

**A STUDY ON THE PATIENT CONVERSION RATE FROM OUTPATIENT
DEPARTMENT TO INPATIENT DEPARTMENT AND THE FACTORS
IMPACTING IT AT ARTEMIS HOSPITAL**

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 and Health Management

By

Anjali Sahu

Under the Supervision and Guidance of

Dr Tripti Bisawa

2024

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During this internship, she was found to be sincere and hardworking.

We wish her all the best for future.

For Artemis Medicare Services Ltd,

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I hereby declare that this dissertation titled **A Study on the Patient Conversion Rate from Outpatient Department to Inpatient Department and the Factors Impacting It at Artemis Hospital** 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.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)

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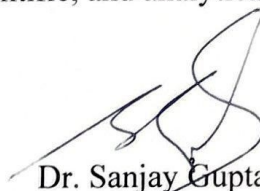
CERTIFICATE

This is to certify that dissertation titled “A Study on the Patient Conversion Rate from Outpatient Department to Inpatient Department and the Factors Impacting it at Artemis Hospital” is a record of the research work undertaken by **Anjali Sahu** 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 his/her approach to the research study has been sincere, scientific, and analytical.

A handwritten signature in black ink, appearing to be 'TB', with a long horizontal line extending to the right.

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Faculty Guide
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Date

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I extend my gratitude to my family and friends for their unwavering love, understanding, and encouragement throughout this academic journey. Their continuous support has been a source of strength and motivation.

Thank you all for your integral roles in this academic endeavour and for your invaluable contributions.

ABSTRACT

Title: A Study on the Patient Conversion Rate from Outpatient Department to Inpatient Department and the Factors Impacting It at Artemis Hospital

In the dynamic landscape of healthcare, optimizing patient admissions from the Outpatient Department (OPD) to the Inpatient Department (IPD) is crucial for enhancing operational efficiency and improving patient outcomes. Effective management of this conversion process can significantly impact the overall performance of a hospital, ensuring timely and appropriate care for patients while optimizing resource utilization.

The primary purpose of this research is to analyse and improve the conversion rates from the Outpatient Department (OPD) to the Inpatient Department (IPD) of some selected department at Artemis Hospital. This study aims to the factors influencing patient admissions and provide mitigation to enhance the conversion rate, ultimately improving patient care and hospital efficiency.

Objectives

1. To compare the OPD to IPD conversion rates at Artemis Hospital with national averages.
2. To compare the OPD to IPD conversion rate in Top 9 Departments of Artemis Hospital
3. To analyse the factors influencing the conversion rate of the hospital
4. To suggest potential mitigation methods to improve the OPD to IPD conversion rates.

Methodology: In this study, a mixed-method approach is employed to investigate the OPD to IPD conversion rates at Artemis Hospital in Gurugram, a multispecialty facility with over 500 beds. The research focuses on nine selected departments within the hospital, excluding follow-up patients and those admitted from the emergency department. Duration of the study was 2 months, utilizing convenience sampling techniques to include patients visiting the OPD and subsequently admitted to the IPD. Data extraction from Artemis Hospital's Hospital Information System (HIS) for February, March, and April includes the total OPD visits and IPD admissions. Additionally, interviews with hospital staff—coordinators, doctors, and nurses—provide insights into

follow-up percentages and new patient visits within each specialty. The conversion rate for each specialty is calculated by determining the percentage of OPD patients admitted to IPD, excluding those admitted from the emergency department. Integration of quantitative data and qualitative insights ensures a comprehensive analysis of factors influencing conversion rates, thereby enhancing hospital performance and patient care at Artemis Hospital.

Results: The comprehensive study shows that average conversion rate % of the 9 departments for the month of Feb24 -April24 included in the study was 11.9% whereas hospital industry standard (IJNRD) conversion rate % is between 10-15% it shows that there is a room for improvement.

The factors influencing the conversion rate % shows that average bed occupancy rate of the hospital for the month of Feb24-April24 was around 75% and according to the ICRA report FY24 average occupancy rate of the Indian hospital will be 65% that shows the hospital has higher % of occupancy so better management is needed and this can be one of the factors influencing occupancy rate

The average target turnaround time of the hospital for the admission process is 20 minutes whereas survey done shows that turnaround time is around 28 minutes so this can also be one of the potential reasons impacting conversion rate.

Conclusion: This study at Artemis Hospital identified a conversion rate of 11.9% from OPD to IPD across nine departments, highlighting areas for improvement despite aligning with industry standards. Factors influencing rates include a high bed occupancy rate (75%) and a longer-than-targeted admission turnaround time (28 minutes). Recommendations include optimizing bed management, streamlining administrative processes, and reducing admission times to enhance operational efficiency and patient care. Addressing these issues is crucial for the Hospital to maintain standards and improve patient flow, contributing to overall healthcare quality and efficiency in hospital operations.

Keywords: Conversion rate, OPD, IPD Bed occupancy rate, Operational efficiency, Patient Care

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Abbreviations

OPD- Out Patient Department

IPD- In-Patient Department

HIS- Hospital Information system

BOR- Bed Occupancy Rate

ICRA- Investment Information and Credit Rating Agency of India Limited

GDA- Ground Duty Assistant

TAT- Turn Around Time

Artemis Hospitals

Established in July 2007 by Apollo Tyres Ltd, Artemis Hospital in Gurgaon stands as a beacon of advanced healthcare in India. Spanning 9 acres, this cutting-edge, multi-specialty hospital features over 400 beds and holds the distinction of being the first JCI and NABH accredited hospital in Gurgaon. Artemis Hospital combines state-of-the-art technology with the expertise of renowned medical professionals from India and abroad, offering a comprehensive array of inpatient and outpatient services.

Designed to set new standards in healthcare, Artemis Hospital is dedicated to delivering top-notch medical and surgical interventions. The hospital's practices and procedures are research-oriented and benchmarked against the highest global standards. Patients receive care in a warm, open, and patient-centric environment, with a focus on affordability and accessibility.

With a team of over 400 full-time doctors, 12 centers of excellence, and 40 specialties, Artemis Hospital ensures unparalleled medical expertise and advanced care across a broad spectrum of disciplines. Its commitment to excellence has made it one of the most respected and revered hospitals in the country.

Vision, Mission & Core Values of Artemis Hospital

Vision Statement To create an integrated world-class healthcare system that fosters, protects, sustains, and restores health through best-in-class medical practices and cutting-edge technology developed through in-depth research conducted by the world's leading scientific minds.

Mission

- Deliver world-class patient care services.
- Excel in the delivery of specialized medical care supported by comprehensive research and education.
- Be the preferred choice for the world's leading medical professionals and scientific minds.
- Develop, apply, evaluate, and share new technology.

- Actively partner in local community initiatives and contribute to its well-being and development.

Core Values The corporate value system at Artemis is founded on three pillars: Service, Compassion, and Integrity.

1. **Care for Customer:** Prioritizing patient-centered care and ensuring the highest level of service.
2. **Respect for Associates:** Valuing and respecting all team members and fostering a supportive work environment.
3. **Excellence through Teamwork:** Achieving excellence by working collaboratively and leveraging collective expertise.
4. **Always Learning:** Committing to continuous learning and improvement to stay at the forefront of medical advancements.
5. **Trust Mutually:** Building and maintaining mutual trust among patients, associates, and stakeholders.
6. **Ethical Practices:** Upholding the highest standards of ethical behaviour in all practices and interactions.

Chapter 1: Introduction

1.1 Overview

In the dynamic landscape of healthcare, optimizing patient admissions from the Outpatient Department (OPD) to the Inpatient Department (IPD) is crucial for enhancing operational efficiency and improving patient outcomes. Effective management of this conversion process can significantly impact the overall performance of a hospital, ensuring timely and appropriate care for patients while optimizing resource utilization.

The primary purpose of this research is to analyse and improve the conversion rates from the Outpatient Department (OPD) to the Inpatient Department (IPD) at Artemis Hospital. This study aims to identify the factors influencing patient admissions and develop strategies to enhance the conversion rate, ultimately improving patient care and hospital efficiency.

The Outpatient Department (OPD) serves as the first point of contact for many patients, offering a diverse range of medical services. The transition from OPD to the Inpatient Department (IPD) is influenced by various factors, including the severity of the patient's condition, the availability of inpatient beds, and the efficiency of administrative processes. Understanding these factors and their interactions is crucial for hospital administrators and healthcare providers to develop targeted interventions that streamline the admission process and enhance patient care.

The healthcare industry constantly strives to deliver high-quality patient care while maintaining operational efficiency. Managing patient flow effectively from OPD to IPD is a significant challenge for hospitals. High conversion rates indicate the hospital's ability to provide comprehensive care and effectively manage patient needs. Conversely, low conversion rates can signal inefficiencies and potential gaps in patient care, leading to dissatisfaction and potential revenue losses for the hospital. High conversion rates reflect the hospital's capability to offer comprehensive care, while low rates can expose inefficiencies and gaps in patient care, causing dissatisfaction and potential revenue losses for the hospital.

Artemis Hospital, a leading healthcare institution, has recognized the need to enhance its patient admission processes. The conversion rate from OPD to IPD is a critical metric that reflects the hospital's ability to transition patients requiring further medical intervention smoothly. Improving this conversion rate is essential for several reasons:

1. Resource Allocation:

- Understanding the conversion rate helps hospitals allocate resources effectively, ensuring adequate staffing, bed availability, and medical equipment to meet the demand for inpatient services.

2. Clinical Effectiveness:

- A high conversion rate can signify efficient diagnostic and treatment processes in the outpatient department, ensuring that patients needing further care are promptly admitted.

3. Operational Efficiency:

- Monitoring this rate aids in optimizing patient flow, minimizing wait times, and reducing bottlenecks. It ensures a seamless transition from outpatient to inpatient care, enhancing overall operational efficiency.

4. Financial Health:

- Inpatient services typically generate more revenue than outpatient services. Tracking the conversion rate assists in financial planning and sustainability, allowing the hospital to invest in quality improvements and maintain operations.

