TIME MOTION STUDY ON BILLING DEPARTMENT-
AN INTEGRAL PART OF DISCHARGE PROCESS

A dissertation Submitted in partial fulfilment of the requirements

for the award of

Post-Graduate Diploma in Health and Hospital Management

By:

Dr. Sakshi Arora

Certificate of Internship Completion

29th April, 2013

TO WHOM IT MAY CONCERN

This to certify that Dr. Sakshi Arora has successfully completed her 3 month internship in our organization from January 5, 2013 to April 5, 2013. During this intern she has worked on " Billing process- An Integral part of Discharge process" under the guidance of me and my team at Asian Institute of Medical Sciences.

We wish her good luck for her future assignments.

Anupam Pandey

Director Administration & Purchase

A ▪▪ Blue Sapphire Healthcares Hospital

Asian Institute of Medical Sciences
Badkal Flyover Road, Sector - 21A, Faridabad 121 001 • **Tel.:** +91 129 425 3000 • **Fax:** +91 129 414 3716 • www.aimsindia.com

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Certificate of Approval

The following dissertation titled **"Time Motion Study in the Billing Department-an integral part of discharge process"** 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
Prof. I. Bhattacharya	
Dr. R. BHALLA	
Dr. Anandhi Ramachan	17 May 13
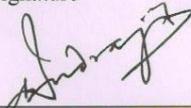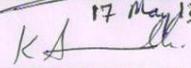
Certificate from Dissertation Advisory Committee

This to certify that **Dr. Sakshi Arora**, a graduate student of the **Post-Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled **"Time Motion Study in the Billing department-an integral part of discharge process"** 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.
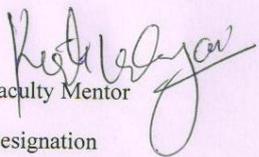
Faculty Mentor

Designation

IIHMR

New Delhi

Date 17 May 2013

Organizational Advisor: Anupam Pandey

Designation: Director- Admin & Purchase

Organization: Asian Institute of Medical Sciences

Address: Badkal Flyover, Sec 21A, Faridabad

Date: April 29, 2013

FEEDBACK FORM

Name of the Student: Dr. Sakshi Arora

Dissertation Organization: Asian Institute of Medical Sciences

**Area of Dissertation:** International Marketing/ Operations

Attendance: 98%

Objectives achieved: Yes

Deliverables: Developing marketing strategies, coordinating with HCFs and international patient coordination.

Strengths: Sakshi is very focused towards her work, has good communication skills and is eager to learn new things.

Suggestions for Improvement: Should take more initiative and develop leadership qualities.
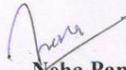
Neha Pandey

Director International Business Development

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

Date: 29/04/2013

Place: Asian Institute of Medical Sciences, Faridabad

ACKNOWLEDGEMENT

Abstract

Time Motion study in Billing Department- an integral part of discharge process

By

Dr Sakshi Arora

The objective of the study was to observe and record the functioning of various Billing counters/Insurance counters, to determine factors influencing the delayed billing services.

Patient satisfaction depends up on many factors such as: Quality of clinical services provided, availability of medicine, behavior of doctors and other health staff, cost of services, hospital infrastructure, physical comfort, emotional support, and respect for patient preferences. Mismatch between patient expectation and the service received is related to decreased satisfaction.

Discharge & Billing process are also important contributing factors towards patient satisfaction. An efficient Billing and discharge process leads to increased patient satisfaction.

The methodology adopted was simple random sampling method and study design was cross sectional descriptive study. The sample size for the study was 117.

The key findings from the study were that there is considerable amount of delay for final financial clearance after the file has been processed leading to delay in discharge process. The main reasons for delays were due to communication gap between billing department and wards which can be taken care of by better communication and streamlining of line of communication from both the sides and just not streamlining but making it a part of job description of the associated staff.

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Abbreviations

ICU: Intensive Care Unit

CCU: Coronary Care Unit

IMCU: Intermediate Medical Care Unit

LDR: Labour Delivery and Recovery Room

LR: Labour Room

PICU: Paediatric Intensive Care Unit

TPA: Third Party Administrator

NICU: Neonatal Intensive Care Unit

PD: Post Delivery

CTVS: Cardiothoracic & Vascular Surgery

HIPAA: Health Insurance Portability and Accountability Act

OPD: Out Patient Department

IPD: In Patient Department

UHID: Unique Hospital Identification Number

TPA: Third Party Administrator

PART 1

INTERNSHIP REPORT

Organization Profile

Asian Institute of Medical Sciences is the vision and dream of renowned surgeon, **Dr**. **N.K. Pandey**, FRCS (Edinburgh), FRCS (Glasgow) FACS, FICS, a 2008 Dr. B.C. Roy National Awardee.

The institute is centrally located in Sector 21-A, Faridabad in the National Capital Region (NCR) and conveniently accessible from Delhi, NCR and other parts of Northern India.

Asian Institute of Medical Sciences (AIMS) is a 350 bedded super specialty tertiary care hospital, truly futuristic in its services and technology and brings together some of the most talented medical professionals. The institute provides preventive, diagnostic, therapeutic, rehabilitative, and palliative and support services under one roof and is designed to meet patient care and research requirements of the new millennium.

The facility is planned with international quality specifications and equipped with state of the art equipment in all specialties. The institute with 11 operation theatres, 80 critical care beds, high-end diagnostics, therapeutic and preventive health facilities, is set to become a preferred destination for quality healthcare services.

All this makes AIMS not just another hospital, but a complete solution in the philosophy of healthcare.

SPECIALTIES OFFERED

Oncology, Cardiac Diseases, Renal Diseases, Neonatal, Paediatric /Medical & Cardiac Intensive care, Orthopaedics, General Surgery, Nephrology, Endocrinology, Gastroenterology, General Medicine, Gynaecology, Paediatrics, Laboratory Medicine, Neurology, Ophthalmology, Radiology, Pulmonology, Urology, Aesthetic & Cosmetic Surgery, Dermatology, Pulmonary Medicine, ENT, Physiotherapy, Critical care, Dental, Alternative Medicine.

ASIAN CENTRE OF EXCELLENCE

- Asian Cancer Centre
- Asian Heart Centre
- Asian Centre For Advanced Surgery
- Asian Centre For Mother And Child
- Asian Centre For Neurology & Neurosurgery
- Asian Centre For Renal Diseases
- Asian Centre For Bone & Joints
- Asian Centre For Imaging & Advanced Imaging

VISION

"To be the most trusted healthcare partner for people through our unsurpassed quality & care and by striving to provide accessible, affordable and best available healthcare services in India".

