

REDUCING PATIENT WAITING TIME: A COMPREHENSIVE ANALYSIS OF OPD TURNAROUND TIME

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

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Under the Supervision and Guidance of

Dr. Mamta Chauhan

2025



ETERNAL HOSPITAL *Sanganer*



CERTIFICATE

This is to certify that Ms. Shruti Kondekar in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her internship at Eternal Hospital Sanganer during 10th March 2025 to 6th May 2025.

Place: *Jaipur*

Date: *31st May 2025*

Preceptor/Head of the Organization

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Date : 09/06/2025

To whomsoever it may concern

Internship certificate

This is to certify that, Ms Shruti Bhalchandra Kondekar has successfully completed internship in our organization from 08th May 2025 to 08th June 2025 in operation department.

During the tenure she has undergone training in operation department as an intern. We found her sincere and hardworking. We wish her success in her future endeavor.

For Ushahkal Abhinav Speciality Hospital LLP


Mr Achyut Pujari
Senior Manager- HR



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CERTIFICATE

This is to certify that dissertation titled. "**Reducing Patient Waiting Time: A Comprehensive Analysis of OPD Turnaround Time**" is a record of the research work undertaken by Ms. Shruti B. kondekar in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

A handwritten signature in blue ink, appearing to read 'Mamta'.

Dr Mamta Chauhan
Faculty Guide
IIHMR University, Jaipur

Date:19/06/2025

A handwritten signature in blue ink, appearing to read 'Sanjay'.

Dr. Sanjay Gupta
School Dean
IIHMR University, Jaipur

Date:19/06/2025

DECLARATION BY STUDENT

I hereby declare that this dissertation, titled “**Reducing Patient Waiting Time: A Comprehensive Analysis of OPD Turnaround Time**” is the Bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



(Signature)

Name of Student *Shwanti Kondekar*

Date: *20/6/25*

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LIST OF ABBREVIATIONS

Sr. No	Abbreviation	Meaning
1	OP	Out Patient
2	OPD	Out Patient Department
3	COO	Chief Operating Officer
4	HOD	Head Of Department
5	HIMS	Hospital Information Management System
6	HIS	Hospital Information System
7	NABH	National Accreditation Board for Hospitals & Healthcare Providers
8	PPE	Personal Protective Equipment
9	PPT	Personal Thromboplastin Time
10	TAT	Turn Around Time
11	RWT	Registration Waiting Time
12	AWT	Assessment Waiting Time
13	CWT	Consultation Waiting Time
14	CD	Consultation Duration
15	MS	Microsoft
16	Ms-Excel	Microsoft Excel

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Ms. Shruti Kondekar

ABSTRACT

The Outpatient Department (OPD) is a vital link between hospitals and the community, delivering essential healthcare services. However, prolonged waiting times and inefficient patient flow often undermine patient satisfaction and service quality. This study, titled “Reducing Patient Waiting Time: A Comprehensive Analysis of OPD Turnaround Time,” was conducted at Eternal Hospital, Jaipur, to pinpoint operational inefficiencies and propose improvements for OPD processes.

Spanning eight weeks (March 10 to May 6, 2025), the study employed a descriptive, cross-sectional observational approach. A sample of 200 patients was selected from four departments—Internal Medicine, Obstetrics & Gynecology, Cardiology, and Neuromedicine—using non-probability purposive sampling. Key time metrics, including entry, registration, consultation waiting, and consultation duration, were recorded to determine the total OPD Turnaround Time (TAT).

Findings highlighted significant delays, particularly in the consultation waiting phase, with Obstetrics & Gynecology exhibiting the longest average waiting times, followed by Cardiology. Key contributors to delays included overcrowded registration areas, inadequate queue management, delayed doctor availability, and patients missing their consultation calls.

The study proposes actionable solutions such as adopting digital token systems, optimizing physician schedules, enhancing patient communication, and streamlining registration processes. These measures aim to reduce waiting times, improve patient satisfaction, and enhance the overall efficiency of OPD services.

1. INTRODUCTION

The Outpatient Department (OPD) plays a critical role in delivering healthcare services, providing essential medical care to patients without requiring overnight hospital stays. However, one of the significant challenges faced by OPDs is the issue of waiting time. Prolonged waiting times have been linked to patient dissatisfaction, reduced compliance, and negative healthcare outcomes.

In this study, the OPD is defined as the hospital's department where patients received diagnoses and/or treatment but did not stay overnight. Patients spend substantial amount of time in the clinics, waiting for the services to be delivered by physicians and other allied health professionals. The degree to which health consumers are satisfied with the care received is strongly related to the quality of the waiting experience.

