

**TIME MOTION STUDY TO EVALUATE & REDUCE AVERAGE
WAITING TIME FOR OUTPATIENT DEPARTMENT IN MAX
SUPER SPECIALITY HOSPITAL, VAISHALI**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital & Health Management

Shailly Thakur

Under the Supervision and Guidance of

Dr Piyusha Majumdar

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “Time motion study on average waiting time in OPD in a multi-speciality hospital” is the Bonafede 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Name of Student- Shailly Thakur

Date- 5th June 2023

CERTIFICATE

CERTIFICATE

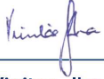
OF ACHIEVEMENT



Max Institute of Medical Excellence
Certifies that

Shailly

has completed Internship in the department of
Operations
at Max Super Speciality Hospital, Vaishali, Ghaziabad
from 06th March 2023 to 19th May 2023


Dr Vinitaa Jha
EVP Research & Education
Max Healthcare Institute Ltd

CERTIFICATE

This is to certify that dissertation titled “Time Motion Study on average waiting time for OPD in Multi-speciality hospital” is a record of the research work undertaken by Shailly Thakur in partial fulfilment 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 her research study has been genuine, methodical, and analytical.

Faculty Guide- Piyusha Majumdar
IIHMR University, Jaipur

School Dean- Dr (Col)Mahender
IIHMR University, Jaipur

ABSTRACT

The primary goal of a hospital's Out-patient department (OPD) should focus on reducing waiting times for patients, improving the quality of services provided, and optimizing resource utilization. The intent of the research is to establish the waiting time and identify the factors responsible for it. The sample size consisted of 100 individuals, including both patients visiting the OPD and hospital staff. Analysis was performed using Microsoft Excel, revealing that patients experienced long waiting times at the central registration counter, OPD waiting area, and during doctor consultations. Despite infrastructure limitations, the study provides suggestions to significantly reduce waiting times.

The outpatient service is an essential component of all hospitals, serving as the primary interface between the hospital and the community. It operates as an ambulatory care centre, providing a comprehensive range of services to maintain community members' health directly or through referrals to specialized institutions. The OPD in a hospital is responsible for diagnosing and treating patients, and it often shapes patients' initial perception of the hospital. In other words, the first impression can have a lasting impact. A well-managed, clean hospital with clear information boards and proper directions generally creates a positive image. Effective management of the OPD can alleviate the burden on in-patient wards.

Currently, many hospitals' OPD services are facing challenges related to queues and waiting times. Patients' waiting time refers to the period from their registration for an appointment with a doctor until they enter the doctor's chamber.

ACKNOWLEDGEMENT

Every achievement is a result of dedication and perseverance. Throughout my three-month tenure, I have diligently applied myself to gain valuable knowledge in both practical applications and theoretical concepts. I owe my success during this training period to the exceptional guidance and support provided by the esteemed trainers and official staff members. Their invaluable assistance has been instrumental in shaping my growth and development. With great pleasure I express my heartfelt gratitude to the President of IIHMR, Jaipur, Dr Sodani, and Dean, Dr (Col) Mahender Kumar for providing me this opportunity to experience this training.

I am extremely thankful for all the guidance at Max Hospital for sharing their knowledge, resources and valued time which inspired me to give my 100% during my training period. I would like to thank Mr. Shashank Mathur (OPD Manager), without whose help it would not have been possible for me to understand and gain the practical knowledge of the hospital to the extent as I have now.

I am extremely grateful to my mentor guide Dr. Piyusha Majumdar without whose guidance this project would have been a distant reality.

Lastly, my sincere thanks to my parents for keeping me motivated and helping me in overcome obstacles in my life.

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CHAPTER 1 - HOSPITAL PROFILE



Max Super Specialty Hospital Vaishali is a renowned medical facility with more than 370 beds. It offers a wide range of preventive and diagnostic treatment options across various specialties, including Oncology, Neurosciences, Cardiac Sciences, Orthopaedics, Nephrology, Kidney Transplant, Liver Transplant, Urology, Gastroenterology, Pulmonology, Aesthetic & Reconstructive Surgery, Endocrinology, and Diabetes.

The hospital is equipped with state of the art technology, featuring 128 critical care beds, 16 High Dependency Unit beds, and 14 high-end modular OTs. It has established itself as a leading medical institution under the guidance of more than 259 renowned doctors and medical experts. The nursing staff, consisting of over 610 dedicated nurses, contributes to the hospital's commitment to delivering the highest standard of medical care to every patient.

Max Super Specialty Hospital, Vaishali stands out for its comprehensive range of 28 clinical specialties. The hospital's multidisciplinary approach, with highly qualified doctors, nurses, and healthcare professionals, allows for integrated medical care. With advanced medical technology at their disposal, the hospital serves as a regional hub for complex procedures such as neurovascular interventions, targeted cancer treatments, heart surgeries, orthopaedic surgeries, and fertility treatments.

HOSPITAL VALUES

COMPASSION- The hospital prioritizes a deep understanding of patients and consistently displays empathy towards their needs. This fosters a culture of providing patient-centred care at a higher standard. The hospital staff demonstrates respect for both their colleagues and patients, ensuring their needs are met with dignity. The hospital consistently recognizes the positive social impact it can create and rises to the occasion.

EXCELLENCE- The hospital holds itself to high standards, striving for excellence in medical expertise and patient care. The staff maintains a passionate commitment to continuous improvement, constantly working towards becoming better versions of themselves each day.

EFFICIENCY- The hospital creates a healing environment that is responsive to the needs of patients, delivering precise and timely care. They exhibit a balance between focus and speed, personalized and practical approaches, and advanced yet seamless delivery of care tailored to each patient's specific needs.

CONSISTENCY- The hospital consistently follows through on its commitments and ensures the highest level of patient care is maintained at every stage, every time. They believe that earning patients' trust and achieving their goals can only be accomplished through consistent delivery of care.

ACCREDITATIONS

One of the aspects that sets the hospital apart as the best hospital in India is that the hospital is accredited by National Accreditation Board for Hospitals and Healthcare Providers (**NABH**) and National Accreditation Board for Testing and Calibration Laboratories (**NABL**).