5. Quality of Care:

- A balanced conversion rate indicates that patients are receiving appropriate care at the right time, helping to assess the effectiveness of outpatient treatments and the necessity of inpatient admissions.

6. Strategic Planning:

- Hospitals can use conversion rate data to identify trends and patterns, guiding strategic decisions about service line development, capacity planning, and resource management.

Factors Influencing OPD to IPD Conversion Rates

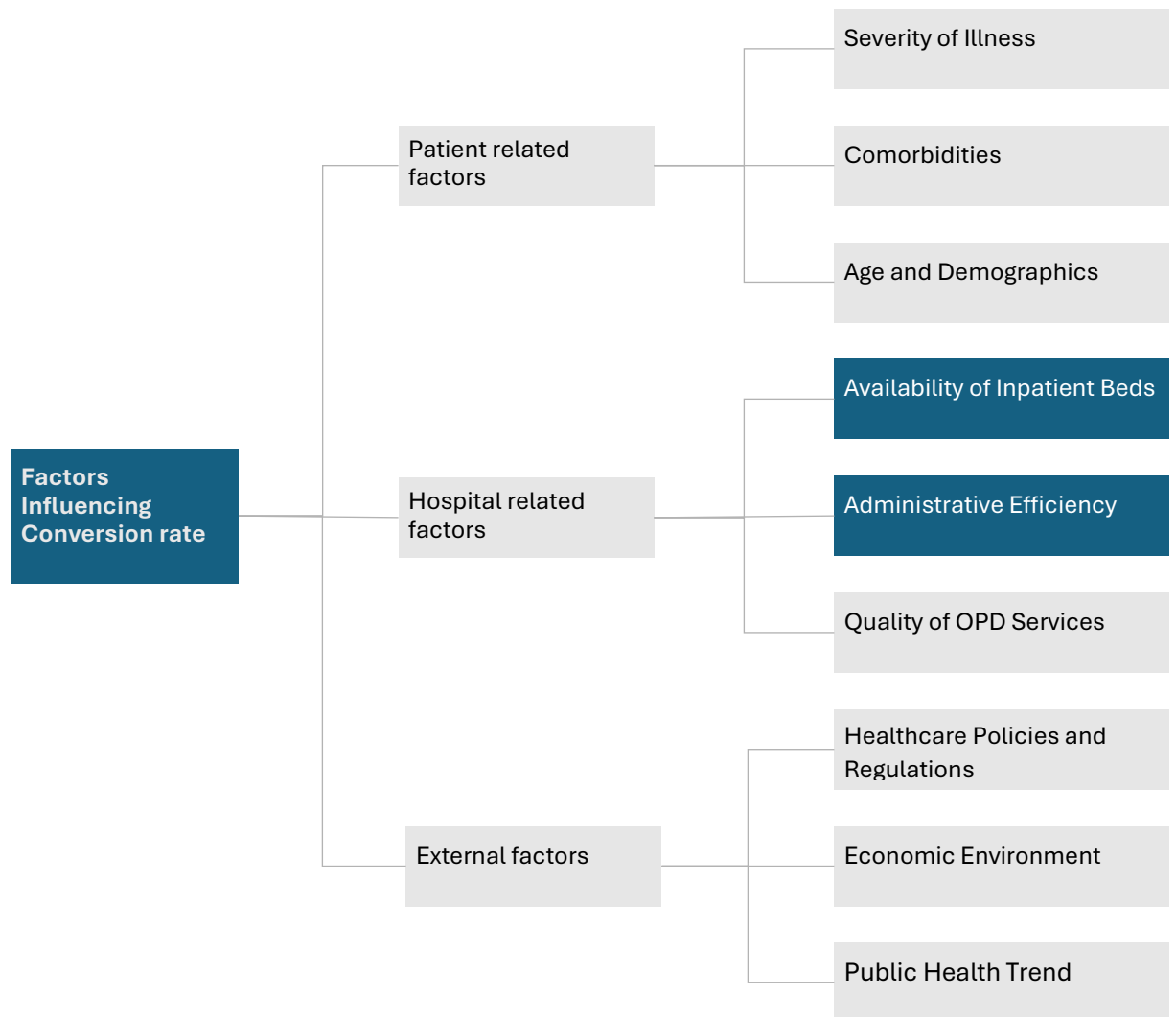


Fig.1.1: These various factors that may influence the conversion rate were identified through interviews with hospital staff. From these, two key factors were chosen for the study

Aim

The aim of this study is to improve the process of admitting patients from the Outpatient Department (OPD) to the Inpatient Department (IPD) at Artemis Hospital.

Objectives

1. To compare the OPD to IPD conversion rates at Artemis Hospital with national averages.
2. To compare the OPD to IPD conversion rate in Top 9 Departments of Artemis Hospital
3. To analyse the factors influencing the conversion rate of the hospital
4. To suggest potential mitigation methods to improve the OPD to IPD conversion rates.

Chapter 2: Review of literature

A Study on OPD to IPD Conversion in One of the Leading Hospitals in Bangalore" © 2023 IJNRD - Identified reasons for non-conversion from OPD to IPD, such as medical management, other treatments, surgery costs, and scheduling issues. - Analysed conversion rates by specialization. - Observed the highest non-conversion rates in radiation oncology and MAS departments. - Found medical management as the top reason for non-conversion. - Recommended improving patient communication, online admission processes, and minimizing waiting times.

Author | Dr. V. Uma, N. Anupriya (2023) | Study Location – Bangalore, Karnataka, India | Sample size-245|Sampling Technique -Census Method

A survey on consequences related to the low conversion of patients from out-patient department to in-patient department at a multispecialty hospital, 2018, JMSCR Vol 06 -Investigates reasons behind low conversion rate of OPD patients to IPD admissions. Targets financial constraints, dissatisfaction with consultations, lack of perceived need for hospitalization, and preference for private consultations as reasons.

Author- Prof. (Dr) Subhashish Chatterjee¹, Dr Medha Wadhwa², Ms. Devanshi Jani³
¹Principal/Director, ²Assist. Professor, ³Student of 3rd Semester

Department of Management, Sumandeep Vidyapeeth, An Institution Deemed to be University | Study Location - Ahmedabad, Gujarat, India| Sampling Technique- Simple Random Sampling |

A study to access level of satisfaction amongst the patients visiting outpatient department in a multi-speciality hospital, IJRCM VOL 11 2020 -Investigated patient satisfaction in the Outpatient Department (OPD) of a multispecialty hospital. Assessed overall satisfaction, identified areas for improvement, and recommended solutions to enhance satisfaction. Patients rated their experience in appointment system, registration, consultation, OPD environment, lab tests, radiology, pharmacy, and waiting times. Generally satisfied patients with specific areas for improvement. High satisfaction with consultation and OPD environment, but low satisfaction with waiting times (registration, lab, radiology, pharmacy) and turnaround times (radiology reports). No significant difference in satisfaction between cash and credit patients.

Author- Dr. Susmit Jain asst. professor IIHMR university Jaipur Dr. Richa Pareek

Study Location- Jaipur, Rajasthan, India Sample size -100 Sampling Technique- Convenience Sampling(non-probability)
Nemours Children's Health (NCH), a healthcare system focused on paediatric care, sought to improve the overall experience for patients and their families. To achieve this, they conducted a value stream analysis, examining each step a family encounters throughout their care journey. This analysis revealed a crucial opportunity for improvement: the patient referral process. Recognizing that timely access to appropriate care is paramount, NCH prioritized ensuring referred patients receive the necessary services. Kellie Olmstead, a key leader at NCH, emphasized their commitment to "getting a child to the right provider," highlighting the human aspect of the referral process (Olmstead, as cited in [source]). NCH's efforts yielded significant results. Referral conversions, signifying the percentage of referred patients who complete appointments, increased dramatically from 70% to 86% within a year. This success story offers valuable insights into strategies for optimizing the patient referral process Increasing the Patient Conversion Rate. (2023, March). Children's Hospitals Today. Available from: https://www.childrenshospitals.org/news/for-the-record
In the fierce competition for patients within the UK's private healthcare landscape, a well-crafted website stands as a vital battleground. For many potential patients, a provider's online presence is the first point of contact, shaping initial impressions and driving conversion rates. To succeed, these websites must weave trust and user-friendliness into their very fabric. Earning trust is paramount, and this can be fostered by prominently displaying accreditations, positive patient reviews, and the qualifications of the medical staff. Furthermore, clear explanations of services and pricing are essential to avoid frustrating potential patients who may abandon the site if left in the dark about available treatments and their associated costs. Finally, a successful healthcare website goes beyond simply conveying information. By offering multiple avenues for engagement, such as downloadable guides or online consultations, it empowers users to navigate their healthcare journey at their own pace, ultimately converting them from curious visitors into satisfied patients. Crucible Conversion Rate Optimization. "Healthcare Websites: Building Trust and Increase Conversion Rate." [Crucible.io]. Accessed June 2024. https://crucible.io/insights/news/healthcare-how-to-build-trust-and-maximise-website-conversion-rate/

Chapter 3-Methodology

Research Question

1. What are the current OPD to IPD conversion rates at Artemis Hospital, and how do they compare with national averages?
2. What are some ways to improve the conversion rate from OPD to IPD while keeping patient care high-quality?

Materials and methods

Study design- Mixed method approach

Study setting - This study takes place at Artemis Hospital in Gurugram, a 500+ bed multispecialty facility. It focuses on the OPD and IPD departments, examining the current OPD to IPD conversion rate, and existing challenges in patient flow to enhance hospital performance and patient care.

Study Population

•Inclusion Criteria:

- Patients visiting the OPD and those being admitted to the IPD.
- Only 9 departments were included in the research

•Exclusion Criteria:

- Follow-up patients and patients admitted from the emergency department.
- Patient of the other department which is not included in the study

Duration of the study – 2 months

Sampling techniques- Convenience sampling

Data collection procedure

Data collection for this study involved a detailed and systematic approach using Artemis Hospital's Hospital Information System (HIS) and interviews with hospital staff. The steps are outlined as follows:

Data Extraction from HIS:

The total number of patients visiting the Outpatient Department (OPD) for the past three months (February, March, and April) was extracted from the HIS.