Prolonged waiting periods are prevalent in healthcare systems worldwide, in both developed and developing countries, and are often a major source of frustration for patients. Improving waiting times for outpatients is thus a vital priority for enhancing healthcare delivery.

Patient satisfaction serves as a vital indicator of healthcare quality, influencing both patient outcomes and institutional success. When patients are content with their care, they are more inclined to adhere to treatment regimens, maintain relationships with their healthcare providers, and attend scheduled visits. A hospital that is clean, well-maintained, and equipped with clear directional signs and information boards fosters a welcoming and professional atmosphere. Such an environment not only enhances patient trust but also streamlines their experience, reducing stress and improving perceptions of care quality.

2. RATIONALE

Outpatient clinics are essential services for hospitals. They perform a gatekeeper role and are often a patient's first contact with a hospital. This study will help to understand the process flow, and identify the delays, at different touch points of the patient. In order to maximize the utilization of Outpatients department, it is essential to know the process flow and understand the reasons leading to delay and increase in patient waiting time. The study also focuses on identifying of bottlenecks in the current process with appropriate suggestion for improvement.

3. RESEARCH QUESTION

To calculate the waiting time and identify the reasons for increase in turnaround time of patients for consultation in outpatient's department.

4. PROBLEM STATEMENT

A quantitative analysis to study the Turnaround Time of consultation in the Outpatients department of Eternal Hospital, Jaipur.

5. OBJECTIVE:

This study was under taken in the out-patient's department pertaining to OPD consultation only, with the following objectives:

1. To study the process flow for OPD consultation as it exists
2. To calculate the patient waiting time at different touch points
3. To study the factors influencing the delayed services, if any
4. To purpose probable solutions for the same

6. REVIEW OF LITERATURE

Efficient management of Outpatient Departments (OPDs) is vital for improving patient satisfaction and ensuring timely healthcare service delivery. One of the key challenges faced by OPDs is prolonged Turnaround Time (TAT), which directly impacts the quality of patient care and operational efficiency.

Process mapping has emerged as an essential tool in understanding and streamlining healthcare workflows. It provides a clear visualization of each step involved in the patient journey—from registration to consultation—and helps in identifying bottlenecks and redundant processes that contribute to delays.

Author(s)	Year	Study Title & Location	Objective	Key Finding	Relevance to Your Study
Begam & Bharathi	2019	Waiting Time in a Private Secondary Hospital, India	To compare waiting times between new and returning patients	New patients had longer TAT (21.44 min) due to lack of triage and slow registration.	Highlights the need to streamline registration and manage queues—issues also seen in your study.
Biya et al.	2022	OPD Waiting Times in Jimma Zone, Ethiopia	To assess patient waiting times and influencing factors in public hospitals	Median waiting time was 93 mins; delays were linked to peak hours, lack of staff, and rural patient influx.	Supports the link between peak hours and long wait times, which also impacted OPD flow in your setting.
Sinha et al.	2023	Patient Turnaround Time in Oncology OPD, India	To study turnaround time in an oncology setting.	Scheduled patients had longer waits than walk-ins due to complex cases and delayed doctor availability	Emphasizes the importance of doctor scheduling and appointment management, aligning with your findings.
Naaz & Mohammed	2019	Time Motion Study in AYUSH Hospital, India	To assess average OPD waiting time and satisfaction	Long waiting times reduced satisfaction; need for triage and digital tools noted.	Confirms that long waits reduce patient satisfaction—supports need for token system and better flow.
AlSubaie et al.	2021	Waiting Time and Satisfaction Relationship Review	Literature review on patient satisfaction	Strong correlation between lower wait time and higher satisfaction.	Reinforces rationale for your study—waiting time is directly tied to perceived service quality.
Khot et al.	2023	Time Motion Study of Registration and Billing, Maharashtra	To evaluate process efficiency in hospital front-desk operations.	Identified delays due to under-staffing and absence of online systems.	Matches your finding of long delays at registration counters due to manual workload.

7. METHODOLOGY

- **Study Area** – Outpatient Department (OPD), Eternal Hospital, Jaipur
- **Study Design** – Descriptive Cross-sectional Study
- **Study Period** – 10th March to 5th May, 2025
- **Study Population** – Patients visiting the OPD for consultation
- **Sample Size** – 200 patients (50 each from Internal Medicine, Obstetrics & Gynaecology, Cardiology, and Neuromedicine)
- **Sampling Method** – Non-probability purposive sampling
- **Data Collection Method** – Direct observation method (shadowing patients from entry to end of consultation)
- **Data Analysis Tool** – Microsoft Excel
- **Parameters Assessed for OPD TAT:**
 1. Patient Entry Time
 2. Registration Time
 3. Consultation Waiting Time
 4. Consultation Start Time
 5. Consultation End Time
 6. Total OPD Turnaround Time (TAT)
- **Nature of Data** – Quantitative data recorded in minutes, collected through real-time observation (stopwatch tracking) and hospital system verification.
- **Department Covered:**
 - Internal Medicine
 - Obstetrics & Gynaecology
 - Cardiology
 - Neuromedicine
- **Exclusion Criteria:**
 - Patients visiting only for diagnostics (lab tests, imaging, etc.)
 - Patients coming for pharmacy, insurance, or administrative tasks
 - Emergency or walk-in patients not following routine OPD flow
 - Health check-up patients who did not have a formal doctor consultation
 - Patients who left before seeing the doctor or did not complete consultation

