control. There is a significant opportunity to create important benefits for increasing bed capacity and hospital throughput.

3 The Columbus Regional Hospital (CRH) is a 325-bed hospital providing care to a 10-county service area surrounding Columbus, Indiana. Patient satisfaction surveys

revealed that fewer than half (47.6 percent) of discharged patients rated the timeliness of the discharge process as “Very Good.” A preliminary review of the discharge process revealed that much of the work was being deferred until the day of discharge. An improvement in the discharge process will result in Nursing staff: less time spent on the discharge process, more hands-on time with patients, and more time for personal development. Finance: cost savings from decrease in supply costs Patients: improved satisfaction with timeliness of discharge process; less wait time in ED for bed availability ED/Surgery: increase in surgical and emergency department capacity by providing timely access to inpatient bed; assured continuity of care through prompt transfer to the nursing unit10 (2004). *Discharge planning fromhospital to home.*Cochrane Database of Systematicpublisher, January 26, 2004.

4 This thesis presents results of a study conducted jointly with a regional hospital and concerned with the inpatient discharge process. A thorough mapping of the existing process flow and analysis of 1700 historical cases were conducted. Results revealed that in its current form the process is inadequately defined, lacks consistency, and its performance is hard to predict These issues cause inpatient overstays past their prescribed acute care (so called Alternative Level of Care, or ALC days) and thus at least 8% of available hospital bed capacity is wasted. Key factors extending unnecessary patient stays were identified and used as predictors for individual patients. Another simulation model was created to explore the effects of standardizing parts of the discharge process. Obtained results indicate that organizational changes (e.g., early involvement of social workers, improved information flow, close collaboration with external facilities accepting patients, etc.)

4 Objectives

4.1 General Objective – The study of the discharge process of the IPD patients to reduce the delays in the discharges

4.2 Specific objectives -

1 To find out the average discharge time and the time taken in various Phases of the discharge process

2 To find out the various causes responsible for the various delays

3 To recommend steps to reduce the delays

5 .METHODOLOGY

Sampling method - The method adopted is random sampling. Among them every third Discharge was taken and total 200 samples were taken from 22nd January to 22nd March

Sampling Size: Sampling sample was 200. Among them 138 were non surgical discharges and 62 were surgical discharges.

Data Collection Plan-

Following was the plan followed for the data collection exercise

Techniques

Primary data was obtained through

1 Time motion study

2 Direct observations of the discharges process and recording of the critical activities

3 Interactions with doctors, team leaders, nurses, billing, pathology and other concerned staff involved in the discharge process

Secondary Data was obtained through

SRIT (Hospital management Information system)

Tools

Following tools were developed for the study:

1 Format for time and motion study

2 MRN (medical record number)

3 Marked for discharge date

3 Marked for discharge time

4 Clinical discharge dates

5 Clinical discharge times

6 Time taken from marked for discharge time to clinical discharge time

7 Financial discharge Date

8 Financial discharge Time

9 Time from Clinical discharge to financial discharge

10 Physically discharge date

11 Physically discharge time

12 Time taken form Financial to physically discharge time

13 Total time taken

Exclusive Criteria: Unplanned discharges, LAMA, DAMA, Corporate and TPA discharges were not the part of study

6 .Hospital Profile:

Asian Heart Institute is located in the Bandra Kurla Complex, recognized as the corporate hub of Mumbai. The hospital is just 10-15 minutes drive from the International & Domestic airport & the Bandra & Kurla stations. It is easily accessible from the Western Express Highway.

Mission:

To operate as a world – class heart hospital, incorporating the latest technological advances and ethical practices to provide quality heart care at reasonable cost.

Vision:

Globally preferred centre of excellence

Core Values

- Customer Satisfaction
- Highest Quality
- Culture of High Performance
- Integrity & Ethical Practices
- Innovation & Change

Achievements of AHI in the last 10 years :

- India's Highest Accredited Hospital with JCI, NIAHO & ISO certification
- Adjudged 'India's Best Private Cardiac Care' two years in a row in The WEEK-Hansa Research.
- Over 1,65,000 patients treated by AHI Doctors in over 10 years

- One of the lowest surgical mortality rates in the world: 0.26% in isolated bypass surgeries and an overall mortality of 0.8%
- Over 17,000 cardiac surgeries performed in last 10 years
- Over 25,000 angiographies and over 5000 interventional procedures which include complex coronary as well as non coronary intervention
- Amongst the lowest documented infection rates in India which is on par with the best in the world
- One of the few centres in the world doing nearly 100% of bypass surgeries on a beating heart and with a very significant percentage using total arterial grafting
- Only comprehensive Pediatric Care Centre in Western India'.
- Was the team specially chosen for Hon'ble Prime Minister Dr. Manmohan Singh's redo bypass surgery and post operative care
- Pioneered Robotic Surgery in Mumbai and Western India. The da Vinci Si Robotic Surgical system in use is one of the very first in the Asia-Pacific region.

