

SUMMER TRAINING
AT
KOKILABEN DHIRUBHAI AMBANI HOSPITAL AND MEDICAL
RESEARCH INSTITUTE, MUMBAI.

10.05.2021 TO 02.07.2021

A REPORT
by
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MBA Health & Hospital management

2020-22





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Acknowledgement

This acknowledgment is a gesture of gratitude toward all who were the driving force in the successful completion of the project.

I would like to convey my heartiest gratitude to Kokilaben Dhirubhai Ambani hospital for providing me the opportunity to work and complete my summer training programme in such a reputed organization. It was a good experience and provided an insight on the market situation and the challenges involved in operating hospital.

I am particularly thankful to my mentor – Alok Mathur Sir (Professor at IIHMR University, Jaipur) who had guided me throughout the summer training period.

The project could not have been completed without the guidance of Urvashi Bhasker (Clinical Administration), Laxmi Iyer (HOD- Medical Records Department), Dr Sonali Vadi (Senior Consultant) to whom I am highly indebted for the inputs provided whenever I needed them.

Through this project, I am enlightened to have added so much knowledge and experience from such dignitaries.

Lastly my heartfelt thanks to Almighty for giving me this opportunity and keeping me safe throughout my internship journey from COVID.

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ACRONYMS/ABBREVIATIONS

- ❖ 2D-ECHO: 2-Dimensional Echocardiography
- ❖ HCK: Health check-up
- ❖ MRD: Medical Records Department
- ❖ NABH: National Accreditation Board for Hospital and Healthcare provider
- ❖ NABL: National Accreditation Board for Testing and Calibration Laboratories
- ❖ OPD: Outpatient Department
- ❖ IPD: Inpatient department
- ❖ TAT: Turnaround Time
- ❖ WT: Waiting Time
- ❖ KDAH: Kokilaben Dhirubhai Ambani Hospital.

ABOUT THE SUMMER TRAINING

Indian Institute of Health Management Research (IIHMR) aims at preparing professionally trained managers in hospital and healthcare organisation and giving them a first-hand experience of the hospital system and functioning of the organisation through an eight-week Summer Internship Program at the end of the first year of the MBA course in Hospital and Healthcare Management.

The key objectives for this summer training was to get exposure to the organization and the functions of organization. It would be beneficial to have a greater understanding and knowledge of the hospital/healthcare organization's daily micro-level operational management. Also, it would help to identify the issues / problems associated with any specific operational area and to provide solutions to the identified problems.

I was privileged to undergo my summer training at Kokilaben Dhirubhai Ambani Hospital, Mumbai. I worked under the clinical administration from the period of 10th may,2021 to 2nd July 2021. Through this journey I got exposure to various departments and the operational functioning of the hospital and an in-depth insight of the Radiology Department in particular. I was assigned the project to study the Turnaround time of 2D-ECHO Department under the mentorship of Urvashi Bhasker (Clinical Administration).

CHAPTER 1

ABOUT THE ORGANISATION



ABOUT THE INSTITUTION: One of India's most sophisticated tertiary care facilities, Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute is meant to enhance India's international position as a healthcare centre, with a priority on quality in clinical services, diagnostic facilities, and research. It is the community-based project of the Reliance Group, which is led by Anil Dhirubhai Ambani.

It was inaugurated in January 2009, as a Corporate Social Responsibility initiative by Reliance Anil Dhirubhai Ambani Group. It was established to raise the Global standing of India as a healthcare hub which emphasises on excellence in clinical services, diagnostic facilities and research related activities.

The 750+ bedded hospital encompassing with 105+ full time doctors, 500 nurses and about 200+ ground staff and still growing. It also provides Full time Specialist system round the clock. A perfect blend of leading expertise, state of art architecture, cutting-edge technology and, more significantly, a dedication to offering the greatest services while reforming hospital perceptions and reinventing concept of care.

History : Nitu Mandke , born in 1984 in a middle class family , followed his dreams of becoming a heart surgeon and establishing a large scale heart hospital. He initiated the hospital project in 1999. With great passion , Dr. Mandke built a substantial portion of the hospital but due to a massive heart attack his dream remained unfinished. The Management of Mandke Foundation approached the Reliance Group and they compassionately took the project and made it their own , through the vision of Dr.Mandke. They developed it into the best state of art multispeciality tertiary care hospital in Mumbai and in the honour of the initiator , the hospital's Medical Convention Centre was named in the memory of Dr. Mandke.

