

A STUDY ON THE OUTPATIENT WAITING TIME IN GASTROENTROLOGY DEPARTMENT AND PROPOSED RECOMMENDATIONS FOR REDUCTION

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

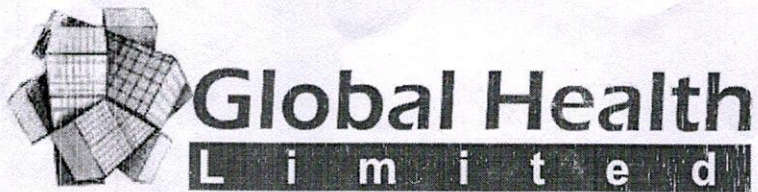
by

Urvi Sharma

Under the Supervision and Guidance of

Dr. Sarthak Sengupta

2025



Date: 12.06.2025

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Urvi Sharma (Emp.ID-00063954)** is engaged with **Global Health Ltd (GHL), Medanta - The Medicity** since 17.03.2025 till date. She is working as **Trainee - Medical Administration & Clinical Operations** at the below address:

**Medanta - The Medicity
Global Health Limited,
Sector 38,
Gurgaon – 122001,
Haryana (India)**

This certificate is being issued on her specific request for exam purpose.

Very truly yours,

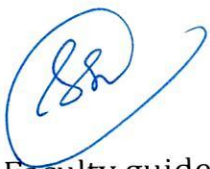
For **GLOBAL HEALTH LTD**



**RANSHUL AGGARWAL
DEPUTY GENERAL MANAGER – HR**

CERTIFICATE FROM FACULTY GUIDE AND SCHOOL DEAN

This is to certify that the dissertation titled **“A study on the outpatient waiting time in the Gastroenterology department and proposed recommendations for reduction”** is a record of the research work undertaken by Dr Urvi Sharma in partial fulfillment of the requirements for the award of the degree of MBA (Hospital & Health Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific and analytical.



Faculty guide

IIHMR University, Jaipur

DATE: 16/6/25



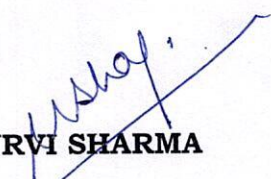
School Dean

IIHMR University, Jaipur

DATE: 16/6/25

DECLARATION BY STUDENT

I, hereby declare that the dissertation titled **“A STUDY ON THE OUTPATIENT WAITING TIME IN GASTROENTROLOGY DEPARTMENT AND PROPOSED RECOMMENDATIONS FOR REDUCTION”** is the Bonafide record of my original research work. I further assure that this work 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 throughout has been duly acknowledged throughout the dissertation.


URVI SHARMA

DATE: 31/5/2025

PLACE: Medanta Hospital, Gurugram

ACKNOWLEDGEMENT

I wish to begin by conveying my deep appreciation for the invaluable opportunity I received to conduct my research at Medanta, the Medicity Hospital, Gurugram. Being able to work at such a renowned and a highly reputed institution has been an incredible experience that has greatly enriched not only my academic but my professional growth as well. I am highly thankful to the staff members of the Medanta Hospital, Gurugram for their cooperation, support and readiness to assist me throughout the various stages of the project. Without their active participation and the willingness to contribute, I would not have been able to collect the necessary data or complete this research successfully.

I am especially grateful to my mentor, Mr. Deepak Batra (Vice President, Hospitality & Operations, Medanta Hospital, Gurugram), who gave me an opportunity to conduct my research on the topic but also provided me with valuable insights. His constant guidance and encouragement throughout the duration of my research has led to the successful completion of the project. His profound knowledge and practical insights into the hospital operations proved to be immensely helpful. His suggestions and the feedback were instrumental in shaping my approach and helped me to maintain clarity and focus throughout the study.

My sincere thanks also to Miss Rashmi Sinha (Assistant Manager, Operations) for her persistent guidance throughout the project. Her dedication, patience, and attention to detail has enabled me to navigate operational aspects in the OPD within the hospital effectively. Her feedback during data collection and during the analysis phases has helped me make informed decisions and has enhanced the overall quality of my study.

I am equally thankful to my internal faculty guide and mentor, Dr. Sarthak Sengupta, for his academic mentorship, timely advice, and unwavering support. His continuous encouragement and constructive feedback were vital to my research design and writing process. His role in guiding the theoretical foundation and refining the research framework has ensured the academic integrity and success of this project.

This acknowledgement would be incomplete without mentioning the collective effort of all individuals—directly or indirectly—who contributed to the successful completion of this project. Each person’s contribution, no matter how small, played a significant role in enabling me to complete this work. I am thankful for the unwavering encouragement, support, and motivation that I received throughout this journey.

This project has been the result of meaningful collaboration, and I feel privileged to have gained insights and work alongside highly committed and knowledgeable people. This acknowledgement reflects the shared efforts of everyone and is a testament to the collective effort of all the individuals who have contributed to the accomplishment of this project.