HOSPITAL LAYOUT

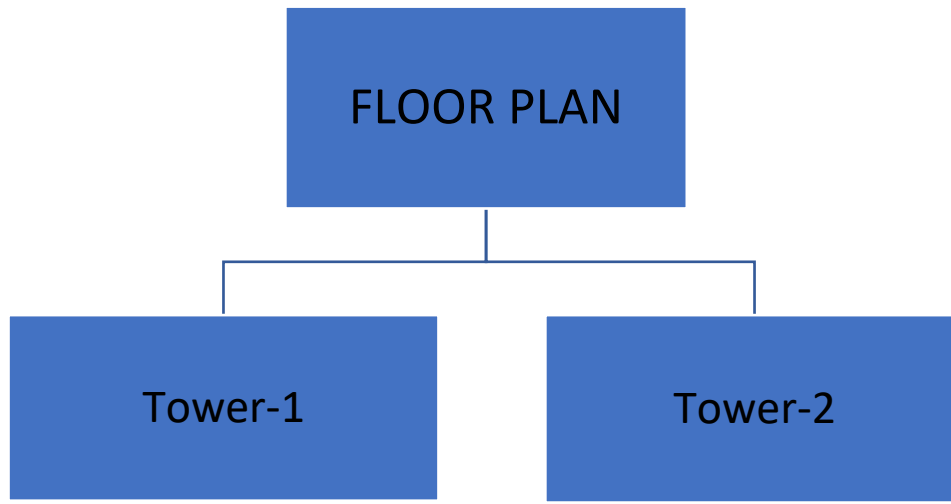


Figure 1.1

TOWER-1

1.LOWER BASEMENT

- Radiation Oncology
- Tomo therapy
- Nuclear Medicine and PET CT

2. GROUND FLOOR

- Emergency
- Blood Transfusion therapy
- Preventive health programme
- MRI, CT, X-RAY, Ultrasound
- Admission, Billing, TPA desk.

3. FIRST FLOOR (OPD)- 16 specialities

- Orthopaedic & Joint replacement surgery
- Vascular surgery
- GI surgery
- Urology, Kidney transplant
- Spine surgery
- Dermatology
- Cardiology
- Aesthetic and Reconstructive surgery
- General and laparoscopic surgery

- Ophthalmology
- ENT

4. THIRD FLOOR (OPD & IPD)

- Obstetrics & Gynaecology
- IVF & Infertility
- Foetal Medicine
- Homeopathy
- Department of Paediatrics- Neurology, Cardiology, Gastroenterology, Endocrinology, Orthopaedics, Surgery.

5. FOURTH FLOOR

- Gastro & Liver ICU
- Chemo day care Unit I & II
- Minimal Access and Bariatric Surgery
- Billing and waiting lounge.
- IPD Beds- 3401-3427

6. FIFTH FLOOR

- Neurosciences & Neurology
- Internal Medicine
- Pulmonology
- Endocrinology & Diabetes
- Rheumatology
- Pharmacy

7. SIXTH FLOOR (OPD & IPD)

- Dialysis Units I & II
- Nephrology OPD
- MICU
- Billing and waiting lounge.
- IPD Beds – 3601-3619 **TOWER-2**

1.GROUND FLOOR

- Max Pharmacy
- Oncology Physiotherapy
- Women Cancer Centre- Breast and Gynaecological Cancer OPD

2.SIXTH FLOOR

- Tobacco Cessation Centre
- Head & Neck Cancer OPD
- Thoracic Cancer OPD
- Gastrointestinal Cancer OPD
- Urogenital Cancer OPD
- Musculoskeletal Cancer OPD
- Haematology/BMT OPD
- Paediatric Cancer OPD
- Pain and Palliative Medicine OPD
- Gastroenterology OPD
- Oncology Physiotherapy (Head & Neck)
- Tumour Board Room
- Ultrasound/Mammography
- Endoscopy/ERCP
- Bronchoscopy/EBUS/EUS
- Cafeteria

3. SEVENTH FLOOR

- HDU
- General Ward (Women)
- General Ward (Men)
- General Ward
- IPD Beds- 2701-2729

4. EIGHTH FLOOR

- IPD Beds- 2801-2804
- VIP Suite 2805-2806
- IPD Beds- 2807-2826
- General Ward

5. NINTH FLOOR

- Operation Theatres
- Post-Operative Ward
- Pre-Operative Ward

CHAPTER 2 - INTRODUCTION

The Outpatient Department (OPD) plays a vital role as the primary interface between the hospital and patients, serving as their initial point of contact. It serves as a crucial gateway to the hospital's services, shaping patients' first impressions. To improve operational efficiency, conducting a time-motion study can collect data on the specific time required for various tasks and movements.

In hospitals, patients are the main users, and the OPD holds significant importance as a central function. However, patients frequently deal with issues like OPD congestion and long wait times. Patient outcomes and waiting times are taken into account when evaluating the quality and efficacy of a treatment. Patient discontent is highly correlated with prolonged waiting times. Although patient turnover might affect waiting times, hospital management must actively address this problem and put strategies in place to shorten wait times. Long wait times may cause patients to seek out alternate healthcare institutions, wasting time and omitting chances for better results.

The time-motion study is a vital tool for enhancing healthcare infrastructure. It takes patient pleasure into account in addition to workflow optimization. The time-motion research helps locate bottlenecks, inefficiencies, and areas for development in the patient care process by carefully observing and evaluating task durations.

Healthcare is only one of the many areas where time-motion studies have proven useful because they provide light on workflow patterns, inefficiencies, and potential for improvement. Hospitals can pinpoint critical areas where resources, procedures, and patient interactions can be better managed, resulting in increased effectiveness and better patient outcomes, by using this methodology in the OPD setting.

OBJECTIVE

Conducting a thorough time motion study in an OPD inside a hospital setting is the goal of this study. by looking at the numerous duties and responsibilities carried out by healthcare workers and employees, as well as patient interactions from the time patients enter the hospital until they leave.

A organised strategy will be used to accomplish these goals, one that includes the choice of certain actions to be observed, the choice of an adequate sample size and time for data collection, rigorous data recording and analysis, and the creation of suggestions that may be put into practise. We aim to add to the corpus of knowledge about OPD workflow optimisation and ultimately assist patients and healthcare workers by performing a rigorous time motion research.

