



DISSERTATION  
At  
CENTRE FOR SIGHT EYE INSTITUTE, DWARKA  
TO ANALYZE AND REDUCE TAT OF OPD FLOORS

BY  
TARU VARSHNEY  
17/20/098

Under the guidance of  
DR. SUKESH BHARDWAJ

PGDM (Hospital & Health Management)

2020-22



International Institute of Health Management Research New Delhi

(Completion of Dissertation from respective organization)

The certificate is awarded to

**Name: TARU VARSHNEY**

In recognition of having successfully completed her Internship in the department of

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**"TO ANALYZE AND REDUCE TAT OF OPD"**

**Date- 4<sup>th</sup> APRIL 2022-04<sup>th</sup> JULY 2022**

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She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish her all the best for future endeavors.

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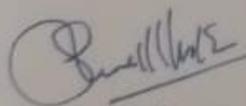
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The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical.

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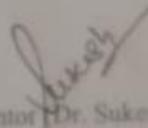
I wish her all success in all his/her future endeavours.



Dr. Sumesh Kumar

Associate Dean, Academic and Student Affairs

IHMR, New Delhi



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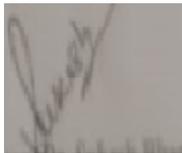
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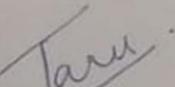
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Area of Dissertation: OPERATION DEPARTMENT

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Objectives achieved: TO ANALYZE AND REDUCE TAT, 100%.

Deliverables: PATIENT JOURNEY TIME REDUCED, ACHIEVE TAT, PATIENT OVERALL  
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2. TEAM WORK      4. EFFECTIVE COMMUNICATION

Suggestions for Improvement:

1. ANALYTICAL SKILLS
2. DOCUMENTATION

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):

1. SHOULD PROVIDE SHORT DURATION DISSERTATION/PROJECT IN BETWEEN  
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DWARKA, New Delhi

SUBJECT- REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT CFSEI

Respected sir,

With due respect this is to inform you that I am pursuing PGDHM(2020-2021) from IIIHMR, New Delhi. I got placed at Centre For Sight Eye Institute as an Operation Management Trainee. Kindly allow me to conduct the research study for dissertation (mandatory academic procedure) from 04<sup>th</sup> April 2022- 04<sup>th</sup> July 2022 on Topic "To reduce TAT of Patient waiting at OPD floors".

During the research I will maintain confidentiality and privacy of health related data of our patients and no patient information will be used in the print and electronic media.

Taru Varshney

Operations Management trainee

1-06-2022

Dr. A.K. Nayak

Medical Superintendent

01/06/22

**Dr. (Col.) A.K. NAYAK (Retd.)**  
Medical Superintendent  
CENTRE FOR SIGHT  
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## ACKNOWLEDGEMENT

Summer training is a golden opportunity for learning and self-development. I consider myself fortunate for having been provided with an opportunity to undergo my summer training at Centre For Sight Eye Institute, Dwarka, New Delhi. In this institute I have had the privilege to get to know many people who generously shared their experiences and knowledge with me. I would like to express my sincere gratitude to Mrs. Vandana Bhulchandani (CENTRE MANAGER) in Operations Department for her continuous guidance, which inspite of being busy with her duties, took time to hear and guide me, gave helpful advice and constructive comments throughout the project. Her valuable inputs made this project possible. I am also very thankful to Ms. Monika Sharma and Ms. Priyansha Saxena (operation executive) for their attention towards my work and helping me, which greatly added to my project. The administrative staffs of the hospital have been very helpful to me and I would like to express my deep gratitude to all.

I would also like to thank my Mentor Dr. Sukesh Bhardwaj for guiding me during my whole dissertation period.

TARU VARSHNEY

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## ABBREVAIATIONS

- CFS- Centre For Sight
- IOL- Intra Ocular Lenses
- NABH- National Accredited Board For Hospital And Healthcare Providers
- RNFL- Retinal Nerve Fiber Layer
- OCT- Optical Coherence Tomography
- FFA- Fundus Florescence Angiography
- HVF- Humprofy Visual Field Analyzer
- PMT- Post Mediatric Test
- FICCI- Federation of Indian Chambers Of Commerce And Industry.
- IPD- Inpatient Department
- OPD- Outpatient Department

## ABSTRACT

The Out Patient Department (OPD) is the first point of contact in the hospital. The care provided in the OPD indicates the quality of care provided and in turn will reflect by the patient satisfaction. Long waiting hours will lead to the patient satisfaction and which ultimately affect the hospital. This study aim is to investigate the total turnaround time of opd patients and will know the loop holes if any. The study is also called the time motion study. Turnaround time for opd department is the total time the patient enters in the hospital till discharge of the patient. According to Baker B, Rochon J. (1989), "Turnaround time is an important parameter that strongly influences patients and staff satisfaction in the emergency department and there are early reports considering this important issue." According to Harshal Lowalekar and N. Ravichandran (2013), the waiting area of the OPD can be extended by using the space currently being used for vehicle parking. This study will help in enumerating and describing the key reasons for delay in discharge process of out -patient department which is a challenge faced by many hospitals, impacting the patient satisfaction and decreasing their footfall. Thus this study will also propose recommendations to implement. It is a Cross sectional descriptive study. Primary data was collected on daily basis with the help of patient co-ordination slip. The study was conducted for three months from April 22 to July 22. Outpatient department of Centre For Sight Eye institute, Dwarka the sample size is 200 patients. Patients with eye Diseases, Only Opd Patients Dilated and Non- Dilated Both, Only Appointments Patients. Daily review of Patient Co-ordination Slip. The MS-Excel tool was used to analyse the result. Average time duration of procedure undergoing for opd patients. Will the average time below or above the Benchmark? If above, what will the interventions to reduce the waiting hours. Patient safety and confidentiality will not be compromised during study. The study will be submitted for ethical review to the IIHMR student research review board. The tool and study protocol will be cleared through this committee.