URVI SHARMA

CONTENTS

DECLARATION BY STUDENT	ii
COMPLETION CERTIFICATE.....	iii
CERTIFICATE FROM FACULTY GUIDE AND SCHOOL DEAN	iv
PLAGIARISM REPORT	v
ACKNOWLEDGEMENT	vi-vii
CONTENTS	viii
TABLE OF GRAPHS.....	ix
ABSTRACT	x-xi
1. INTRODUCTION	1-2
2. REVIEW OF LITERATURE.....	2-5
3. RESEARCH METHODOLOGY	5-12
3.1 Purpose of the Study	
3.2 Research Question	
3.3 Study Objectives	
3.4 Materials and Method	
3.5 Operational Definitions	
4. RESULTS	12-13
5. CONCLUSION	13-15
6. DISCUSSION.....	15-22
7. RECOMMENDATIONS	22-24
8. BILIOGRAPHY	24

TABLE OF GRAPHS:

S NO.	GRAPH NO.	GRAPH NAME
01.	GRAPH 1	Average Waiting time Appointment (C) vs Walk in (C) patients by the patient category
02.	GRAPH 2	Average Waiting Time Appointment (R) vs Walk in (R) patients by the patient category
03.	GRAPH 3	Average Waiting time and Consultation time by the patient category

TABLE OF ABBREVIATIONS:

S NO.	ABBREVIATIONS	MEANING
01.	OPD	Outpatient Department
02.	AWT	Average Waiting Time
03.	ACT	Average Consultation time
04.	ATT	Average Total Time

ABSTRACT

This study aims to analyze the waiting time experienced by the patients in the Gastroenterology Department of the Outpatient Department (OPD) at Medanta Hospital, Gurugram and is centered on evaluating the waiting time challenges faced by the patients. The core objective of the study is to understand the key challenges associated with patient wait times and explore the underlying causes behind these delays and propose actionable as well as evidence-based recommendations so as to decrease the same and improve the efficiency of the OPD operations. The intent is to enhance the patient satisfaction, streamline the work flow in the OPD, and ensure that the delivery of the healthcare is timely and patient – centered.

To achieve this , the following study was conducted wherein the primary data of the patients visiting the OPD was collected manually , the data was collected for a three month period from March 2025 to May 2025, the study includes a total of 92 participants representing two broad categories—walk-in patients – those who visited without prior appointments for consultation or follow up , while the other category of the patients are the appointment-based patients- those who had pre -scheduled visits for consultation or follow-up .

To ensure fairness and eliminate biasness in the process of selection of the subjects for the study, and in order to maintain objectivity and representativeness, simple random sampling was used during the conduction of the study. This sampling technique has helped to gather a representative dataset of the patients who are visiting the OPD whose results can then be generalized for all the patients who are visiting the Gastroenterology OPD.

The findings from this study indicate that minimizing waiting time can play a crucial role in improving the overall experience and satisfaction of the patients who are visiting the hospital for the healthcare services. This will help to strengthen trust in the healthcare system,

Based on the findings, the study provides a set of targeted and practical recommendations. By implementing the given recommendations, these have the potential to significantly minimize the patient waiting times, optimize the use of the resources that are available and thus improve the quality as well as the delivery of the healthcare services. This in turn will contribute to the better patient outcomes, improved efficiency of the staff, and a significant improvement in the operational efficiency of the OPD services in the hospital.

Key words: Waiting Time, Outpatient Department (OPD), healthcare, patient flow, operational efficiency, patient satisfaction

1.INTRODUCTION

The Outpatient Department (OPD) represents a crucial as well as a vital component of hospital – based healthcare systems, and plays a critical role in delivering the healthcare services and serves as the initial touchpoint for the individuals who wish to come to the Hospital. The OPD provides a wide range of services that involve medical consultations, diagnostic services, advising admissions, as well as the formulation of the treatment plan, follow up care, or admission to the hospital.

The OPD plays a pivotal role not only in providing timely and accessible medical care but also in shaping a patient's overall experience with the healthcare system. Efficient functioning of the OPD is crucial, as delays or long waiting times can significantly affect patient satisfaction and trust in the healthcare facility.

The OPD offers a broad spectrum of services, ranging from the initial consultations and diagnostic evaluations, treatment plan and the post treatment follow ups. The OPD acts as the bridge between preventive and curative services. In high volume tertiary care hospitals, where a large number of patients visit daily, ensuring smooth operations within the OPD becomes even more essential. I had been assigned to the OPD Department at Medanta Hospital from April 1, 2025, to April 30, 2025. During this one-month period, I closely observed the functioning of the department, particularly focusing on the areas where operational inefficiencies were leading to prolonged patient waiting times. Among the various specialties, I selected the Gastroenterology OPD for an in-depth analysis, as it consistently experienced high patient footfall and visible delays. The study was conducted under the observation of the two consulting doctors whose OPD timings were from 9:30 AM to 4:00 PM. The study encompassed all categories of patients visiting the Gastroenterology Department in the OPD, namely:

Walk-in patients: Those arriving without prior appointments for consultation or follow-up

Appointment-based patients: Those who had scheduled consultation or follow-up. All patients are included in the study regardless of age or gender.

Over time, long waiting times have become a recurring concern of the patients who visit the OPD of Gastroenterology. Complaints about extended delays are

common, affecting both the walk -in and appointment-based patients. Since patient satisfaction is closely linked with the quality and timeliness of the healthcare services, addressing such operational issues is essential for maintaining good reputation of the hospital, as well as delivering high quality care. So, it is of utmost importance to improve the waiting time for the patients (appointment patients as well as the walk in patients). As the patient satisfaction is directly related with the experience of the patient in a hospital,

The present study was undertaken to

- understand the challenges faced by the patients during their visit
- know the difficulties faced by the patients as well as the factors that have led to prolonged waiting time
- analyze the contributing factors that are responsible for extended waiting periods
- Evaluate how the availability of the doctors, procedural interruptions, and patient flow impact the delivery of the services

The recommendations have been given thereafter, that aim at improving the efficiency, reducing delays and ultimately enhancing the overall patient experience, following which the gaps in the OPD can be bridged, thus enhancing the patient satisfaction and the overall patient experience during their visit to the OPD. The findings from this study are intended to serve as actionable insights for the hospital administrators and the OPD coordinators. By implementing the targeted solutions based on the recommendations of the study, the institution can aim towards bridging the operational gaps, streamlining the flow of the patients, as well as improving the quality of care provided through the OPD services.

