Summer Training at
Narayana Health City, Bangalore
(April 3 to June 2, 2017)

Turnaround Time [TAT] for Inpatient Discharge Process of Narayana Institute of Cardiac Sciences

By
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Under the guidance of
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MBA Hospital & Health Management
2016-2018

Institute of Health Management Research
The IIHMR University, Jaipur
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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that **Dr. Anjali K** has undergone summer training in **Narayana Institute of Cardiac Sciences, Bangalore** from 3rd April to 2nd June 2017.

The candidate herself completed the project assign to her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

I wish her success in all her future endeavors.

Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affair)

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NH Narayana Health™

Date: 2nd June 2017

PROJECT COMPLETION LETTER

This is to certify that **Ms. Anjali K – MBA - Hospital and Health Management, IIHMR, Rajasthan,** has successfully completed her internship project at NH Health City, Bangalore from 3rd April 2017 to 2nd June 2017.

During the course of Internship, the intern has worked on project titled **"Turn Around Time of Inpatient discharge Process",** at **Narayana Institute of Cardiac Sciences, Bangalore**, under the guidance of **Mr. Karan Dave – Facility Director, at NH Health City, Bangalore.**

We found her sincere, hardworking, and technically sound and result oriented. She worked well as part of a team during her tenure.

We take this opportunity to thank her and wish her all the best for her future.

For Narayana Hrudayalaya Limited.

Nitin Barekere,

Group Head – Human Resources.

Acknowledgement

I **, Dr. Anjali. K**, a student of MBA-HM- 21 at **IIHMR Jaipur**, **would like to sincerely express my heartfelt gratitude to:**

- Dr. Col. **C. Ramesh**, Professor and Dean, school of Pharmaceutical Management IIHMR University, for being my mentor and helping me in my project activity through his valuable suggestions.
- Mr. **Hem Bhargava**, Placement Officer, IIHMR Jaipur, for facilitating my training at Narayana Institute of cardiac sciences.
- Dr. **Devi Shetty**, Chairman and Executive Director, Narayana Institute of Cardiac Sciences, for granting me the opportunity for training.
- Dr. **Ashutosh Raghuvanshi**, Chief Executive Officer and Managing Director, Narayana Institute of Cardiac Sciences, for granting me the opportunity for training.
- Mr. **Karan Dave**, Facility Director, Narayana Institute of Cardiac Sciences, for granting me the opportunity for training, along with guidance and encouragement in the whole journey of my training.
- Mr. **Lokesh Tharidal. S**, General Manager, Narayana Institute of Cardiac Sciences, for granting me the opportunity for training, along with guidance and encouragement in the whole journey of my training.
- Mrs. **PATRICIA**, Manager Training and Development, Narayana Institute of Cardiac Sciences, for coordinating our whole Summer Training in a very educative and fun manner.

I would like to thank whole of **Operations Team** of Narayana Institute of Cardiac Sciences, for all the guidance and help required in the whole of my Summer Internship Journey and arranging for the exposure of other departments of the Hospitals.

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Acronyms/Abbreviations:

A&E- Accident and Emergency

DAMA-Discharge Against Medical Advice

CSSD-Central Sterile and Supply Department

CT-Computerized Tomography

ECG-Electro Cardiogram

MRI- Magnetic Resonance imaging

TMT-Treadmil Test

CCU-Critical Care Unit

PITU-Pediatric Therapy Unit

ITU-Intensive Therapy Unit

IPD- In-Patient Department

NICS-Narayana Institute of cardiac sciences

NH-Narayana Healthcity

MRD-Medical Records Department

OBSERVATIONAL LEARNING

INTRODUCTION

Narayana Health, headquartered in Bangalore is one among India's largest healthcare provider and also one of the world's most economical, is set to be emerged as a global industry model for its ability to reconcile quality, affordability, scale, transparency, credibility and profitability, with all super-specialty tertiary care facilities that the medical world offers, it is now a one-stop destination for all. The rich come here for the world's best medical care. The poor come here for the world's kindest care, for no one here is turned away for lack of funds.

Narayana Health Group of Hospitals is racing towards the goal of providing healthcare to everyone on its two healthy legs- affordability grows stronger on cost reduction in administration through economies of scale and taking advantage of contemporary technologies. Accessibility strengthens as Narayana Health relentlessly continues to expand from a 225-bed hospital to a 30,000 bed hospital that would make it, by far, the largest healthcare destination in India. Famous for its cost-cutting approach in many creative ways. NH has ranked 36th among "WORLDS 50 MOST INNOVATIVE COMPANIES by Fast Companies in 2012.