8. DATA COLLECTION

The data collection was done by following a patient from the time of registration till the time the patient enters the consultant's room for consultation. Though this method is very intense but helps to study functional accuracy of the hospital.

1. Source of Data

The process flow analysis would be done by gathering information from three main sources

- Interviews with the stakeholders
- Customer care Staff (managers, assistants)
- Nurses

a) Primary Data

The time taken at each and every step is noted with the help of a watch from entry into the OPD till the entry into the consultant's chamber.

b) Secondary Data

The registration and billing data for each patient was taken from the system.

Other sources of data were –

- OPD Staff

Mapping of the Processes

The mappings of the processes involved in the department were done mainly by three methods;

- Interviews with the stakeholders
- Customer care staff (OPD Staff, managers, assistant)
- Nurses

PROCESS FLOW

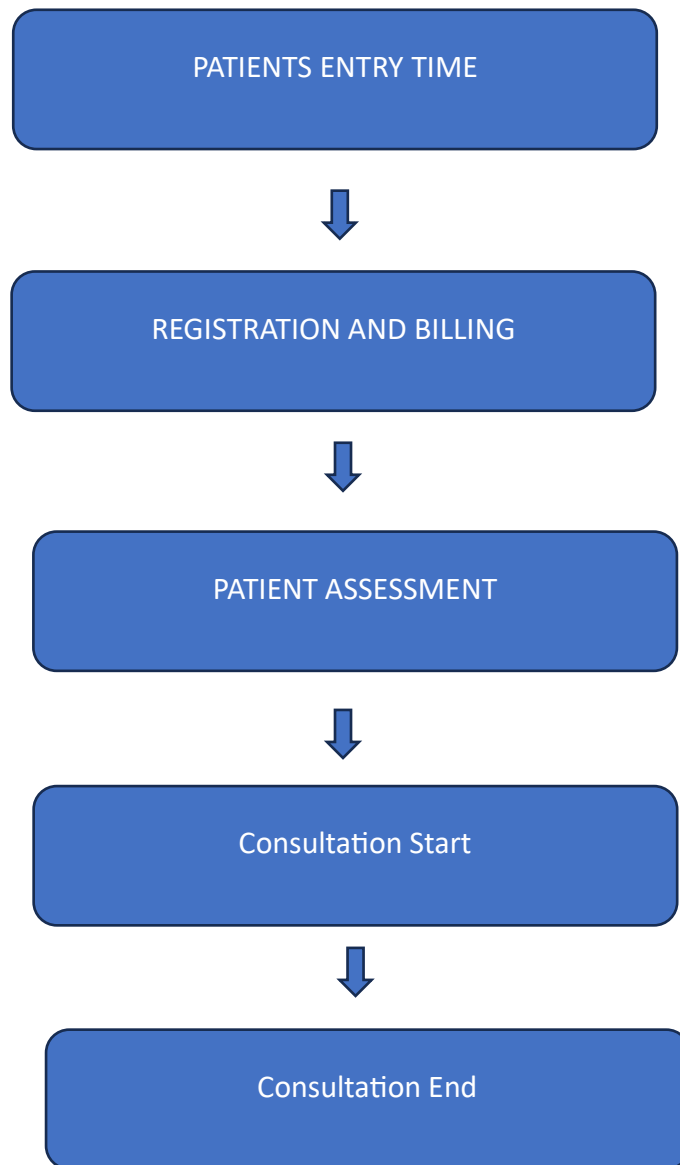
The outpatient clinic's patient flow in detail. The procedures are broken down into three categories for a more thorough understanding: counter procedures (registration and billing), nurse procedures (nurse first assessment), and physician procedures. The activities taken on the patient by nursing staff either before to or following medical consultations are referred to as nurse procedures.