MISSION

- To give world class patient care.
- To revolutionize our healthcare services by genuinely caring.
- To be an active participant in the local community and provide the very best medical expertise for general welfare & well being.
- To make specialized medical care available to every in

What sets AIMS apart:

The institute is planned with international quality specifications and equipped with state-of-the-art equipment in all specialties. Some of the leading edge healthcare services that will be provided are:

- The cancer centre at Asian Institute of Medical Sciences is a state-of-the-art facility that is slated to become North India's most comprehensive Cancer Centre offering all forms of treatment from early detection to cure and palliative care.
- AIMS is the first hospital to acquire and install **Rapid Arc- IGRT & IMRT Linear Accelerator (Varian)** in North India and it is the only hospital in Haryana, with this kind of comprehensive facility.
- AIMS is equipped with the **first PET/CT** in this region. The PET/CT is one of the most advanced diagnostic equipments available today for early detection of cancer
- 11 modular modern and state of the art operation theatres equipped with LED Lights, media bridges, Laminar flow, operating microscopes, image intensifiers, laparoscopic equipment, Harmonic, RFA Laser, CUSA etc.
- Imaging department equipped with state of the art Phillips equipment including a 1.5T MRI, The first PET CT in South Delhi/Faridabad, 64 Slice CT Scan Mammography, Bone Densitometer, High end ECHO, 4D Ultrasound & Digital X-Ray.
- Comprehensive Cardiac Program including Non-invasive & Interventional Procedures and Cardiac Surgery. Centre of Excellence in Renal Care – round the clock facility for dialysis..
- Comprehensive and State of the art Laboratory & Blood Bank, with all machines in imaging and diagnostics online and results available on posting immediately on the intranet and internet
- Preventive Health Check-up facilities tailored to individual requirement.
- A comprehensive physiotherapy centre and a dedicated centre for alternate medicines and treatments such as Homeopathy, Ayurveda and Reiki Spiritual healing.
- A 250-seat auditorium and amphitheatre for education, conferences, workshops and seminars. The auditorium is connected to a live stream from all operation theatres.
- Air Ambulance Service.

Distribution of Beds

	No. of Beds
Suit/R	7
Private Cabins	15
Semi Cabins – 1ST Floor	10
Semi Cabins – 6th Floor	14
General Wards – 1st Floor	14
General Wards – 2nd Floor	28
Emergency Ward	11
ICU	10
CCU	15
IMCU	6
LDR	3
LR	12
PICU	6
NICU	4
PD	13
NUR Ward	6
CTVS	6
Recovery Room	11
Dialysis Ward	8
TOTAL	199

PART II

Dissertation on

"Time Motion Study on Billing Department: An Integral Part of Discharge Process"

Chapter 1:

Introduction

Medical billing is the process of submitting and following up on claims to insurance companies in order to receive payment for services rendered by a healthcare provider. The same process is used for most insurance companies, whether they are private companies or government -owned.

Billing Process

The billing process is an interaction between the provider and the insurance company (payer). It begins with the office visit. After the provider sees the patient, depending on the service provided and the examination, the doctor creates or updates the patient's medical record. This record contains a summary of treatment and demographic information related to the patient. Upon the first visit, the provider will usually give the patient a diagnosis (or possibly several diagnoses); in order to better coordinate and streamline his/her care.

After arrival of the patient to the hospital, necessary demographic details are created (Name, Age, Sex, Religion, Occupation, Place). A unique ID is allotted to the patient and the subsequent transactions at various contact points in the hospital are entered into the patient account. All the details of the consultation like Medical history and Drug history are entered duly in the patient record sheet. The relevant investigations/ procedure advised by the physician are entered into the records with billing codes (Procedure record and Professional fee code) along with name and speciality of the concerned physician. At the time of discharge, the patients bill is generated (Various bills are compiled- Consultation, procedure, dietary, drugs etc) and claim is put forth to Insurance company for final approval. In case of denial of approval, the patients can put forth all his hospitalisation bills for reimbursement provided if necessary documents are enclosed including name of insurance company, claim policy number, and address of patient.

Billing Quality

Billing Quality is measured in terms of timeliness and completeness of payment. The shape of the distribution curve of Accounts Receivable illustrates billing quality. Specific measures include median and percent of accounts receivable beyond 30 days, 60 days, and 120 days. A good quality billing process has relatively small median, e.g., half of the claims must be paid within 30 days, and a steep drop in terms of percents of accounts receivable(A/R), e.g., reaching less than 10% of A/R beyond 120 days. The actual amount of Accounts Receivable beyond 120 days is considered uncollectable and labelled as a provider's loss for write off.

Billing Transparency

Billing Transparency allows every participant in the billing process to see continuously both its big picture and the minute detail. The big picture consists of total cash flow in a given time period, current submitted and failed claims, and Billing Quality. The minute detail pertains to individual claims making up the big picture, including complete history from the moment of creating the claim, testing its validity, corrections, submissions, and reconciliations, until payment.

Rationale of the study

Billing process is an integral part of discharge process. If there is no unnecessary delay in billing process, it will lead to faster discharge process contributing to increased patient satisfaction.

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.

The appropriate billing and discharge processes enable the list of available beds for admission to be kept current and accurate, and in addition, the useful data can be obtained by accurate registration of patients in the admission book and calculating there from the admission and discharge dates for each patient.

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 rate represent a waste in health care resources, and result in heavy associated organizational costs.

Improving the quality of the billing and 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.

Review of literature

Evolution of Medical Billing in Last Few Decades:

Billing has been around for decades. For much of that time it was largely unregulated and unorganized, and was conducted on paper in its entirety. In view of the voluminous paperwork involved and the exhaustive number of daily medical claims, the medical billing process became tedious, lengthy and time consuming.

When it was put into practice, Billing was conducted manually and claims took a considerable amount of time to be processed for payment. With the arrival of the computer age--and in order to meet growing demand for conducting medical billing online-several IT and software companies designed special medical billing software to cater to this potentially highly lucrative segment of the health services market.

For several decades, medical billing was done almost entirely on paper. However, with the advent of medical practice management software also known as health information systems it has become possible to efficiently manage large amounts of claims. Many software companies have arisen to provide medical billing software to this particularly lucrative segment of the market. Several companies also offer full portal solutions through their own web-interfaces, which negates the cost of individually licensed software packages.

The billing field has been challenged in recent years due to the introduction of the HIPAA act. Due to the many restrictions that were enacted as a result of this new law, many software companies and medical offices spent thousands of dollars on new technology and were forced to redesign and rebuild their business processes and software in order to become compliant with this new act.

Since 2005, medical providers have been urged to electronically send their claims in compliance with HIPAA to receive their payment. The national health insurance crisis has renewed community interest in how their own hospitals meet local health care needs and helps with the financial challenges faced by uninsured and underinsured patients. The response from hospitals was a number of initiatives strengthening the hospital billings, collection, and communication practices that impact all patients.

The billing field has been challenged in recent years due to the introduction of the Health Insurance Portability and Accountability Act (HIPAA). HIPAA is a set of rules and regulations which hospitals, doctors, healthcare providers and health plans must follow in order to provide their services aptly and ensure that there is no breach of confidence while maintaining patient records. Read more about how this bill affects the medical billing services.

Since 2005 medical providers have been urged to electronically send their claims in compliance with HIPAA to receive their payment. The national health insurance crisis has renewed community interest in how their own hospitals meet local health care needs and helps with the financial challenges faced by uninsured and underinsured patients. The response from hospitals was a number of initiatives strengthening the hospital billings, collection, and communication practices that impact all patients.

Medical billing service providers and insurance companies were not the only ones affected by HIPAA regulations - many patients found that their insurance companies and health care providers required additional waivers and paperwork related to HIPAA.