AIM

The goal of the study is to locate workflow bottlenecks, inefficiencies, and potential improvement areas. The results of this study will offer evidence-based insights and suggestions for boosting productivity, decreasing patient wait times, optimising overall patient care processes, and resource allocation in the OPD. Through this study, we hope to shed light on the difficulties OPDs face and offer evidence-based suggestions for workflow optimisation that will enhance patient care, better utilise resources, and increase overall efficiency in hospital outpatient departments

RESEARCH QUESTION

To determine areas of delay and recommend solutions, measure and evaluate the typical time spent by an outside patient at each visit in different OPDs.

CHAPTER 3 - LITERATURE REVIEW

PATIENT SATISFACTION AT THE MUHIMBILI NATIONAL
HOSPITALIN DAR ES SALAAM, TANZANIA- E.P.Y. Muhondwa, M.T.
Leshabari, M. Mwangu, N. Mbembati, M. J. Ezekiel

This research focused on assessing patient satisfaction levels at MN hospital, in relation to the treatment and services offered by the outpatient department (OPD) prior to significant reforms, restructuring, and renovations implemented at the hospital. The study utilized exit interviews as the primary method to evaluate patient satisfaction. Patients leaving various areas, including OPD clinics, the lab, X-ray room, pharmacy, and inpatient wards, were interviewed. The findings of the study emphasized the importance of waiting times and staff behavior for OPD patients. Feedback from patients revealed concerns regarding staff shortages, unprofessional conduct, and extended waiting times. Patients specifically mentioned occasions where staff members made harsh remarks that they perceived as unprofessional. Patients also complained that they believed services were being provided slowly, which led to extended hospital stays. Patients who were questioned frequently complained about long consultation wait times.

EVALUATION OF SERVICE IN QUALITY DEPARTMENT OF HOSPITAL OUTPATIENT DEPARTMENT SERVICES

The hospital where this study was done provided modest specialist services and was a peripheral service hospital. The research design employed was cross-sectional, involving patients who visited the hospital's outpatient department (OPD). Every third patient with a prior history of using the OPD services was given a self-administered questionnaire during their current visit. The patients were requested to complete the survey while waiting for their medications at the dispensary, ensuring their privacy and anonymity. The study findings indicated a significant level of dissatisfaction among OPD patients, primarily due to extended waiting times before consultations. Moreover, a statistically significant gap was observed between patients' expectations and their actual perceptions concerning the importance of prompt service and timely responses.

This gap suggests a potential need for additional training in the behavioural aspects of the OPD staff. Alternatively, it could indicate that the OPD is understaffed, resulting in willing and helpful staff members being unable to provide timely treatment.

STUDY ON OPD WAITING TIME IN HOSPITAL UNIVERSITY KEBANGSAAN MALAYSIA

The objective of this thesis was to document the practices implemented at the opd clinic and examine potential operational issues that could result in extended waiting times for patients. The duration of a patient's wait significantly influences their perception of the quality of service provided. The research was conducted at Hospital University Kebangsaan Malaysia (HUKM), one of Kuala Lumpur's teaching hospitals. Individuals who showed up unannounced at the HUKM outpatient clinic made up the study's subjects. The length of the registration process, insufficient staffing at the service counters, and a physician scarcity were found to be the three main causes of the outpatient department's (OPD) lengthy waiting times.

TIME EXPECTATION AND SATISFACTION- PATIENT EXPERIENCE STUDY AT NATIONAL HOSPITAL ABUJA, NIGERIA- Oluwagbenga Ogunfowokan, Muhammad Oora

This study's goal was to find out how much time patients spend at various service locations within the National Hospital Abuja's (NHA) general outpatient department (OPD). The study also sought to determine how patients felt about their time with doctors and how satisfied they were with the services in general. At the primary OPD of NHA, a cross-sectional study was carried out, and information from 320 randomly chosen patients was gathered. The patients themselves completed a validated questionnaire that included inquiries about the time spent at various service sites, along with other relevant factors. The findings revealed that enhancing patient satisfaction at the general OPD of NHA could be achieved by reducing the duration of the patient-clinic encounter and meeting patients' pre-visit expectations.

CHAPTER 4 - METHODOLOGY

STUDY DESIGN: Systematic Random Sampling

SETTING: Max Hospital, Vaishali, Ghaziabad (370+ bedded)

STUDY POPULATION: Orthopaedic OPD, Oncology OPD, Gynaecology & Obstetrics OPD, Gastroenterology OPD, Neurology OPD.

DURATION OF STUDY: 6th March to 6th April

SAMPLE SIZE: 100 patients.

DATA COLLECTION: Direct and Primary Data collection.

DATA COLLECTION PROCEDURE: Direct observation and department wise appointment list (Qikwell software).

This project uses routinely collected data from 5 departments (gynaecology and obstetrics, Gastronomy, Orthopaedics, Neurology, Oncology) of MAX hospital, Vaishali of patients belonging to category of CASH/prepaid, over a period from 6th March to 19th May.

DATA ANALYSIS PLAN: Qikwell software, E-prescription, Practo user, HIS (Hospital management system)

ETHICAL CONSIDERATIONS: Patient data's privacy and confidentiality has been maintained.

IMPLICATIONS OF RESEARCH: The average waiting time in OPD is an important factor of the efficacy of hospital management. Reduction in the waiting time of OPD will result in patient satisfaction and increased hospital profit with more efficient management of patients. Timeline of the study is from 6th March to 6th May.