Specialities :

1 Robotic Surgery :

The daVinci Si Surgical System with Simulator is Mumbai's very first Robotic Surgery option. This is an incontestable example of AHI leading the way in India's healthcare with the latest technologies and innovations in patient treatment and care. The daVinci Si Surgical System with Simulator, in use at Asian Hospitals for months now, is the most advanced Robotic Surgery instrument available in the world. It is the very first in Mumbai, the very first in Western India, and one of the first in the entire AsiaPacific region. With Asian Hospitals' Robotic Surgery, Mumbai joins the top few cities in the world whose citizens have full access to state-of-the-art healthcare.

2 Cardiac Surgery

AHI has set a benchmark in cardiac care in the country & our results are one of the best in the country. Our world class surgical team performed over 1258 cardiac surgeries in 2008 with an average mortality of 0.5%. Our mortality for isolated

bypass surgery was 0.37% which is one of the best in the world. Apart from the Coronary Artery Surgery, the Department does the following operations on a routine basis .

- Complex aortic aneurysms
- Redo Surgeries including Bypass Surgery
- The Maze Procedure for Atrial Fibrillation
- Valve Repair and Replacement
- Aneurysm Surgery of Aorta and Blood vessels

are all done by the department with results on par with the best centers. Our Pediatric surgical team operates on all types of cardiac conditions in children. Credit Card with surcharge of 1.25% on Debit & Credit Cards; and 2.25% on all American Express Cards. In the year 2008, we performed 58 redo bypass surgeries with no mortality. Similarly in 2007, we performed 52 redo bypass surgeries with no mortality.

- Coronary Artery Bypass Graft Surgery
- Ventricular Aneurysm
- Mitral Valve Surgery
- Ascending Aortic Aneurysm Surgery

3 Cardiology

At Asian Heart Institute we offer the full range of cardiology services, from early disease detection to complex interventions. Our diagnostic services include, ECG, stress testing, 2-dimensional echocardiography, stress echocardiography, holter testing, and angiography.The Cardiac Catheterization Laboratory, where angiographies, angioplasties etc. are performed, is a state-of-the-art, first fully digital panel Cathlab in Mumbai. The flat panel technology replaces the image intensifier technology, which has been in use for many years.The flat panel technology incorporates Solid-state Digital Detector to reliably provide consistently high imaging performance through the full range of cardiac procedures. This is a fully integrated imaging system that meets all clinical needs for interventional and diagnostic cardiac angiography with advanced image quality, innovative dose management and ease of

positioning. The flat panel technology promises the highest level of clarity of the angiogram without any loss of detail. This will be helpful in complex angioplasty procedures where minor details and better image quality are critical for achieving results

4 Children Heart care:

Designed exclusively for children, the Asian Heart Institute's Children Heart Centre is ISO 9001-2000 certified. It incorporates the most advanced medical technology and infrastructure, in an entirely child friendly environment. The Children's Heart Centre has been designed keeping the safety and comfort of children in mind. Beginning with the decor in the clinics, the examination couch, the soft linen for wrapping babies, the stringent infection control measures to around-the clock physician care; everything has been planned to optimize a child's care in a very special way.

5 Preventive Cardiology and Rehabilitation

At the Preventive Cardiology and Rehabilitation Department at Asian Heart Institute, we have a tailor made program to suit all categories:

- Cardiac Rehabilitation program: for those who have already suffered a cardiac event, such as a heart attack, bypass surgery or angioplasty.
- Secondary prevention program: for those who have been detected with heart diseases on routine tests, and want to avoid an interventional procedure, such as bypass surgery.
- Prevention program: for those who are at risk for heart disease, and want to avoid suffering, example those with a high BP, or cholesterol, or diabetes or a family history of heart disease.