The year 1999 marked the beginning of a new era for health insurance in the Indian context. With the passing of the Insurance Regulatory Development Authority Bill (IRDA) the

insurance sector was opened to private and foreign participation, thereby paving the way for the entry of private health insurance companies.

In cashless Mediclaim facility the insurance company settles the bill directly through its Third Party Administrator (TPA) provided the hospital in which patient have taken admission is a network hospital of his health insurance provider and these detail are usually provided along with the policy document. The hospital takes the patients ID card and from there it takes the policy details so as to deliver the cashless service. There are many exclusions and inclusions and hence this easy insurance works only under certain conditions.

Pre-authorization of cashless claims will be permitted only when the policy is in full force and any due premium has been paid. In the event the claim arises during the grace period cashless facility will not be available. Non cashless hospitalization is allowed either if the policyholder is admitted in non networked hospital or in case the cashless service is denied.

Objectives of the study

General Objective:

To observe and record the functioning of various Billing counters/Insurance counters, to determine factors influencing the delayed billing services

Specific Objectives:

a) To identify time taken for the file to be processed in the billing department.
b) To determine the time taken between file received and final financial clearance.
c) To study and analyze the problems of the patients occurring during billing clearance in hospitals.
d) Recommend changes, if necessary.

Chapter 2: Data & Methods

Study design-

Research design: The research design adopted for the project is descriptive in nature.

Sampling universe: Asian Institute of Medical Sciences

Sample size: 117 IPD Patients

Study design: Cross sectional descriptive study

Sampling method: The sampling technique employed for the research was Purposive Sampling

Sampling Tool: Observational

Data collection: Primary data was collected across different days of the week and different time of the day.

Data analysis: The acquired data is analyzed using simple statistical method.

Introduction to the department

The department divided into 3 functional zones:

1. First room for billing of semi private and private rooms.

2. Second room for TPA

3. Third room for corporates

Layout:

Corporate Approval   TPA approval   Room for bills preparation
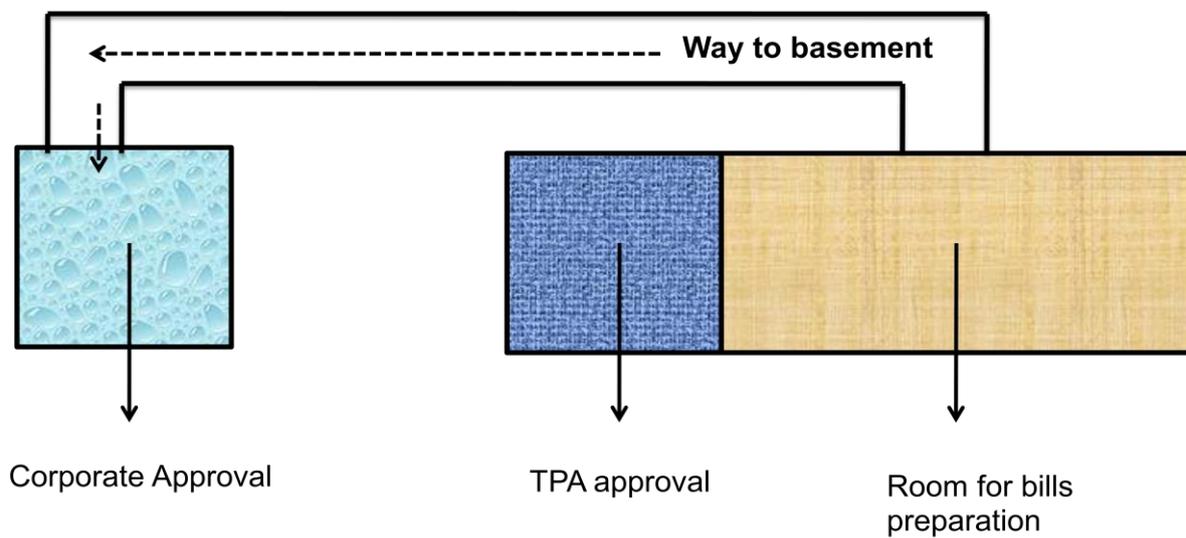
Work flow at the billing counter for a semi private/deluxe/suite/general ward patient:
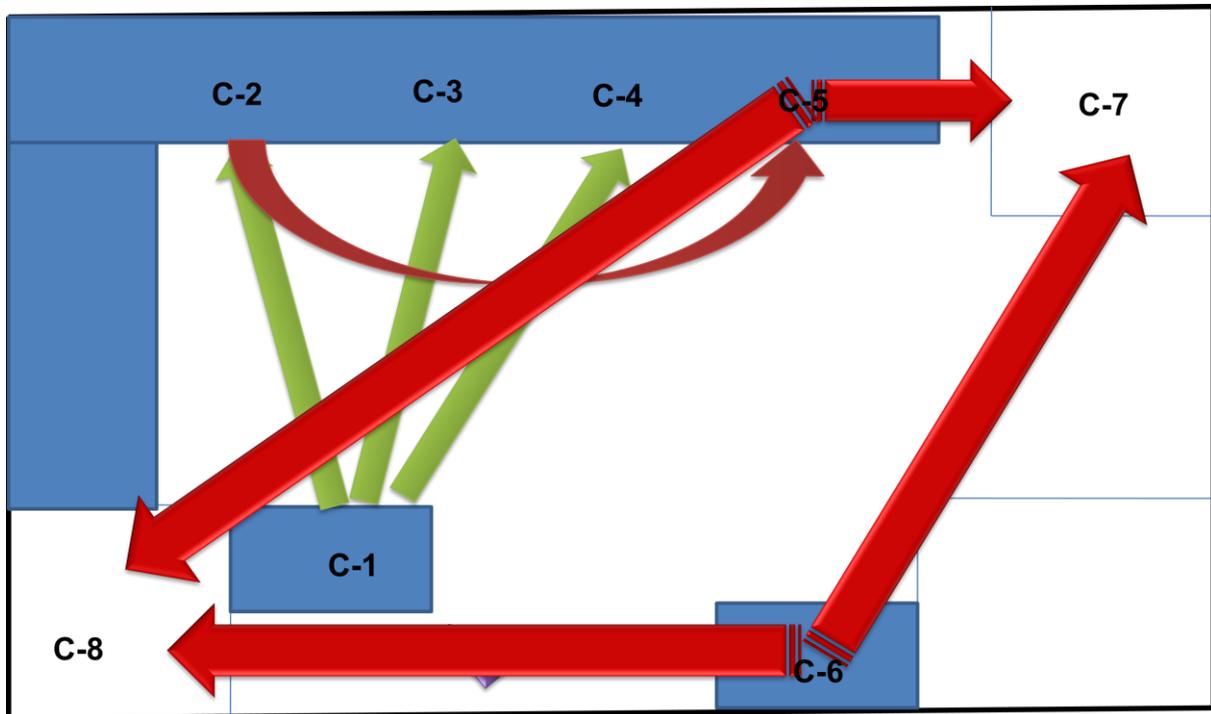
1. The file is received at C1 where the room number and registration number of the patient is noted down.
2. The file is then passed on to accountants for preparation of the file who sit at C2 or C3 or C4
3. From these counters, after preparation of the file the file is passed on to C5 or C6 at the supervisor's desk where the file is checked for errors.
4. From these counters the file is passed on to C7 and C8 where the patient is informed about the final bill and any queries are cleared
5. Once the patient is satisfied the file is forwarded to Payment counters and the patient pays the final bill.