VISION

" We aim to be a global healthcare institution that combines the best in medical treatment with strong ethical principles and a culture of care and compassion. " [1]

- Late Shri. Dhirubhai Ambani

MISSION

" To be an institution that offers comprehensive quality healthcare services under one roof through transparent patient-centric care ensuring patient safety, privacy and dignity. An institution where Every Life Indeed Matters. " [2]

VALUES

- Integrity
- Transparency
- Maximum Care
- Self-Improvement
- Patient Dignity
- Social Responsibility
- Patient Safety

KEY STATISTICS

- Spread over 17 storeys and 2 basements, the building has a total area of 10 lakh square feet. Its 'intelligent framework' enables hospital staff to make the most use of available space and resources.
- Over 750 inpatient beds are available, allowing for the most efficient use of resources while ensuring privacy, integrity, comfort, accessibility, and the finest healthcare for each patient.
- With 180 ICU beds, KDAH has the highest number of ICU beds in Mumbai. Ceiling-mounted, dual-arm pendants, which guarantee that the area surrounding the patient is not crowded, are a special technological element in ICUs. Another unique feature is the specialised air supply, which prevents contamination and infection in the critical care area.
- The hospital's movement is handled by 30 elevators, the country's largest elevator bank competent of carrying 7,500 people per hour, with separate elevators for IPD, OPD, employees, and caterers.
- 2 exclusive elevators allow patients to be transferred quickly to Operation Rooms and ICUs.
- The hospital's laboratory has a single level with a total area of nearly 40,000 square feet. It will act as a referral centre for second views and will offer over 3,000 standard & specialized diagnostic, genetic, and molecular biology testing.

TECHNOLOGY

- Da Vinci Surgical System (Robotic Surgery)
- O-armTM Surgical Imaging Systems
- Orthopaedic, ENT and Neuro Navigation Systems
- Armeo Spring is a computer-assisted rehabilitation device that helps people with strokes, brain traumas, and neurological diseases regain their hand and arm mobility.
- Lokomat Pro is a robotic-driven gait orthosis and computer-assisted rehabilitation equipment that helps neurologically disabled individuals walk more effectively.
- EDGETM – the most powerful Stereotactic Radiosurgery tool for cancer treatment
- 3 Tesla MRI
- For patients with cerebral palsy and stroke, there is a Gait and Motion Assessment Lab.
- Aquatic Treadmill for speedy recovery from sports injury.

UNIQUE FEATURES

- With 42 machines, it is Mumbai's biggest dialysis facility.
- Accident and Emergency Department is open 24 hours a day, 7 days a week.
- Number of ICU beds: 180
- Number of OTs: 22
- Number of Paramedics: 300
- 56 Accommodation facility for Patients' Family members and friends.
- Pharmacy with all of the best resources.
- Other services include a prayer hall, a salon & spa, 24-hour pharmacy, a gift shop and a travel desk.

ACCREDITATIONS

- Joint Commission International (JCI) Accreditation, USA
- National Accreditation Board for Hospital and Healthcare Providers (NABH) Accreditation, India
- College of American Pathology (CAP) Accreditation, USA in the year 2013
- National Accreditation Board for Testing and Calibration Laboratories (NABL) Accreditation, India



HOSPITAL INFRASTRUCTURE :

1. Lower Basement

- PET CT
- RADIATION ONCOLOGY
- Biomedical Engineering
- CSSD
- IT Department
- Stereotactic Radio Surgery

2. Upper Basement

- Car Parking
- Mortuary
- Central Security Office

3. Ground Floor

- Accident and Emergency
- Admissions and TPA
- Discharge Billing
- ATM
- Food court
- Gift shop
- Salon & Spa
- Report collection centre
- Pharmacy and Medical hall
- International Patient Lounge

4. Mezzanine Floor

- Administrative Offices

5. First Floor

- Central for Bone & Joint
- General OPD for Centre for Cardiac Sciences
- ECG/Stress/ECHO
- Health Check Program
- Pulmonary Function Laboratory
- Sample Collection
- Radiology Department
- Dental Clinic
- Clinical Administration
- Pre-Operative Evaluation Clinic
- Telemedicine and Telehealth Station

6. Second Floor

- Centre for Brain and Nervous System
- EEG/EMG
- Dialysis
- Diabetology
- Centre for Cancer
- Liver Transplant
- Centre for Children
- Endoscopy theatre Complex
- ENT
- Ophthalmology clinic
- Allergy clinic
- Urodynamics laboratory
- Research
- Urology
- Nephrology