The goals of cardiac rehabilitation are:

- To help the person get back to his or her normal routine, as quickly as possible
- To institute lifestyle changes and regular monitoring to reduce future risk of cardiac events

- To improve the psychological well being of the cardiac patient

6 Health Check Up :

Deluxe : Rs 11,500

Gold: Rs 9,000

Cardiac : Rs 4,750

Basic: Rs 3,250

7 Laboratory Medicine:

The department of Laboratory Medicine is a round the clock facility with state of the art equipment.Biochemistry section has a fully automated, discrete, computerized Hitachi 902, randomacres analyzer with a throughput of 200 Tests / hour.The laboratory has the facility to perform Arterial Blood Gas estimation with electrolyte estimation on stat basis with the IL 1610 and IL 1650 and ILYTE, ABG and electrolyte analyzer.The Blood Bank provides whole blood and various components like: Packed Cells, Saline Washed Packed Cells, Fresh Frozen Plasma, Platelet Concentrate, Cryoprecipitate, Cryo-poor Plasma. Platelet pharesis with donor screening is also carried out on the MCS+.The Blood Bank has a Component Preparation Laboratory with equipment like the Cryofuge 5500i from Heraeus. There is a deep freezer from Heraeus and platelet agitator and incubator from Terumo Penpol for storage of components.The department caters to out patients as well as in patients. Well-trained staff provide round the clock service. The instruments are interfaced with the Hospital Information Management System

8 Asian Chest Pain Clinic Services:

The Asian Chest Pain Clinic (with a 24x7 help line: 126 126) has been launched with an aim to provide specialized and comprehensive chest pain treatment and PAMI

(Primary Angioplasty for Myocardial Infarction), to patients suffering from a heart attack. The Asian Chest Pain Clinic has been set up to deal with chronic and acute cases of chest pain for:

- Those with acute heart attack symptoms.
- Those with chest pain for evaluation and diagnosis (cardiac or Non-cardiac), followed by comprehensive treatment and a follow-up plan.
- Those who have had an angioplasty or a bypass surgery but continue to have chest pain despite optimal medical management.

- 24x7 Heart Helpline: 126126
- Round the clock cardiac emergency services for patients suffering from heart attack
- Well-equipped ambulance offering Basic and Advanced Life Support Systems
- Comprehensive cardiac evaluation
- Patient education
- Risk assessment and management
- Rehabilitation programme
- OPD consultation (by appointment) for patients suffering from chronic chest pain - Mon-Sat -10 am to 12 noon

7. GENERAL KEY FINDINGS

7.1General Findings:

Table- 7.1.1 indicates the total number of discharges and among them 232 was on average time and 268 were delayed

Total No Discharges (sample)	On Average Time	Delay in Discharge
200	92	108

Figure -7.1.1 indicates the 46 % discharges were on time and 54% discharges were delayed

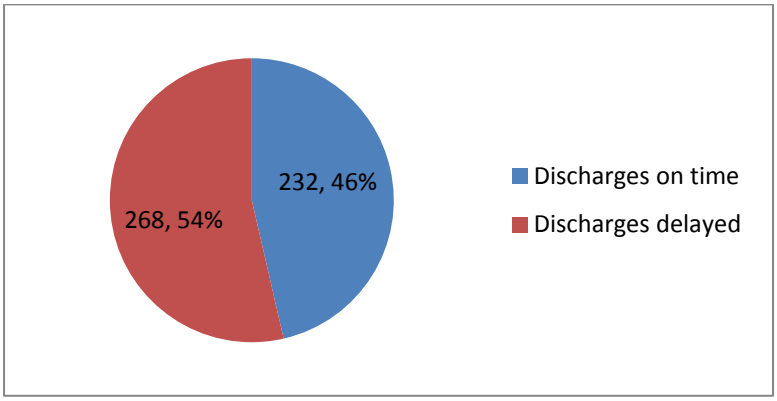


Table 7.1.2 indicates the time taken in the various phases of discharges for **Non Surgical cases**

Types of Discharges	**Time Taken (Minutes)**
Marked for Discharge to Clinical Discharge	6.7 Minutes
Clinical Discharge to Financial Discharge	62.5 Minutes
Financial Discharge to Physical Discharge	21.8 Minutes
Total Time Taken	90.43 Minutes

Table -7.1.3 indicates the time taken in the various phases of discharges for **surgical cases**