Work flow for a TPA case:

1. The file is received at C1 where the room number and registration number of the patient is noted down.

2. The file is then passed on to accountants for preparation of the file who sit at C2 or C3 or C4

3. From these counters, after preparation of the file the file is passed on to C5 or C6 at the supervisor's desk where the file is checked for errors.

4. The file is then sent to the next room which is dedicated for TPA approval

5. The discharge summary along with the final bill is sent to respective TPA.

6. Once the approval is received the patient is informed about any lag in the payments which are present and need to be payed.

7. After payment the patient is discharged.

Time and Pattern of the department:

- Duration of operations- it is functional 24 hours.

- Location of department- located in the second basement

The study: The study was restricted from the point the file is received in the billing department to the point patient makes the payment.

Process mapping of the discharge process:
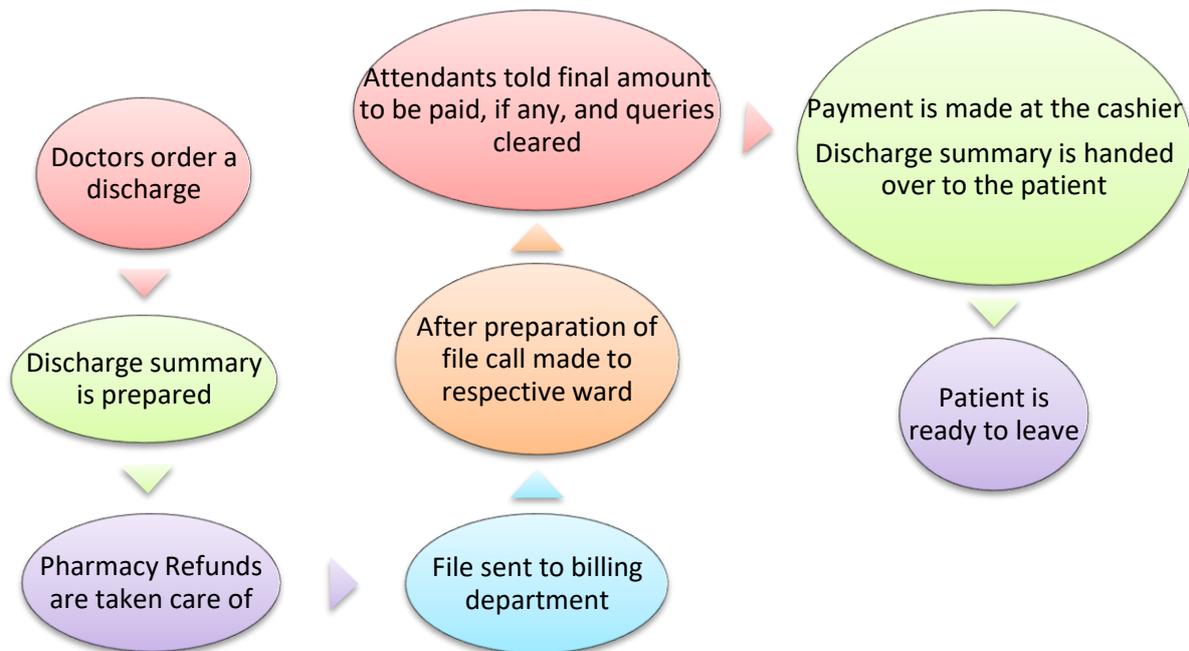
- Doctors order a discharge
- Discharge summary is prepared
- Pharmacy Refunds are taken care of
- File sent to billing department
- After preparation of file call made to respective ward
- Attendants told final amount to be paid, if any, and queries cleared
- Payment is made at the cashier
- Discharge summary is handed over to the patient
- Patient is ready to leave

DATA COLLECTION:

Registration number	File received at C-1:	Preparation time	Financial Final at C-18:
813354	9:36	9:39	10:28
817839	9:42	9:50	10:00
817480	9:55	9:59	10:23
815480	10:05	10:12	14:00
816099	10:06	10:09	10:42
786313	10:11	10:17	11:13
817802	10:27	10:43	11:03
817563	10:36	10:51	11:15
814144	10:59	12:17	12:55
803768	11:20	11:26	11:45
817995	11:37	11:49	14:55
818342	12:16	12:42	12:54
876543	12:36	12:42	13:52
626300	12:39	12:53	13:30
814628	12:44	13:00	13:05
815972	13:10	13:16	13:20
700203	13:35	13:43	13:45
766991	14:08	14:14	14:19
778398	14:40	14:45	14:49
723081	15:45	15:54	16:20
586899	15:51	15:56	16:09
816018	16:30	16:40	17:10
818425	9:06	9:13	12:12
733954	9:30	9:32	9:50
746943	9:35	9:42	14:12
817639	9:44	9:59	12:32
817587	9:50	10:06	10:10
634532	10:00	10:15	15:15
816561	10:19	10:22	12:00
817469	10:31	10:35	15:23
819070	10:36	10:50	11:17
803016	10:50	11:04	11:40
817780	10:50	11:01	14:11
816561	11:22	11:25	12:00
815675	11:37	11:43	12:30
594578	12:00	12:15	13:55
817519	11:55	12:05	15:55
802018	12:55	13:04	16:15
818534	14:11	14:16	17:42
817812	14:31	14:40	16:51
819931	15:12	15:18	15:25

813378	15:24	15:27	17:10
807058	9:32	9:45	12:53
807792	9:50	10:00	12:30
817296	10:02	10:10	11:46
819859	10:07	10:15	14:30
800147	10:25	10:28	10:55
818883	10:30	10:49	11:19
815794	10:54	11:19	11:21
819712	10:59	11:31	20:01
816524	11:25	11:41	13:13
813813	11:37	11:55	12:39
366522	11:38	12:00	12:36
185832	12:54	13:02	15:45
817624	13:20	13:25	14:20
816618	14:14	14:20	17:51
814739	14:42	14:45	15:52
789266	9:20	9:27	10:29
820957	9:24	9:30	11:13
763535	9:36	9:39	11:30
817569	9:45	9:49	10:05
733973	10:01	10:06	15:14
817434	10:01	10:04	10:13
781565	10:03	10:12	12:58
817786	10:10	10:40	14:53
510081	10:30	10:41	11:16
817788	10:43	11:10	14:53
768202	11:07	11:18	11:41
822372	9:29	9:32	9:42
823339	9:30	9:41	10:11
822836	9:31	9:37	11:19
821678	9:40	9:48	10:19
818840	9:48	9:57	10:51
603777	9:59	10:04	13:42
809879	10:08	10:14	16:12
822961	10:14	10:24	10:39
689771	10:28	10:38	11:27
797434	10:39	10:48	11:21
822070	10:48	11:08	12:15
818512	11:05	11:09	15:27
812620	11:10	11:15	12:24
819669	11:20	11:35	13:56
814001	11:43	11:48	12:01
817795	11:50	11:59	12:29
821655	12:28	12:33	14:05