The total number of admissions to the Inpatient Department (IPD) during the same period was also retrieved from the HIS.

Interviews with Hospital Staff:

Interviews were conducted with coordinators, doctors, and nurses to gather information on the follow-up percentages for different specialties. This data helped identify the proportion of repeat visits versus new patient visits in the OPD.

The follow-up percentages were subtracted from the total number of OPD visits to focus on new patient visits for each specialty.

Admission Analysis:

The total number of admissions was analysed, and the percentage of patients admitted from the emergency department was subtracted from the total admissions. This step ensured that only admissions originating from the OPD were considered.

Conversion Rate Calculation:

The conversion rate for each specialty was calculated using the formula:

Conversion Rate - $\frac{\text{Number of patients admitted through OPD in a period}}{\text{Total number of OPD patients}} \times 100$

Total number of OPD patients

This calculation provided the conversion rate for each specialty by considering the number of OPD patients admitted to the IPD and the total number of new OPD patients.

Data Integration and Analysis:

The collected data from the HIS and the insights obtained from the interviews were integrated to ensure a comprehensive understanding of the conversion rates for different specialties.

The combined data allowed for a detailed analysis of the factors influencing the OPD to IPD conversion rates, ensuring the accuracy and reliability of the results.

This thorough approach, combining quantitative data from the HIS with qualitative insights from hospital staff, ensured precise calculation and understanding of the conversion rates for different specialties at Artemis Hospital.

Sample size for the admission TAT (A small part of study) -45 , done for a week

Ethical Considerations

Patient details will be highly confidential and will not be displayed. This study will be following the guidelines and regulations for the hospital.

Chapter 4: Results & Analysis

OPD					IPD			
Department	Month	Total no of visits	Total followup visits	Total new Patient	Total admissions	Admissions from emergency	Admissions from OPD	OPD to IPD conversion %
Internal Medicine	Feb-24	800	320	480	150	60	90	18.8
	Mar-24	980	392	588	180	72	108	18.4
	Apr-24	950	380	570	165	66	99	17.4
Ortho	Feb-24	1690	676	1014	205	82	123	12.1
	Mar-24	1800	720	1080	235	94	141	13.1
	Apr-24	1800	720	1080	210	84	126	11.7
Cardiology	Feb-24	1200	360	840	250	100	150	17.9
	Mar-24	1250	375	875	269	108	161	18.4
	Apr-24	1500	450	1050	235	94	141	13.4
Neurology	Feb-24	850	255	595	100	40	60	10.1
	Mar-24	1000	300	700	93	37	56	8.0
	Apr-24	950	285	665	89	36	53	8.0
Gynaecology	Feb-24	795	239	557	97	39	58	10.5
	Mar-24	1000	300	700	110	44	66	9.4
	Apr-24	790	237	553	95	38	57	10.3
Pulmonology	Feb-24	679	204	475	109	44	65	13.8
	Mar-24	630	189	441	100	40	60	13.6
	Apr-24	601	180	421	75	30	45	10.7
Urology	Feb-24	955	287	669	111	44	67	10.0
	Mar-24	1000	300	700	110	44	66	9.4
	Apr-24	1130	339	791	112	45	67	8.5
ENT	Feb-24	701	210	491	50	20	30	6.1
	Mar-24	1000	300	700	99	40	59	8.5
	Apr-24	990	297	693	90	36	54	7.8
Medical Oncology	Feb-24	900	450	450	100	40	60	13.3
	Mar-24	1100	550	550	110	44	66	12.0
	Apr-24	1200	600	600	105	42	63	10.5

Table 4.1: Detailed Analysis of OPD to IPD Conversion Rates by Department

This table provides an overall calculation of the OPD to IPD conversion rate, with column-wise explanations of each category for better understanding.

Department (Column 1)

This column indicates the hospital department included in the study for analysing and calculating the OPD to IPD conversion rate.

Month & Year (Column 2)

This column shows the three months used for the calculation: February, March, and April of the year 2024.

Total Number of Visits (Column 3)

This represents the total number of visits for each department over the three months, including follow-up patients.

Total Follow-Up Visits (Column 4)

This represents the number of follow-up patients out of the total visits for each department over the three months.

(Note: The percentage of follow-up patients was determined through interviews with various coordinators and nurses from the departments included in the study.)

Total New Patients (Column 5)

This represents the number of new patients, calculated by subtracting the follow-up visits from the total visits. These are patients visiting the department for the first time.

Total Admissions (Column 6)

This represents the total number of patients admitted to each department each month, including admissions from the emergency department.

Admissions from the Emergency Department (Column 7)

This represents the total number of patients admitted from the emergency department.

(Note: The percentage of emergency department admissions, which is 40% of the total admissions, was determined based on interviews with coordinators and the admissions department.)

Admissions from OPD (Column 8)

This represents the total number of patients admitted to the IPD from the OPD after excluding those admitted from the emergency department.

OPD to IPD Conversion Rate (%) (Column 9)

This represents the percentage of new patients from the OPD who were admitted to the IPD.

The various graph showing conversion rate from OPD to IPD has been shown in below figures:

Internal Medicine department Conversion rate graph

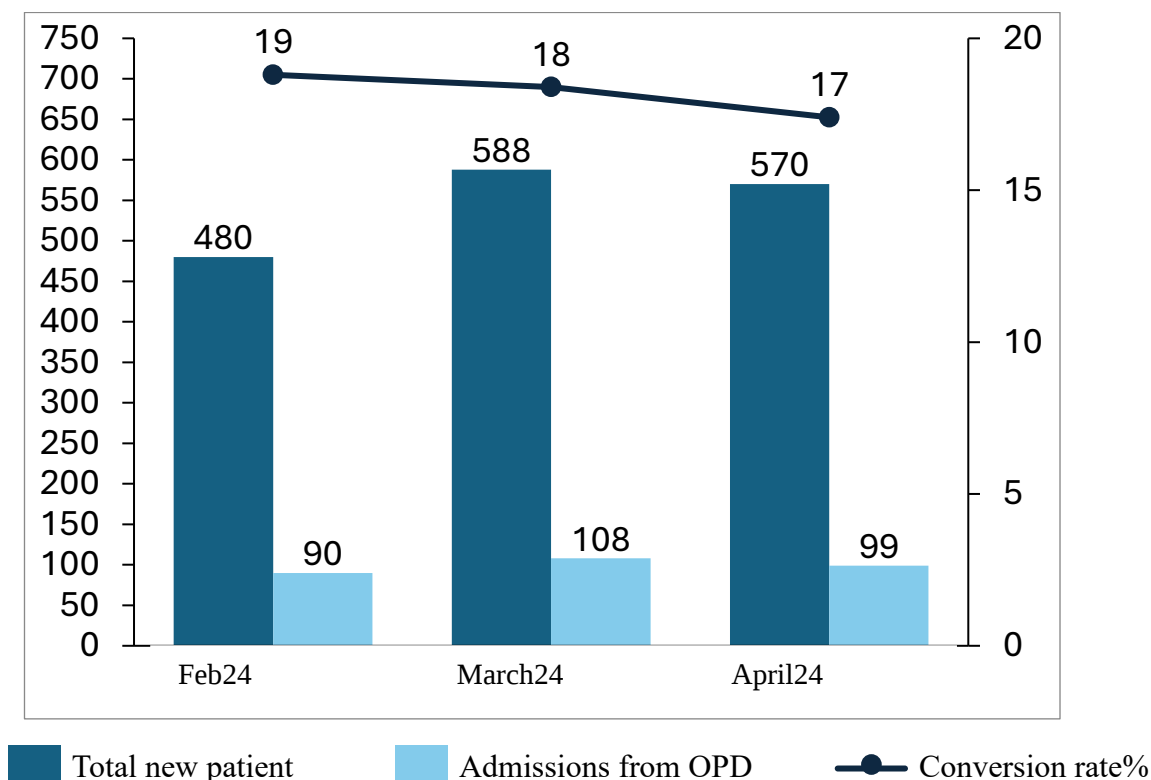


Fig.4.1: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April. Additionally, the line graph depicts the conversion rate% for the Internal Medicine Department during the same period.

- In February, the total number of new patients was 480, with 90 admissions from the OPD, resulting in a conversion rate of 19%.
- Moving to March, the total number of new patients increased to 588, with 108 admissions from the OPD, leading to a conversion rate of 18%.
- By April, the total number of new patients decreased to 570, along with a decrease in OPD admissions to 99, resulting in a conversion rate of 17%.

The data indicates fluctuations in new patient numbers and OPD admissions over the three months, with a gradual decline in the conversion rate for the Internal Medicine Department.