PROCESS FLOW OF OPD

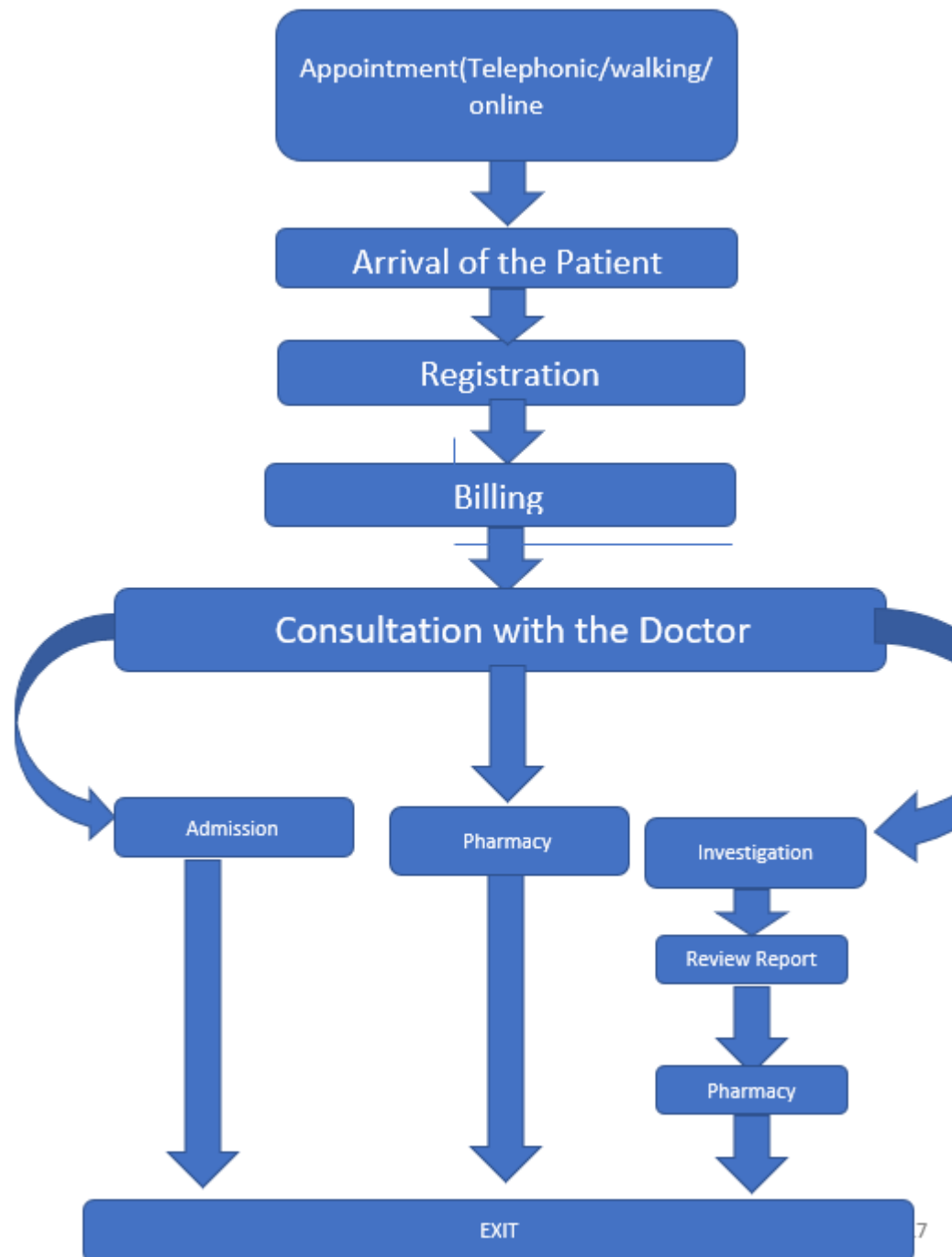


Figure 4.1

PROCESS FLOW OF OPD

The following flowchart provides a general representation of the typical process flow in an Outpatient Department (OPD). It is important that particular steps and sequences may change according to the hospital's protocols, the patient's condition, and the nature of the OPD visit. The flowchart can be modified by hospitals to fit their own needs and workflows.

1. Registration of patients:

The patient shows proper identity and insurance details when they arrive at the OPD desk.

The patient's personal details, medical history, and visitation purpose are all gathered by the front desk employees.

For the purpose of retaining records, the patient is given an OPD card or identification number.

2. Vital Signs and the Triage:

A nurse or other medical expert evaluates the patient's condition and decides whether medical attention is required immediately.

Measurements are made of the body's vital indicators, such as temperature, pulse rate, and respiration rate.

The patients are divided into various categories basis the degree of their ailments.

3. Consultation: During consultation, patient are called into either the consultation room or the examination room. In the aforesaid room, a specialized healthcare personnel, such as a doctor or nurse practitioner, conduct a thorough medical evaluation and examination. Subsequently, the patients and the healthcare professional discuss the probable diagnosis and the available treatment options that can effectively solve the issues of the patient.

4. Diagnostic procedures: Once a patient undergoes consultation, the patient is directed to proceed towards undertaking a diagnostic procedure. In this category, the

patient is typically directed to the hospital's diagnostic department, wherein necessary procedures such as like blood tests, X-rays, ultrasounds, or other imaging studies, are undertaken to understand the diagnosis more effectively.

5. Medication

In accordance with the diagnosis, the healthcare professional may prescribe medicine, suggest a course of therapy, or set up follow-up consultations. The prescription or treatment plan, and any required medications as provided by the hospital should be followed by the patient, wherein the required medication may also be obtained from the hospital pharmacy.

The healthcare professional describes the patient's diagnosis, the proposed course of therapy, and any necessary lifestyle changes.

To aid the patient in understanding and effectively managing their condition, patient education materials, guidelines, and resources may be made available.

6. Aftercare and Release:

The patient's next visit or follow-up arrangement is made.

The patient is released from the OPD with the required instructions and prescriptions if their condition is stable.

Any pertinent medical records, referrals, or instructions must be given to the patient prior to discharge.

In order to guarantee effective and patient-centered care, hospitals must customize this flowchart to their unique requirements and operations.

TIME FRAME OF THE STUDY

Activity	March			April				May			
	2	3	4	1	2	3	4	1	2	3	4
Understanding the working of hospital, getting acquainted with various departments, discuss project with the MS and noting the process flow in OPD (Define stage)											
Time motion study and collecting data (Measure stage)											
Transfer of data to MS Excel, creating tables and charts, analysing bottlenecks (Analysis stage)											
Brainstorming for possible measures to reduce TAT and implementation of interventions (Improve stage)											
Time motion study, collecting data and analysing impact of interventions (Control stage)											

Figure 4.2

CHAPTER 5 – OBSERVATION

Keeping the objectives of this study in consideration, the following surveys were conducted, and following interpretations were drawn. In this study following inclusions were made-

1. Data was collected for maximum patients as possible in the OPD. 10% of the patients of the total data collected were included in the study i.e., 100 patients. The selection of the patients was done through systematic randomization sampling where every individual had equal chance of selection.
2. Only those patients were included in study whose consultation & investigation was done on the same day. Following patients were not included in the study.
 1. Patients who came for investigations only.
 2. IPD patients.
 3. Patients coming for Preventive health check-up.
 4. Patients coming in emergency.