821695	12:25	12:34	12:41
817222	12:43	12:51	13:30
641503	15:00	15:30	16:10
269830	15:06	15:10	15:30
826593	15:23	15:30	15:53
170751	15:44	15:48	16:03
186731	15:49	15:54	16:01
821561	16:11	16:23	16:48
684804	9:10	9:18	9:28
814708	9:12	9:14	11:15
817216	9:35	9:53	12:48
823873	9:39	9:42	10:05
820910	9:50	9:53	11:28
541600	9:50	9:56	11:42
708534	9:50	10:02	10:25
816745	10:05	10:16	11:09
705365	10:08	10:18	10:31
822287	10:20	10:27	11:28
698937	10:30	10:33	10:56
134622	10:33	11:05	12:30
821451	11:05	11:13	11:52
822832	11:17	11:21	11:32
824096	11:35	11:39	11:44
564783	11:49	12:00	12:27
822963	12:05	12:09	12:24
294411	12:19	12:23	13:10
811623	12:30	12:35	15:45
821971	15:39	15:42	16:19
193228	15:48	15:51	16:00
539089	16:16	16:18	16:20
823189	16:23	16:30	17:15
689772	16:26	16:33	16:50

DATA ANALYSIS:

Time between Received and prepared	Time between Prepared and financial final	Time between Financial final and file received
0:03	0:49	0:52
0:08	0:10	0:18
0:04	0:24	0:28
0:07	3:48	3:55
0:03	0:33	0:36
0:06	0:56	1:02
0:16	0:20	0:36
0:15	0:24	0:39
1:18	0:38	1:56
0:06	0:19	0:25
0:12	3:06	3:18
0:26	0:12	0:38
0:06	1:10	1:16
0:14	0:37	0:51
0:16	0:05	0:21
0:06	0:04	0:10
0:08	0:02	0:10
0:06	0:05	0:11
0:05	0:04	0:09
0:09	0:26	0:35
0:05	0:13	0:18
0:10	0:30	0:40
0:07	2:59	3:06
0:02	0:18	0:20
0:07	4:30	4:37
0:15	2:33	2:48
0:16	0:04	0:20
0:15	5:00	5:15
0:03	1:38	1:41
0:04	4:48	4:52
0:14	0:27	0:41
0:14	0:36	0:50
0:11	3:10	3:21
0:03	0:35	0:38
0:06	0:47	0:53
0:15	1:40	1:55
0:10	3:50	4:00
0:09	3:11	3:20
0:05	3:26	3:31
0:09	2:11	2:20

0:06	0:07	0:13
0:03	1:43	1:46
0:13	3:08	3:21
0:10	2:30	2:40
0:08	1:36	1:44
0:08	4:15	4:23
0:03	0:27	0:30
0:19	0:30	0:49
0:25	0:02	0:27
0:32	8:30	9:02
0:16	1:32	1:48
0:18	0:44	1:02
0:22	0:36	0:58
0:08	2:43	2:51
0:05	0:55	1:00
0:06	3:31	3:37
0:03	1:07	1:10
0:07	1:02	1:09
0:06	1:43	1:49
0:03	1:51	1:54
0:04	0:16	0:20
0:05	5:08	5:13
0:03	0:09	0:12
0:09	2:46	2:55
0:30	4:13	4:43
0:11	0:35	0:46
0:27	3:43	4:10
0:11	0:23	0:34
0:03	0:10	0:13
0:11	0:30	0:41
0:06	1:42	1:48
0:08	0:31	0:39
0:09	0:54	1:03
0:05	3:38	3:43
0:06	5:58	6:04
0:10	0:15	0:25
0:10	0:49	0:59
0:09	0:33	0:42
0:20	1:07	1:27
0:04	4:18	4:22
0:05	1:09	1:14
0:15	2:21	2:36
0:05	0:13	0:18
0:09	0:30	0:39

0:05	1:32	1:37
0:09	0:07	0:16
0:08	0:39	0:47
0:30	0:40	1:10
0:04	0:20	0:24
0:07	0:23	0:30
0:04	0:15	0:19
0:05	0:07	0:12
0:12	0:25	0:37
0:08	0:10	0:18
0:02	2:01	2:03
0:18	2:55	3:13
0:03	0:23	0:26
0:03	1:35	1:38
0:06	1:46	1:52
0:12	0:23	0:35
0:11	0:53	1:04
0:10	0:13	0:23
0:07	1:01	1:08
0:03	0:23	0:26
0:32	1:25	1:57
0:08	0:39	0:47
0:04	0:11	0:15
0:04	0:05	0:09
0:11	0:27	0:38
0:04	0:15	0:19
0:04	0:47	0:51
0:05	3:10	3:15
0:03	0:37	0:40
0:03	0:09	0:12
0:02	0:02	0:04
0:07	0:45	0:52
0:07	0:17	0:24
Average time taken: 0:05	**Average time taken: 1:05**	**Average time taken: 1:32**

For the morning:

0:08	0:10	0:18
0:02	0:20	:22
0:18	2:55	3:13
0:03	0:23	0:26
0:03	1:35	1:38
0:06	2:44	2:50
0:12	0:23	0:35
0:11	0:53	1:04
0:10	0:13	0:23
0:07	1:01	1:08
0:03	0:23	0:26
0:32	5:54	6:26
0:08	0:39	0:47
0:04	0:11	0:15
0:04	0:05	0:09
0:11	0:27	0:38
0:04	0:15	0:19
0:04	1:47	1:51
0:05	1:30	1:35
0:07	1:02	1:09
0:06	1:43	1:49
0:03	1:51	1:54
0:04	0:16	0:20
0:05	5:08	5:13
0:03	0:09	0:12
0:09	2:46	2:55
0:08	14:53	4:43
0:11	0:35	0:46
0:27	3:43	4:10
0:11	0:23	0:34
0:03	0:10	0:13
0:11	0:30	0:41
0:06	1:42	1:48
0:08	0:31	0:39
0:09	0:54	1:03
0:05	3:38	3:43
0:06	5:58	6:04
0:10	0:15	0:25
0:10	0:49	0:59
0:09	0:33	0:42
0:20	5:49	6:09
0:04	4:18	4:22
0:05	1:09	1:14

0:15	2:21	2:36
0:05	0:13	0:18
0:09	0:30	0:39
0:05	3:07	3:12
0:09	0:07	0:16
0:08	4:15	4:23
0:13	3:08	3:21
0:10	0:35	0:45
0:08	1:36	1:44
0:08	4:15	4:23
0:03	0:27	0:30
0:19	0:30	0:49
0:25	0:02	0:27
0:32	8:30	9:02
0:16	1:32	1:48
0:18	0:44	1:02
0:22	0:36	0:58
0:08	1:20	1:28
0:07	2:59	3:06
0:02	0:18	0:20
0:07	4:30	4:37
0:15	2:33	2:48
0:16	0:04	0:20
0:15	5:00	5:15
0:03	1:38	1:41
0:04	4:48	4:52
0:14	0:27	0:41
0:14	0:36	0:50
0:11	3:10	3:21
0:03	0:35	0:38
0:06	0:25	0:31
0:15	0:35	0:50
0:20	4:55	5:15
0:09	0:20	0:29
0:16	0:05	0:21
0:03	0:49	0:52
0:08	0:10	0:18
0:04	0:24	0:28
0:07	3:48	3:55
0:03	0:33	0:36
0:06	0:56	1:02
0:16	0:20	0:36
0:15	0:24	0:39
1:18	4:34	5:52
0:06	0:19	0:25
0:12	5:34	5:46