Orthopaedic department Conversion rate graph

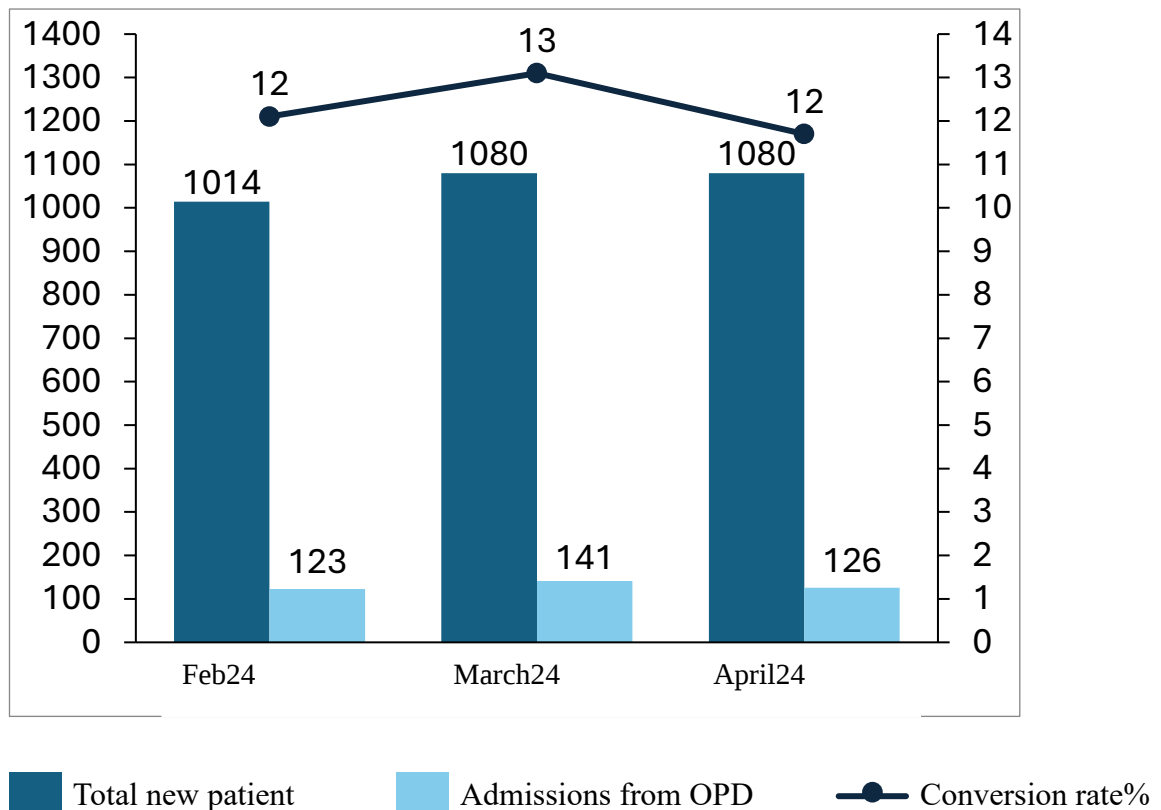


Fig.4.2: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April. Additionally, the line graph depicts the conversion rate% for the Orthopaedics Department during the same period.

- In February, the total number of new patients was 1,014, with 123 admissions from the OPD, resulting in a conversion rate of 12%.
- Moving to March, the total number of new patients increased to 1,080, with 141 admissions from the OPD, leading to a conversion rate of 13%.
- By April, the total number of new patients remained at 1,080, while OPD admissions decreased to 126, resulting in a conversion rate of 12%.

The data indicates an increase in new patient numbers and OPD admissions from February to March, followed by a stabilization in new patient numbers and a decrease in

OPD admissions in April. The conversion rate shows a slight increase in March before returning to the February level in Apr

Cardiology Department Conversion rate graph

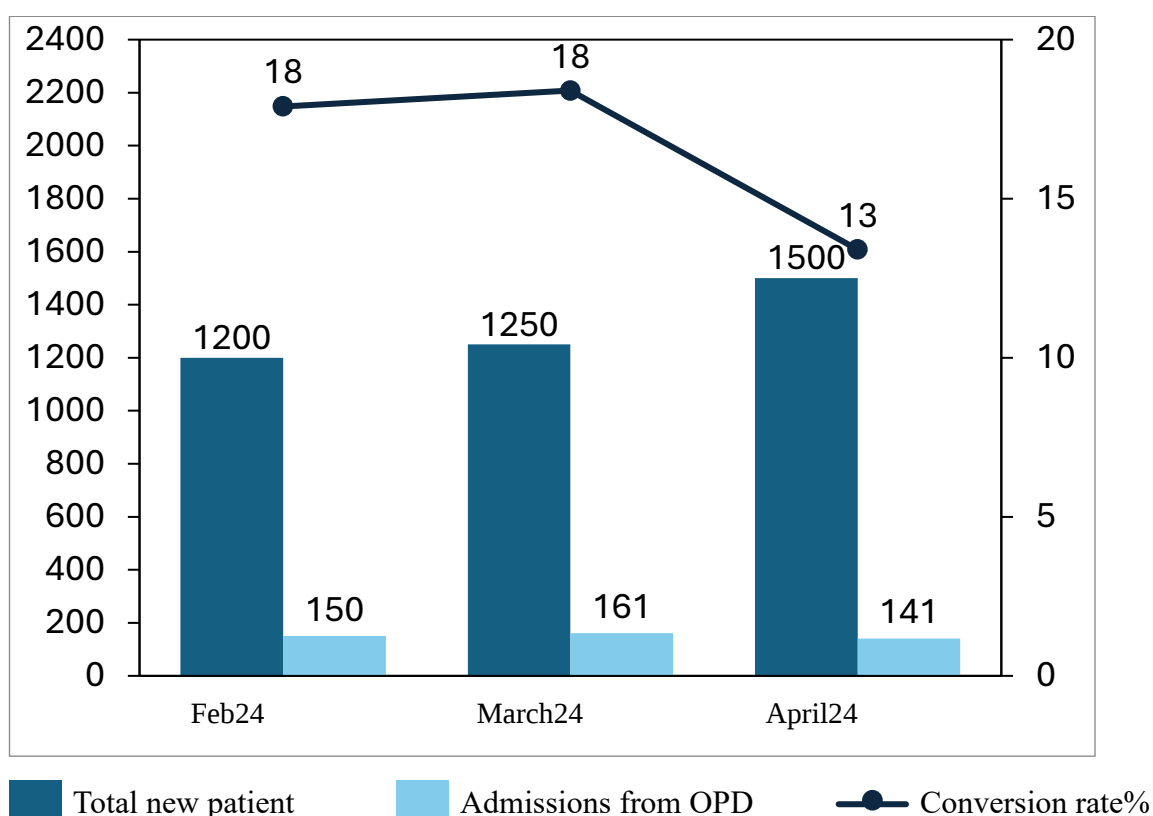


Fig.4.3: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April. Additionally, the line graph depicts the conversion rate % for the Cardiology Department during the same period.

- In February, the total number of new patients was 1,200, with 150 admissions from the OPD, resulting in a conversion rate of 18%
- Moving to March, the total number of new patients increased to 1,250, with 161 admissions from the OPD, leading to a conversion rate of 18%.
- By April, the total number of new patients further increased to 1,500, while OPD admissions decreased to 141, resulting in a conversion rate of 13%.

The data indicates a steady increase in new patient numbers from February to April. OPD admissions increased from February to March but then decreased in April. The conversion rate shows a slight increase from February to March before dropping significantly in April

Neurology Department Conversion rate graph

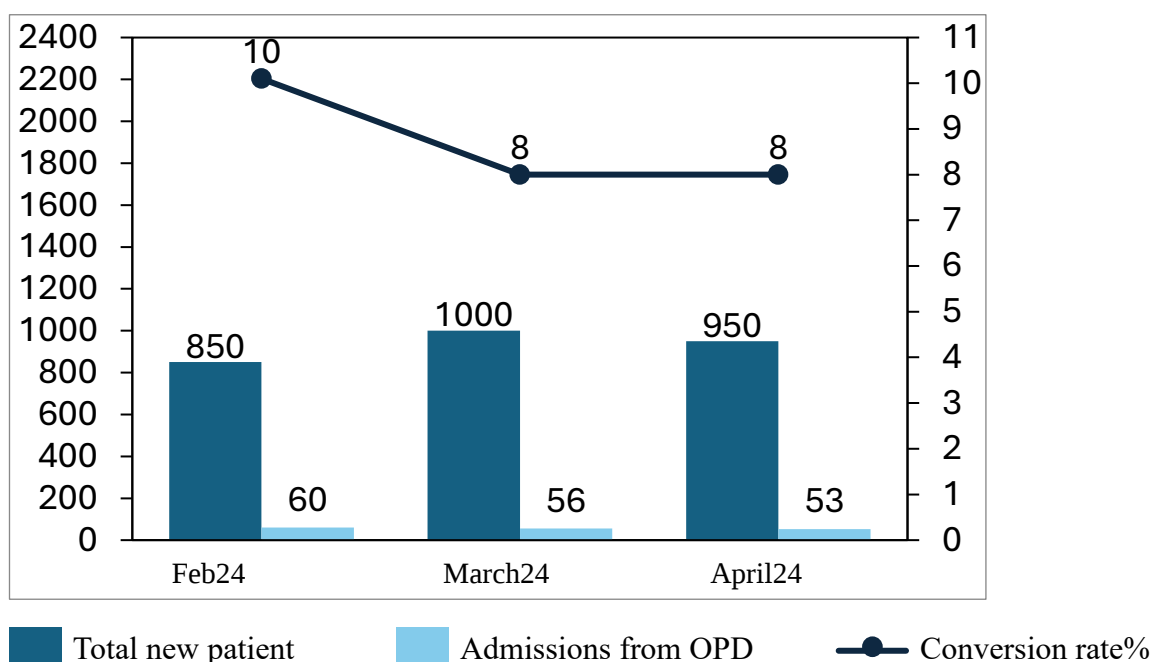


Fig.4.4: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the Neurology Department. Additionally, the line graph depicts the conversion rate % for the Neurology Department during the same period.

- In February, the total number of new patients was 850, with 60 admissions from the OPD, resulting in a conversion rate of 10%.
- Moving to March, the total number of new patients increased to 1000, with 56 admissions from the OPD, leading to a conversion rate of 8%.
- By April, the total number of new patients slightly decreased to 950, while OPD admissions further decreased to 53, resulting in a conversion rate of 8%.

The data indicates an overall increase in new patient numbers from February to March, followed by a slight decrease in April. OPD admissions show a steady decline from

February to April. The conversion rate decreases from February to March and then remains constant in April.