2. LITERATURE REVIEW –

A critical summary of the research papers that had been taken for the reference for the study have been listed below along with the names of the authors and their dates of publication. These research papers have provided me a context for my research and build a foundation for my in-depth study.

The below mentioned research papers have helped me to understand that how various studies define and measure the waiting time, identify the gaps in the system and suggest evidence-based recommendations to improve the waiting time in a hospital.

RESEARCH TOPIC	AUTHORS	SUMMARY
1.To study the Association Between Waiting Time, Service Time, and Patient Satisfaction in the Out-Patient Department of a Tertiary Care Hospital in Maharashtra	A Acharya, Varsharani Kendre, Yallapa Jadhav, Muralidhar Tambe Journal: International Journal of the Community Medicine and Public Health (2023)	The study found that shorter waiting times significantly increased patient satisfaction. The mean waiting time was approximately 59 minutes, and patients with lesser waiting times reported higher satisfaction levels.
2. A Study on the relationship between the waiting time and the out-patient satisfaction at Gujarat Medical Education Research Society Hospital, Valsad, Gujarat, India	Ravikant Patel, Hina R. Patel Journal: International Journal of the Community Medicine and Public Health (2017)	The study reported a mean waiting time of 12 minutes. Despite relatively short wait, patients faced difficulties locating various departments, indicating that hospital layout and signage also impact patient satisfaction.

3. The rate of the patient satisfaction among the OPD attendees at a Secondary Care Hospital in Northern India	Ravneet Kaur, Shashi Kanta, A Dhanesh Goel, Nitika Sharma Journal: Journal of Primary Care & Community Health (2022)	Approximately half of the patients rated the waiting time at the registration counter as unacceptable, highlighting the need for streamlining the registration process and improving patient amenities.
4. An approach to reducing Waiting Time in Outpatient Services: Six Sigma Approach	Onkar More, Sudha Pathak Journal: The International Journal of Business & Management (2016)	By applying the Six Sigma methodology, the study achieved a significant reduction in average waiting time from 90 minutes to 40 minutes. Patient satisfaction scores increased from 79% to 91%, demonstrating the effectiveness of process improvement techniques.
5. Impact of the Waiting Time in the OPD on patient satisfaction	Authors: Dr. Anil Pandit, Er. Lalit Varma, Dr. Amruta Journal: International Education and Research Journal (2016)	The research study emphasized that enhanced waiting times adversely affect the satisfaction of the patients. It recommended implementation of Hospital Information Systems (HIS) and better appointment scheduling to mitigate delays.
6. Waiting time and the factors associated in Patients Presenting to Outpatient Departments at Public Hospitals of Jimma Zone, Southwest Ethiopia	Melesse Belayneh, Mikenzie Woldie Journal: BMC Health Services Research (2022)	The study identified that factors such as educational qualification, place where the patient resides, the day on which the patient visits the OPD, arrival time, are statistically associated with waiting time. It concluded that more than half of the patients experienced long waiting times.

7.The relationship between the Waiting Time and satisfaction of the patients visiting the OPD	Hamad Abdulaziz, Mansour AlNaim, Sara AlSubaie Journal: The International Journal of Sciences: Basic and Applied Research (2021)	The review concluded that reduced waiting periods result in increased satisfaction amongst the patients and a greater probability that the patients will return to the health facility time and again
---	---	---

3. METHODOLOGY

3.1 Aim:

This research primarily aims to evaluate the duration of waiting time experienced by the patients in the Out-Patient Department (OPD), with the main focus on the Gastroenterology Department. Waiting times in the OPD is a key indicator of the efficiency of the hospital and has a direct influence on the patient satisfaction and forms an important cornerstone that helps to build trust of the patients in the healthcare delivery system, particularly the hospitals.

This study seeks to:

- Understand the patient flow /journey in the OPD
- Identify the causes behind the prolonged waiting times
- Analyze operational inefficiencies
- Recommend practical, data driven solutions that aim at reducing the waiting time of the patients without compromising the quality of care provided to the patients

3.2 Research Question:

1. What is the average outpatient department (OPD) waiting time for the different category of patients (Walk in & Appointment) in the Gastroenterology department at Medanta Hospital?

This question seeks to quantitatively assess and compare the average waiting times experienced by two distinct groups of patients—those who visit the OPD without a prior appointment (walk-in patients) and those who have pre-scheduled consultations (appointment-based patients). By evaluating these categories separately, the study aims to identify disparities in waiting time patterns and understand if prior appointments are effectively managed to reduce any kind of delays. The findings will help determine whether a scheduling system is being optimally utilized or if improvements are needed in patient flow and time management.

2. What are the primary contributors to increased waiting times in the Gastroenterology OPD?

This question focuses on identifying the root causes behind prolonged patient wait times. It may include factors such as delayed arrival of the doctors in the OPD, non-availability of the patients when their names are called out in the OPD, administrative inefficiencies, unanticipated walk-in surges, or the non-availability of the doctors in the OPD as they have to attend the endoscopy procedures as well. Understanding these factors is essential to develop meaningful, data-driven recommendations for improving the efficiency and patient experience within the department.