## PART A- ORGANIZATIONAL LEARNING

### CENTRE FOR SIGHT EYE INSTITUTE, DWARKA

#### INTRODUCTION

Established in 1996 by Dr. Mahipal S. Sachdev, an eminent ophthalmologist, and Padma Shri awardee, Centre for Sight (CFS) is a leading eye care provider in India. Centre for Sight is the pioneer in high-quality vision care for over two decades. Driven by the mission to provide the best eye care to all, it is registered in many states under the Nursing Home Act by the Directorate General of Health Services. It is on the panel of many reputed public sector undertakings, corporates, and TPAs.



modern ophthalmic treatments to its patients. It is

Centre for Sight offers the entire range of modern ophthalmic treatments to its patients. It is registered in many states under the Nursing Home Act by the Directorate General of Health Services. Centre for Sight has its eye bank at Preet Vihar, Delhi.

Centre for Sight won the prestigious Frost & Sullivan award as the eyecare provider company of the year 2010 & 2014, an affirmation of its values. It was awarded the prestigious FICCI Healthcare Excellence award for operational excellence in 2012. CFS also won the ET Now Leaders of Tomorrow award for business Excellence in 2014. It also received the “Best Single Speciality Hospital Chain 2016” at Business world’s 3rd Healthcare Summit & Awards.

CFS Group of hospitals chairman & MD, Dr. Mahipal S Sachdev, received a lifetime achievement award at Times Health Achiever Delhi NCR 2017. Also, the hospital was awarded the best single specialty hospital in the same conclave. These awards are recognition of our committed efforts to make eye care a super specialty in India.

#### ABOUT CENTRE FOR SIGHT DWARKA

Centre for Sight eye institute, Dwarka, is the largest private comprehensive super speciality eye institute in north India, a one-stop solution for eye-related diseases, and problems. With cutting edge eye care technologies and infrastructure facilities, CFS stands apart. It strives to offer comprehensive treatments, surgical and diagnostic services, including an array of internationally approved ocular specialities.

- It is spread over an area of 90,000 sq. ft.
- It has 6 floors with 17 examination chambers
- It houses more than 20 consultation chambers
- It has 9 state-of-the-art and technologically advanced modular operation theatres

### AWARDS AND ACCREDIATION

- Padmashree awarded to Dr. Mahipal Sachdev in year 2007.
- Times Healthcare Achiever's Award for Best Single Specialty Hospital in 2017.
- Trusted Hospital Award by Reader's Digest Summit in 2018.
- Best Eye Care Hospital of North India 2019 & 2020 by "THE WEEK Hansa Research Survey"
- Best Healthcare Brands by "The Economic Times 2021"

### OBSERVATIONAL LEARNING

VISION- To establish the most preferred brand of Super Specialized world class eye care facilities in and around India by 2025.

MISSION- Centre for Sight is committed to deliver best quality care with personalized touch and cutting edge technology, to enhance patient satisfaction and provide continual improvement in our services.

VALUES- Guided by patient centric values of efficiency, precision, compassion & integrity.

#### QUALITY POLICY

- To provide quality of care that exceeds the patient's expectations.
- To adhere to operational protocols of institute, in order to reduce errors and enhance patient safety.
- To comply with all statutory and regulatory requirements.
- To promote on the job training to improve skills and competence of the staff.
- To ensure health and safety of the staff members.

## SCOPE OF SERVICES

TABLE 1.

Anesthesiology	Orbit Surgery
Ophthalmic Emergency (During Working Hours Only)	Ocular Oncology
Comprehensive Ophthalmic Services	Cornea Services
Cataract Services	Refractive Services
Glaucoma Services	Uvea Services
Vitreo Retina Services	Squint Services
Oculoplasty & Reconstructive Surgery	Optical
Pediatric Ophthalmology	Pharmacy

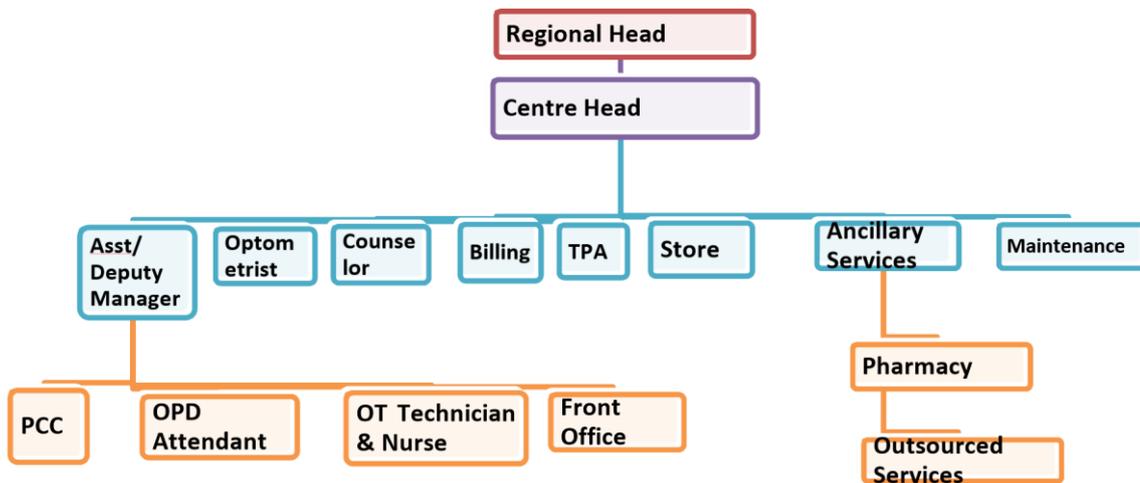
## DIAGNOSTIC SERVICES

TABLE 2.