The results are depicted below through tables and graphs for better understanding of study. On an average, total number of patients visiting OPD in 5 different departments Orthopaedic, Oncology, Gynaecology & Obstetrics, Neurology & Gastronomy in three months. There are two types of patients with appointments and walk-ins.

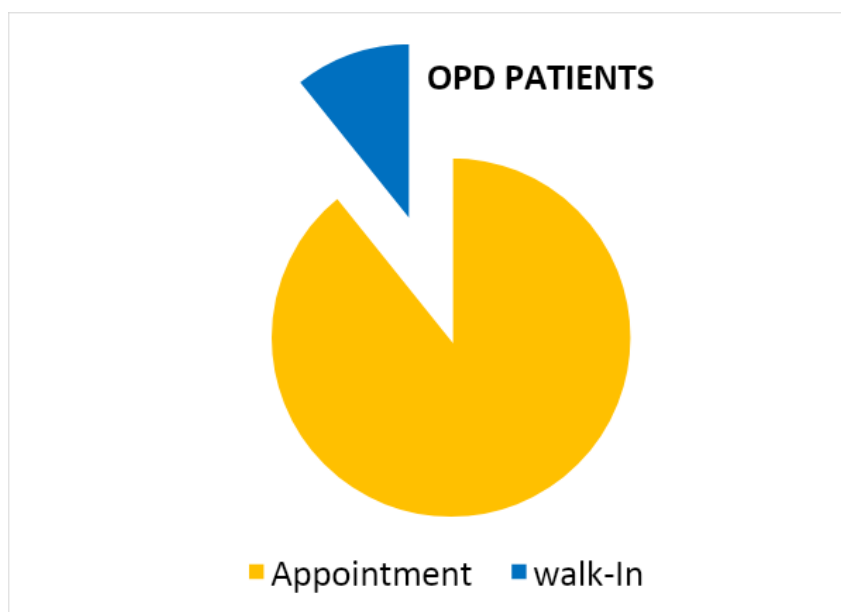


Figure 5.1

Above chat shows that 89% of patient prefer to take an appointment before the visit and these are some following reason :

- Patient can better plan their day according to the appointment time
- Most of the time taking an appointment reduces there waiting time for the patient.

Whereas in only 11% of the cases OPD has walk-in patient. Some of them are not aware of the appointment system and some of them are for follow ups.

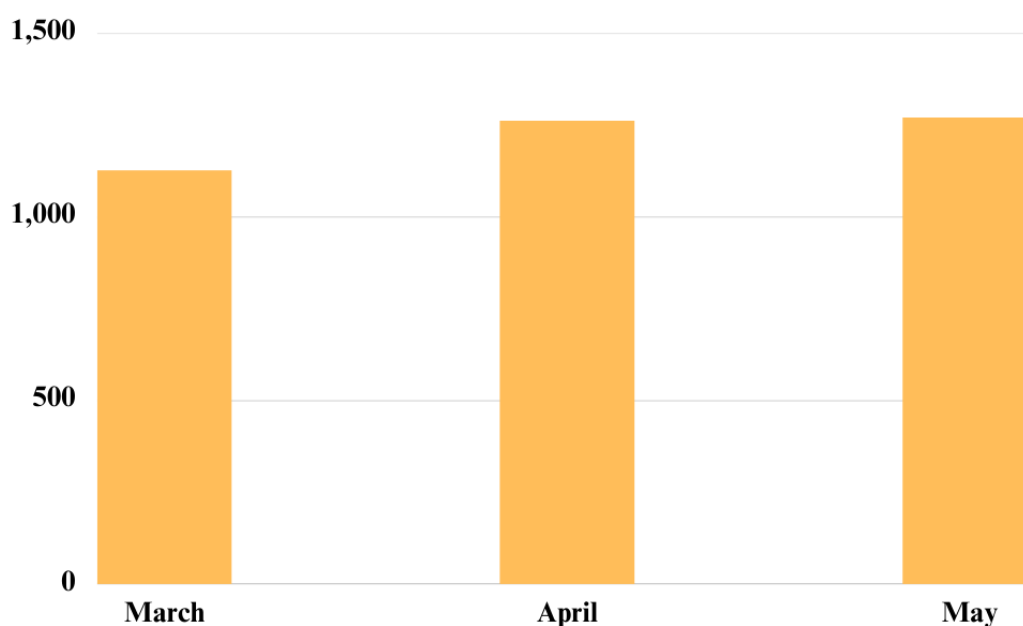


Figure 5.2 – Total number of OPD patients in 3 months

March	1126
April	1261
May	1270

Table 5.1 - Number of OPD patients

The average waiting time in different departments was observed and represented in this graph.

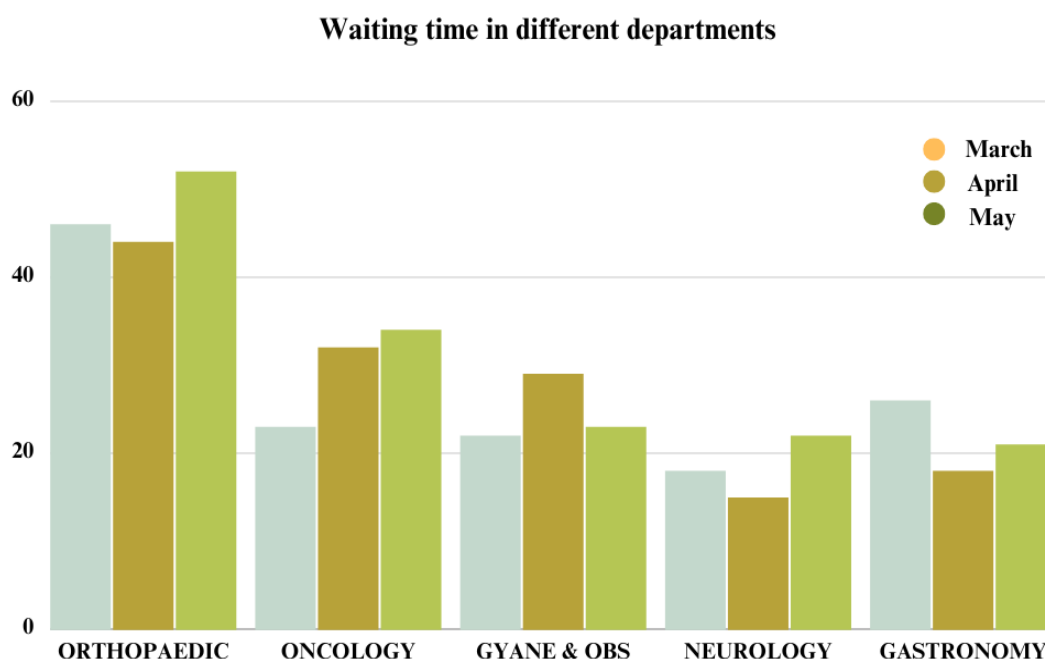


Figure 5.3- Average waiting time in departments.