3. What is the average time for consultation in the Gastroenterology Department of the OPD?

This question addresses the actual duration of the doctor-patient consultation. Knowing the average consultation time will provide insights into time allocation per patient, help assess whether current practices are adequate, and determine if longer consultations are contributing to delays. Additionally, it offers context for optimizing appointment slots and balancing patient volume with quality care delivery.

3.2 Objectives:

- To determine the waiting time in the Gastroenterology OPD:

The primary objective of this study is to systematically measure and document the average waiting time that the patients experience when visiting the Gastroenterology OPD at Medanta Hospital. Accurate recording of the waiting time will help to establish a baseline understanding of the current scenario. This data will be crucial for comparing the trends and assess the effectiveness of any interventions.

- To understand the possible reasons resulting in increased patient waiting time:

This objective focuses on identifying and analyzing the underlying causes that contribute to the extended waiting times in the OPD. The factors include operational inefficiencies, appointment scheduling process, the unavailability of the doctors in the OPD as they have to leave for the endoscopy procedures

- To suggest evidence-based solutions to reduce the problem of long waiting time:

Based on the findings from the data, collected and analyzed, the study aims to propose practical, data -driven and evidence-based strategies to reduce the waiting times. The purpose of this objective is to offer actionable solutions that not only reduce the patient waiting times but also enhance the efficiency and the satisfaction of the patients while maintaining the quality of patient care.

3.4 Methodology:

RESEARCH STUDY DESIGN

This research is conducted in the Department of Gastroenterology. It is an Observational Study, and adopts a cross-sectional study design, which is appropriate for understanding the current patterns and the factors affecting the waiting times in the hospital set – up.

Observational nature of the study – The study involves observing and recording the following time for the patients visiting the Gastroenterology OPD -

- Completion of billing (Billing time)
- Entry into the consultation room
- Exit from the consultation room

The above data related to the patients has been recorded without intervening in the hospital's day-to-day operations. No experimental treatments or changes are introduced during this study and instead, the goal is to document the actual waiting times as they occur naturally in the Gastroenterology OPD (Outpatient Department). Primary Data is being collected for a period of 3 months from April 2025 to June 2025 for the patients visiting the OPD of gastroenterology. The research is conducted within the Gastroenterology Department of Medanta Hospital, where both walk-in and appointment-based patients are catered to. This real-time and location-specific data collection allows the findings to be closely aligned with the actual hospital operations and workflows.

Cross-sectional research design -

This study collects data at one specific point in time or for over a short as well as a defined period rather than over an extended period. In this case, the data is being collected over a span of three months (March 2025 to May 2025). This allows for a comprehensive snapshot of waiting time trends during this period, offering insight into any operational patterns, peaks, or anomalies.

STUDY POPULATION

The study population refers to the group of individuals whose data is being collected and analyzed. In this case, it includes all patients visiting the Gastroenterology OPD during the study period. These patients are further categorized as follows:

- *Walk-in Patients:*

These are individuals who visit the OPD without prior appointments.

Their visits may be for initial consultations or for follow-up sessions without prior appointments.

These patients typically experience variability in waiting times depending on patient load and availability of the doctors.

- *Appointment-Based Patients:*

These patients have scheduled visits, either for new consultations or follow-ups. Their waiting times may be influenced by how efficiently the appointment system is managed and adhered to.

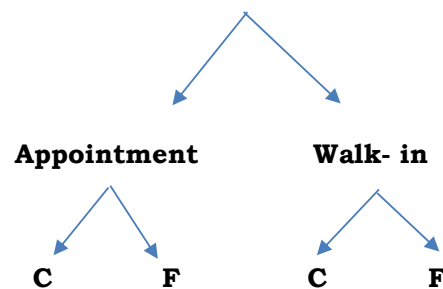
- *Inclusivity criteria:*

All patients, regardless of age or gender are included in the study.

This ensures a comprehensive and unbiased understanding of waiting times across diverse patient demographics.

By categorizing the patients into walk-ins and those with appointments, the study can compare waiting time patterns between these two groups and identify which group faces longer delays and why.

Patients coming in the OPD



C – Consultation

F – Follow up

DURATION OF STUDY

The study was designed to take place over a defined time period, beginning on 15th March 2025 and concluding on 31st May 2025. This two-and-a-half-month duration has allowed me sufficient time for data collection from a diverse patient pool, including both walk-in and appointment-based consultations. The timeline ensures that fluctuations in patient flow across different days and weeks are captured, providing a comprehensive understanding of the waiting time patterns within the Gastroenterology Outpatient Department (OPD). The study commenced from 15/3/2025 and the study was till 31/5/2025

SAMPLE POPULATION

The cohort size for this study includes a total of 92 participants, selected to represent both major patient categories—walk-in patients (who visit without prior appointments) and appointment-based patients (who have scheduled consultations or follow-ups). This number was chosen to maintain a manageable yet statistically meaningful cohort, enabling accurate analysis while ensuring individual observations that could be recorded with attention to detail.

SAMPLING METHOD

The study utilizes the simple random sampling method. This method ensures that every eligible patient within the target population has an equal probability of being selected for the study. By eliminating selection bias, this approach helps in achieving a more representative sample, leading to more generalizable and reliable results. It also promotes fairness and objectivity, which is very crucial for the academic and institutional research credibility.

DATA COLLECTION PROCEDURE -

The study is being conducted in the Gastroenterology OPD located on the 11 th floor. Primary Data is being collected manually over a period of 3 months from March 2025 to May 2025 for the patients visiting the Gastroenterology OPD. The data collection process is conducted in a structured and a systematic manner.