For millions across the world, NH health city is the panacea for all ills. With 150 surgeries performed every day and 80,000 patients per month, the NH group currently offers super-speciality tertiary care facilities in various areas of specializyion, which includes Cardiac Surgery, Cardiology, General Medicine, Gastroenterology, Vascular and Endovascular services, Urology, Nephrology and Neurosurgery, Psychiatry, Solid organ transplants for kidney, Liver, Heart and Bone Marrow, Endocrinology services, Cosmetic surgery and Rehabilitation and Oncology services for almost each type of cancer including head, neck, breast, cervical, lungs, and gastro intestinal cancer.

VISION

To provide a high-quality healthcare, with care and compassion, at an affordable cost, on a large scale.

CORE VALUES: I-C-A-R-E

MISSION

"A Dream of Making Quality Healthcare Available To The Masses Worldwide"

NARAYANA HEALTH- A PAN-INDIA MULTISPECIALITY HOSPITAL GROUP

- 2000 year founded by Dr Devi Prasad Shetty
- 56 Healthcare facilities
- 31 locations in India
- 1.97 Patients annually (in millions)
- 30+ Medical specialties
- 312 Daily average surgeries and procedures
- 11,650 Full-time employees and students
- 2,563 Full-time, consultant and students doctors

LOGO -THREE LEAVES OF BILEF

NARAYANA in Sanskrit means the preserver of the universe matches with NH ethos of being committed to the health of every life.

COLOUR: Blue is the colour of calm , peace and culture, leaf is the symbol of life.

NH: NH does not have any gaps in between as there is no space for discrimination while catering to the health needs of every individual.

3 Leaves: The core values of NH- Compassion, Quality, Affordability.

Sunrise: The sunrise behind the letters NH marks a new dawn in healthcare that NH is brining.

What Makes Narayana Health different?

- Clinical Excellence with 2 JCI (Joint Commission International) accredited Hospitals
- 4 NABH Accredite Hospitals
- Service Excellence
- Affordability
- More than 90000 Cardiac Surgeries
- Amongst the Largest Telemedicine networks in the world
- Patients from 76 countries
- One of the largest Dailysis unit in India with 217 dedicated bedsand 1,30,000 procedures per year
- 80 bed dedicated post-operative cardiac ICU, Largest in the world
- Digital radiology
- Academic excellence
- Financial stability

- **FLOOR WISE FACILITY DISTRIBUTION**

  - **BASEMENT**

BLOCK- A

- IT DEPARTMENT
- LINEN DEPARTMENT
- SCHEME UNIT
- DATA PROCESSING
- STAFF CAFETERIA

BLOCK-B

- RADIOLOGY DEPARTMENT CT-SCAN, X-RAY, ULTRASOUND, MRI
- DEPARTMENT OF SOCIAL WORK
- CSSD
- ADMINISTRATIVE DEPARTMENT

  - **GROUND FLOOR**

BLOCK-A

- HELP DESK
- REGISTRATION
- PACKAGE OFFICE
- ADMISSION COUNTER
- BILLING COUNTER- OPD and IPD
- CASH COUNTERS
- OUT PATIENT DEPARTMENT (17 consultants room)
- INVESTIGATION DEPARTMENT- ECG, TMT , ECHO, X-RAY, Hematology
- DIABETIC EDUCATION ROOM
- LAB REPORT DISPATCH COUNTER

BLOCK –B

- PEDIATRIC OPD (with 8 consultant room)
- CCU TRIAGE
- STEPDOWN CCU
- EXCECUTIVE CCU WARDS
- CATH LAB
- COUNSELLING ROOM

➢ **FIRST FLOOR:**

BLOCK-A

- EXCECUTIVE OPD
- CORPORATE CELL
- CAFETERIA
- WARD- SEMI PRIVATE ROOMS- 6BEDS
  PRIVATIVE ROOMS- 3 BEDS
  DELUX ROOMS- 12 BEDS
  SUITE- 1ROOM