0:26	0:12	0:38
0:06	0:20	0:26
0:14	0:37	0:51
Average 0:05	**Average 0:50**	**Average 1:10**

For the afternoon:

00:03	**00:37**	**00:40**
00:03	00:02	00:05
00:02	00:02	00:04
00:04	00:20	00:24
00:04	00:20	00:24
00:04	00:26	00:30
00:04	00:15	00:19
00:05	00:07	00:12
00:04	00:33	00:37
00:05	00:55	01:00
00:06	03:31	03:37
00:03	01:07	01:10
00:05	03:26	03:31
00:09	02:11	02:20
00:06	00:07	00:13
00:03	01:43	01:46
00:06	00:04	00:10
00:08	00:02	00:10
00:06	00:05	00:11
00:09	00:26	00:35
00:05	00:13	00:18
00:10	00:30	00:40
Average=00:10	**Average=01:23**	**Average=01:35**

For TPA:

Registration number	File received at	File preparation completed at	Financial final at:
826793	08:00	08:10	12:05
829043	09:08	09:36	11:44
822282	09:12	09:26	10:05
825208	09:41	09:44	20:52
830407	10:30	10:35	12:50
818019	10:35	10:40	14:16
829928	10:51	11:05	14:10
883358	10:52	11:13	11:15
829226	10:54	11:15	13:42
829830	10:55	11:18	12:15
829166	11:00	11:06	14:42
829933	11:12	11:29	16:06
302530	11:15	11:40	14:30
829143	11:16	11:41	16:55
830436	11:35	11:57	13:55
829261	13:47	13:50	16:32
142138	15:07	15:49	17:05
811054	09:15	09:19	10:31
830706	10:10	10:25	12:22
604297	10:13	10:31	15:53
316352	10:25	12:31	16:40
608126	10:31	10:38	11:45
830587	10:57	11:51	13:32
830651	11:12	11:15	15:48
508677	11:50	12:15	15:33
626377	16:46	16:49	17:07

Data analysis for TPA:

Average preparation time	Average time for approval	Average time for patient payment complete
00:10	03:55	04:05
00:28	02:08	02:36
00:14	00:39	00:53
00:03	11:08	11:11
00:05	02:15	02:20
00:05	03:36	03:41
00:14	03:05	03:19
00:21	00:02	00:23
00:21	02:27	02:48
00:23	00:57	01:20
00:06	03:36	03:42
00:17	04:37	04:54
00:25	02:50	03:15
00:25	05:14	05:39
00:22	01:58	02:20
00:03	02:42	02:45
00:42	01:16	01:58
00:04	01:12	01:16
00:15	01:57	02:12
00:18	05:22	05:40
02:06	04:09	06:15
00:07	01:07	01:14
00:54	01:41	02:35
00:03	04:33	04:36
00:25	03:18	03:43
00:03	00:18	00:21
Average: 00:19	**Average: 02:55**	**Average: 03:16**

Chapter 3: Results and findings

Of the samples reviewed across the time frame the time was observed for:

1. Time taken between file received and processed

2. Time taken between processed file and final payment.

3. Total time taken from file received and patient discharged.

Time taken between file received and processed:
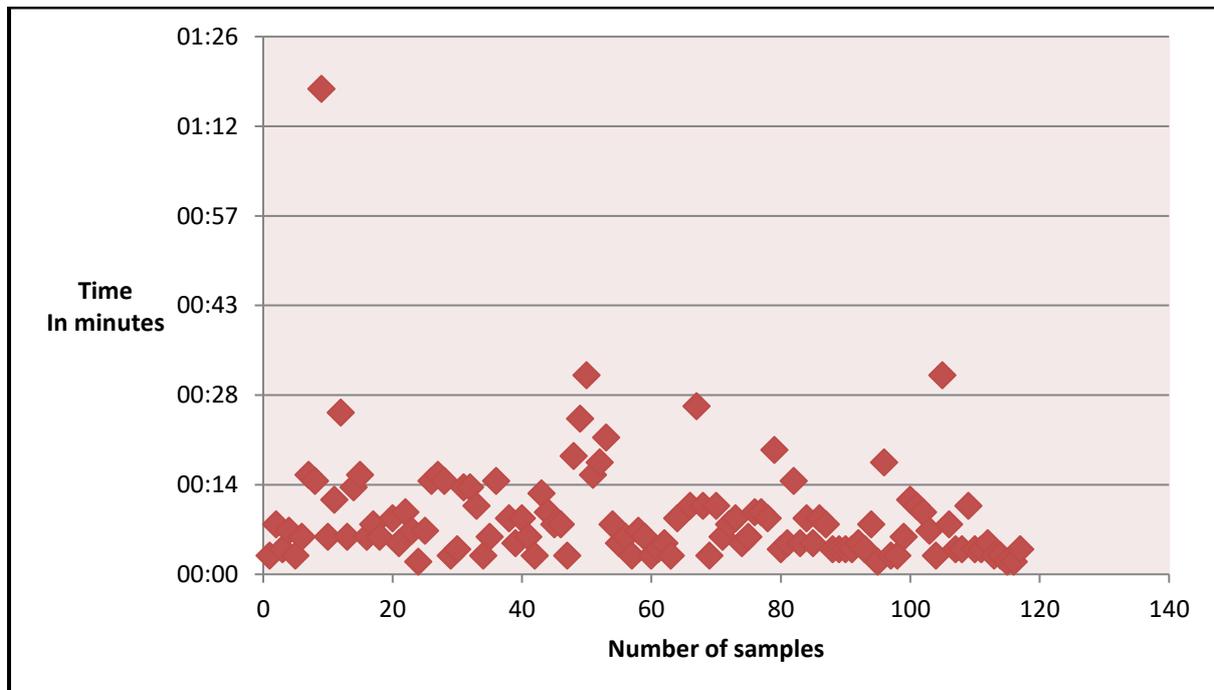

Analyzing the graph it can be observed that most of the cases the file preparation time tend to lie between 0 and 14 minutes.