The following are the key aspects that are important with respect to the data collection procedure:

Location: The study is carried out in the Gastroenterology OPD, located on the 11th floor of the hospital.

Method: Primary data is collected manually, involving direct observation and recording of relevant time points for each patient. The hands-on approach has been used that has enabled to gain detailed and context-specific insights.

Time Period: Data is gathered over three months, from March 2025 to May 2025. This duration has ensured the collection of diverse data that has reflected the routine activity of the OPD and helped in accounting for the variations in daily and weekly patient volumes.

Process: For each patient, specific time-related metrics have been recorded, including billing time, registration time, time of entry in the doctor's room for consultation, and time of exit from the doctor's room after consultation. These data points are later analyzed to compute average waiting times and identify bottlenecks or delays in the workflow.

The following key time points are recorded for each patient:

- Completion of billing
- Entry into the consultation room
- Exit from the consultation room

Waiting time is defined as the interval between the completion of billing and the moment the patient enters into the doctor's consultation room.

For the follow-up cases, the patients are enquired about the time when they enter the OPD, as they do not have the billing time, so for the follow-up cases, the waiting time will commence from the time the patients enter the OPD till they exit from the doctor's room after consultation.

Time of consultation is defined as the duration between the entry in the doctor's room for consultation till the time the doctor comes out from the doctors' room after the consultation.

Primary Sources: Personal observation (direct and indirect observation), OPD records, Health Information System of the hospital, Internet as a source of theoretical information.

Ethical Considerations:

Ethical considerations are of utmost importance in any research involving human participants, especially in a clinical setting such as the Gastroenterology Outpatient Department (OPD). The following ethical principles are strictly adhered to throughout the study to ensure the dignity, rights, as well as the well-being of all the participants:

1. **Confidentiality:** All the data of the patients that has been collected will be treated with strict confidentiality. This includes any personally identifiable information such as names, registration numbers, or medical record details. Such data will be anonymized to ensure that participants cannot be individually identified. The research team members and the concerned members involved will only have access to the raw data, and the research data will be stored securely, whether in digital or physical form. This measure ensures that participants' identities are protected from unauthorized access or disclosure. The data collected will be kept confidential, as well as the identity of the patients will be protected.

2. **Privacy:** The privacy of all the participants has been respected throughout the data collection process. Interviews, observations, or any other form of data collection has been conducted in a manner that minimizes any potential embarrassment or discomfort. For instance, data has been recorded discreetly and no sensitive personal questions unrelated to the study have been asked. Participation is completely voluntary, and the participants have the right to withdraw at any stage without affecting their medical care in any way. The privacy of the patients has been maintained during the process of data collection.

3. The **safety** of the patients will be of the highest priority and the study will not interfere with their medical care

Ensuring the safety and well-being of patients is a top priority in this study. The research will be conducted in such a way that it does not interfere with or delay the patient's medical treatment or cause them any harm, physically or psychologically. No experimental treatment is being administered as part of this study—it is purely observational. The presence of research staff and the process of data collection has not affected the patients' medical consultations or outcomes.

These ethical protocols are designed to align with the institutional guidelines and uphold international standards of human research ethics, such as those outlined in the Indian Council of Medical Research (ICMR) Ethical Guidelines. All efforts will be made to ensure that the study is conducted with transparency, integrity, and full respect for the rights of the patients.

4. RESULTS:

DATA ANALYSIS:

The average OPD waiting time in the Gastroenterology Department calculated is as follows –

Category of patients	Average Waiting Time (Min)	Average time for consultation (Min)	Average total time (Min)
Appointment (C)	128	8	136
Walk in (C)	141	8	149
Appointment (R)	63	7	70
Walk in (R)	120	7	127

Table 1. Average Waiting and Consultation times by the patient category

The Table 1 categorizes patients in the Gastroenterology OPD based on two factors:

- Whether they had an appointment or were a walk-in.
- Whether their visit was for a Consultation (C) or a Follow-up/Review (R).

It presents three metrics for each group:

- Average Waiting Time (in minutes)
- Average Time for Consultation (in minutes)
- Average Total Time Spent in the OPD (sum of waiting and consultation time)

5.CONCLUSION:

1. *Appointment (C)* – this includes category of patients who come for consultations with Prior Appointment

Average Waiting Time: 128 minutes

Average Consultation Time: 8 minutes

Average Total Time: 136 minutes

Patients who came for consultation with a scheduled appointment have to wait on an average for more than 2 hours (128 minutes). This suggests that having an appointment did not significantly reduce the waiting burden, possibly due to delays in the doctor's schedule and the non-availability of the doctors in the OPD as they have to attend the endoscopy procedures. The consultation

duration was modest at 8 minutes, resulting in a total OPD time of 136 minutes.

2. *Walk-in (C)* – This includes patients who come to the OPD for the Consultations without Prior Appointment and are thus referred to as walk - in

Average Waiting Time: 141 minutes

Average Consultation Time: 8 minutes

Average Total Time: 149 minutes

Walk-in patients for consultation experienced the highest average waiting time (141 minutes) among all the categories, which is expected due to the lack of slots that are available for their consultation due to which they have to wait for long times for their turn in the OPD for consultation. They also spent a total of 149 minutes in the OPD, indicating both scheduling and capacity challenges. Despite being unscheduled, these patients received the same average consultation time as those with the patients who come after taking the appointments.