7. Third Floor

- Cardiac and Vascular Catheterization
- Interventional radiology
- ICU 1
- ICU 2
- ICU 3

- PCICU
- PCICU Stepdown
- NCICU
- Operation Theatre complex

8. Fourth Floor

9. Fifth Floor

- Ambulatory surgery
- Day surgery
- ICU 4
- ICU 5
- Refuge area
- Operation Theatre complex

10. Sixth Floor

- Centre for Physical medicine and rehabilitation
- Executive offices
- Gait and motion analysis laboratory
- Pain and palliative care
- Robotics
- Sports Rehabilitation
- Aqua Treadmill
- Convention Centre

11. Seventh Floor

- Assisted Reproductive (IVF)
- Genetics
- Cosmetology and aesthetic surgery
- Blood centre
- Laboratory medicine and pathology
- Chemotherapy
- HRD training

12. Eighth Floor

- Birthing complex (labour and delivery)
- PICU
- NICU
- Inpatient Obstetric
- Operation Theatre- Obstetric

13. Ninth Floor

- IPD wards
- BMT unit

14. Tenth Floor

- ICU 6
- ICU 7
- ICU 8
- Refuge area

15. Eleventh Floor

- General Ward
- Nursing College

16. Twelfth to Sixteenth Floor

- IPD ward

Table I. OBSERVATIONAL LEARNING TABLE:

Serial No.	ACTIVITY	OBJECTIVE	KEY LEARNING
1	Observed the working of admission desk.	To understand the process flow of how a patient gets hospitalized at KDAH.	Learnt about the process flow for IPD patients and what all documents are required at the time of registration
2	Observed the working of MRD department	To understand the process flow of MRD department	Learnt how the files were stored and till what duration the case files were stored of the patients and what all documents are attached in the case file which is stored in the MRD room
3	Observed the working of the radiology department	To understand the department functioning	Learnt what all procedures were being conducted; learnt the process flow of patients; learnt what all new technological advancements have been set up in the department
4	Observed the working of the Emergency department	To understand the process flow of the Emergency department	Learnt how the beds are designated in case of emergency and triage; learnt the process flow of patients; learnt the basic CPR technique; learnt the various codes of the hospital and how they were managed.

CHAPTER 2

PROJECT REPORT

PROJECT TITLE: TO STUDY THE TIME-MOTION OF 2D ECHO DEPARTMENT

INTRODUCTION

An echocardiogram, often known as ECHO, is a type of ultrasound exam that employs high-pitched acoustic signals transmitted through a transducer. As it hovers above different regions of the heart, the device takes up echoes of the sound waves. These rebounds are then converted into moving heart visuals that may be seen on a computer monitor. The time taken for this procedure takes around 30 minutes.

Diagnostic tests like echocardiography are valuable in evaluation of both emergent and life-threatening patients. Timely and accurate diagnosis of patients is required. Thus, it is necessary to take quick steps in management with emphasis in reducing patient waiting time and overall turnaround time.

TAT is defined as the time interval from the time of initiation of a process till the time of the completion of the process. It is one of the major determinants that marks as a tool to analysis the institutions progress growth. It is the time taken from the arrival of the patient till the final report is received by the patient.

TAT for 2D ECHO department is used as a Quality indicator for improvement in services. The purpose of the study was to evaluate the turnaround time for patients undergoing echocardiography and to understand the factors causing the delays in the process According to the hospital protocols, the average time taken for the entire process should be 24hours.

Rationale

The 2D-ECHO department is a busy department with a constant load of patients. The purpose of this study/project is to understand the factors leading up to increased waiting time and total turnaround time (TAT) for the patients coming in the 2-D ECHO department of a super specialty hospital.

Patient contentment, quality of treatment, personnel satisfaction, and eventually hospital profitability will all improve as TAT is reduced.

Research Question

1. What is the TAT Turnaround time involved in the various steps of the process flow of patients getting a 2D-ECHO?

Research Objective

1. To study the process flow of patients getting 2D echocardiography.
2. To calculate the TAT Turnaround time taken in the various steps of the process flow of patients getting 2D echocardiography.