This graph shows that maximum waiting time was taking place in Orthopaedic OPD as it was observed that Orthopaedic department had maximum rush resulting in increased waiting time. Thereafter Oncology OPD also had increased waiting time due to doctor not available on time.

The average total waiting time was taken 20 minutes from the starting of billing till entering for consultation. Neurology and Gastronomy OPD falls under the ideal average waiting time and gynaecology and obstetrics OPD in the month of March.

For better understanding, patients were directly tracked at different time stations to rule out the bottlenecks for increased waiting time. When a patient arrives in the hospital the first encounter point is the reception or the billing counter for billing or new patient registration.

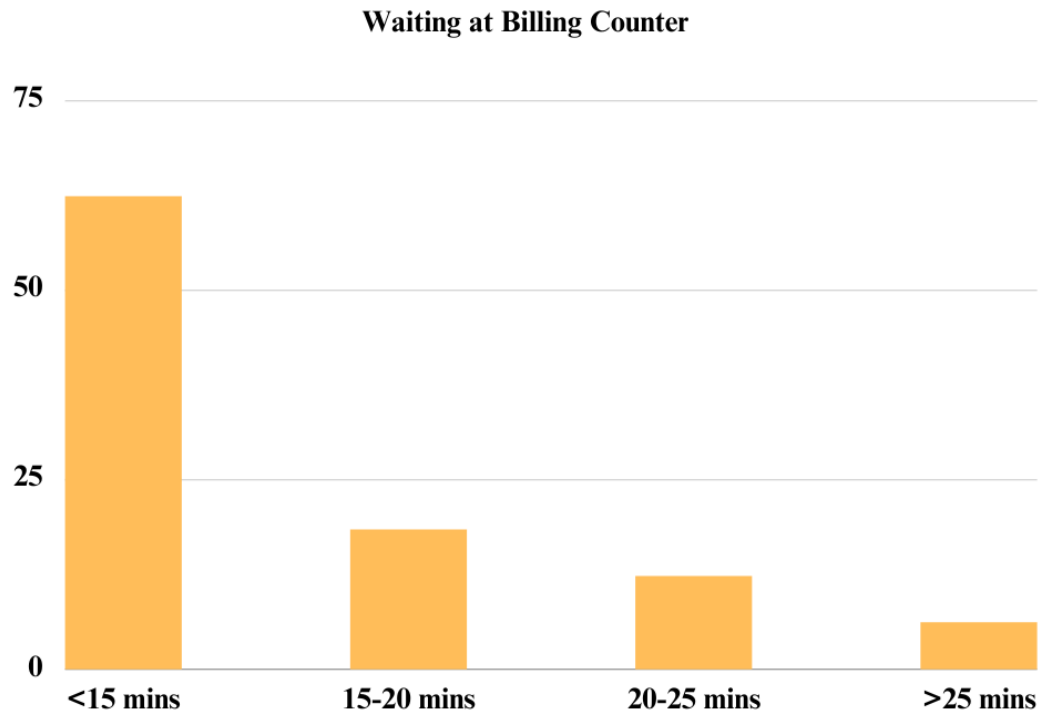


Figure 5.4 – Average waiting time at Billing counter

Criteria	Frequency	Percentage
<15 mins	62	62.37
15-20 mins	18	18.371
20-25 mins	12	12.24
>25 mins	6	6.12

Table- 5.2 Waiting time spent on billing counter.

In the Figure 3.3, the graph's X-axis represents the no. of patients and Y-axis represents the average time in different criteria. It is evident from the graph that the maximum time for maximum patients spent at billing counter is less than 15 minutes and 18% spent between 15 to 20 minutes, 12% waited between 20-25 minutes and only 6% had to wait for 25 minutes.

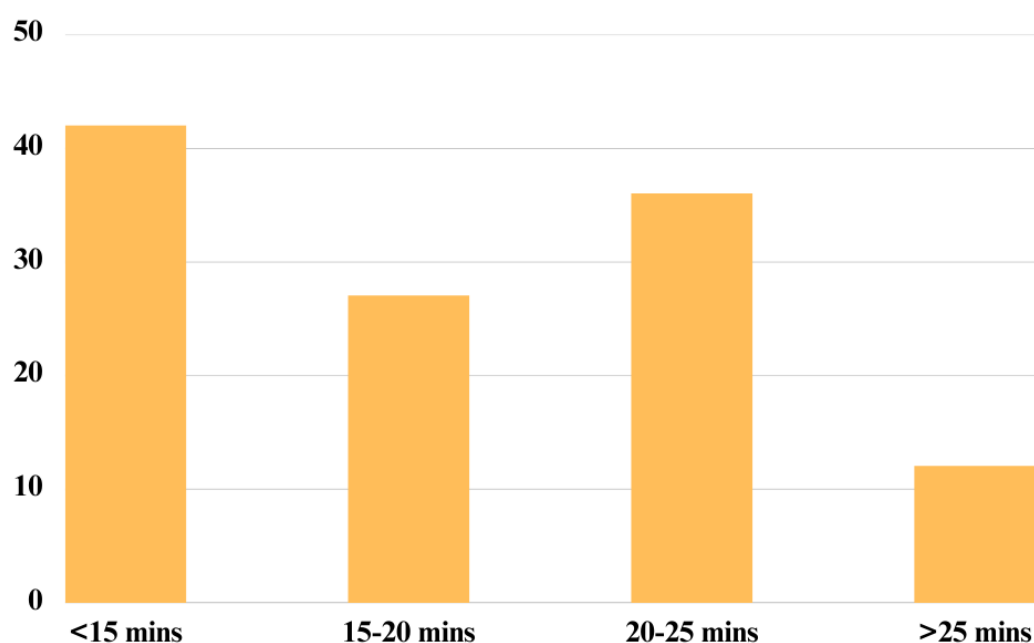


FIGURE 5.5 – Waiting time for Consultation.