BLOCK –B

- Dr. DEVI SHETTY OFFICE
- 3 OT
- ITU – 22 BEDS

➢ **SECOND FLOOR**

BLOCK-A

- ITU- 36 BEDS
- 5 OT ‘s

BLOCK-B

- WARD- SEMI PRIVATE ROOMS- 32 BEDS
  PRIVATIVE ROOMS- 4BEDS

- **THIRD FLOOR**

BLOCK-A

- PITU- 70 BEDED

BLOCK-B

- WARD- SEMI PRIVATE ROOMS- 30BEDS, PRIVATIVE ROOMS- 6 BEDS

- **FOURTH FLOOR**

BLOCK-A

- 2-CATH LAB
- HYBRID OT (VASCULAR, RADIO, NEURO SURGERIES)
- PITU- 14 BEDS
- ITU- 17 BEDS

BLOCK-B

- WARD- SEMI PRIVATE ROOMS- 16 BEDS
  PRIVATIVE ROOMS – 1 BED
- PLATINUM WARD- 9 ROOMS
- SUITE- 1 ROOM

- **FIFTH FLOOR**

BLOCK-A

- PEDIATRIC WARDS- 52 BEDS
- PHARMACY

BLOCK-B

- WARD- SEMI PRIVATE ROOMS, PRIVATIVE ROOMS, DELUX ROOMS
- MARKETING SECTION

- **SIXTH FLOOR**

BLOCK-A

- WING-1 GENERAL WARDS- 32BEDS
- BILLING COUNTER

BLOCK-B

- WING -2 GENERAL WARDS- 34BEDS
- TELEMEDICINE DEPARTMET

➢ **SEVENTH FLOOR**

- TRAINING ROOMS
- DEVELOPMENT AND TRAINING OFFICE

1. **PREAMBLE:**

1.1 Definition of Discharge:

Discharge from the hospital is the point at which the patient leaves the hospital and returns to their social environment or is transferred to other facilities like rehabilitation, nursing homes , hospice.

Medicare states the actual process of discharge planning can be completed only by concerned physician decision to release from the hospital, used to decide what patient needs for a smooth move from one level of care to another along with nurse, managers, other hospital staff and social worker. Ideally it's a team approach for effective discharge planning. The quality of Healthcare has changed the demands and functioning of Health Industry. In the present competitive environment of Health Industry leaves no scope of error, we need to delight our patient, look for new ways to exceed their expectations on continuous basis, with a focus on improvement in technical skills, human skills and to develop cost effective methodologies. Among all the components, defining the patient satisfaction discharge process plays a very important role. Discharge process is the final phase in hospital, with satisfactory overall experience by the patient during hospital stay, a slothful discharge process can leave dissatisfied.

At Narayana Institute of cardiac sciences, a study was conducted to determine the Turn Around Time [TAT] for discharge process and analyzing the underlying factors that consume time during discharge process. As mentioned above an effective discharge planning is a team approach right from informing patient appropriate post-hospital treatment to clearance from

all departments, bill settlements, thus total time consumed in the discharge process is a summation of clearance time consumed by every department along with other factors related to patients and the process. Hence, maintaining an acceptable level of discharge time provides competitive edge to the organization. The present study aims to identify the different factors that determine the total discharge time and identify the measures that can contribute in reduction of the total discharge time.

1. THE 10 KEY PRINCIPLES OF EFFECTIVE DISCHARGE PLANNING:

1. Start planning before or on admission
2. Identify whether the patient has simple or complex management
3. Develop a clinical management plan within 24 hours of admission
4. Coordinate the discharge or transfer process
5. Set an expected date of discharge within 48 hours of admission
6. Review clinical management daily
7. Involve patients and their relatives/care takers
8. Plan discharges and transfer to take place over seven days
9. Use a discharge checklist 48 hour before transfer
10. Make decisions to discharge and transfer patients each day

2. PROBLEM STATEMENT:

Based upon past complaints, increased waiting time for discharge process leading to Inpatient dissatisfaction, and delay further availability of beds for emergency and elective admissions, which impacts on revenue generation for the NICS. The patient-centred hospital goals, is to improve patient satisfaction through discharge process.

3. OBJECTIVE:

- To find different factors that determine the turnaround time [TAT] for discharge process.
- To Identify the measures that can contribute in reduction of the TAT for discharge process.

4. METHODOLOGY:

4.1 Study design:

This was a cross-sectional, descriptive, time motion study conducted in Inpatient department of Narayana Institute of Cardiac Sciences hospital after receiving permission as well as ethical approval from the hospital authorities.