A Scan Biometry	Gonioscopy
IOL Master Biometry	Keratoconus Work Up
OCT	Humphrey Field Analyzer
Fundus Fluorescein Angiography	Auto –Refractometry
Fundus Photography	Diplopia Charting
Keratometry	Squint Work Up
Pachymetry	Anterior Segment photography
Corneal Topography/ Sirius (Corneal work up)	Specular Microscopy
Tonometry	Contact lens/soft lens work up

CFSEI – HIERARCHY

FIG1



MAN-POWER DETAILS

TABLE 3.

CATEGORY OF STAFF	NO'S
CONSULTANT (FULL TIME)	19
VISITING CONSULTANT	0
ANASTHESIA CONSULTANT(VISITING )	2
NURSE	4
SUPPORT STAFF	19
PHARMACIST	4
OPTOMETRIST	17
MANAGERIAL	4

TOTAL	62
-------	----

### OUT-SOURCED SERVICES AT CENTRE FOR SIGHT

- Security: Tiger Security Services
- Emergency & Ambulance: Manipal Hospital & Ayushman Hospital, Dwarka, New Delhi
- Laundry: Amit Laundry & Dry Cleaners

### DEPARTMENT WISE OVERSERVATIONS (OPERATION)

I have been placed as an operation management trainee at Centre for Sight Eye Institute. In the department I have learnt about the basic of the operations.

- Learnt about the staff management which include Doctors, Front desk, opd attendants, Counsellors and Optometrist.
- Block management of Doctors at HMIS system
- Managing appointments of Doctors at daily basis.
- Rescheduling the appointments as per the Doctors on Leave, OT and emergency cases in IPD.
- Have brief knowledge of the working of Front desk, Floors, Diagnosis, and Pharmacy, Counselling department, optometrist and IPD.
- Daily Operational Report.
- Work on the MRD audit of the patients.
- Work on the clinical audit of the patients.
- NABH Accreditation.
- I have learnt about the admission process and discharge process of the patients.

### MANAGEMENT TEAM

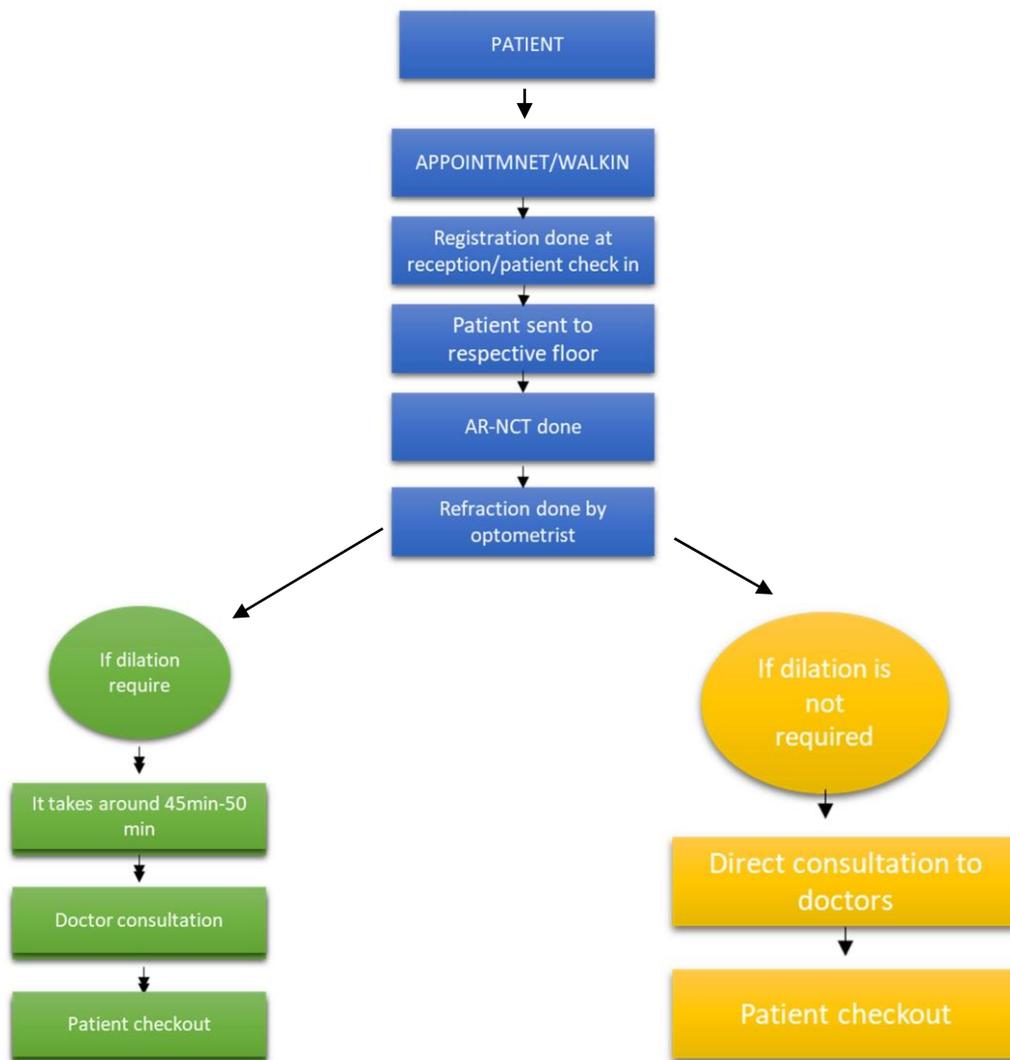
TABLE 4.

Sno	Name of the Employee	Designation
1.	Vandana Bhulchandani	Manager
2.	Monika Sharma	Executive

3	Priyansha Saxena	Executive
4	Narender Singh	PCC
5.	Taru Varshney	Management Trainee

PATIENT FLOW

FIG2



PART B- RESEARCH REPORT

## TO ANALYZE AND REDUCE THE TAT OF OPD FLOORS

### INTRODUCTION

We have seen that how the healthcare market is growing at very fast pace. To provide a satisfaction to a patient, it is much needed to provide the right information about the procedures and the expected time to complete those procedures. These procedures include initial workup, consultation and diagnosis. This information usually satisfies the patients instead of long waiting hours.