Criteria	Frequency	Percentage
<15 mins	42	42.16
15-20 mins	27	27.31
20-25 mins	36	36.71
>25 mins	12	12.22

Table- 5.3 Waiting time for consultation.

In the Figure 3.4, the graph's X-axis represents the number of patients and Y-axis represents the average time taken for a patient after billing to go for consultation. The

graph shows that the maximum time for maximum patients spent at billing counter is between 20-25 minutes and 36% waited less than fifteen minutes, 27% waited between fifteen to twenty mins and 12% had to wait for 25 mins.

The average waiting time study was carried out with the help of OPD patients in various departments. The time of patient arrival to billing counter to consultation was calculated at different time stages with a stopwatch manually. Table 3.3 shows the format of calculation of data done for the study.

Patient name	Doctor Department	Category	Appointment time	Arrival time	Billing time	Check-in	Waiting time	Reason

Table 5.4 Calculation of Average waiting time

Based on the observation of 100 patients, it was found that the average waiting time for OPD patients is 22.38 minutes. The average time taken to reach the OPD waiting area from the registration desk is 14.4 minutes, while the average time to enter the doctor's chambers from the OPD waiting area is 20 minutes.

There are several factors contributing to the increased waiting time for OPD patients, including:

1. Delay in the start of OPD sessions.
2. Absence of doctors due to leave.
3. Delays at the registration desk.
4. Unavailability of healthcare assistants to assist and guide patients effectively.
5. Doctors being occupied with rounds or emergency situations.
6. Scheduled surgeries taking place during OPD hours.

These factors are the major reasons for the increased waiting time in OPD dealt by patients in the hospital.

Reasons for increase in OPD waiting time

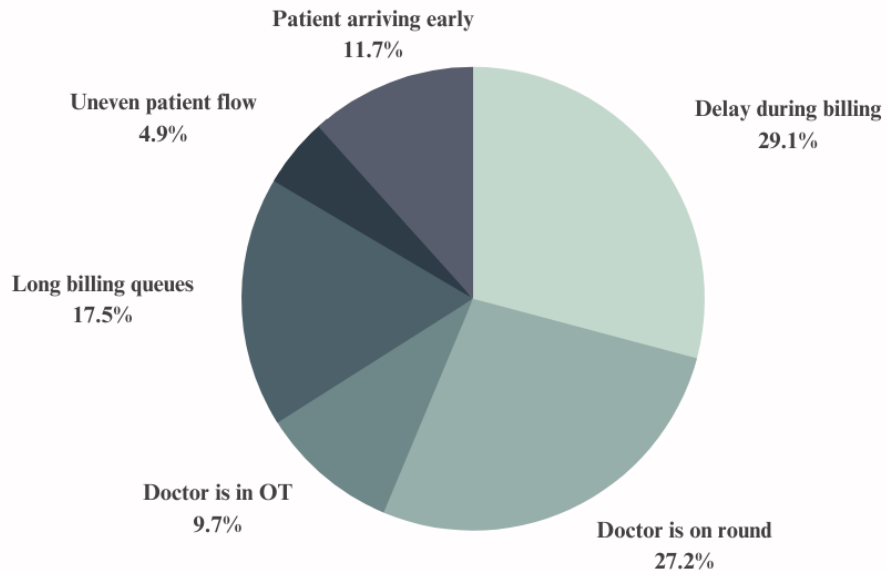


Figure – 5.6

The pie-chart shows that the frequency of cases in which there's a maximum increase in OPD waiting time is due to delay in billing and slightly less at 27% is non availability due to rounds or any other reason. 17% patient's waiting time is increased due to long queues or rush time in OPD, 11% patient arrive before their appointment time in case of prepaid patients resulting in rush in OPD, 9% includes the doctor's non availability due to emergency cases or delay in surgery, 4% patients face more waiting time due to uneven patient flow like walk-in patients on weekends which results in increased rush in OPD.

CHAPTER 6 – ANALYSIS

The cause-and-effect relationship between the time motion study conducted on the outpatient department (OPD) in hospitals and the desired outcomes can be understood as follows:

Cause:

1. Conducting a time motion study: The primary cause is the implementation of a time motion study to analyse the OPD workflow. This study involves careful observation, data collection, and analysis of tasks, activities, and patient interactions within the OPD.

Effect:

1. Identification of bottlenecks and inefficiencies: The time-motion study helps identify specific areas in the OPD workflow where bottlenecks and inefficiencies exist. These bottlenecks can include delays in patient flow, excessive wait times, redundant tasks, or inefficient resource allocation.
2. Insights for workflow optimization: The study provides evidence-based insights into the root causes of bottlenecks and inefficiencies. This information allows healthcare professionals and administrators to understand the underlying issues and develop targeted strategies for workflow optimization.
3. Enhanced efficiency and reduced wait times: By addressing the identified bottlenecks and inefficiencies, hospitals can streamline the OPD workflow, leading to enhanced efficiency and reduced patient wait times. For example, reallocating resources or redesigning processes based on the study's findings can result in smoother patient flow and shorter waiting periods.
4. Better resource distribution: The analysis aids in identifying OPD areas where resources are being used inefficiently or excessively. By shifting workers, altering schedules, or deploying new technologies, hospitals can optimise resource allocation with the use of this information. As a result, resources are used more effectively, and overall efficiency is increased.
5. Processes for improving patient care can be identified by healthcare professionals thanks to the study's insights, which help them. This could entail

strengthening patient education and counselling, optimising appointment scheduling, enhancing professional coordination between healthcare providers, or putting in place standardised processes. These improvements lead to better patient outcomes, more patient satisfaction, and enhanced patient experiences.

6. Cost savings and resource efficiency: By optimizing workflows and resource allocation, hospitals can achieve cost savings and resource efficiency. Reducing patient wait times, improving staff productivity, and eliminating unnecessary tasks can lead to financial savings and better utilization of resources, ultimately benefiting the healthcare organization.