For better and in-depth understanding, I have grouped the processes into the following:

- Registration process and billing process (Handled by Customer Care)
- Nurse's initial assessment process (Handled by Nurses)
- Queue Management process (Handled by Customer care)
- Doctors Consultation process (Handled by Doctors)

Conceptual Model Summary:

Process	Responsible Department	Influence on TAT
Registration & Billing	Customer Care	Start delay; administrative bottlenecks
Nurse's Initial Assessment	Nursing Department	Preparation time; clinical readiness
Queue Management	Customer Care	Patient flow; waiting time reduction
Doctor's Consultation	Medical Staff	Diagnosis time; total patient time



Study Tools

- Data Collection Checklist: Printed sheet with OPD TAT steps and space to record timings
- Excel Spreadsheet: For entering and organizing raw data

[illegible]

OPERATIONAL DEFINITIONS

Term	Definition
OPD Turnaround Time (TAT)	Total time from patient's entry into the OPD area to the end of consultation with the doctor.
Registration Time	The time at which the patient completes formal registration and receives an OPD slip.
Consultation Waiting Time	The time the patient waits after registration and before entering the doctor's chamber.
Consultation Start Time	The exact time when the doctor begins consultation with the patient.
Consultation End Time	The time when the consultation is completed and the patient exits the consultation room.
Total Consultation Duration	Time spent by the patient inside the consultation room (Consultation End Time - Start Time).

9. ANALYSIS AND RESULTS

Data Analysis

A study involving 200 outpatient department (OPD) patients was conducted across four departments—Internal Medicine, Obstetrics & Gynaecology, Cardiology, and Neuromedicine—with 50 patients evaluated in each. The time spent by each patient at various OPD service points was recorded, including:

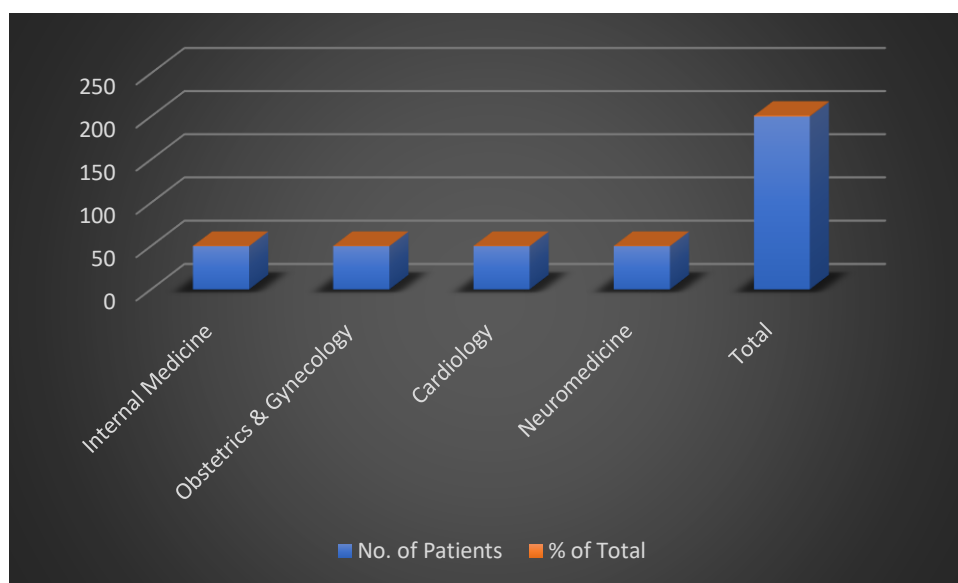
- Registration Waiting Time (RWT)
- Assessment Waiting Time (AWT)
- Consultation Waiting Time (CWT)
- Consultation Duration (CD)
- Total OPD Turnaround Time (TAT)

The collected data was analysed and visualized graphically to examine the distribution of time spent and variations across the departments.

Department wise Bifurcation of OPD

Distribution of OPD Patients by Department (N = 200)

Department	No. of Patients	% of Total
Internal Medicine	50	25%
Obstetrics & Gynecology	50	25%
Cardiology	50	25%
Neuromedicine	50	25%
Total	200	100%