Types of Discharges	Time Taken (Minutes)
Marked for Discharge to Clinical Discharge	7 minutes
Clinical Discharge to Financial Discharge	57 minutes
Financial Discharge to Physical Discharge	28 minutes
Total Time Taken	116 minutes

Table -.7.1.4 shows the average time taken in comparison with average standard time for **Non Surgical Procedures.** The maximum delay is in the financial discharge to physical discharge .i.e. 17.8 minutes

Phases of Discharges	Time Taken (Minutes)	Average Standard Time
Marked for Discharge to Clinical Discharge	6.7 minutes	5 minutes
Clinical Discharge to Financial Discharge	62.53 minutes	35 minutes
Financial Discharge to Physical Discharge	21.8 minutes	20 minutes
Total Time Taken	90.43 minutes	60 minutes

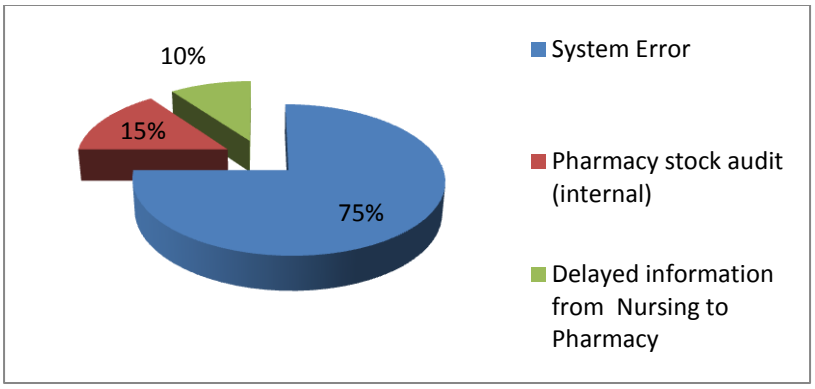
Table. 7.1.5 shows the average time taken in surgical procedures comparison with average standard time for **Surgical Procedures** the maximum delay is in the Clinical discharge to financial discharge .i.e. by 43 minutes**.**

Phases of Discharges	Time Taken (Minutes)	Average Standard Time
Marked for Discharge to Clinical Discharge	7 Minutes	5 Minutes
Clinical Discharge to Financial Discharge	69 Minutes	60 Minutes
Financial Discharge to Physical Discharge	40 Minutes	25 Minutes
Total Time Taken	116 Minutes	90 Minutes

Reasons for the delays in the various phases of Discharge process:

1 **Marked for discharge to clinical Discharge**: Clinical discharge is done by the pharmacy .The delay in Marked for discharge to clinical discharge is delayed by 2 minutes in Non Surgical and 1.7 minutes in surgical discharges. The main reasons for the delay were

Figure7. 1.2 indicates the percentages of the various reasons responsible for the delay in marked for discharge to clinical discharge



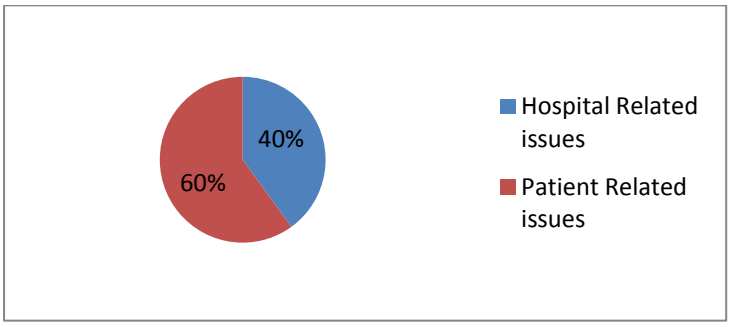
A. System Error: The error in the software system .i.e. SRIT. Sometimes the system crashed or there were ongoing internal updates in the software as per the requirements put by various departments.