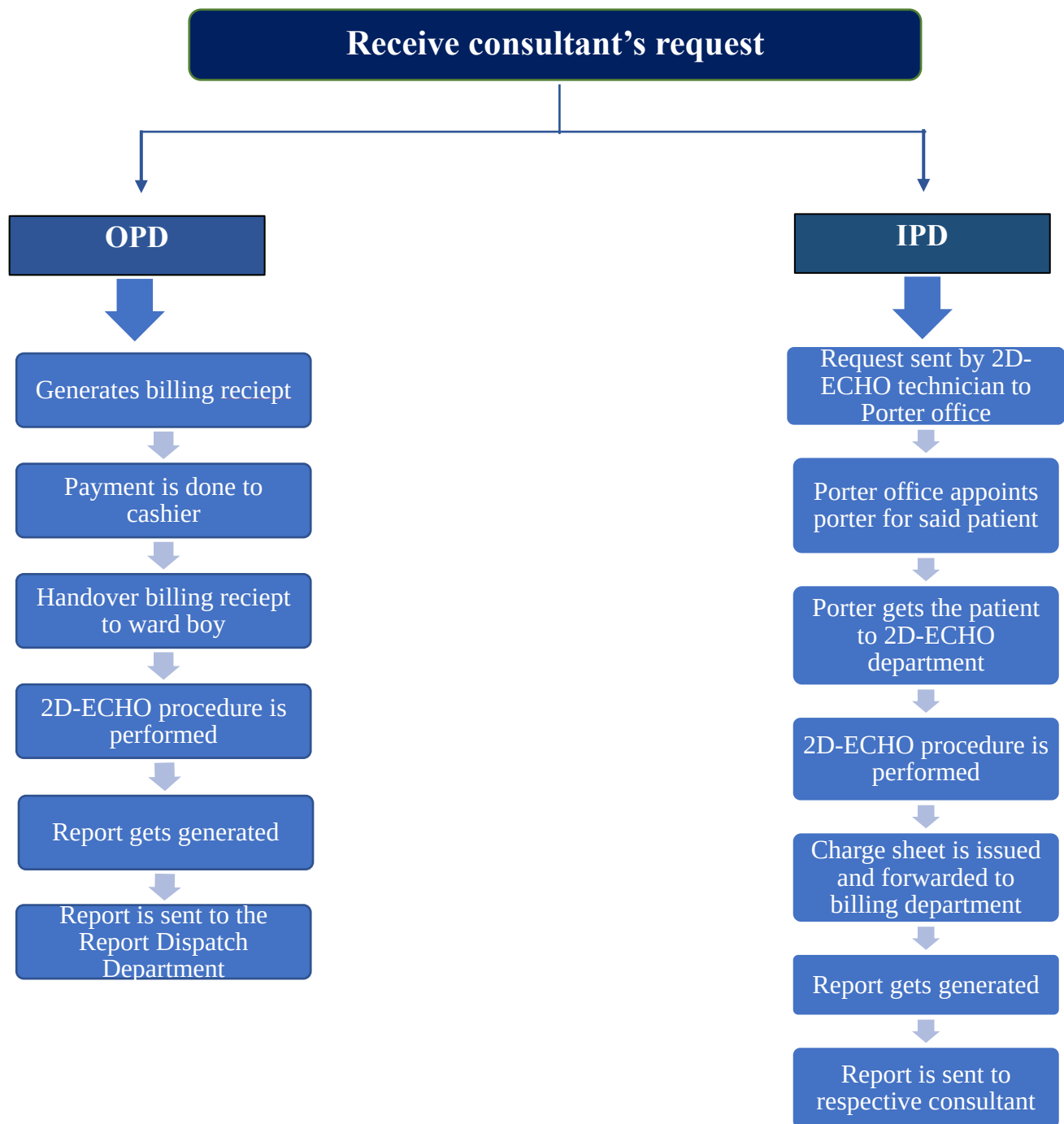
RESEARCH METHODOLOGY

For this study, patients visiting from the Inpatient Department(IPD) and Outpatient department(OPD) were taken into consideration. The data collected is analyzed using the average time taken during each step of the process and graphical representation is done for the same.