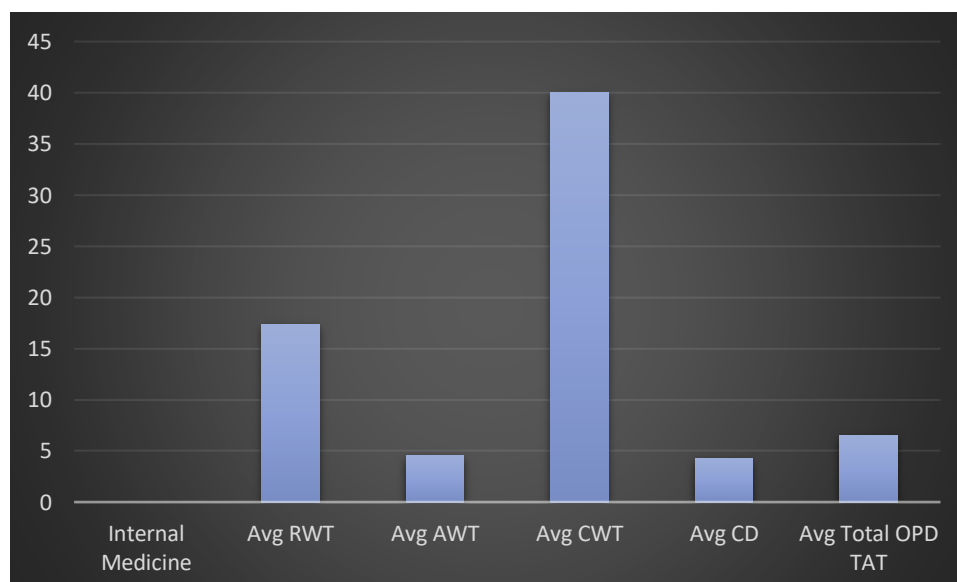


Department-Wise Average Time

1. Internal Medicine

N=50

Avg RWT (in min)	Avg AWT (in min)	Avg CWT (in min)	Avg CD (in min)	Avg Total OPD TAT (in min)
17.38	4.52	40.00	4.24	6.54



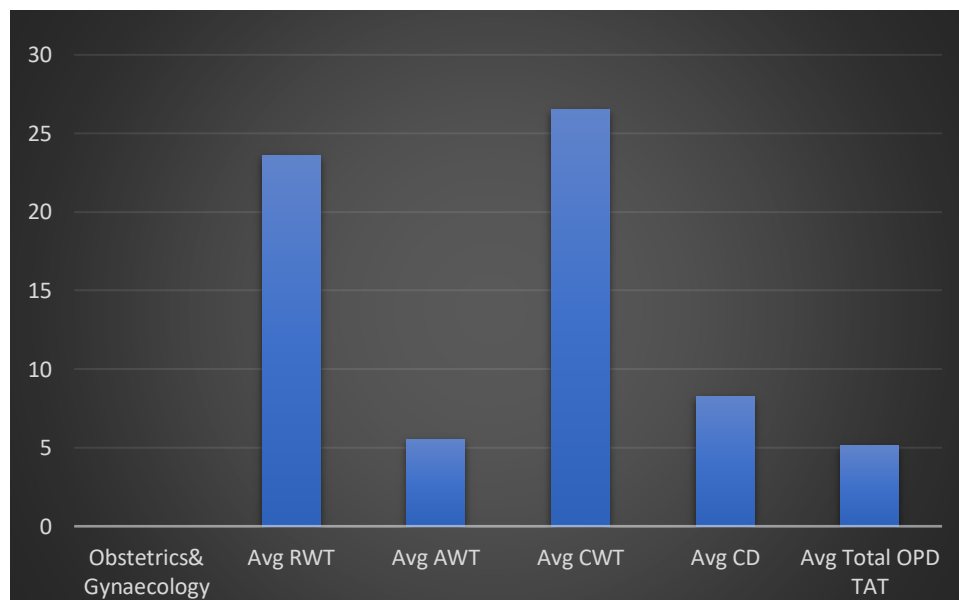
The provided chart illustrates the average time patients spend at various stages of the OPD process in the Internal Medicine department, encompassing registration waiting time, assessment waiting time, consultation waiting time, consultation duration, and total OPD

turnaround time. Notably, consultation waiting time stands out as the longest, suggesting delays in patients accessing doctors. This indicates a need for improved queue or appointment management to boost efficiency and enhance patient satisfaction in this department.

2. Obstetrics & Gynecology

N=50

Avg RWT (in min)	Avg AWT (in min)	Avg CWT (in min)	Avg CD (in min)	Avg Total OPD TAT (in min)
23.58	5.53	26.55	8.26	5.12