Gynaecology department Conversion rate graph

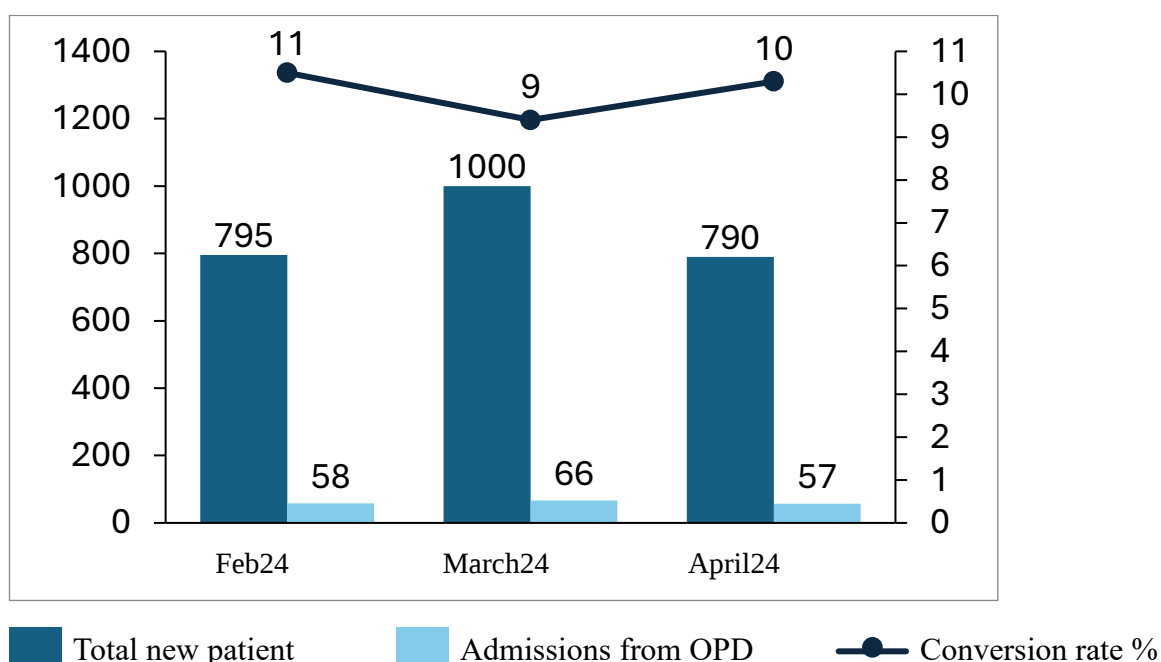


Fig.4.5: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the Gynaecology Department. Additionally, the line graph depicts the conversion rate % for the Gynaecology Department during the same period.

- In February, the total number of new patients was 795, with 58 admissions from the OPD, resulting in a conversion rate of 11%.
- Moving to March, the total number of new patients increased to 1000, with 66 admissions from the OPD, leading to a conversion rate of approximately 9%.
- By April, the total number of new patients slightly decreased to 790, while OPD admissions further decreased to 57, resulting in a conversion rate of approximately 10%.

The data indicates an increase in new patient numbers from February to March, followed by a decrease in April. OPD admissions show an initial increase from February to March and then a slight decline in April. The conversion rate decreases from February to March but increases again in April.

Pulmonology department Conversion rate graph

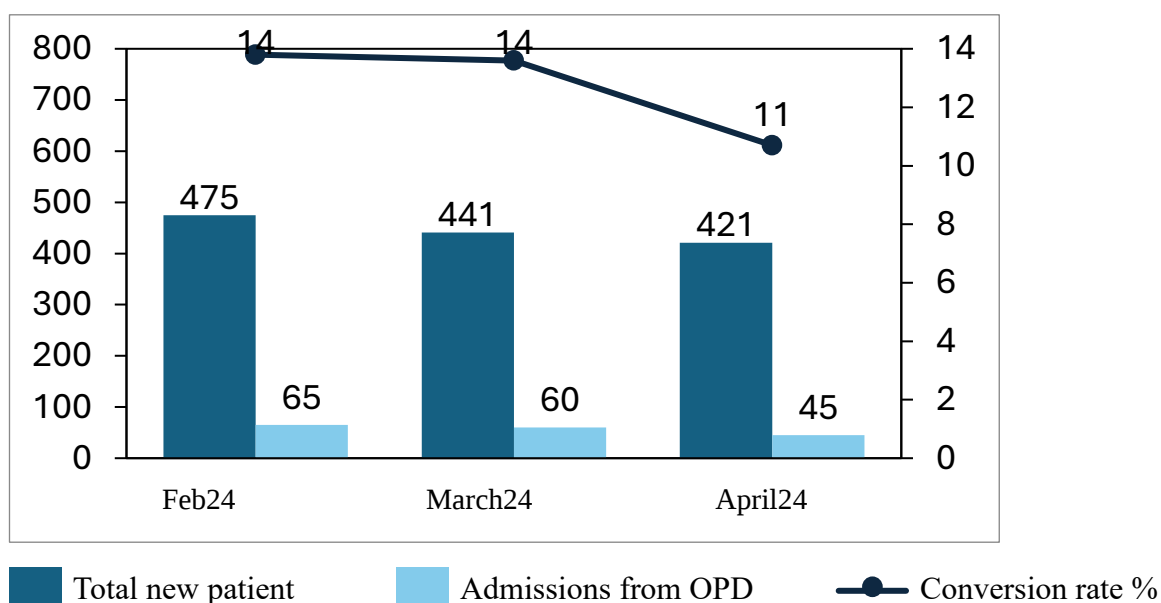


Fig.4.6: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the Pulmonology Department. Additionally, the line graph depicts the conversion rate% for the Pulmonology Department during the same period.

- In February, the total number of new patients was 475, with 65 admissions from the OPD, resulting in a conversion rate of 14%.
- Moving to March, the total number of new patients slightly lower at 441, with 60 admissions from the OPD, leading to a conversion rate of approximately 14%.
- By April, the total number of new patients slightly decreased to 421, while OPD admissions further decreased to 45, resulting in a conversion rate of approximately 11%.

The data indicates that the number of new patients remained constant from February to March, followed by a slight decrease in April. OPD admissions show a steady decline from February to April. The conversion rate decreases from February to March and then decreased more in April.

Urology department Conversion rate graph

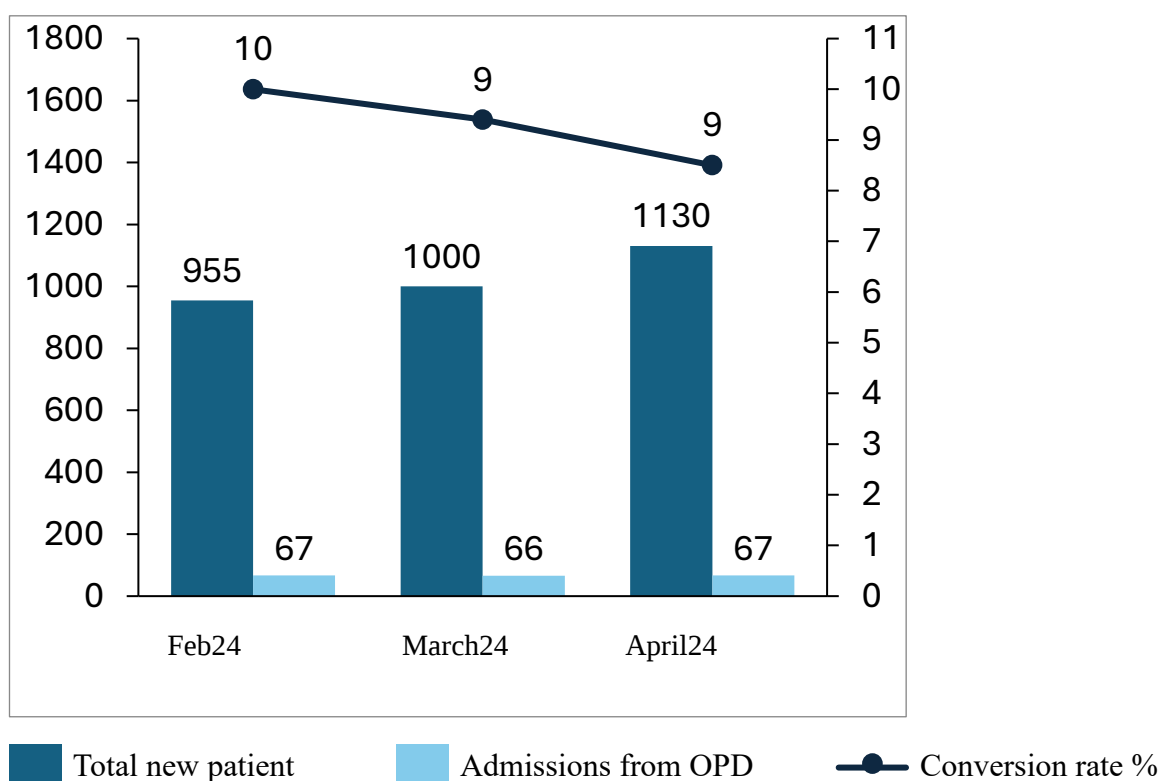


Fig.4.7: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the Urology Department. Additionally, the line graph depicts the conversion rate % for the Urology Department during the same period.

- In February, the total number of new patients was 955, with 67 admissions from the OPD, resulting in a conversion rate of 10%.
- In March, the total number of new patients increased to 1000, with 66 admissions from the OPD, leading to a conversion rate of approximately 9%.

- By April, the total number of new patients further increased to 1130, while OPD admissions remains almost constant to 67, resulting in a conversion rate of approximately 9%.

The data indicates that the number of new patients has been gradually increasing from February to April. However, OPD admissions have been slightly decreasing over the same period, leading to a gradual decline in the conversion rate from February to April.