- a) **Type of study:** Descriptive study
- b) **Study area:** Data has been collected through observations by doing a time and motion study of patients coming in the 2D-ECHO department which is situated on the first floor of the hospital.
- c) **Inclusion Criteria:** Both IPD and OPD patients
- d) **Exclusion Criteria:** Emergency ward patients were not considered and patients coming for 2D ECHO on Sundays were not included in this study
- e) **Study duration:** The period of data collection was from 15th June 2021 to 21st June 2021. Before the collection and recording of data, an observation period was conducted to study the entire process of 2D ECHO for one week. After learning the process, the study was conducted, and the time taken for the process of 2D ECHO was observed and recorded. The time of each step of the process was noted manually with the help of a tracking sheet. Data was collected for discharge patients taking place in the hospital from wards, resident medical officer, nursing staff, pharmacy department, billing department and Insurance desk.
- f) **Mode of Data Collection:** Observational
- g) **Sample size:** A total of 150 patients were observed from the Inpatient Department (IPD) and Outpatient department (OPD)
- h) **Data collection tool and techniques:** An Observational table was created as a tool to record time using MS-EXCEL sheets, at various steps in the process. Quantitative data like:
 - Patient name
 - UHID: it is a unique identification code given to each patient. Through this all the patient data , history of visits and procedures that have been conducted can be stored within the system and can be accessed by the patient anytime.
 - Type of patient: IPD or OPD

- Appointment time: Time allotted to each patient for the procedure
- Arrival time: It is the time when the patient arrives in the department for the procedure
- Time taken for the procedure: It involves the time the patient entered the room for the procedure and when the patient left the room after the procedure.
- Time taken for the report to be generated.

Figure 2.1. PROCESS FLOWCHART of 2D ECHO department

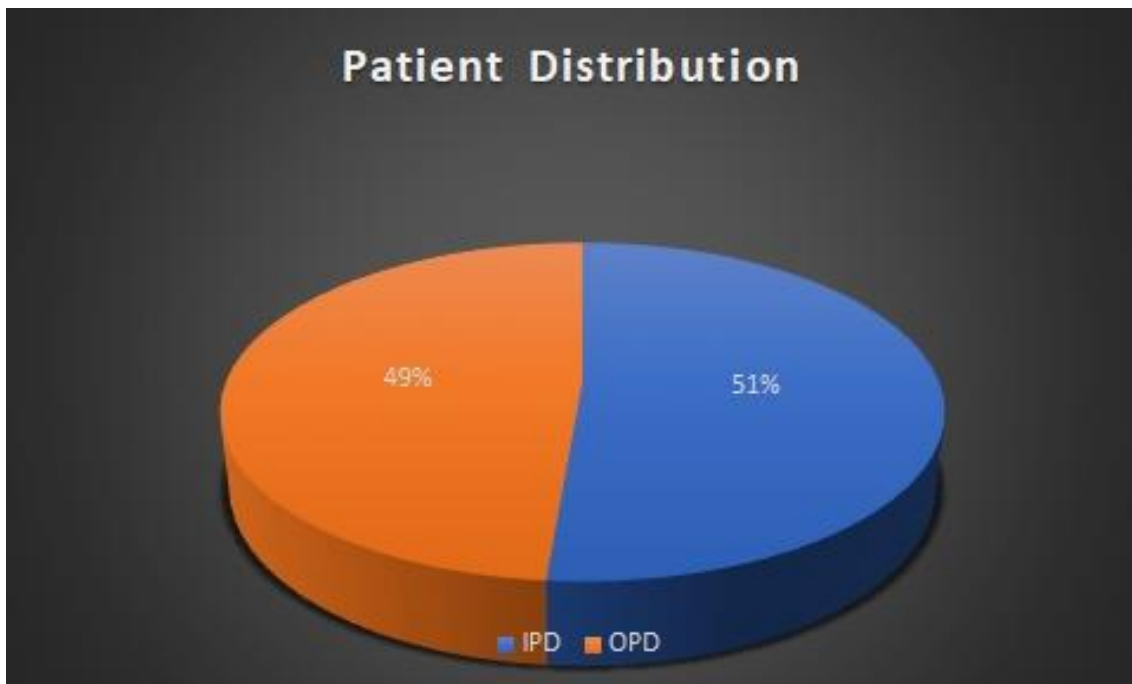


The 2D ECHO department gets patient flow from OPD and IPD department. The process flow is different based on the patient type (OPD/IPD). For an OPD patient, the patient is advised by a consultant to get the procedure done. The patient is first asked to make the payment for the procedure, to generate a billing receipt which is then handed over to the ward boy of the department. The ward boy carries the receipt and makes the entry into the department register. The patient is then asked to wait for their turn. On arrival of the technician team, the procedures are started, and the patient is called into the room. The procedure takes about 30 minutes on an average. Post the procedure the patient is asked to collect their report after 2 days. A provisional report is made by the radiologist which is then approved by the Head of the Department on verification of the details. The final report is then sent to the report collection centre from where the patient receives the report.