B. Pharmacy stock audit (internal)

C . Delayed information from nursing to pharmacy for Clinical discharge

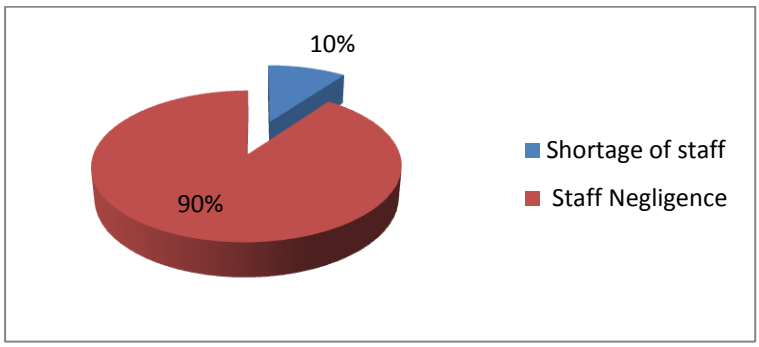
2. Clinical to Financial Discharge: After clinical Discharge then comes the financial discharge by the billing department after the Patient relative paid the bill. In nonsurgical cases the delay was 42.5 minutes and in surgical cases delay was 9 minutes .The various reasons for the delay were divide into Hospital related and Patient related issues:

Figure -7.1.3 indicates that hospital related issues were responsible for 40 % and Patients related issues were responsible for 60 % of the delays



A. Hospital Related issues: The various hospital related issues were:

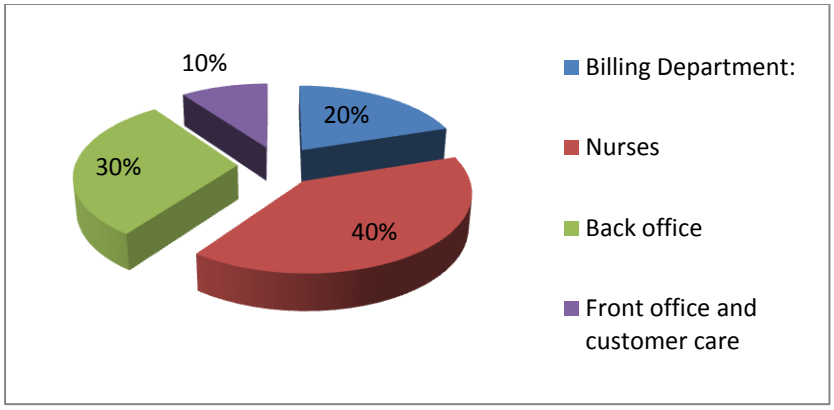
Figure 7.1.4 indicates that 10 % of the delays were due to shortage of staff and 90% were due to staff negligence



1. **Shortage of staff**: Shortage of staff in the billing department .when staff on the leave or when there was workload

2. Staff Negligence: The delays due to the negligence of the different staff of the different various departments (90 %) were billing department, nurses, back office, front office and customer care

Figure 7.1.5 indicates that billing department was responsible for 20 %, Nurses were 40%, back office 30 % and front office and customer care were responsible for 10% of the delays



A Billing Department: The different negligence done by the billing staff was:

1. Bill not adjusted properly: in cases of advance deposit, down gradation and different kinds of charges like room, blood bank etc

2. Inadequate follow up with patients' relatives for clearance of the bills by telephonic calling or not generating interim bills at proper time

B. Nurses: Nurses entered double/ wrong vouchers in the system. At the time of discharge they sometimes cancel all the vouchers or sometimes some vouchers were pending from nursing side they did not made the voucher which in turn delays in making the final bill of the patient

C. Back Office: Consultant's visit charges and the consumable entries for which the rights are not resumed with nursing are not entered in the system**.**

D .Front office and customer care: the bills generated by billing were distributed by the front office i.e. duty manager and customer care executive sometimes they did not distribute the interim bills as a result patient relative did not know about the bill and which in turn increase the

relatives queries about the charges, time taken to pay the amount were increased 10%

Patient related issues: which accounted for 60% of delays The various reasons were:

1 Patient's Relative arrived at the Billing counter late from the time they were informed responsible for 20% of the Patient related issues delays

2 Patient relative queries at the billing counter about bill adjustment, Packages different rates, discounts etc responsible for 70% of the Patient related issues delays