The main aim of the Time motion study to determine the time standards for the efficient operations of the hospital. If there is some standard and accurate time, the hospital might give best outputs. The hospital can best utilize their equipment's and obtain optimum utilization of the workforce.

To get the patient satisfaction and optimum output, there should not be long waiting hours. This study will tell the Turn-around time of dilated and not dilated patients of Centre For sight Eye Institute. If we talk about the TURN AROUND TIME (TAT), it is the standard time in which an operator is allowed to carry out the specified task under the specified conditions.

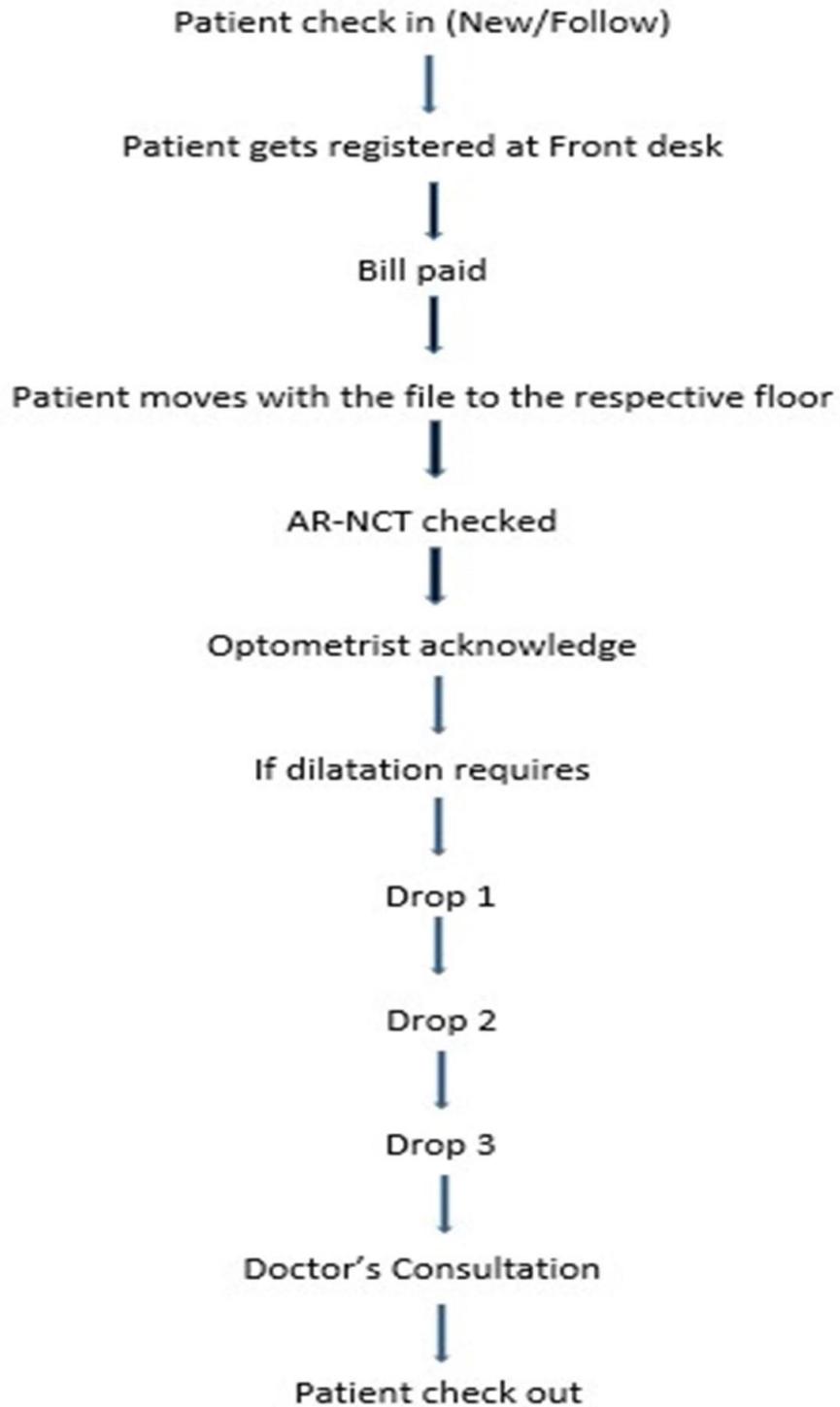
### OUTPATIENT DEPARTMENT

The Out Patient Department (OPD) is the first interaction in the hospital. OPD care in the hospital reflects the quality of the hospital. Long waiting hours will lead to the patient satisfaction and which ultimately affect the hospital. This 3 months study will find out the patient journey analysis. The study is also called the time motion study. The Outpatient Department provides the care and diagnosis that does not require for a patient to overstay at night. To make the hospital output effective, it is much needed that the OPD of the hospital must be qualitative and time effective. It is because patient spent 50-60% of his time at OPD. If I will talk about CFSEI, there are two opd floors. The patient flow at both the floor is same. But the diagnostic procedures are different at both the floors. This is the very reason that there are many cues at second floor in comparison to first floor.

The opd procedure includes-AR-NCT, REFRACTION, DILATION, DOCTOR CONSULTATION, DIAGNOSTICS, COUNSELLING, PMT.