ENT Department Conversion rate graph

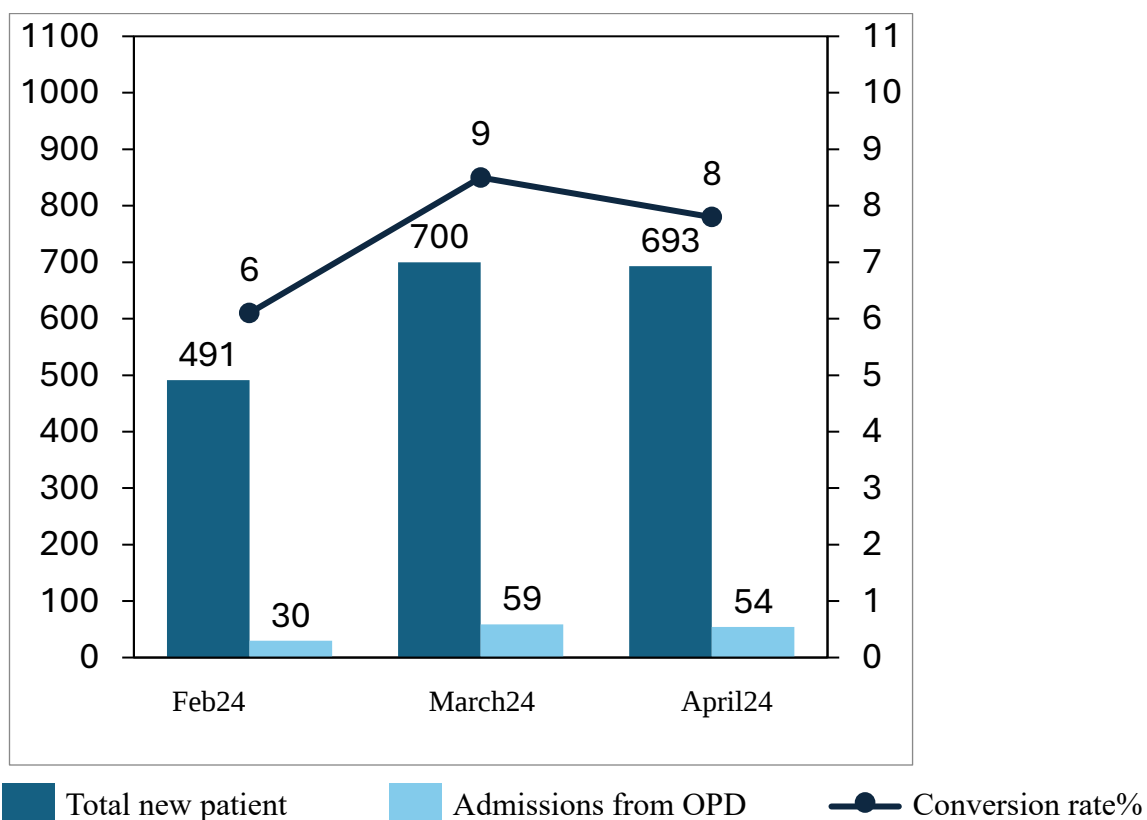


Fig4.8: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the ENT Department. Additionally, the line graph depicts the conversion rate %for the ENT Department during the same period.

- In February, the total number of new patients was 491, with 30 admissions from the OPD, resulting in a conversion rate of 6%.

- In March, the total number of new patients increased to 700, with increased up to 59 admissions from the OPD, leading to a conversion rate of approximately 9%.
- By April, the total number of new patients slightly decreased to 693, while OPD admissions also decreased to 54, resulting in a conversion rate of approximately 8%.

The data indicates that the number of new patients has been gradually increasing from February to March then slightly decreased in April. However, OPD admissions have been slightly increasing over the same period, leading to a gradual incline in the conversion rate from February to March then decline in March to April.

Medical Oncology Department Conversion rate graph

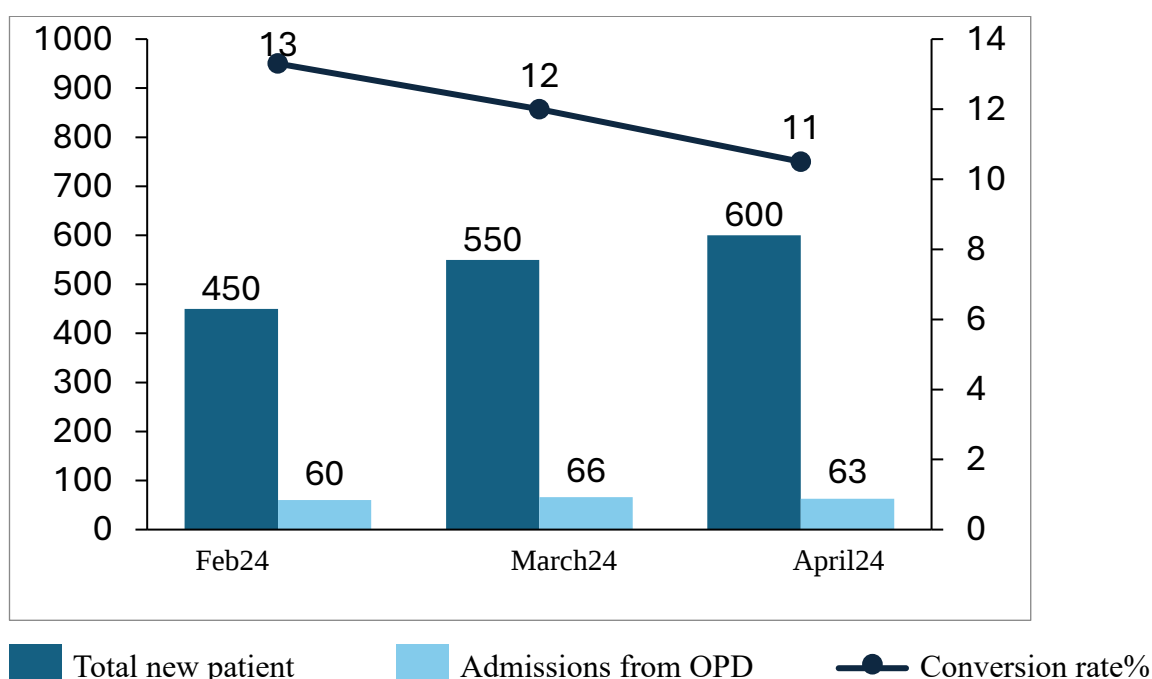


Fig.4.9: The graph illustrates the total number of new patients and admissions from the Outpatient Department (OPD) for the months of February, March, and April in the Medical Oncology Department. Additionally, the line graph depicts the conversion rate% for the Medical Oncology Department during the same period.

- In February, the total number of new patients was 450, with 60 admissions from the OPD, resulting in a conversion rate of 13%.

- In March, the total number of new patients increased to 550, with increased up to 66 admissions from the OPD, leading to a conversion rate of approximately 12%.

- By April, the total number of new patients increased to 693, while OPD admissions decreased to 63, resulting in a conversion rate of approximately 11%.

The data indicates that the number of new patients has been gradually increasing from February to April. However, OPD admissions have been slightly increasing and little bit decreasing over the period, leading to a gradual decline in the conversion rate from February to April.

Department	Feb-24	Mar-24	Apr-24	Average
Internal Medicine	18.8	18.4	17.4	18.2
Orthopaedics	12.1	13.1	11.7	12.3
Cardiology	17.9	18.4	13.4	16.6
Neurology	10.1	8.0	8.0	8.7
Gynaecology	10.5	9.4	10.3	10.1
Pulmonology	13.8	13.6	10.7	12.7
Urology	10.0	9.4	8.5	9.3
ENT	6.1	8.5	7.8	7.5
Medical Oncology	13.3	12.0	10.5	11.9
Total Average				11.9

Table4.2 – This table shows the average conversion rate of each department and the total average conversion rate

Average Conversion rate graph of each department

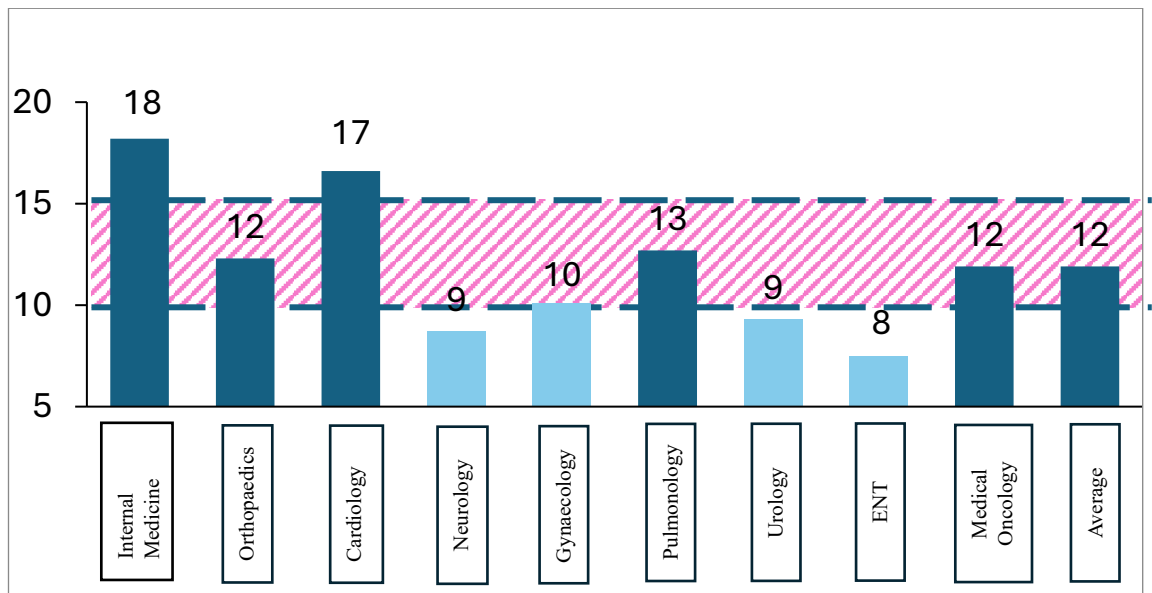


Fig.4.10: This graph shows the conversion rates of each department and backside line range from 10-15% represents the hospital industry conversion rates as per the IJNRD which shows that some department is performing better than the average whereas some departments is lower than the average. The overall 9 department average is 11.9% which is shown in the last right corner of the graph.