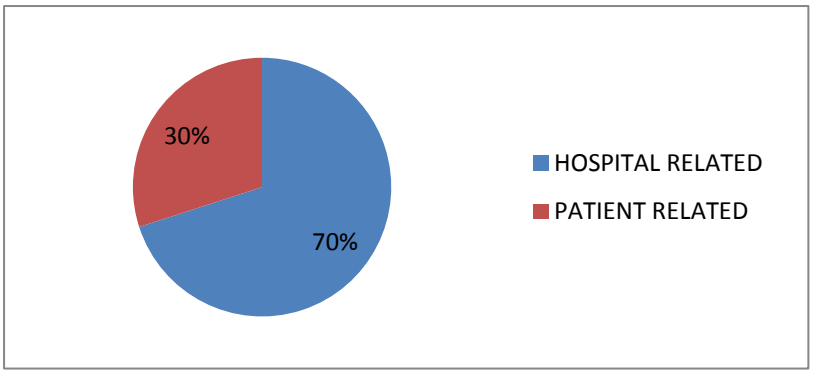
3 Patient took some time for the arrangement of the remaining money in case of huge outstanding responsible for 30% of the Patient related issues delays

Financial to Physical Discharge: After paying the bill to the final discharge. The reasons for the various delays were:

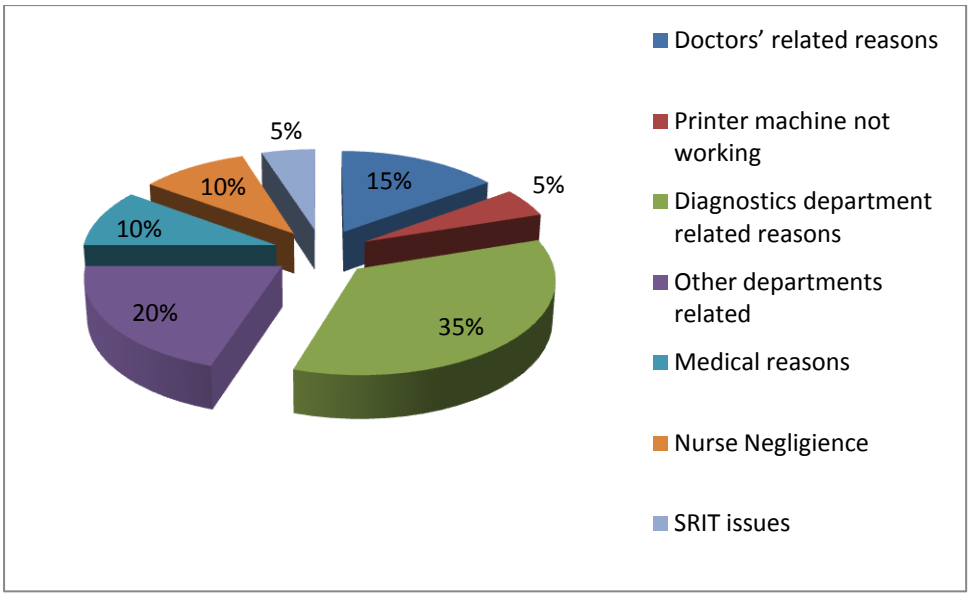
1 Hospital related: 70 %

2 **Patient related:** 30 %

Figure 7.1.6



The below figure 7.1.7 indicates that different hospital related issues were doctor's related issues which was 15%, Printer not working 5 %,Diagnostics department related reasons 35%, other departments related 20 %,Medical reasons 10% , nurse negligence 10% and SRIT issues were 5 % of all the hospital related issues



1 <u>Doctors' related reasons for delay</u>: Accounted for 15 % of the total delay of hospital related issues

A Discharge summary not prepared: Delay from the ward doctor side. They were busy in others patients like taking admissions, dressing etc

B Discharge summary edited: Very often discharge summary is edited and reprinted due to errors (drug and dose changes by the consultants after seeing the last reports or any changes in patient condition

2 Printer machine not working: Accounted for 5 % of the total delay of hospital related issues Ward printer not working

3 Diagnostics department related reasons: Accounted for 35 % of the total delay of hospital related issues **.**The major reason was delayed / Pending reports from pathology, radiology and echo cardiology departments.

4 **Other departments related:** Accounted for 20 % of the total delay of hospital related issues and they were Pending counseling sessions and lectures from Cardiac Rehabilitation, Physiotherapy and Dietetics departments.

a **Cardiac Rehabilitation** -. Often, patient and relatives are in cardiac rehab session and are disturbed for billing formalities and patient relative has to leave the session to clear the payment. It was also observed that all the formalities are completed but patient is waiting for the session only. Sometimes patient relative went to billing after the session.

b Diabetic/ Dietetics/Physiotherapy counseling - Most of the time, patient is just waiting for one of these counseling.