For IPD patient, the consulting doctor advises the procedure either on stat purpose or as regular pre-op procedure. In both the procedures, a request is made by the doctor on the hospital server, Techno Purple. The request is then addressed by the technician of the 2D echo department which in turn sends a request to the porter office. This request is made to the co-ordinator of the porter office who then appoints a porter for the said patient. The patient is then carried to the 2D echo department either in a wheelchair or a stretcher based on the condition of the patient. In case, any ongoing procedure is taking place at that time the patient has to wait for their turn. Once the previous procedure ends, the IPD patient is then called inside for their process. After the procedure gets over, a charge sheet is issued and forwarded to the billing department. The porter then carries the patient back to the ward. The reports are made by the radiologist and an intimation is given to the nursing staff on generation of the final report which is collected and handed over to the concerned doctor.

RESULTS

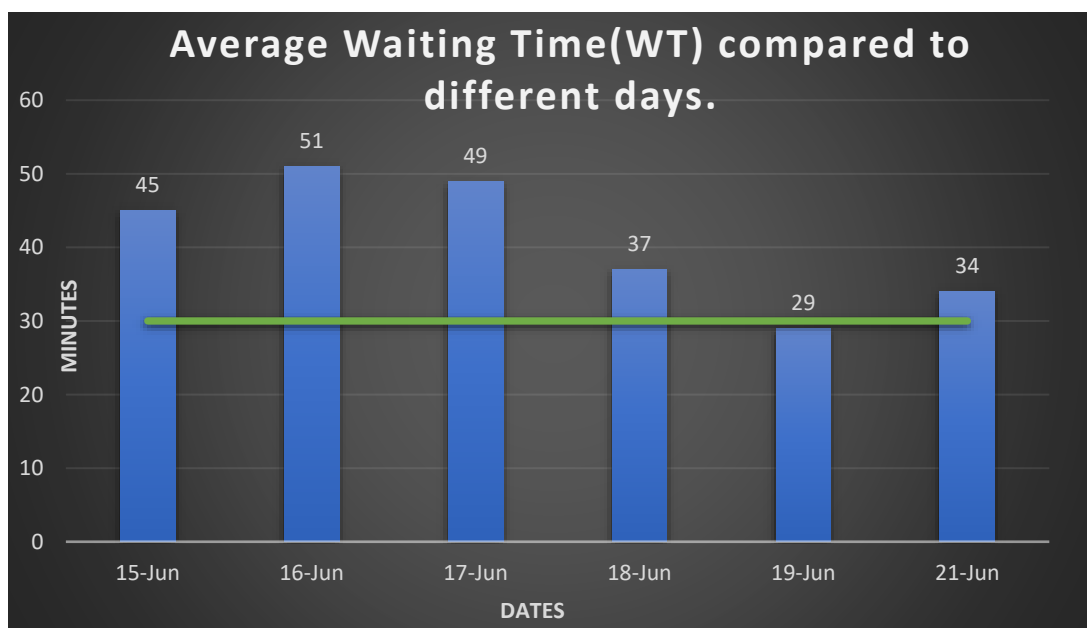
Figure 2.2. Distribution of patients



Interpretation: From the data collected of 150 patients, the highest number of patients recorded are from the in-patient department (IPD) – 51% while 49% were from the Out-patient Department (OPD).

Figure 2.3. Average waiting time of patient

The Waiting Time (WT) for the 2D-ECHO department is the time measured starting from patient's arrival time in the 2D-ECHO department till the start of the 2D-ECHO test.