4.2 Sampling plan:

- **sampling unit:** 1st - 4th floors Inpatient wards.
- **Sample size:** 152 samples collected during the study, which includes uninsured (cash) and insured (TPA/corporate) patients.
- **Sampling method:** Purposive sampling.
- **Sample size:** 152 patients (76 insured, 76 uninsured).
- **4.3 Data collection:** Following format used for data collection, a time motion recording chart were developed in consultation with all the concerned departments and to determine the factors impacting overall process.

- checklist of time-motion recording for cash (Appendix 1)

checklist of time-motion recording for insurance (Appendix 2)

Appendix 1 Time-motion recording for cash
SL No.
Date of Discharge
Ward
Patient name
Type of admission
Consultant
Discharge announced time
Case file sent for D/S
Billing intimation sent time
Draft copy of D/S
Final D/S ready
Bill ready
Bill cleared by patient
Patient leaving time

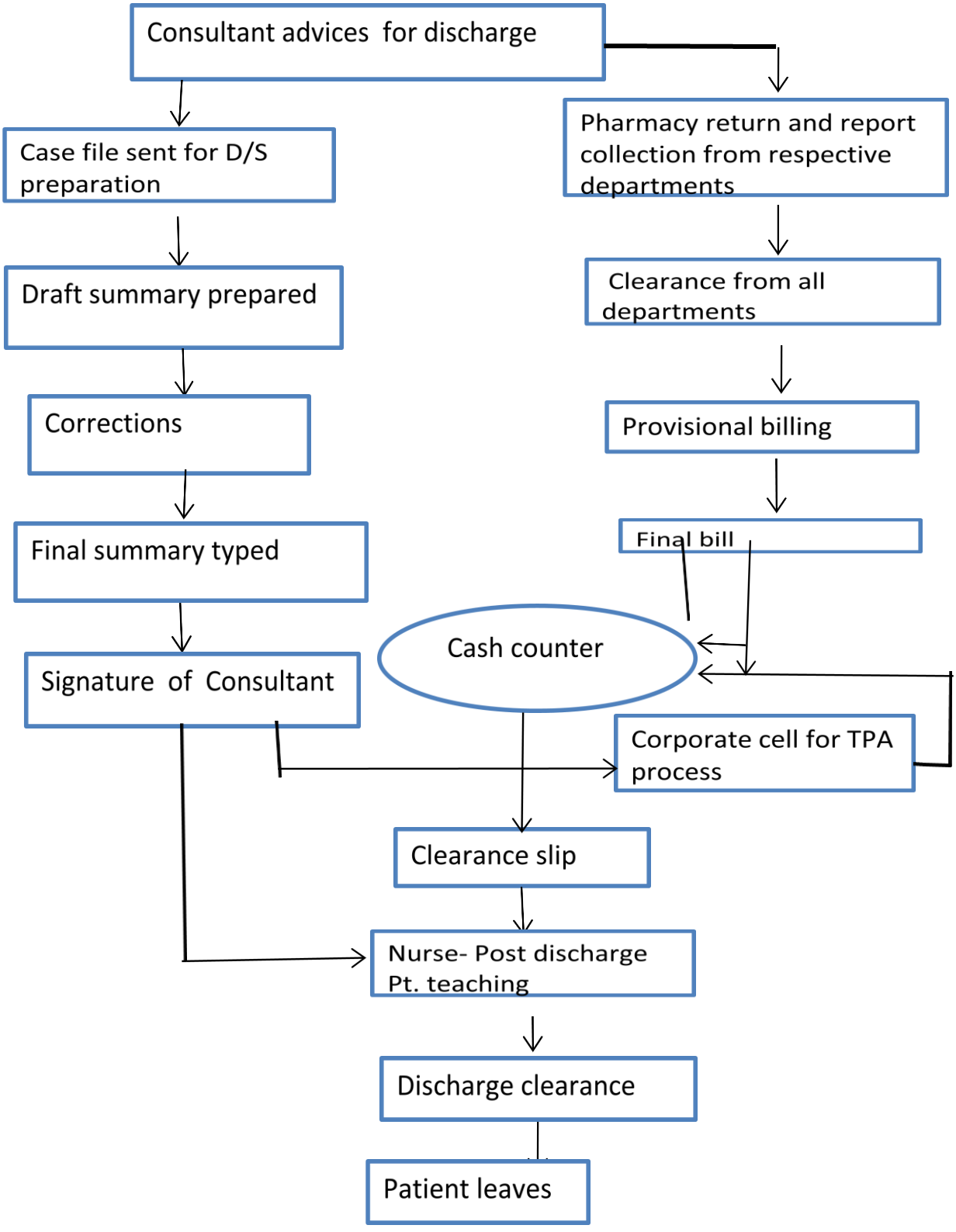
Appendix 2 Time-motion recording for insurance
SL No.
Date of Discharge
Ward
Patient name
Type of admission
Company
Consultant
Discharge announced time
Billing Sheet sent to billing department time
Case file sent for D/S
Draft copy of D/S
Final D/S ready
Final Bill ready
Corporate cell- time taken to send TPA
TPA time taken to respond
Send back o billing department
Patient intimated
Bill cleared by patient
Patient leaving time