2 <u>Medical reasons:</u> Accounted for 10 % of the total delay of Hospital related issues

1. Delayed post angiography patient mobilization.
2. Awaited dressing of the patient.

3 <u>Nurses Negligence</u>: Accounted for 10 % of the total delay of hospital related issues

Nurses were responsible for delay in marking physical discharge in the system

3 <u>SRIT ISSUES:</u> Accounted for 5 % of the total delay of hospital related issues. SRIT system hanged down and problems in entry of certain

items.

4 **PATIENT RELATED ISSUES:** Accounted for 30 % of the total delay of Financial to physical discharge. The various reasons were:

1 Patient waiting for vehicle to be picked up from the hospital and which was accounted for 35 % of the total delay of Patient related issues

2 Patient (diabetic) insisting to leave after taking meal and which was accounted for 25 % of the total delay of Patient related issues.

3Patient waiting to take consultation from other doctors voluntarily. and which was accounted for 10 % of the total delay of Patient related issues

4 Patient delaying submission of paid copy at the nursing station due to miscellaneous reasons. and which was accounted for 25 % of the total delay of Patient related issues

5 Patient went for purchasing medicines from the pharmacy and which was accounted for 5 % of the total delay of Patient related issues

8 Discussion:

Among the 200 samples taken, 46 % discharges was within the time where 54% were delayed with the average standard time .The average standard time of discharge for non surgical cases was 60 minutes but the study showed 90.43 minutes i.e. discharges were late by 30.43 minutes . while the the average standard time of discharge for surgical cases was 90 minutes but the study showed 116 minutes i.e. discharges were late by 24 minutes. So both type of discharges were delayed,

The hospital further divides the discharge process into 3 different phases and set an average standard time for each of the phase for both non surgical and surgical cases. For Non surgical cases Marked for Discharge to Clinical Discharge was 5 minutes , Clinical to financial discharge was 35 minutes and financial to physical discharge was 20 minutes while there was delay in each step by 1.7 , 27.53 and 1.8 minutes respectively. and the total average time taken was 90.43 minutes in which there was delay of 30 .43 minutes .For Surgical cases marked for Discharge to Clinical Discharge was 5 minutes, Clinical to financial discharge was 60 minutes and financial to physical discharge was 25 minutes while there was delay in each step by 2, 9 and 15 minutes respectively and the total average time taken was 116 minutes in which there was delay of 24 minutes There were different reasons for the delay of discharge process. The different reasons were find out in the different phases of the discharge.

1 Marked for Marked for discharge to clinical Discharge: all the reasons were hospital related . the reasons were 75% were system error , 15 % were due to pharmacy stock audit and 10 % were delayed information from nursing to pharmacy .

2 Clinical to Financial Discharge: In this hospital related issues were responsible for 40 % and Patients related issues were responsible for 60 % of the delays. Among them hospital related reasons were 10 % of the delays were due to shortage of staff and 90% were due to staff negligence. The various staff negligence reasons were billing department was responsible for 20 %, Nurses were 40%, back office 30 % and front office and customer care were responsible for 10% of the delays.the different

Patient related issues were 20% Patient's Relative arrived at the Billing counter late . in 70 % cases Patient relative query at the billing counter was the reason and in 30% the patient took some time for the arrangement of the remaining money in case of huge outstanding .

3 Financial to Physical Discharge: the reasons were divided into hospital related and patient related reasons. The different hospital related issues were The different hospital related issues were doctor's related issues which was 15% , Printer not working 5 %,Diagnostics department related reasons 35%, other departments related 20 %,Medical reasons 10% , nurse negligence 10% and SRIT issues were 5 % of all the hospital related issues **.** Patient related issues accounted for 30 % of the total delay of Financial to physical discharge. The various reasons were one was Patient waiting for vehicle to be picked up from the hospital , Patient (diabetic) insisting to leave after taking meal and which was accounted for 35 % of the total delay of Patient related issues. Patient (diabetic) insisting to leave after taking meal and which was accounted for 25 % of the total delay of Patient related issues. Patient waiting to take consultation from other doctors voluntarily and which was accounted for 10 % Patient delaying submission of paid copy at the nursing station due to miscellaneous reasons and which was accounted for 25 % and Patient went for purchasing medicines from the pharmacy and which was accounted for 5 % of the total delay of Patient related issues