3. *Appointment (R)* – This includes patients who come to the OPD for Follow-up Visits with Prior Appointment

Average Waiting Time: 63 minutes

Average Consultation Time: 7 minutes

Average Total Time: 70 minutes

Follow-up patients with appointments had the shortest total time in the OPD (70 minutes), indicating better scheduling and quicker throughput. Their waiting time was also the lowest (63 minutes), possibly because follow-up cases require less time for discussion and consultation and the hospital staff may prioritize them to streamline the services.

4. *Walk-in (R)* – Patients who come to the OPD for Follow-up without Prior Appointment

Average Waiting Time: 120 minutes

Average Consultation Time: 7 minutes

Average Total Time: 127 minutes

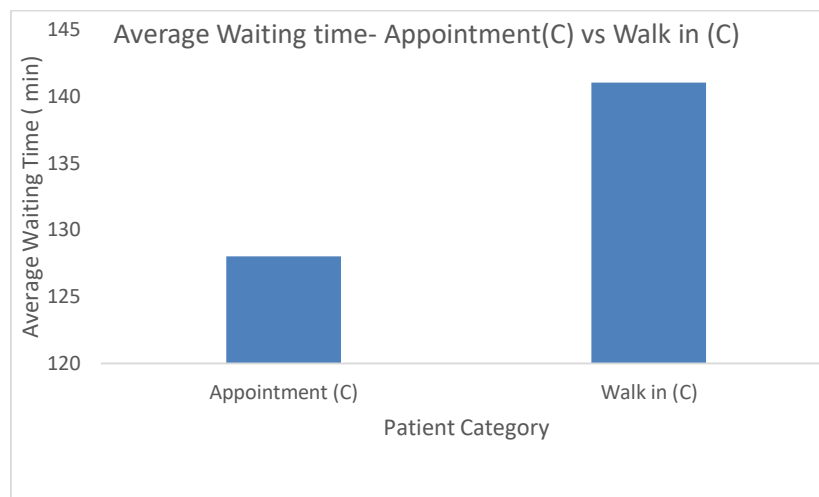
Although these patients were visiting for a follow-up, the absence of an appointment significantly increased their waiting time to 120 minutes, nearly double that of follow-up patients with appointments. The total time spent was 127 minutes, which is still lower than new consultation cases but significantly higher than scheduled reviews.

6. DISCUSSION:

The (Graph1) below shows a bar graph comparing the average waiting time (AWT in minutes) between the two categories of patients in the Gastroenterology OPD for the consultation visits:

Categories Compared:

- Appointment (C) – Patients who schedule an appointment for a consultation.
- Walk-in (C) – Patients who arrive without an appointment for a consultation.



GRAPH 1

Values from the Graph:

Appointment (C): Average waiting time is 128 minutes.

Walk-in (C): Average waiting time is 141 minutes.

The average waiting time (AWT) for the patients who come after taking scheduled appointments for consultation is 128 min while the patients who walk in the OPD for consultation directly without any appointment is 141minutes.

Detailed Explanation:

1. Longer Wait for Walk-in Patients:

Walk-in patients experience 13 minutes longer average wait time than those with scheduled appointments.

This increase is expected, as walk-ins are typically seen based on the availability of the slots and come without a predefined consultation time.

2. Efficiency of Appointment System:

The difference indicates that the appointment system helps in reducing the waiting time. Patients with appointments are often prioritized in the scheduling process.

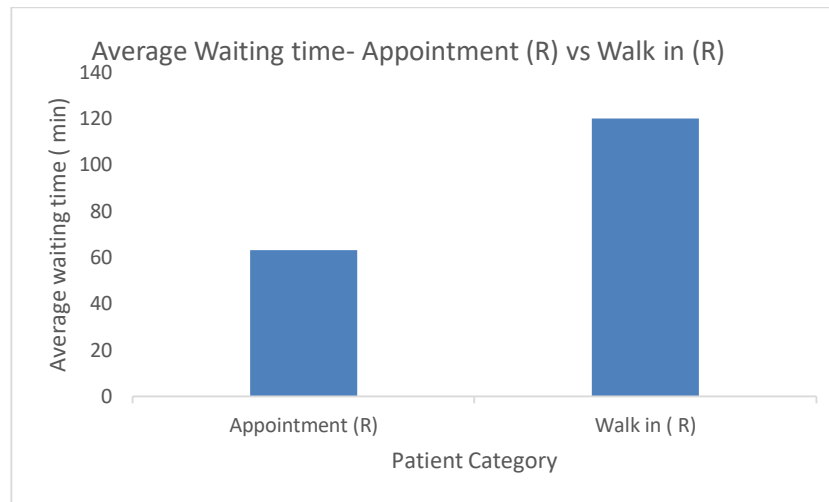
3. OPD Management Insight:

The data supports the need for encouraging patients to schedule appointments rather than arriving unannounced. Efficient scheduling can help to reduce the overcrowding and improve time management for both the staff as well as the patients.

The bar graph (Graph 2) below compares the average waiting time (AWT in minutes) for two categories of patients attending follow-up visits in the OPD.

Patient categories compared:

- Appointment (R) – Patients who had scheduled appointments for their reports or follow -up visits.
- Walk-in (R) – Patients who came for follow -up visits without a prior appointment.



GRAPH 2

Values from the Graph:

Appointment (R): Average waiting time is 60 minutes.

Walk-in (R): Average waiting time is 110 minutes.

The average waiting time for the patients who come after taking scheduled appointments for follow up is 60 min while for the patients who walk in to the OPD directly is 110 minutes

Detailed Explanation:

1. Significant Waiting Time Gap:

There is a notable 50-minute difference between the two groups.