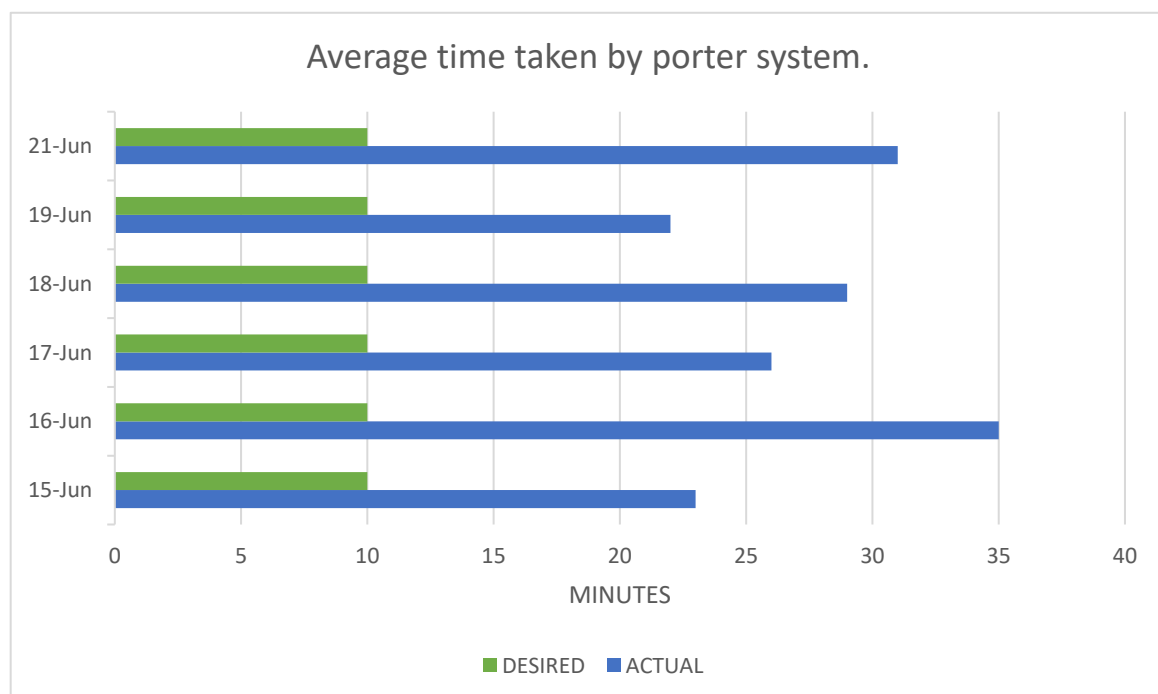


Interpretation:

- The maximum Waiting Time (WT) in the 2D-ECHO department was observed to be 2 hours & 44 minutes.
- The proposed average time taken should be 30 minutes, but the actual average time taken was 41 minutes.
- Waiting time is observed to be high during the start of the week as patient flow is much higher during this period.

Figure 2.4. Porter System

The porter system plays an important role in the total turnaround time of the 2D-ECHO department as they are responsible for bringing the IPD patients to the 2D-ECHO department from their respective rooms/beds. For the porter system to work, a technician from the 2D-ECHO department places a request at the porter office for a specific patient. A porter is then appointed to get this specific patient from his/her room/bed. The longer the porter takes time to get the patient to the 2d-echo department, the longer will be the total turnaround time for the patient.