Out Patient Department Flow chart for dilated patient at Centre for Sight FIG3

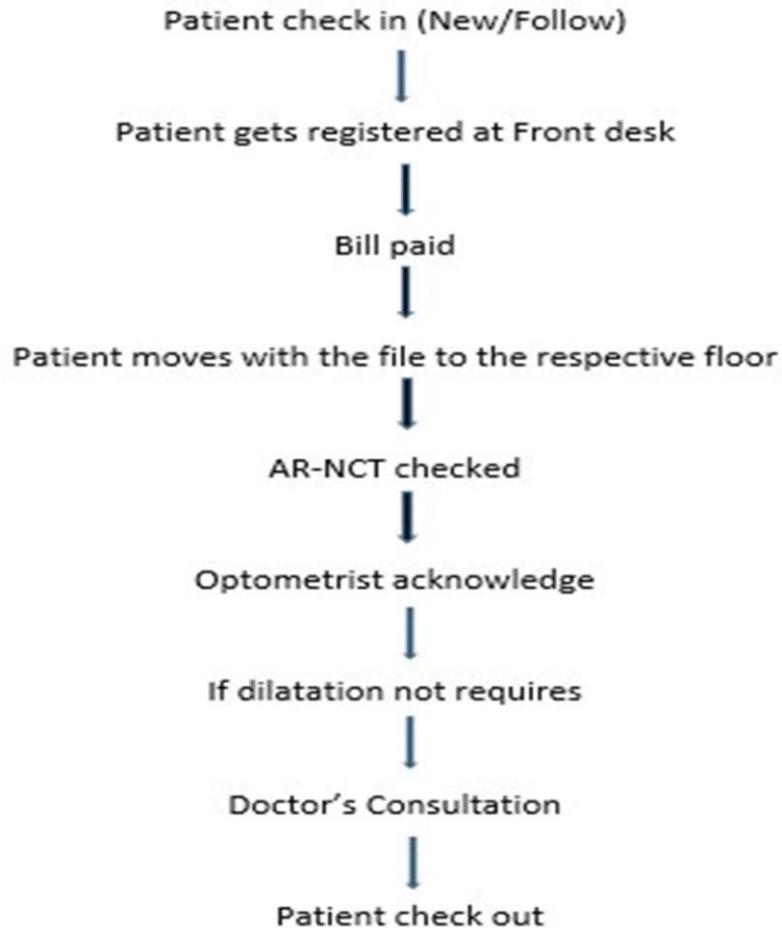
### Patient-Journey Flowchart-Dilated patient



Outpatient department flow chart for non- dilated patient.

FIG4

### Patient-Journey Flowchart- Non-Dilated patient



### RATIONALE

This study will help in describing the key reasons for delay in discharge process of out -patient department which is a major challenge faced by many hospitals which ultimately results in patient dis-satisfaction and decreasing their footfall. Thus this study will also propose recommendations for the better operations. Six- sigma Methodology would help in reducing the turn- around/ waiting time of patients.

## OBJECTIVE

- To learn about the process flow in OPD
- To find out the TAT of dilated patients in OPD.
- To determine the TAT of Non-dilated patients in OPD.
- To put the recommendations to reduce the long waiting hours.

## LITREATURE REVIEWS

1. Study on Turnaround time of Outpatient Billing services at Super speciality Hospital/Ayanabakkam- Chennai, Vigneshwaran S, Mrs. Bhooma Devi. In this study, time and motion both the study has been taken and has been used together to achieve the common results. Through this study we can calculate the estimate waiting time in billing department and can provide the effective way to improve the efficiency of the departments. The main objective of the study is to find out the process flow of the outpatient department and carry out the waiting time and patient satisfaction in the process. The study used 122 sample and used histogram, control chart and Pareto and cause and effect tool to analyses the problem. The major causes for delaying in billing were phone enquiry from other departments, patient prescription, Electronic Data Capture (EDC) machine and the cashier is slow.
2. Determinants of patient waiting time in General Outpatient Department of a Territory Health Institution in North Western Nigeria, MO Oche, H Adamu- This is a descriptive cross- sectional study which was carried out at the Nigeria. The study is being done on 100 patients. A structured questionnaire was used and convenience sampling method has been taken. The data collected and entered and then analyzed using Stastical Package for Social Sciences.
3. A Time motion study to evaluate the average waiting time in OPD with reference to patient satisfaction in the setting of State Level AYUSH hospital (India), Farah Naaz, Idris Mohammed- this study conducted among the 100 patients in AYUSH Hospital. This study is about the average waiting time of the patient and their satisfaction level. The study was conducted for 15 days. According to the findings, the patients spent 2 hours in OPD after the arrival to the hospital. The maximum time delay in the study was at the doctor consultation and at the pharmacy. The patients were least satisfied with the OPD waiting timing.
4. A study on waiting time at the Outpatient Department of Private Secondary care Hospital, Bharathi Thiyagarajan- the study depicts that Time motion study is the combination of time study work and motion study work .Motion study tells the best way to complete the job and Time study will tell how long will it take to an average worker to complete the task. These two studies are now integrated and are usually done for the improvement and upgrading of work.

5. To identify caregiver's perceptions of reasons for patient journey delay at MoffittLong Hospital, Cristina Masello, Andrew D. Aurebach, Robert M. Watcher-  
Inadequate communication between optometrists, hence files gets pile up at ARNCT process where it is more likely to attribute in patient waiting. Non-availability of staff also causes delay in patient waiting. According to the caregivers at the hospital, there are different reasons for patient delaying in check-up. To reduce patient journey TAT, there should be proper communication among the staff of the hospital and traditional morning routines should be reexamined.
- 6- A study on turnaround time as an indicator to improve Laboratory Efficiency, Dr. Mekala Jaya Krishna, Dr. KV Sandeep, Dr. Anuradha- Tat is often used as a Key Performance Indicator in Laboratory. Timely reporting of the laboratory test results would increase in patient satisfaction and early discharge of the patients too. The study is being done for 3 months and the sample is collected for all the three departments OPD, IPD and emergency. In this study, various reasons of delay have also been described.
- 7- Laboratory turnaround time for Biochemistry Investigations In emergency Departments of a Tertiary Care Hospital Of North India, Zaffar N, Rashid H, Hussain S, Hakeem A- the study is to calculate the turnaround time for biochemical investigations from accidents and emergency departments of Tertiary care hospitals. In this study, the percentage of pre-analytical, analytical and post- analytical phases has been found out. Total 7515 samples were evaluated in which the Tat of pre analytical phase was highest. Although get the efficient result, still the pre-analytical phase causes the most delay.
- 8- Assessment of patient waiting time in Radiology Department (X-ray) in Avbrh Hospital, Sawangi (M), Wardha, Shivam Bahe, and Deepika Kanyal- It is a prospective cross sectional study research, it is an questionnaire based survey which main objective was to assess the patient waiting time in the radiology department, the expected outcome that the waiting time should be the less and the outcome is effective as it should not cause patient dissatisfaction.