Walk-in patients for follow-up visits waited almost twice as long as those who had appointments.

This gap emphasizes the operational strain unplanned visits can create.

2. Benefits of Scheduling:

The data underscores the efficiency of using scheduled appointments even for follow-up visits.

Scheduled patients are likely accommodated into the system's existing flow, reducing unnecessary delays.

3. Implication on Patient Experience:

Long waiting times for walk-in patients may lead to patient dissatisfaction, especially for those returning for care.

Encouraging appointment adherence can improve throughput and patient satisfaction in the OPD.

4. Operational Recommendations:

Hospitals should consider policies that discourage walk-ins for follow-ups unless in emergency cases.

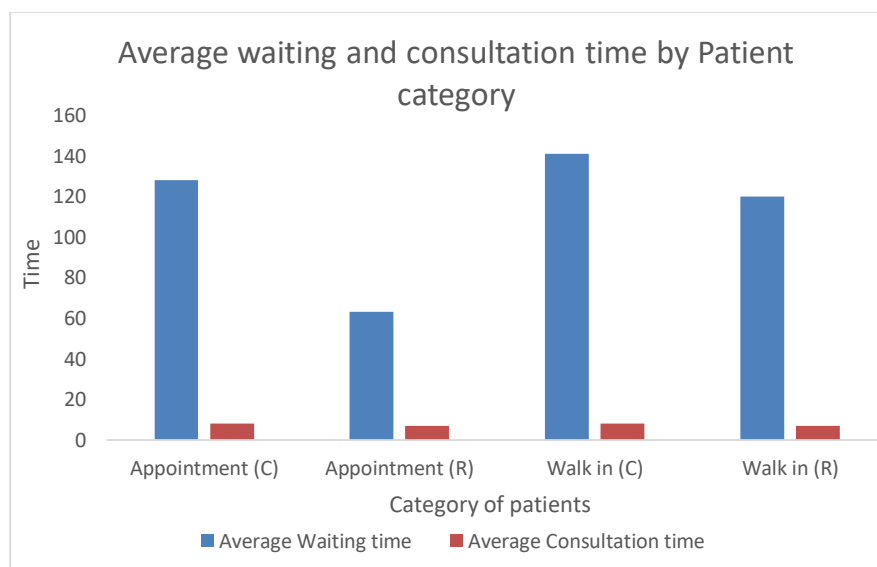
Implementing digital reminders, appointment portals, and walk-in caps per day may help streamline flow.

5. Resource Allocation:

High waiting time for walk-ins indicates potential strain on staff and infrastructure during peak hours.

Proper appointment scheduling can lead to better allocation of healthcare personnel and consultation slots.

Thus, it can be analyzed that the waiting time is prolonged for the walk in patients whether they come for consultation or follow up in comparison to the patients who visit the OPD after taking scheduled appointments



GRAPH 3

The Average consultation time is 8 min for the patients who come to the OPD for the first time, while for the patients who come for follow -up or the patients who come for discussion of reports, the average time for consultation is 7 minutes

DETAILED ANALYSIS:

Here is the detailed analysis of the Graph 3. The following trends can be inferred from the graph which are explained in detail as follows -

1. *Waiting Time Trends:*

Walk-in patients (C & R) experienced longer waiting times than their appointment counterparts.

Walk-in (C): Had the longest wait (~141 mins), indicating potential system inefficiencies for unscheduled consultations.

Appointment (R): Had the shortest waiting time (~63 mins), reflecting the smoothest patient flow among all categories.

2. *Consultation Time Trends:*

Consultation durations remained consistent across all categories

For Consultation patients – 8 minutes

For Follow up patients – 7 minutes

This indicates that doctor-patient interaction time is uniform and unaffected by appointment status.

3. *Appointment vs Walk-in Performance:*

Patients with appointments had significantly reduced waiting times across both consultation and follow-up types.

This highlights the operational efficiency and predictability associated with the appointments.

4. *Resource Management Implications:*

Walk-in patients, particularly for consultations, may lead to crowding, longer queues, and resource strain. Encouraging appointments can help balance OPD load and improve the patient satisfaction.

Thus, the average total time is the highest for the walk in patients who come to the OPD for the first time for consultation, while it is the least for the patients who come to the OPD for the follow up.

The factors that have led to increased waiting time in the OPD are as follows:

By identifying the factors contributing to waiting time and providing recommendations for improvement, this study aims to enhance the patient experience in the OPD Department

- Interruptions due to procedures: Doctors have to frequently leave the OPD for endoscopy or other procedures, or attend emergency cases which can take a significant amount of time. This interrupts the OPD workflow and contributes to longer waiting time for the patients.

Doctors working in the OPDs often have multiple responsibilities beyond just seeing outpatients. These include performing procedures like endoscopies or responding to emergencies within the hospital. These unplanned or scheduled duties remove the doctor from the OPD during patient consultation hours.

IMPACT:

1. The consultation flow gets disrupted
2. Patients already waiting in the OPD experience delays
3. New patients continue to arrive, causing the queue to grow

- Delayed arrival of doctors: The Operations Control Centre schedules appointments from 9:30 AM onwards. However, doctors often arrive late, causing delays in starting the OPD, leading to increased waiting time. The hospital's Operations Control Centre (OCC) is responsible to coordinate the time slots and book appointments for the patients visiting the OPD assuming that the doctors are available from 9:30 AM and schedules appointments accordingly whereas, in the reality, doctors frequently arrive later than the scheduled time.

IMPACT:

1. Patients arrive punctually at or before 9:30 AM expecting to be seen.
2. Any delay in doctor arrival results in the accumulation of waiting patients, creating a backlog that can persist throughout the day.