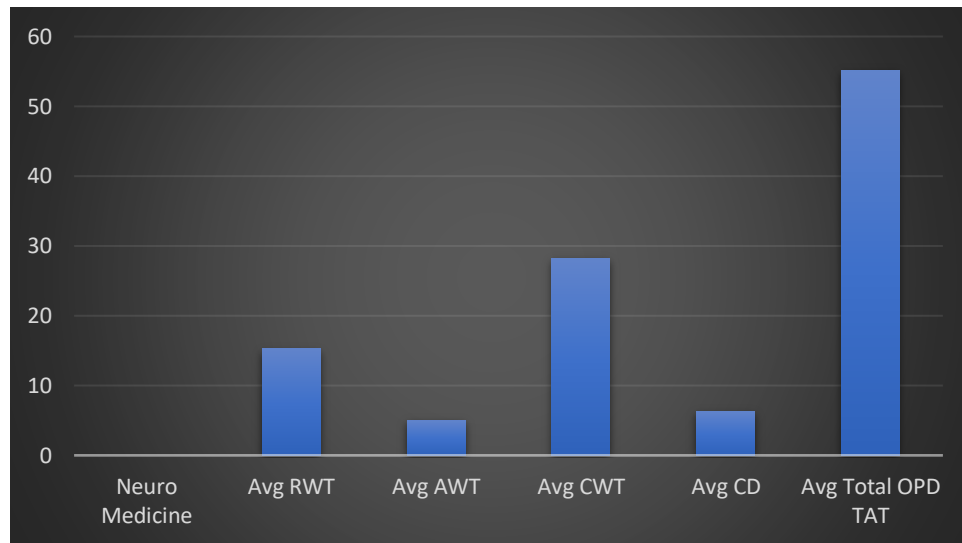


The chart displays the average time patients spend at different stages of the OPD process in the Obstetrics & Gynecology department, covering registration waiting time, assessment waiting time, consultation waiting time, consultation duration, and total OPD turnaround time. Notably, consultation waiting time is the longest, with registration waiting time being a close second. This indicates that patients experience significant delays before seeing a doctor, highlighting the need for improved scheduling or resource management to enhance patient flow in this department.

3. Neuro Medicine

N=50

Avg RWT (in min)	Avg AWT (in min)	Avg CWT (in min)	Avg CD (in min)	Avg Total OPD TAT (in min)
15.26	5.01	28.17	6.34	55.18

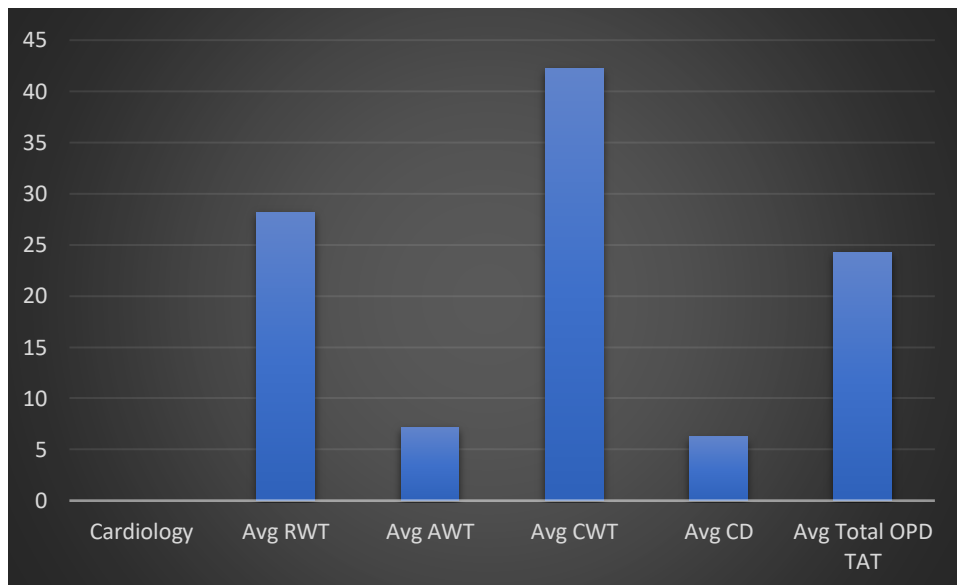


The provided chart illustrates the average time patients spend at different stages of the OPD process in the Neuro Medicine department, encompassing registration, initial nursing assessment, consultation waiting, and the consultation itself. Notably, consultation waiting time is the most prolonged, followed closely by registration waiting time. This trend highlights significant delays before patients reach the consultation phase, indicating a need for improved scheduling and queue management to reduce the overall OPD turnaround time.