## RESEARCH METHODS

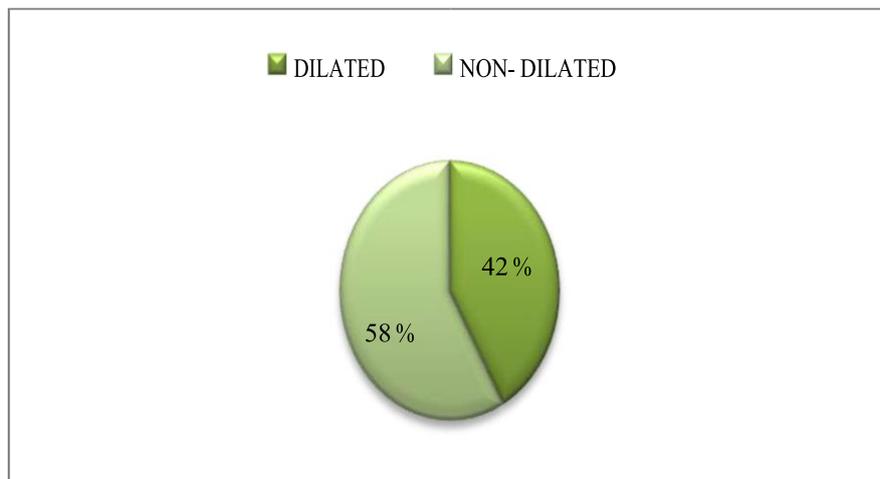
- 1- STUDY DESIGN- The study is an observational study with an objective of understanding of reducing turnaround time in outpatient departments. The literature was searched through the Google Scholar and PubMed to obtain relevant study using the combination of following terms, "TAT", "WAITING TIME", HOSPITAL MANAGEMNET, OUTPATIENT DEPARTMENTS and SIXSIGMA PROTOCOLS.
- 2- STUDY AREA- the study has been done in the Outpatient Department of CFSEI, Dwarka, First and second floors.
- 3- STUDY POPULATION- The study population includes all the appointments patients. Both categories of Patients, dilated and not-dilated includes in the study.

- 4- STUDY PERIOD- The study has been conducted for three months from April 2022 to July 2022.
- 5- SAMPLE SIZE- The study is conducted among 203 patients. Daily 6 to 8 samples are collected for study for 1 month (April).
- 6- DATA SOURCE- collects the primary data with the help of Patient co-ordination slip.
- 7- DATA ANALYSIS- MS- EXCEL

### RESULTS

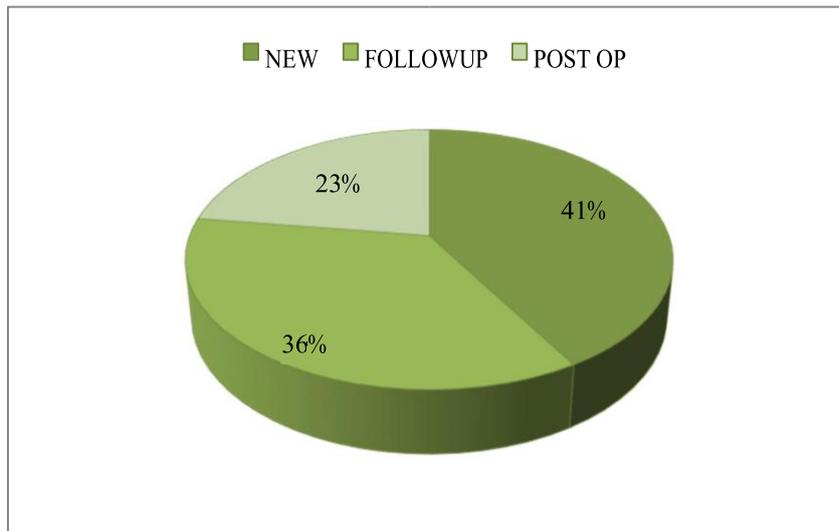
Present study was conducted among the 203 dilated and non-dilated patients. Among which 42% patients are dilated and 58 % are non –dilated

Figure 5. Pie chart showing percentage of dilated and Non-dilated patients.



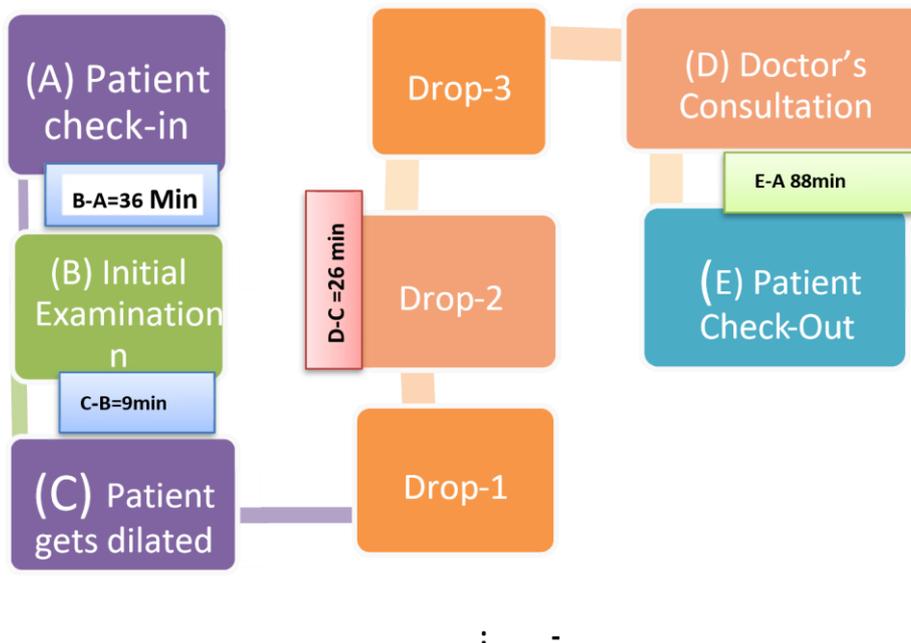
There are three types of patients visit at Eye institute. These are new patients, follow-up patients and Post-operative patients. The post-operative patients might be 1 day, 1 week, 2 week and 3 week patients. Among our study, there is 41% new patient (84), 36% follow up patient (72) and 23% Post-operative patients (46).