Manually data was collected using tool by communicating each department daily, as mentioned above the sample criteria for the study is cash and insurance patients and keen interest to know reasons for delay and the TAT difference between these two discharges and to measure each step of standard operating procedure through time motion recording.

5. DISCHARGE PROCESS:

5.1 Process description: Discharge is done once patient is medically stable, concerned consultant intimates discharge to patient and nurses. Nurses starts process, bed side medicine returned and intimated pharmacy, simultaneously case file sent to summary counter for summary preparation, and blue sheet with intimation sent to billing counter once clearance obtained from all department, provisional bill/ final bill is prepared and informed to patient party. After clearing a bill, clearance slip is given. Nurses will handover summary and reports with post-discharge teaching and patient leaves This process is for uninsured patients whereas for insured patients through online discharge summary and final bill is collected at corporate cell , and coordinates with insurance company for settlement of final bill.

5.2 Work break down of discharge process:



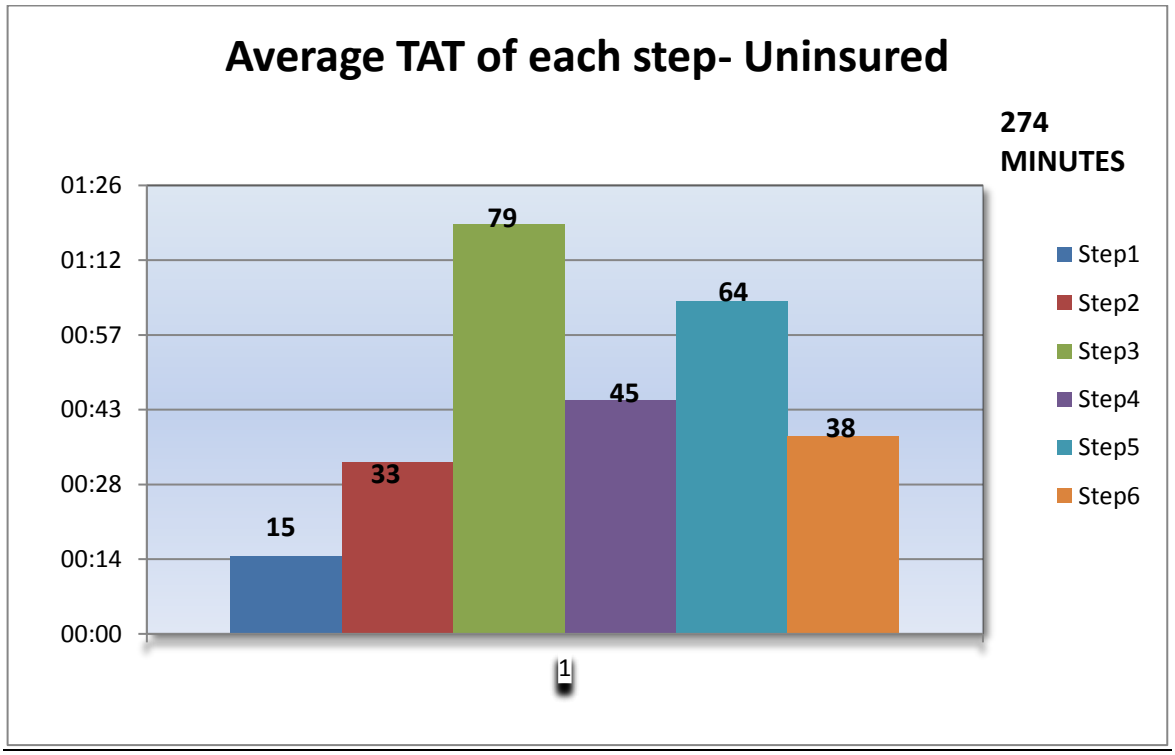
DATA ANALYSIS AND DATA INTERPRETATION:

5.1 Findings: Total **152** patient's data was collected for time-motion study out of which **76** were cash and **76** were insurance. The data has been analyzed in steps, right from completion of discharge reports by concerned physicians and time interval between discharge intimation to concerned departments and the actual clearance provision from their side.

5.2 CASH: The average time taken for discharge process of cash patients is **274** minutes ie. **4** hours 34 minutes.

- The following are average time taken for each step,

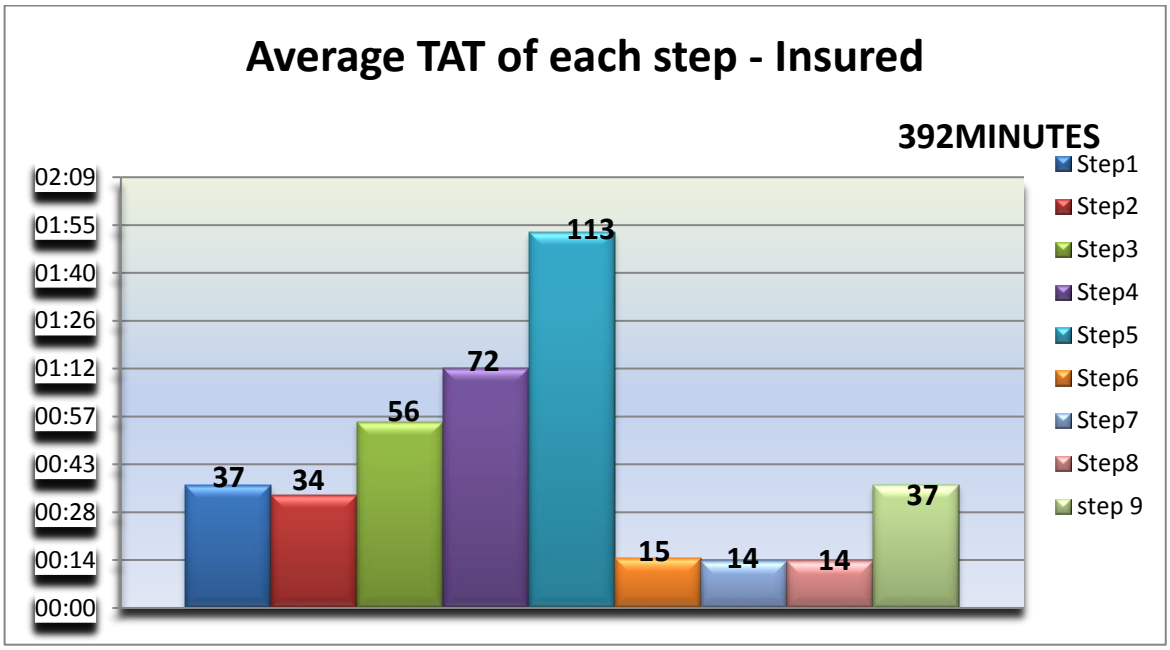
Step1: Physician advices for discharge to file sent for summary counter is **15**minutes.
Step2: Physician advices for discharge to intimation sent (billing sheet) to billing counter is **33**minutes.
Step3: File received from ward to final discharge summary preparation is **79**minutes.
Step4: Billing intimation received to provisional / final bill preparation is **45** minutes.
Step5: Patient party intimated provisional / final bill to bill clearance is **64**minutes.
Step6: Patient party clearing bill to physical discharge of patient is **38**minutes.



7.3 INSURANCE: The average time taken for discharge process of insurance patients it is **392** minutes ie. **6** hours **32** minutes.