4. Cardiology

N=50

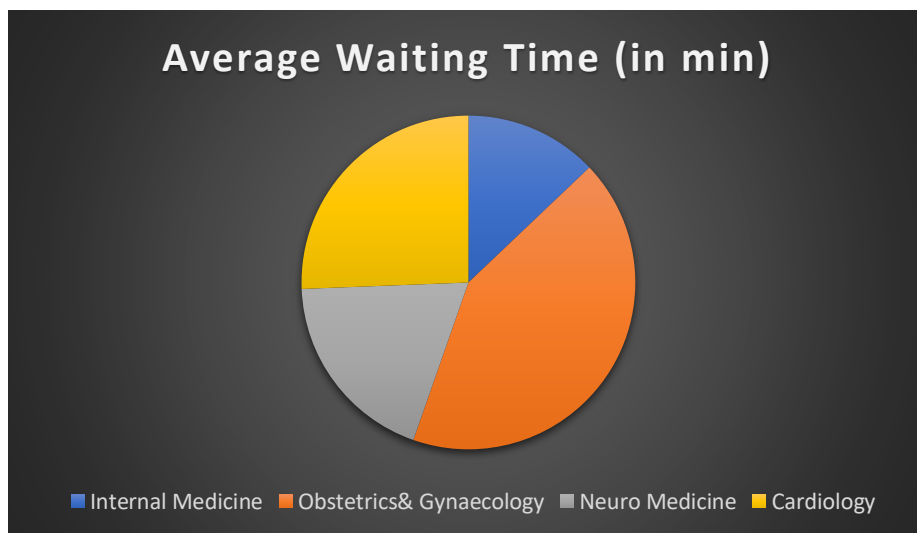
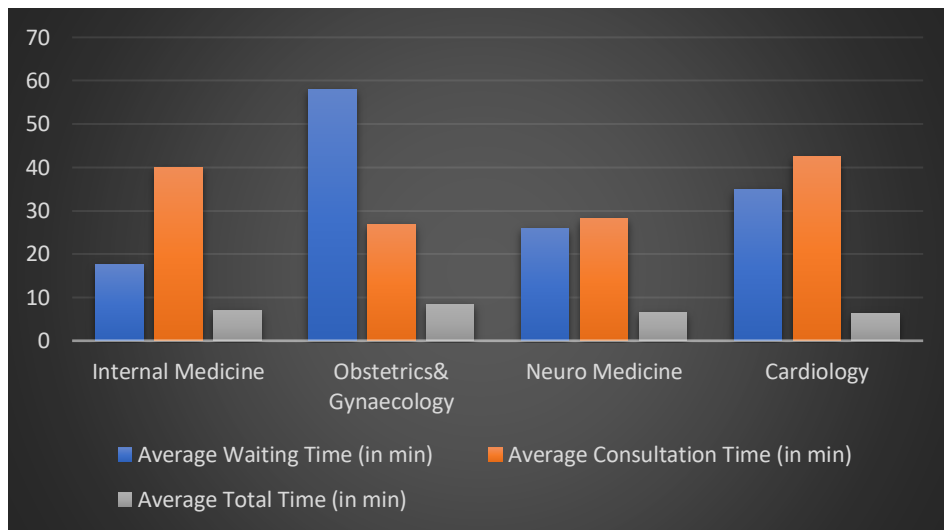
Avg RWT (in min)	Avg AWT (in min)	Avg CWT (in min)	Avg CD (in min)	Avg Total OPD TAT (in min)
28.2	7.17	42.26	6.23	24.26



The chart depicts the average time patients spend at various OPD stages in the Cardiology department, including registration, assessment, consultation waiting, consultation duration, and total OPD turnaround time. Notably, consultation waiting time is the most significant, with registration waiting time as the next longest. This suggests substantial delays before patients see a doctor, underscoring the need to optimize queue management and appointment scheduling to enhance consultation timeliness and patient satisfaction.

The average waiting time for each department was calculated below:

Department	Average Waiting Time (in min)	Average Consultation Time (in min)	Average Total Time (in min)
Internal Medicine	17.63	40	6.9
Obstetrics& Gynecology	58	26.92	8.43
Neuro Medicine	26	28.28	6.57
Cardiology	35	42.43	6.38



The combined bar chart offers a comparative analysis of average waiting time, consultation time, and total OPD turnaround time across the four departments. Obstetrics & Gynecology exhibits the highest average waiting time, followed by Cardiology, while Internal Medicine records the shortest overall time. Cardiology has the longest average consultation time, suggesting extended doctor-patient interactions in this department. The total OPD turnaround time is highest for Cardiology, indicating that patients spend the most time navigating the OPD process in this department.

The pie chart highlights the distribution of average waiting time across departments, clearly showing that Obstetrics & Gynecology accounts for the largest share, followed by Cardiology. This points to opportunities for improving efficiency in registration and initial assessment processes in these departments.

10. DISCUSSION

Reducing waiting time in the OPD requires a comprehensive approach that addresses various factors, including patient flow, staffing and communication. By implementing the recommendations mentioned and enhancing the quality of care and optimizing the overall efficiency of the OPD.

This study identified critical inefficiencies within the OPD process at Eternal Hospital, Jaipur, by analyzing turnaround times across four departments.

1. Comparison with Previous Research:

- The average consultation waiting time in this study ranged from 26.55 to 42.26 minutes, consistent with Biya et al. (2022), who reported median delays exceeding 90 minutes.
- Begam & Bharathi (2019) identified registration bottlenecks and lack of triage as main delay factors—also observed in your data, particularly in the Cardiology and Gynaecology departments.
- Sinha et al. (2023) highlighted unpredictable doctor availability as a source of delay in Oncology OPDs, aligning with this study where doctors' absence due to rounds and emergency duties contributed to extended wait times.