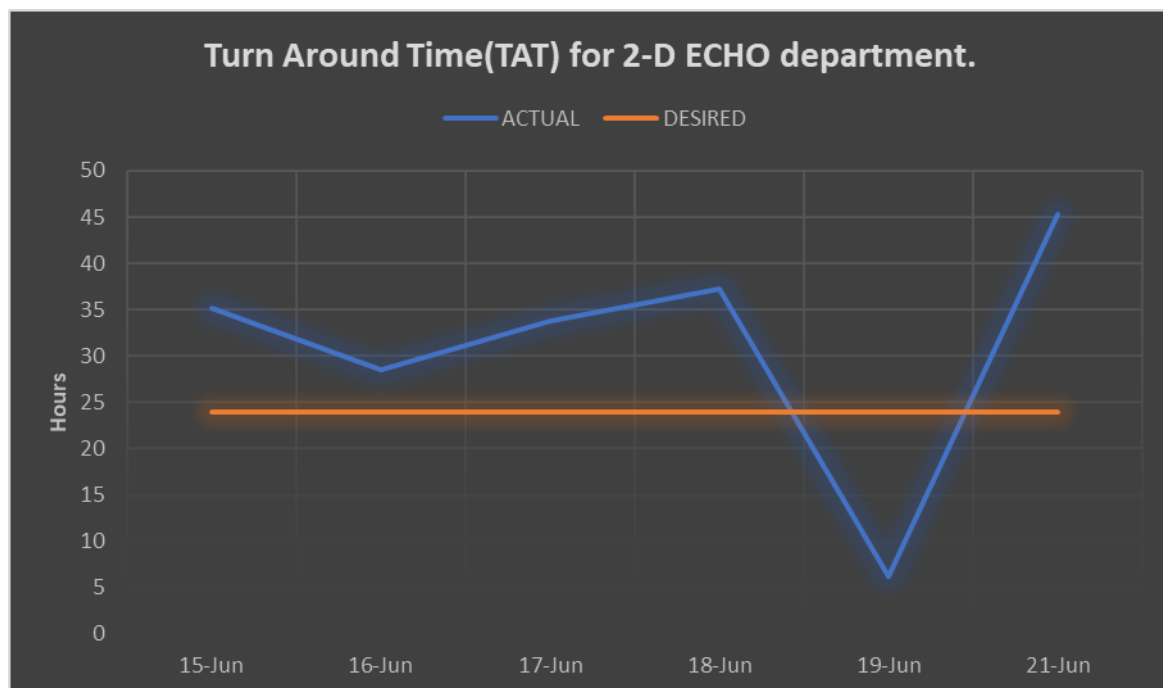


Interpretation:

- The average time taken by the porter to bring a patient to the 2D-ECHO department varies throughout the week depending upon the availability of porters.
- The lowest observed average time taken was 22 minutes, while the highest observed average time taken was 35 minutes which is much higher than the desired average value of around 10 minutes.
- The time taken by the porter system was found out to be a critical factor affecting the waiting time (WT) as well as the turnaround time (TAT) for the 2D-ECHO department.

Figure2.5. Turnaround time (TAT)

The turnaround time (TAT) for the 2D-ECHO department is the time measured starting from the patient's arrival time in the 2D-ECHO department till the time the final report is sent to the Report Dispatch Department.



Interpretation:

- The maximum Turn Around Time (TAT) in the 2D-ECHO department was observed to be 78 hours & 23 minutes, the average for the same was 30 hours & 52 minutes.
- Turn Around Time (TAT) can be significantly reduced if the reports gets typed on the same day and gets dispatched next day in the morning.

FINDINGS

- Although there are 3 2D-ECHO machines in the department, there are only 2 technicians to operate them due to which the department is not working in its full potential.
- The maximum Waiting Time (WT) in the 2D-ECHO department was observed to be 2 hours & 44 minutes, while the average time taken was 41 minutes.
- Walk-in from the Outpatient department (OPD) leads to an increase in Waiting Time for other patients.
- Sometimes queue system is not followed which leads to unjust Waiting Time for other patients.
- Too many patients from In-Patient Department (IPD) are called through porter service at once, increasing the waiting time for such patients.
- Each porter takes around 35 minutes after receiving request from the porter office to get the patient from their respective room/bed to the 2D-ECHO department.
- The maximum Turn Around Time (TAT) in the 2D-ECHO department was observed to be 78 hours & 23 minutes, the average for the same was 30 hours & 52 minutes.
- As there is only one typist to type the reports, workload on the typist is very high. As a result, even when the chief radiologist has authorized a report, the typist types the final report the next day.
- It has been observed that some of the employees showed irregularities and delay in their reporting to the department.

RECOMMENDATIONS

- The lack of technicians and radiologists to perform the test is one major cause of the delay. More number of people can be hired for the same.
- There is no proper queue for OPD patients. A token system should be incorporated and generated on the arrival of the patient to the department.
- Due to mismanagement, 4-5 IPD patients are called in altogether at one point of time, causing increase in the waiting time of each patient. A person must be appointed to co-ordinate IPD patients call time.
- There are 25 porter's available to manage a 750 bedded hospital. This causes an increase in the time taken by the porter service for arrival. Hiring more number of porters can be suggested.
- Turn Around Time (TAT) can be significantly reduced if the reports get typed on the same day and get dispatched the next day in the morning.
- One more person can be hired as a typist, so that the reports can be generated in timely order.
- The procedures should start by 9 am but due to delay of arrival of staff, the procedures begin by 9:30, which causes increase in the waiting time of appointed patients.

CONCLUSION

Through this study to conclude that the 2D-ECHO department is a busy department with constant load of patients from both Inpatient department (IPD) and Outpatient department (OPD), due to which there were some delays in the process due to lack of staff; porter service issues; patient related delays; mismanagement of IPD patients call time; delay in report generation which in turn causes an overall increase in the turnaround time for the patients. Decreasing this time would help to increase patient satisfaction, consequently increasing the quality experience for the patients in the hospital.

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