- The following are average time taken for each step,

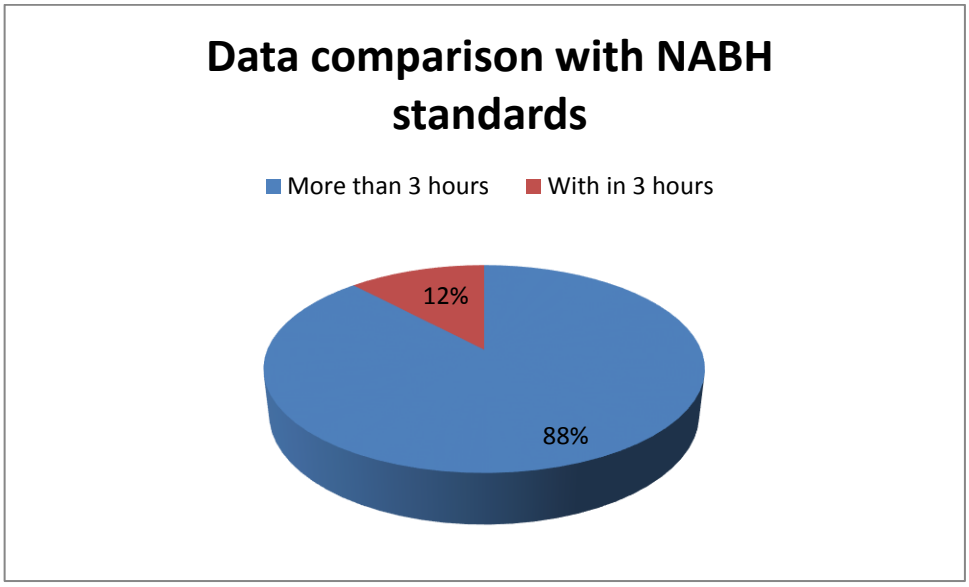
Step1: Physician advices for discharge to file sent for summary counter is **37**minutes.
Step2: Physician advices for discharge to intimation sent (billing sheet) to billing counter is **34**minutes.
Step3: File received from ward to final discharge summary preparation is **56**minutes.
Step4: Billing intimation received to final bill preparation is **72**minutes.
Step5: TPA processing, from Corporate cell to respond of TPA is **113**minutes.
Step6: TPA respond to sending back to billing counter is **15**minutes.
Step7: Billing counter intimates patient party for difference amount bill/ clearance slip is **14**minutes.
Step8: Patient party clears amount bill / collects clearance slip is **14** minutes.
Step9: Patient party clearing bill to physical discharge is **37**minutes.



7.4 DATA INTERPRETATION:

- According to NABH prescribed standards the average Discharge TAT should be **180** minutes i.e **3** hours and NABH does not differentiate between cash, credit, corporate cases, in comparision with NABH standards, out of 152 sample patients, 88% patients discharge process took more than 3 hours whereas 12% patients process was with in 3 hours.

- A pie chart showing comparison between NABH standards with collected data



7.5CONCLUSION:

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Through time motion study the overall average discharge TAT for cash (uninsured) patients was **274** minutes ie.2hours 34 minutes whereas for insured patients discharge TAT was **692** minutes ie. 6 hours 32 minutes. Planning the discharges can reduce the total time of discharge process considerably and also helps in reducing the clearance time by different departments.

An effort should be made to plan as many discharges as possible to enhance the discharge flow process. Day to day process will avoid major consumption of time on the day of discharge. Review of inpatient bill at night and encouraging duty doctors to promote discharge summary indentation will contribute to improvements. The discharge checklist must be regularly monitored to keep a track of all delays and control these immediately.