Figure 6. Showing percentage of new, follow-up and post-operative patients.

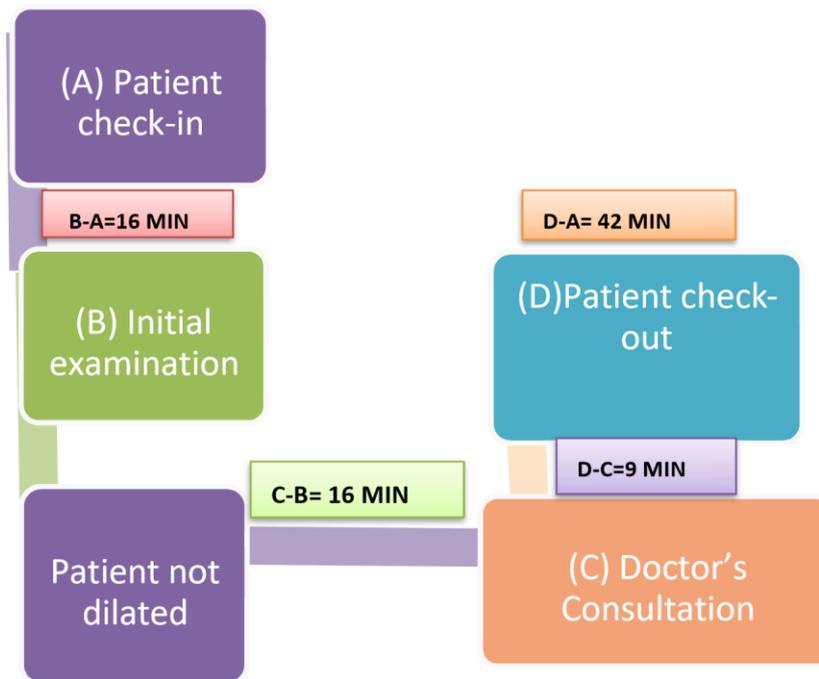


OBJECTIVE 1- to study the process flow in OPD

Patient Journey TAT: Dilated Patients (FIG7)



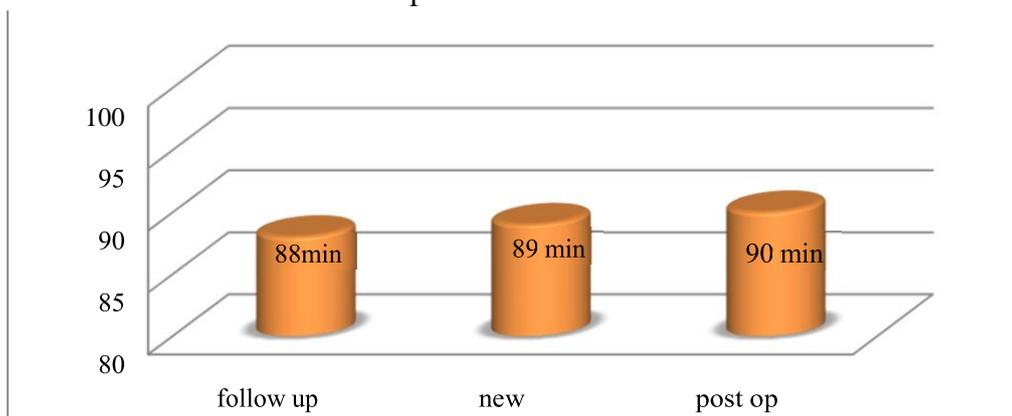
### Patient Journey TAT: Non-dilated patient



OBJECTIVE 2- to determine TAT of dilated patients.

Figure 9. Depicts the average time of New, follow up and post-Operative patients. Among 42% of dilated patients there are 38% of follow up patients, 48% of new patients and 11% of postoperative patients. The average time of all these patients is almost same.

Figure9. Showing average time among new patient, follow-up patient and post-operative dilated patients.



OBJECTIVE 3- to determine TAT of non- dilated patients

Figure 10. Depicts the average time of New, Follow-up and Post-operative non- dilated patients. Among 58% of Non- dilated patients, 33% are follow-up patients, 36% are new patients and 30% are post- operative patients. Average turnaround of New and follow-up patients are same and minor difference in Post-operative patients.

Figure10. Showing average time of new, follow-up and post-operative non-dilated patients.