Factors Influencing Conversion rate

Bed occupancy rate of the Hospital

Bed Occupancy rate	
Feb-24	77.91%
Mar-24	72.35%
Apr-24	76.00%
Average	75.42%

Table4.3: This table represents the bed occupancy of three months of the hospital and the average bed occupancy rate

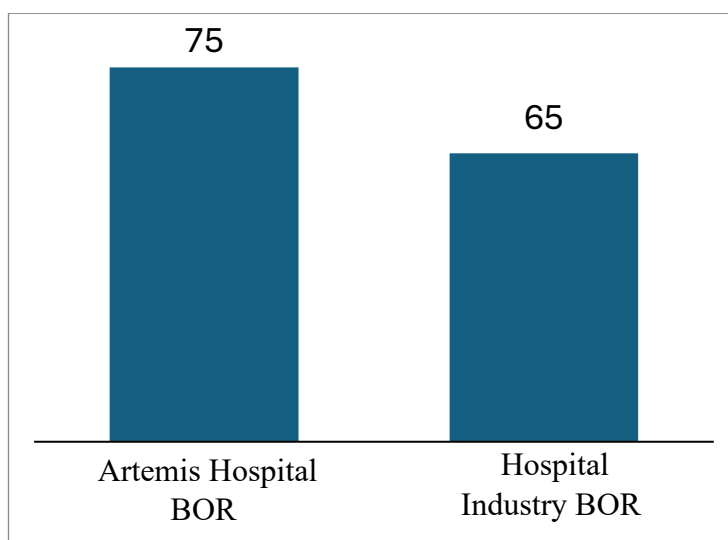


Fig4.11: Artemis Hospital has recorded an average bed occupancy rate of 75% from February 2024 to April 2024, indicating significantly higher bed utilization compared to the national hospital occupancy rate of 65%, as projected by ICRA for its sample set in FY2024.

Admission Efficiency

Admission efficiency, which includes admission Turnaround Time (TAT), plays a crucial role in influencing OPD to IPD conversion rates.

Patient Name	Bed allocation time	Duration in min	Admission process time	Duration in min	When GDA takes patient to their allotted room	Total time in min
Patient 1	12:38	00:09	12:47	00:21	13:08	30
Patient 2	12:40	00:15	12:55	00:04	12:59	19
Patient 3	13:08	00:09	13:17	00:08	13:25	17
Patient 4	13:05	00:14	13:19	00:26	13:45	40
Patient 5	13:13	00:14	13:27	00:13	13:40	27
Patient 6	13:16	00:14	13:30	00:15	13:45	29
Patient 7	14:36	00:10	14:46	00:08	14:54	18
Patient 8	14:51	00:09	15:00	00:15	15:15	24
Patient 9	15:15	00:08	15:23	00:17	15:40	25
Patient 10	15:17	00:10	15:27	00:18	15:45	28
Patient 11	11:10	00:12	11:22	00:13	11:35	25
Patient 12	11:20	00:18	11:38	00:07	11:45	25
Patient 13	12:10	01:00	13:10	00:05	13:15	65
Patient 14	12:12	00:13	12:25	00:35	13:00	48
Patient 15	11:55	00:15	12:10	00:22	12:32	37
Patient 16	12:30	00:07	12:37	00:15	12:52	22
Patient 17	12:36	00:10	12:46	00:12	12:58	22
Patient 18	12:45	00:05	12:50	00:10	13:00	15

Patient 19	12:47	00:11	12:58	00:16	13:14	27
Patient 20	12:50	00:05	12:55	00:35	13:30	40
Patient 21	13:15	00:12	13:27	00:11	13:38	23
Patient 22	14:15	00:20	14:35	00:15	14:50	35
Patient 23	14:17	00:08	14:25	00:15	14:40	23
Patient 24	14:20	00:10	14:30	00:10	14:40	20
Patient 25	14:30	00:20	14:50	00:08	14:58	28
Patient 26	14:30	00:15	14:45	00:05	14:50	20
Patient 27	14:35	00:20	14:55	00:10	15:05	30
Patient 28	15:00	00:10	15:10	00:08	15:18	18
Patient 29	15:15	00:15	15:30	00:08	15:38	23
Patient 30	15:18	00:12	15:30	00:15	15:45	27
Patient 31	13:10	00:07	13:17	01:43	15:00	110
Patient 32	14:00	00:15	14:15	00:13	14:28	28
Patient 33	14:35	00:25	15:00	00:10	15:10	25
Patient 34	14:58	00:12	15:10	00:14	15:24	26
Patient 35	14:59	00:16	15:15	00:13	15:28	29
Patient 36	15:15	00:15	15:30	00:08	15:38	23
Patient 37	15:30	00:15	15:45	00:05	15:50	20
Patient 38	11:30	00:12	11:42	00:13	11:55	25
Patient 39	11:35	00:05	11:40	00:12	11:52	17
Patient 40	11:45	00:13	11:58	00:14	12:12	27
Patient 41	11:48	00:17	12:05	00:10	12:15	27
Patient 42	12:10	00:10	12:20	00:15	12:35	25
Patient 43	12:15	00:12	12:27	00:13	12:40	25
Patient 44	12:18	00:11	12:29	00:09	12:38	20
Average		00:13		00:15		28.57

Table4.4: The Table shows the Admission TAT of 44 patient and how much time it takes them for the admission process starting from bed allocation process to the documentation and then when GDA staff take them to the allotted rooms

Admission process time of each patient

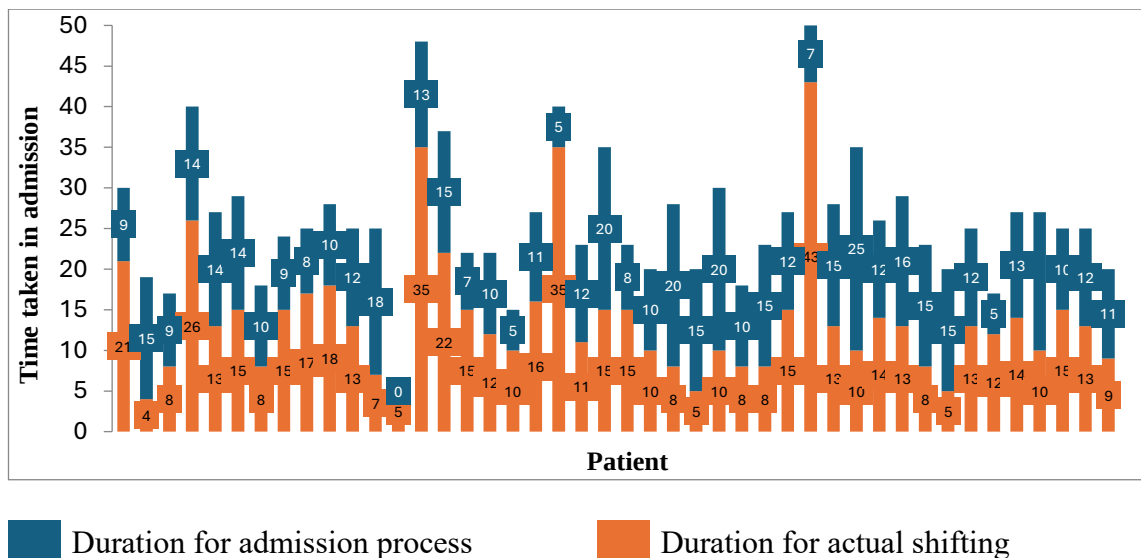


Fig4.12: This graph shows the time taken by each process for the admission of each patient

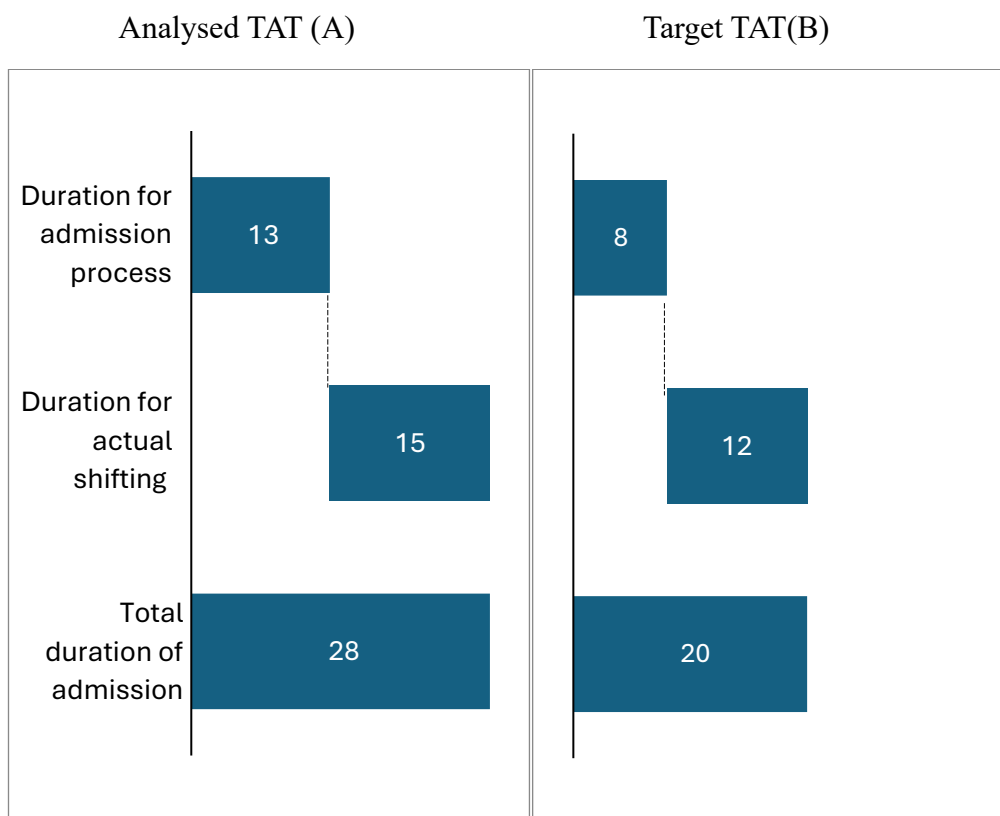


Fig.4.13 continued : Graph A illustrates the average duration of time each process takes for the surveyed patients, while Graph B depicts the hospital's target average for each process and the overall Turnaround Time (TAT).