The average:

Time taken between file received and processed:
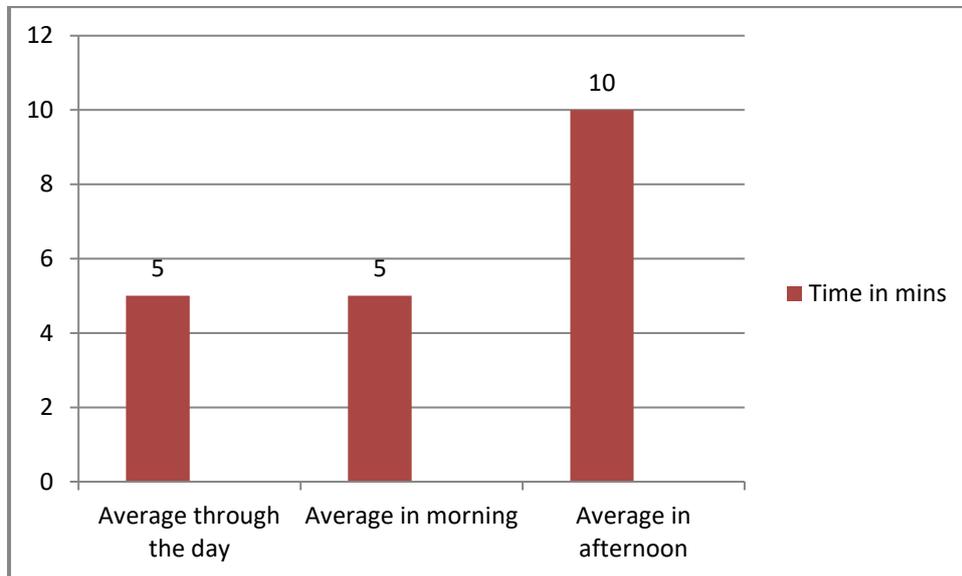
Time taken between file processed and final payment:
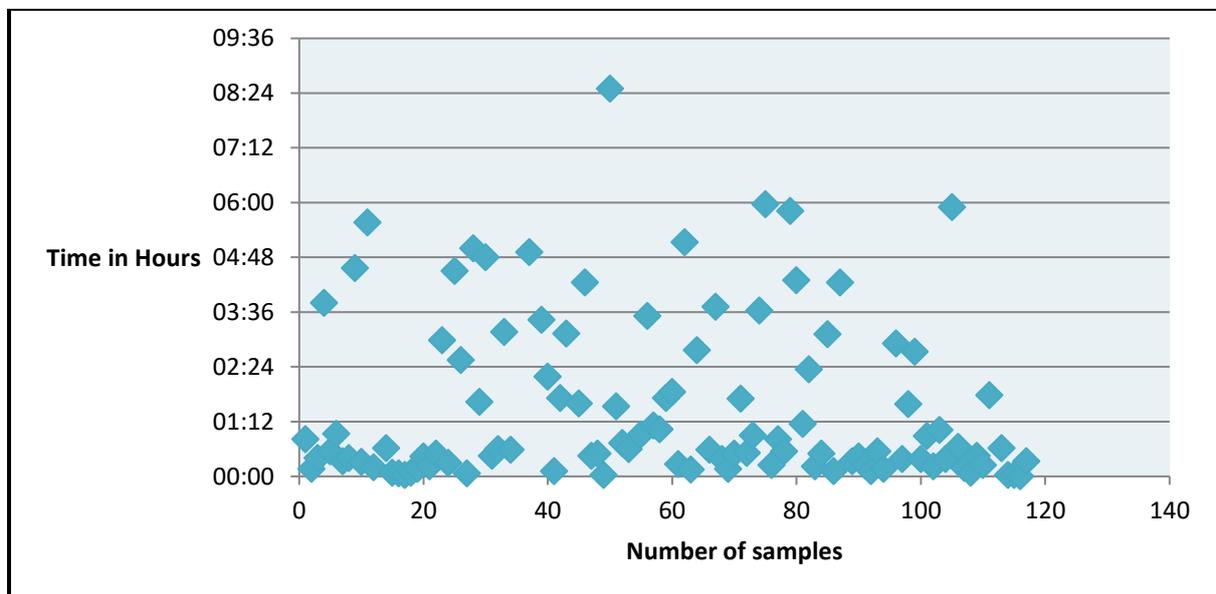

Analyzing the graph it is seen that in most of cases the time taken between file processed and final payment is upto 1:30 hours

The average:
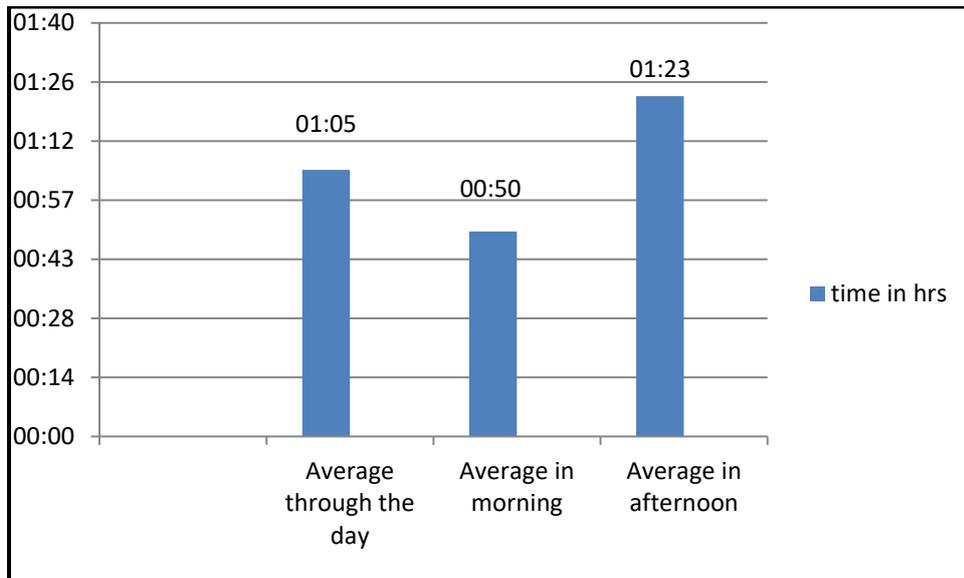
Total time taken from file received and final payment:
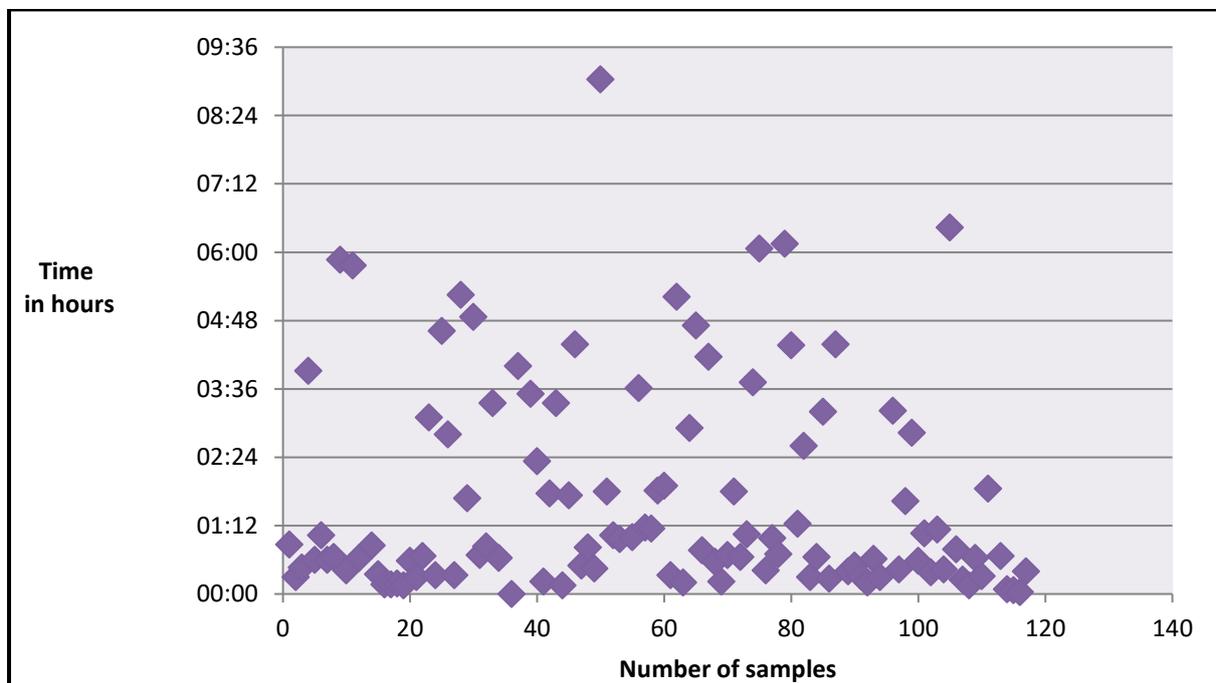
Again the graph shows that majority of the cases are winded up within 1 hour and 40 minute time frame.