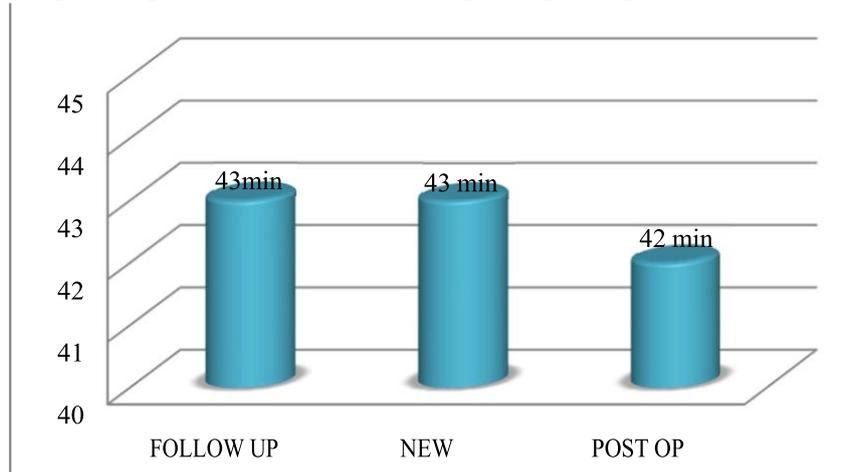
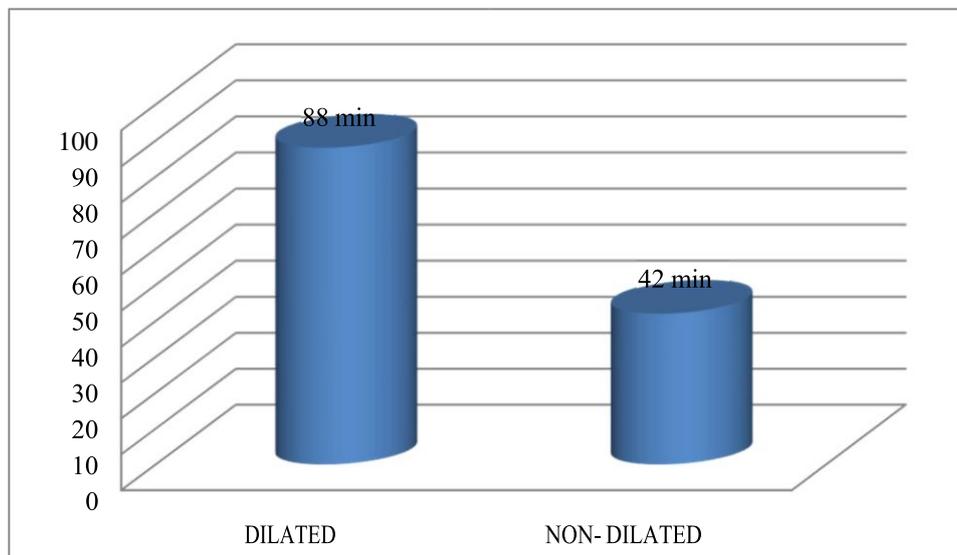


Figure11. Showing the average time of dilated and non- dilated patients. Dilated patients usually take extra 45 minutes to discharge.

Figure11. Average time of dilated and non-dilated patients.



## OBSERVATION

Based on the study, it has been observed that the average time of both dilated and no dilated patients are within the benchmark. The benchmark for non-dilated patients is 45 minutes and the benchmark for dilated patients is 90 minutes. Apart from this it has been observed that most of the patients have to wait for too long in the hospital. The time varies according to the chief complaints and the procedure. Whereas there are certain other

Findings which lead to time lag of the patients.

TABLE 5

1.	File lying for approx. 20 minutes, before sending to Optometrist Room.
(i)	Staff absent at Ar-Nct area, especially during lunch hours (around 1 pm to 3 pm).
(ii)	Wait time for files increases for all rounds to complete the procedure.
(iii)	Attendant takes time to dilate the patients when advised due to heavy rush of walk-in patients.
2.	Time taken for doctor consultation : 1.5 hours- 2hours
(i)	Doctors are late due to extended OT case.
(ii)	Stacking of files in file holder rack.
(iii)	No segregation for received files.
(iv)	Doctor emergency case added to OT, hence increasing the patient waiting for 20-30 minutes.

### 3. Errors on blue-slips- 10-15 min

- (i) Patient coordination slip printed twice when doctor is changed.

### 4. Diagnostics

- (i) Many appointments at the same time of different procedures.
- (ii) Unavailability of patients, miscommunication between staff.
- (iii) Procedure like lasers, FFA, Yag Cap, Yag Pi etc. takes time.

### 5.HMIS (HOSPITAL MANAGEMENT INFORMATION SYSTEM)

- (i) Interruption at information software hence increasing the patient waiting.

## RECOMMENDATIONS

TABLE 6

### 1.Proper availability of staff

- (i) Proper deployment of staff at the respective floor, as per doctors availability.
- (ii) Doctors OT should be properly planned.

### 2. Appointment

- (i) Appointment patient should be the priority.

### 3. Minimize Physical Movement Of file

- (i) Patient details should be checked twice before billed.

### LIMITATIONS

TABLE 7

Study Performed	
(i)	Study period is only of Three months.
(ii)	Only Dilated and Non-dilated patients were considered for this study.
(iii)	The study focuses only on the (OPD) Out Patient Department of only two floors of CFSEL.

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## ANNEXURE –I

### PATIENT CO-ORDINATION SLIP

HYPERSENTITIVE	DIABETIC	VULNERABLE	OTHERS
UHID	DOCTORS NAME		
PATIENT NAME	PAYER NAME		
AMOUNT	PURPOSE		
AGE/GENDER			

DATE/SIGN	REGISTRATION/CONSULTATION (HH:MM)	INITIAL EXAM OPHTHALMOLOGIST/ OPTOMETRIST(HH:MM)	DILATION (HH:MM)
			TROPICAMIDE  CYCLOPENTOLATE  HOMATROPINE  OTHERS_

DATE/SIGN	EXAMINE BY CONSULTANT(HH:MM)	COUNSELLING OTHER PROCEDURE (HH:MM)	PRESCRIPTION HANDED OVER/CHECKOUT (HH:MM)

PROCEDURE ADVICE	TENTATIVE TIME FRAME FOR SURGERY				FEMTO	PREMIUM IOL	COMMENTS
	1 MONTH	1-3 MONTHS	>3 MONTHS	NOT INTRESTED			

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Print date and time

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