So all over 54 % of total discharges were delayed. The average non surgical discharge took 90.43 minutes instead of 60 minutes so were discharges delayed by 30.43 minutes and surgical discharges took 116 minutes instead of 90 minutes so the average discharge delayed by 24 minutes . So keeping other studies in mind where average discharge took place about more than 4 hours (1) so the Asian hospital discharges process was fair good. The hospital can improve the discharge process further by focusing on certain hospital and Patient related issues and reach their average standard time of discharge. The improvement in the discharge Process will result in improved satisfaction with timeliness of discharge process; less wait time in ED for bed availability ED/Surgery: increase in surgical and emergency department capacity by providing timely access to inpatient bed

RECOMMENDATIONS

1.To avoid miscommunication and lack of coordination among the staff regarding discharge, one of the Duty Manager can be assigned the role of a discharge coordinator during morning shift (Because maximum discharges happened in morning shift) or the customer care manager can also be assigned the responsibility in handling discharges

2 A list of planned discharges should be sent to respective departments/ staff after the consultants round in the evening. All probable discharges should be communicated to departments to avoid clashing of services to be provided during the discharge.

3 The summary drafts are made very often and changed again and again. So the summary should be updated daily by the respective RMOs in the system to avoid wastage of stationary and on the time of consultant‟ s round one day prior to discharge, thorough draft should be checked by the consultant and the suggested changes should be update in the system. The final summary should be printed in the morning per probable list of discharges conveyed and signed by the RMOs in the morning and handed over to nursing staff. And this summary should be explained to patient/ relatives without waiting for discharge slip to come. After explaining the summary the summary should be kept in the discharge folder so that nurse can hand it over to patient at the time of reports hand over.

4 The nurse Team Leader will take responsibility and coordinating of the below mentioned things are:
A consultant visits should be updated timely after the consultant visits to the floors. The visits should be entered in the system by the shift end and checked by the Team leader of the floor.

b Nurses Team leader should coordinate with the billing staff before

cancelling any voucher from the system and the investigations should be checked with the reports received of the tests.

c Collection of all the reports of the patients a day prior to the Discharge entry of all the consumables at the end of the day monitored by the team leader

5 Cardiac rehabilitation and other counseling (Diabetic/ Dietics/ Physiotherapy) should be completed one day prior to discharge or the patients should be counseled timely with priority basis of discharge list communicated by the nursing staff.

6 Laboratory staff should start preparing all the reports of discharge patients communicated by the nursing staff one day prior to final discharge. All the processed reports should be kept ready and handed over to respective nursing station by 7.30 in the morning. The responsibility of this should be given to pathology staff.

7 To avoid house-keeping disturbances to nurses, housekeeping supervisors should be instructed to be on the designated floors so that they can handle all house-keeping related issues of the patients. This will make nurses to focus on their core activities and reduce the overwork.

8 In case, all the formalities are completed and patient is just waiting for transportation, patient can be requested to sit in Relative's lounge. This will enable prompt readiness of the room for the next patient.

9 Team leader should coordinate with housekeeping supervisor to prevent delay in the discharge due to shortage of ward boys as nurses has to do their work of getting wheel chair , collection of reports , providing clothes, making beds, etc

10 Beyond the daily main meetings headed by MD and operational director there should be meetings at lower level among all the HOD's of the

respective department for the mutual understanding, Cooperation and solving various issues

11 The Hospital should also include the below mentioned time as currently this time is not being included in the discharge time which actually consumes a considerable time

A. The time between doctor instructed discharge to the time when nurses send billing docket

B. The time between the docket sent to the time when billing called nurses to marked for the discharge

CONCLUSION

From the analysis and interpretation of the data, it can be concluded that 56% of the discharges were delayed .But the average delay was about half an hour which showed that the discharge time was fairly good as compare with other studies (1,2,3). The hospital can improve the discharge process further by focusing on certain hospital and Patient related issues and reach their average standard time of discharge. The hospital can reduce the delays by precisely defining , increasing the role and assigning responsibilities and coordination Among the duty manager ,Customer care manger , Nursing team leader , Housekeeping supervisor ,Pathology and billing staff The improvement in the discharge Process will result in improved satisfaction with timeliness of discharge process; less wait time in ED for bed availability ED/Surgery, increase in surgical and emergency department capacity by providing timely access to inpatient bed.

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Annexure -1

(List of Surgical discharges)

Annexure - 2

(List of Non Surgical discharges)