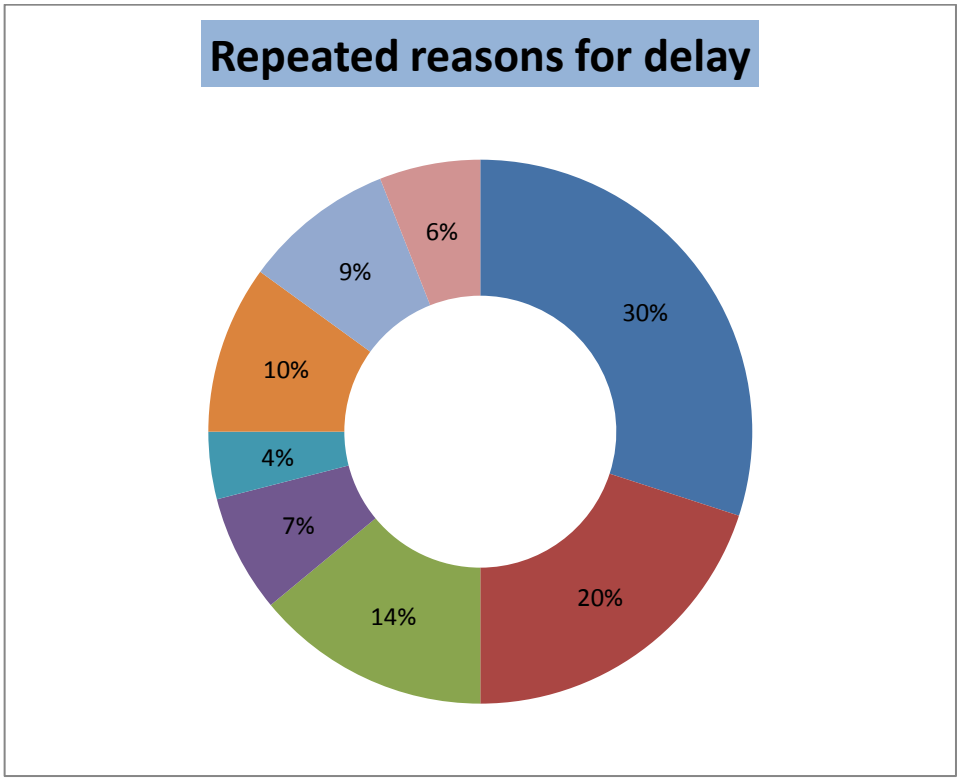
8. REASONS FOR DELAY DISCHARGE:

1. Delay in start of discharge process: Unplanned discharges and unscheduled physician rounds.
2. Movement of files is through shifting staff.
3. Unavailability of doctors for summary corrections and for signature on final D/S.
4. TPA approval and Enquires.
5. Nursing errors in discharge checklist.
6. Physiotherapy/diabetic/warfin teaching unscheduled time.
7. Manual updation in hinai software.
8. During Emergency interventions, incomplete information of extra charges to patient party.

9. Incomplete case sheets / poor handwriting.
10. Lack of intra department communication.
11. Waiting queues in corporate cell and billing counter.
12. Financial constraint of patients.

8.1 DELAYS OFTEN NOTICED

SL no.	DELAYS	Delay in percentage
1	Unplanned discharge and unschedule physician rounds	30%
2	Late summary authorized by doctors	20%
3	TPA approval and enquires	14%
4	Financial constraint of patients	7%
5	Incomplete case sheets / poor handwriting of physician	4%
6	waiting queques in billing counter and corporate cell	10%
7	No proper information of extra charges to patient party	9%
8	others	6%



9. RECOMMENDATIONS:

1. Expected date of discharge / planned discharges should be actively followed expect emergency conditions.
2. For effective admissions and discharge process training should be conducted to all the department staff (Flow charts, checklists).
3. Availability of summary typist in various floors can save movement of files time, and Physician for corrections and signatures.
4. Doctors should completely fill case sheet on day of admission and good hand-written notes should be followed.
5. Inpatient billing should be shifted Inpatient ward floor.
6. A day prior preparation of draft discharge summary should be practiced.
7. Provisional bill / extra charges should be clearly informed 24 hours prior.
8. Sensitizing the attenders availability at all time during discharge process in the hospital.
9. Segmenting corporate cell into 3 areas reduces waiting queues:
   a. Pre-authorization request
   b. Admissions
   c. Discharge
10. Introducing EMR.
11. Floor coordinators should analyze patient needs/ conditions and regularly monitor concerned floor staff and track delays control them immediately.

9.1 DISCHARGE PLANNER FOR FLOOR MANAGERS

PATIENT DETAILS:

Patient Name: Language:
MRN no: DOA:
Admitting Dx: EDOD:
Planned Rx: DOD:

INTRA-DEPARTMENT CHECKLIST:

SL no.	Department	Date and Time	Pending status reasons
1	Reports		
2	OT notes		
3	Draft discharge summary / final discharge summary		
4	Provisional bill / final bill		

PATIENT CHECKLIST:

1. If any, Emergency intervention additional charges: Informed ☐
   *Amount: _____
2. Discharge intimation prior 24 hours to patients:
   *Available patient party: Name: _____ , Mobile :_____
   *Transportation ☐

REMARKS:

Anticipated problems in discharge process Signature of floor manager