The average:
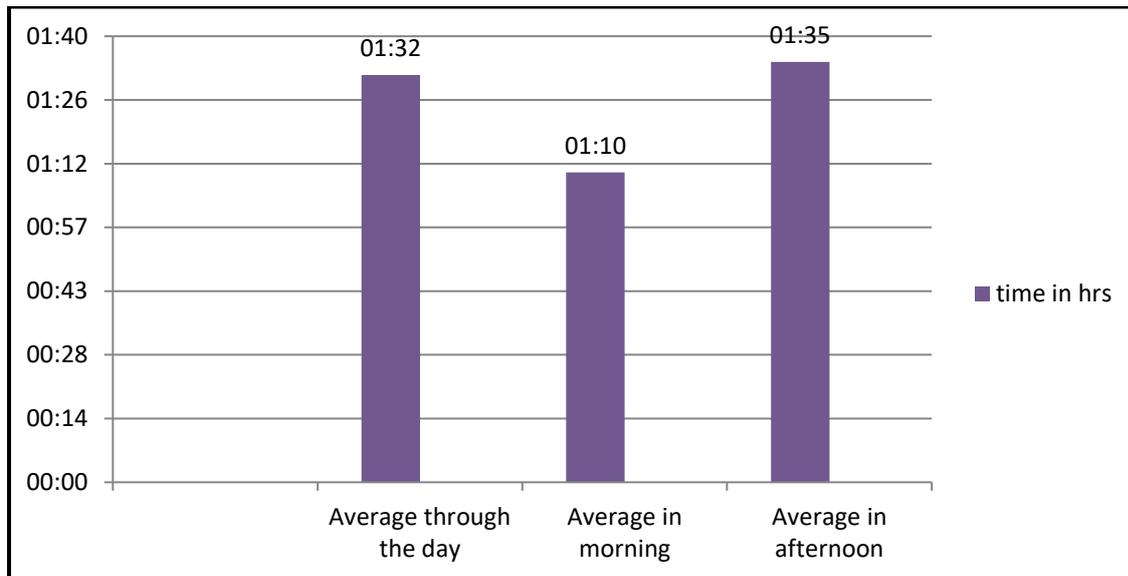
Observations

Variation between morning and afternoon:

Reasons for prolonged time in afternoon:

1. Fluctuating number of staff due to lunch breaks at varied periods in the afternoon.

2. Increased work load in the afternoon- there are more discharges in the afternoon compared to morning.

3. Daily compiling and completion of billing reports and data entry into system happens in the afternoon, thus requires a dedicated staff for the same.

4. Response to any queries which require a confirmation from wards/doctors on the bills levied takes more time in the afternoon rather than in the morning. This might be owing to the busy schedules of ward in charge and doctors.

Time taken on an average for preparation of file is 5 minutes and final payment is 1 hour 30 minutes.

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Bottle necks:

Reason for major delays are-

1. Incorrect billing done (specific discounts/rates not followed as per agreement with the corporate/TPA), Patient signature not taken on final bill.

2. Improper recording of the details (name, address, bill no., bill date/IPD No., admission date, discharged date, etc). Bills not signed by the concerned authority in the hospitals.

3. Patient taking time to arrange in the money apart from deposits.

4. Communication gap between billing department and wards.

5. Incompletion of the forms.

6. Pharmacy bill total frequently doesn't match with the total bill, because of refunds, and creates a lot of fuss at the billing counter

Example:

- Medication for a patient is ordered but not used and subsequently goes for refunds.
- In the bill it doesn't reflect if in case the whole thing has gone for refund but reflected only if something out of the total strip is used.
- But patient has total refund slips which on matching lead to confusion.

Chapter 4: Recommendations

A.   The crucial step in achieving reduction in waiting time is to make planned discharges for the patient. The doctor has to confirm the date of discharge and steps have to be taken 12 hrs before the discharge process. The following can be ensured.

- Return of unused medication by the nursing staff.

- Showing pharmacy returns by the billing executive in HIS.

- Completing the Updating process and processing it for auditing.

- Completion of discharge summary (95%).

- Arrangement of funds by the patient party.

- On the day of discharge, only minimum work has to be carried out.

B.   Increase the deposit from patient's front.

We have the estimates for each treatment but still in the end we end up taking something from patient instead of refunding them something.
Having a relook at the treatments where in the payments are generally more than the deposits on a regular basis.

C.   Better communication and streamlining of line of communication from both the sides and just not streamlining but making it a part of job description of the associated staff.

D.   Sensitize the doctors and nurses towards proper preparation of discharge summary and form so as to reduce the cases of 'file return' which lead to increase in discharge time.

Chapter 5: Limitations of the Study

- Since this was an observational study, there would be worker bias as the staff knew that they were being observed.

- Inherent bias due to mix of TPA and cash cases.

Chapter 6: Conclusion

- A fast discharge and Billing process is an important requisite for patient satisfaction.

- At AIMS there are few bottlenecks in billing process which can be curbed down easily.

- The key findings from the study were that there is considerable amount of delay for final financial clearance after the file has been processed leading to delay in discharge process.

- The main reasons for delays were due to communication gap between billing department and wards which can be taken care of by better communication and streamlining of line of communication from both the sides and just not streamlining but making it a part of job description of the associated staff.

References

1. Billing process linked to long-term patient satisfaction December 14, 2011 | By Karen Cheung-Larivee

2. Daniel R. Levinson Inspector General December 2008 OEI-06-08-0022

3. Hospital Billing 2009 McGraw-Hill Higher Education

4. Regulations-and-Guidance/Guidance/Manuals/downloads/clm104c03.pdf

5. Marshall MCrowther R, Almaraz-Serrano A, Creed F, Sledge W, Kluiter H, Roberts C, Hill E, Wiersma D, Bond GR, , et al. Health Technol Assess. 2001; 5(21):1-75

6. Lee AV, Moriarty JP, Borgstrom C, Horwitz LI. Journal of hospital medicine: an official publication of the Society of Hospital Medicine. 2010; 5(9)514-520

7. Billing Error Reduction Project: A Hospital Payment Monitoring Program Special Study by Sue M. Malone, MA, MBA, RHIA, FAHIMA