3. Delayed starts snowball into higher waiting times for even later appointments.
 4. Systemic Insight: This indicates poor coordination between scheduling and actual doctor availability. This reflects a need for improved accountability and perhaps a scheduling buffer or staggered appointment planning.
- Doctors have to attend the meetings for which there are no definite timings, which is a cause of delay in the OPD

Doctors are often required to participate in the hospital meetings (administrative, clinical discussions, or case reviews). These meetings are not scheduled at fixed or predictable times, leading to abrupt and unplanned doctor absences from the OPD.

IMPACT:

1. Mid-session disruptions
2. Patients may be left waiting with no communication or estimation on when the doctor will return
3. Resumption of OPD activities becomes uncertain, further lengthening patient wait times

This suggests a lack of synchronization between administrative and clinical departments. Meetings should either be scheduled outside OPD hours or doctors should be rotated so OPD services continue uninterrupted.

- Patient absence during call time: Some patients have multiple appointments across different OPDs, when their name is called in one OPD and they are not present, they miss their turn. This adds to the overall delay and disrupts the flow as the time is lost calling out and skipping the patients who are absent in the OPD. The following reasons have been attributed for this:

1. When the patient's name is called for consultation in one OPD, they may not be physically present because they are in another OPD. As a result, the staff either calls out the name multiple times to ensure the patient is not simply delayed for consultation or they tend to skip the patient and move to the next, and possibly return to the missed one later.
2. Or in some cases, the coordinators mark the patient as absent, requiring them to go through the queue again later.

IMPACT:

- Time is wasted calling out the patients who are absent
- Each skipped or recalled patient has to be called out again which leads to disruption in flow of patients in the OPD
- This leads to increased consultation time per patient slot
- This creates gaps in the appointment schedules that could have been used to consult other patients
- Extended Waiting Times for Others
- When some slots are wasted or shifted due to no-shows, the entire schedule shifts, causing longer wait times for subsequent patients which causes frustration among the staff as well as the patients as the staff has to repeatedly adjust the queue, due to which the present patients may feel unfairly delayed
- And the patients who are absent may lose their chance or have to face re-queuing in the OPD
- This leads to operational inefficiencies in the system

7. RECOMMENDATIONS:

Strategies to minimize the prolonged wait time in the Gastroenterology OPD:

This section outlines strategic recommendations aimed at reducing patient waiting times in the Gastroenterology Outpatient Department (OPD). All these points are discussed and elaborated in detail as follows:

1. Schedule Surgical Procedures in Advance

Explanation: Surgical procedures like endoscopies and other interventions should be planned in advance as these procedures often take a significant amount of time and require doctors' undivided attention.

If not scheduled properly, they can interfere with OPD timings, leading to delays for regular patients. By integrating these procedures into the doctor's schedule visibly, it ensures that OPD appointments are not overbooked or understaffed during those times.

2. Avoid Booking Appointments During Procedure Periods

Explanation: Appointments should not be scheduled when doctors are already engaged in surgical procedures.

This prevents overlapping responsibilities, which can cause delays.

If the appointments are scheduled during the time of procedure, patients are left waiting, creating bottlenecks in the system. Avoiding such scheduling conflicts will help to smoothen the workflow as well as help to enhance the satisfaction among the patients.

3. Maintain Continuity in OPD Services

Explanation: Even if one doctor is occupied with a procedure, OPD services should not be halted.

The other doctors in the team should take over the OPD responsibilities.

This ensures the continuity of patient care without significant interruptions.

Delegation and teamwork are essential in maintaining efficiency in the busy hospital environments.

4. Use of Team-Based Approach

Explanation: If a doctor is unavailable, other team members should handle patient cases.

This includes reviewing medical history and preparing documentation, so the consulting doctor can efficiently resume without delays.

This will prevent complete standstill in the functioning of the OPD and maintain a steady patient flow.

5. Implement Virtual Consultations

Explanation: Offer online or virtual consultations for follow-up patients. Follow-up patients may only need to discuss reports or minor concerns that don't require physical presence.

Virtual visits can significantly decongest the OPD, saving time and space for new or critical cases.

This will also benefit the patients who live far away or have mobility issues as well as this will free up time for the new patients who want to visit the OPD for consultation. Reducing the number of unnecessary in-person visits will free up time for those who need it the most. In-person OPD should prioritize new patients or those with complex conditions. This will ensure the optimal use of clinical resources and reduce the waiting time.

References and Bibliography:

- 1.** Prof. Dinesh T.A, Prof. Dr. Sanjeev Singh, Prem Nair, Remya T R Reducing waiting time in outpatient services of large university teaching hospital –A six sigma approach Management in health, Issue 18, January 2013, page no.31-37
- 2.** Danish Javed A time motion study of OPD Services at a state level Ayurvedic hospital to reduce the OPD congestion international ayurvedic medical journal, Issue 10, October 2015, Volume 3, Page No: 1-9
- 3.** Rashmi Yadav Reducing Waiting Time of Patients in Outpatients Services of Large Teaching Hospital: A Systemic Quality Approach IOSR-Journal of Dental and Medical Sciences, Issue 11, November 2017, Volume 16, Page No: 1-7
- 4.** Dr Nirmalya Manna, Dr Md Samsuzzaman, Dr Saikat Das A time motion study in the OPD clinic of a rural hospital of West Bengal IOSR Journal of Dental and Medical Sciences, issue-7, July-2014, Volume-13, Page no:34-37.