The goal in this phase is to analyse the results of the investigations and surveys done for the study. This diagram identifies the causes of delay in increased waiting time in OPD and to determine bottlenecks or disparity that may exist in current performance and future levels to be achieved. For better understanding of analysis, the relationship between cause and effect was done to highlight improvements.

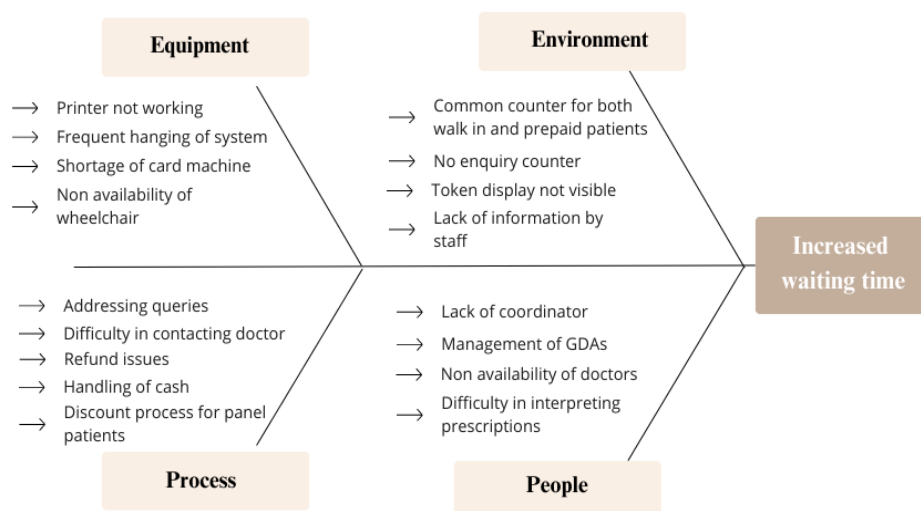


Figure- 6.1- Fishbone diagram of increased waiting time in OPD

CHAPTER 7 – DISCUSSIONS

The study titled "TIME MOTION STUDY TO EVALUATE & REDUCE AVERAGE WAITING TIME FOR OUTPATIENT DEPARTMENT" aimed to examine the patient flow and average time spent in the OPD, identify factors contributing to high waiting times, and provide appropriate suggestions for optimizing waiting times in the OPD. The research took place in a well-regarded multi-specialty hospital with 200 beds located in Jaipur, known for its comprehensive services and advanced technologies.

Data analysis involved the use of tables and graphs to present the number of respondents and their respective percentages. Percentage bar diagrams were utilized to aid in interpreting the results. The research found various problems that contributed to long OPD wait times, including:

Effective communication between the front desk executive and patients/attendants was lacking at the registration desk. Patients experienced delays and inconveniences because of staffing issues during peak times.

Due to a lack of departmental signage and the absence of healthcare professionals to act as guides, patients had trouble finding their way to the appropriate departments.

Patients had to wait longer for OPD appointments because of the delayed start timings and occasionally tardy doctors.

Patient wait times were made longer by improper scheduling of OPD time slots and doctors leaving for rounds during OPD hours.

There was a variable patient flow during the week, with a larger intake of people on Mondays and Saturdays. The result was lengthier in the packed waiting room, there are longer wait times for doctor consultations and longer registration waits.

Registration times and increased waiting periods for doctor consultations in the overcrowded waiting area.

Overall, the study shed light on the specific challenges contributing to extended waiting times in the OPD and provided recommendations to address these issues and improve efficiency.

CHAPTER 8 – RECOMMENDATIONS

To decrease waiting times in the OPD, it is recommended to implement the following measures:

Conduct timely training sessions for front office executives on OPD forms to improve their understanding and reduce miscommunication with patients. This will ultimately result in decreased waiting hours in the OPD.

Install clear and appropriate signboards for various OPD departments to assist patients in navigating and reaching the correct department without wasting time. Alternatively, display room numbers at the reception to guide patients and minimize waiting time.

Encourage a higher number of appointments on Wednesdays and Thursdays and promote the importance of booking appointments in advance to manage patient flow effectively.

Keep a record of delays exceeding 15 minutes and share a weekly report with the chairman to monitor and address any persistent issues causing delays.

Increase the number of appointment slots available and reconsider the design of the appointment scheduling system to accommodate more patients efficiently.

Educate patients about the benefits of booking appointments before coming for consultation to streamline the process and reduce waiting times.

Provide front office staff with training to make it easier for patients to schedule appointments in advance and to emphasise the benefits of doing so.

Create a method for alerting the front desk employees or designating a resident physician to treat patients in cases of emergency when the primary physician is unable to do so in the OPD.

The OPD's efficiency can be increased, patients' experiences can be improved, and waiting times for patients seeking consultation can be decreased by putting these ideas into practise.

CHAPTER 9 – CONCLUSION

In conclusion, the goal of the time motion study on the outpatient department (OPD) in hospitals was to find workflow bottlenecks, inefficiencies, and opportunities for improvement. In order to increase effectiveness, decrease patient wait times, improve resource allocation, and optimize overall patient care processes in the OPD, the study set out to offer evidence-based insights and recommendations.

In order to improve workflows in the outpatient department (OPD), the aim of this study was to pinpoint opportunities for improvement by thoroughly reviewing tasks, activities, and patient contacts. The ultimate objective was to improve patient care, boost overall efficiency, and better resource utilization.

The satisfaction of patients attending a hospital plays a crucial role in shaping the hospital's reputation. Numerous studies have identified common issues in outpatient services, such as overcrowding, delays in consultations, and staff behaviour. This study examines the average time spent by patients and their perspectives on the hospital's services, as well as the expenses incurred for each activity. The study reveals that patients of all age groups and genders visit the OPD, with a higher proportion being females. The administrative staff is attentive to patient expectations, providing suggestion boxes and ensuring satisfactory responses. To reduce waiting times in the OPD, a queuing method is implemented, and it is observed that the OPD generally starts and doctors arrive on time. However, there may be scope for improvement, such as adding another server at the reception centre to maintain a steady flow. Additionally, exploring the possibility of combining the functions of the reception centre with registration could eliminate an extra node and reduce the overall process time per patient. Simulation results demonstrate that having a single refraction chamber with 8 or 6 technicians can reduce waiting times by up to 25% and optimize resource utilization.

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