Chapter 5: Discussion

Overview

The conversion rate from outpatient department (OPD) visits to inpatient department (IPD) admissions is a critical metric in hospital operations, reflecting the efficiency and effectiveness of patient care.

Key Findings

Key findings from the study reveal conversion rate of 11.9% as shown in Table 4.2 across all nine hospital departments for the month of Feb24 -April24. Among these, Internal Medicine showed the highest conversion rate at 18.2%, followed by Cardiology at 16.6%, Pulmonology at 12.7%, and Orthopaedics at 12.3% table 4.2. These departments demonstrated conversion rates above the hospital's average, highlighting their effectiveness in transitioning patients from outpatient to inpatient care.

However, some departments recorded conversion rates below the hospital's average, indicating areas where improvements could be targeted. Despite variations, the hospital's overall conversion rate underscores its role in managing patient flows effectively across specialties, contributing to comprehensive healthcare delivery.

IJNRD suggests that the typical conversion rate ranges between 10-15%, fig 4.10 indicating satisfactory performance with room for improvement, as the hospital's 11.9% rate shows a 3.1% gap.

The study identified several factors influencing outpatient to inpatient conversions, focusing on bed availability and administrative efficiency. Specifically, it analysed Bed Occupancy Rate, averaging 75% as shown in Table 4.3 over the study period,

Comparatively, ICRA's estimation places the aggregate occupancy of the Indian hospital industry at a stable 64-65% as shown in fig 4.11, underscoring sector-wide resilience.

The study indicates that the admission turnaround time during the survey was 28 minutes fig.4.13, whereas the hospital's target turnaround time is 20 minutes fig.4.13. This discrepancy highlights the need for improvement in the admission process.

Limitations:

1. Limited Departments: The study encompasses only nine departments of the hospital, limiting the scope of the analysis.
2. Data Reliability: Data collected through staff interviews may introduce bias and errors, affecting the reliability of the study.
3. Duration of the Study: The three-month analysis period may impact the accuracy of the findings.
4. Single-Centre Study: Since the study is confined to Artemis Hospital, the findings may not be generalizable to other hospitals with different patient demographics and operational dynamics.

Chapter 6: Conclusion & Recommendations

The current patient conversion rate % from the OPD TO IPD of the 9 departments included in the study are 11.9% as shown in Table 4.2 for the hospital for the months of Feb24- April24 whereas hospital industry says that conversion rate % should be between 10-15% as shown in fig. 4.10 for the private hospitals in India so it shows that the hospital is performing well but still they are on lower range and it shows room for improvement of ~ 3%

If we analyse department wise, we see 2 out of 9 departments (Internal medicine and Cardiology) fig.4.1 and 4.3 are performing better than the industry standard so not so much focus is needed in those department.

4 out of 9 departments (Orthopaedics, Gynaecology, Pulmonology and Medical Oncology) Table 4. shows within range of the hospital industry standard but yes there is a scope of improvement.

3 out of 9 departments (Neurology, ENT, Urology) shows below the range of the hospital industry standard it means there is good scope of improvement.

Potential next step

- Quality of the OPD services can be further assessed to find the root causes of low conversion rates of those departments.

The study shows that average BOR of the hospital for the month of Feb24-March24 was 75% where as Comparatively, ICRA's estimation places the aggregate occupancy of the Indian hospital industry at a stable 64-65% as shown in fig 4.11, underscoring sector-wide resilience so it shows that the BOR of Hospital is more and there is a possibility that it can be one of the reason impacting conversion rate , may be patient are coming but there is unavailability of beds so they are not able to get admitted in the hospital .

Potential next step

- **Expand capacity** - To expand capacity, consider increasing the number of available beds through physical expansion or by optimizing existing space within the hospital. Additionally, utilize flexible spaces that can be converted into patient areas during peak times. This dual approach ensures that more patients can be accommodated, thereby reducing wait times and improving overall patient conversion rates.

The admission turns around time of the hospital while the survey was done was around 28 minutes fig.4.13 but the actual target turnaround time for the hospital was 20 min fig.4.13. so, it shows that there is a gap of 8 minutes delay where the hospital needs to work.

Potential next step

- **Process Mapping and Analysis:** The admission process is divided into multiple steps, so a more detailed process mapping can be conducted to analyse the actual root cause for the delay.

Thorough Analysis and assessment of other relevant KPIs Influencing Conversion rate.

Additional recommendations for sustainability

With the increasing digitization in hospitals, the focus has shifted towards enhancing feedback systems for greater efficiency. In private hospitals, where competition for providing superior services is intense, effective feedback mechanisms are essential. To support continuous improvement and convenience for both patients and the hospital, I proposed and developed an online feedback form using Google Forms. Patients can easily scan and fill out the form, making the feedback process more streamlined and efficient.

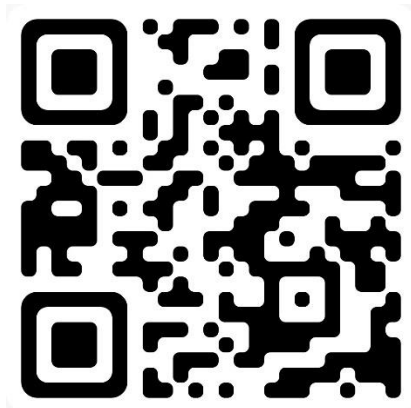


Fig.6.1: QR code for the feedback collection

Patient Name * Your answer	Contact no * Your answer	Diagnostic/Procedures ☐ Radiology ☐ Neuro(EEG,EMG,NCV) ☐ PFT ☐ Dermatology ☐ Dialysis ☐ Procedure room ☐ Non Invasive Cardiology (TMT, Stress ECHO,ECHO) ☐ Urology ☐ Nuclear Medicine ☐ Cyber Knife ☐ Endoscopy ☐ Dental ☐ Ophthalmology ☐ Others	Ease of appointment booking * How easy was it to schedule your appointment? ☐ Very Easy ☐ Easy ☐ Neutral ☐ Difficult ☐ Very Difficult
GNID * Your answer	Consultant Name * Your answer		Waiting time * How would you rate the waiting time before you were seen by the doctor? ☐ Very Short ☐ Short ☐ Neutral ☐ Long ☐ Very Long
Age * Your answer	Purpose of the visit * ☐ Executive Health Check ☐ Consultation by appointment ☐ Walk-in patient with no prior appointment ☐ Follow up visit		☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied
Gender * ☐ Male ☐ Female ☐ Others		Information Provided * Did the staff provide you with all the necessary information about your condition and treatment? ☐ Yes, all information was provided ☐ Yes, but some information was missing ☐ No, information was not provided adequately	Would you recommend Artemis for future Healthcare needs? * ☐ Yes ☐ No ☐ May be
Staff Courtesy * How would you rate the courtesy of the OPD staff? ☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very poor	Quality of care * How would you rate the quality of care you received? ☐ Excellent ☐ Good ☐ Neutral ☐ Poor ☐ Very Poor	Overall Satisfaction * How satisfied are you with your overall experience at the OPD? ☐ Very Satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very Dissatisfied	Suggestions for improvement Your answer
Doctor's Communication * How would you rate the doctor's communication skills? ☐ Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very poor	Cleanliness and Hygiene * How would you rate the cleanliness and hygiene of the OPD? ☐ Excellent ☐ Good ☐ Neutral ☐ Poor ☐ Very Poor		Submit Clear form

Never submit passwords through Google Forms.

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Fig.6.2: These are the questions in the feedback form

A small survey was conducted among 30 people asking them to fill this form

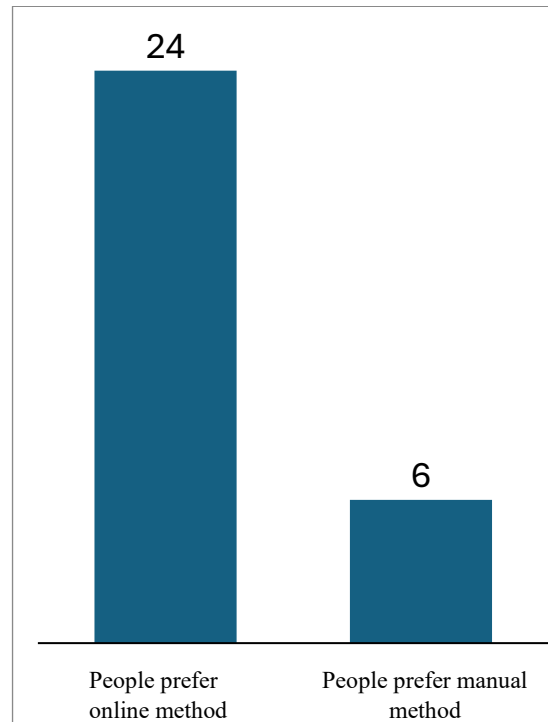


Fig. 6.3: Among 30 people 24 people said they will prefer the online way of feedback collection which i.e. 80% whereas 20% of people said they will prefer the manual way of feedback collection.

In conclusion the study at Artemis Hospital found an 11.9% conversion rate from OPD to IPD across nine departments, aligning with industry standards but highlighting improvement areas. Influencing factors include a high bed occupancy rate (75%) and a longer admission turnaround time (28 minutes). Recommendations for enhancement include optimizing bed management, streamlining administrative processes, and reducing admission times. Addressing these issues is crucial for maintaining standards, improving patient flow, and enhancing overall healthcare quality and efficiency in hospital operations.

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