2. Department-Specific Insights:

- Obstetrics & Gynecology showed the highest average waiting time (58 min), while Internal Medicine had the shortest (17.63 min). This pattern indicates operational gaps in high-volume departments that require better doctor availability and registration support.
- Despite the longest consultation durations being in Cardiology (42.43 min), patients still faced delays due to inefficient queue management.

3. Operational Weaknesses Identified:

- Manual registration queues, as flagged in Khot et al. (2023), caused significant backlogs.
- Absence of a digital token system led to patients missing turns, echoing findings by Naaz & Mohammed (2019), who recommended tech-based patient flow systems.

4. Stakeholder Interviews Synthesis:

- **Customer care staff and nurses reported:**
 - "Morning peaks overwhelm registration desks due to lack of staff."
 - "Patients often don't hear when called, causing skipped turns and delays."
 - "Doctors occasionally step out for other duties, breaking OPD flow."

- These qualitative insights confirmed and complemented the observed quantitative data.

5. Limitations:

- Sample was limited to 200 patients over 8 weeks and may not reflect seasonal OPD variations.
- Data was gathered through observation, which may introduce subjective bias despite checklist use.

11. CONCLUSION

After analyzing the data, we can conclude that the avg waiting time(min) for each department is Internal Medicine (17.63), Neuro (26), Cardio (36), Gynae (58) among which we can see Neuro has the highest waiting time.

By identifying the factors contributing to waiting time and providing recommendations for improvement, this study aims to enhance the patient experience in OPD department. By implementing given recommendation can reduce waiting time, increase patient satisfaction and can optimize healthcare delivery.

As we can conclude the reasons behind the long waiting time are

- Some patients are not available when their names are called for consultation, causing disruptions and delays in the appointment schedule.
- Doctors may need to attend to emergency cases, requiring them to leave the OPD temporarily, which contributes to longer waiting times.
- Participation in medical grand rounds occasionally pulls doctors away from OPD consultations, increasing patient wait times.

12. RECOMMENDATION

- **Fix IPD Round Timings:**
Schedule inpatient rounds outside OPD hours to avoid disrupting outpatient consultations.
- **Notify Patients About Their Turn:**
Use token systems or announcements to ensure patients are present when called.
- **Inform Early Arrivals About OPD Hours:**
Clearly communicate the doctor's timing to manage expectations and avoid long waits.
- **Improve Communication:**
Provide accurate and timely information through help desks, displays, or SMS alerts to reduce confusion.
- **Optimize Doctor Schedules:**
Balance duties to ensure doctors are available and consultations run on time.
- **Doctor Availability During Lunch Hours:**
Ensure at least one doctor is available to avoid delays during lunch breaks.
- **Streamline Operations:**
Identify and fix workflow bottlenecks in registration, billing, and patient movement.
- **Reduce Registration Queues:**
Increase staffing or introduce multiple counters at the registration desk to minimize long waiting lines, as patients currently face up to an hour's wait.

13. REFERENCES

- **Flug, J.A., Steelmaker, J.A., Tollefson, C.D., Comstock, E.M., Buelna, E., Truman, B., Ponce, L., Milosek, A., McCabe, J. and Jokerst, C.E., 2022.**
[Improving turnaround time in a hospital-based CT division with the Kaizen method](#)
- **Adams, R., Warner, P., Hubbard, B. and Goulding, T., 2004.**
Decreasing turnaround time between general surgery cases: a six-sigma initiative
[Decreasing turnaround time between general surgery cases: a six sigma initiative](#)
- **Sinreich, D. and Marmor, Y., 2005.**
Ways to reduce patient turnaround time and improve service quality in emergency departments.
[A Time Motion Study of the Patients Attending the Outpatient Departments of a Tertiary Care Hospital in Kanchipuram, Tamil Nadu.](#)
- **Naaz, F. and Mohammed, I., 2019.**
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).
[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 \(India\)](#)
- **AlSubaie, H.A., AlNaim, M. and AlSubaie, S., 2021.**
Literature review: waiting time and patient satisfaction relationship.
[Literature review: waiting time and patient satisfaction relationship](#)
- **Khot, S., Pedhambkar, R. and Salgotra, K.R., 2023.**
Time motion study of registration and billing department of a tertiary care hospital in Raigad district of Maharashtra, India.
[Time motion study of registration and billing department of a tertiary care hospital in Raigad district of Maharashtra, India](#)
- **Mehrotra, N., 2016.**
Patient turnaround time in the outpatient department.
[Patient turnaround time in the outpatient department: Case study of an oncology department in a tertiary care centre in India](#)