

***“Interdepartmental Referral Conversions: A Trend and
Variance Analysis in
Diagnostic and Pharmacy Services in a Tertiary Care
Hospital.”***

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INTRODUCTION

- In modern hospital systems, **interdepartmental referrals** (commonly called “drop-downs”) are essential for coordinating timely and efficient patient care across services.
- These referrals, generated from the **Outpatient Department (OPD)**, direct patients to **Laboratory**, **Radiology**, or **Pharmacy** based on clinical needs.
- In high-volume tertiary care hospitals, poor tracking of these referrals leads to:
 - i. Missed services
 - ii. Patient dissatisfaction
 - iii. Operational inefficiencies
 - iv. Revenue loss
- Despite digitized Hospital Information Systems (HIS), **conversion of referrals into completed services** remains inconsistently monitored.
- This study focuses on Max Super Speciality Hospital, Shalimar Bagh, to analyze how many OPD referrals are successfully converted into actual services in Laboratory, Radiology, and Pharmacy.
- The aim is to identify **conversion patterns**, **gaps in coordination**, and suggest system-level improvements for better service integration

OBJECTIVES

- To measure the number of OPD-generated referrals (drop-downs) to the Laboratory, Radiology, and Pharmacy departments.
- To determine the monthly conversion rate of these referrals across a three-month period.
- To analyse the variance in conversion trends and identify patterns of inefficiency.
- To compare interdepartmental performance in terms of conversion efficiency and responsiveness.
- To recommend system-level interventions that can enhance tracking and improve patient follow-through.

METHODOLOGY

Study Design

- Retrospective, observational, and descriptive study
- Comparative analysis between Laboratory , Radiology and Pharmacy
- Based on secondary data from Electronic Prescription through HIS.

Study Duration

- January 1 to March 31, 2025 (3 Months)

Sample Size & Technique

- Data from 27 departments with over 2000+ consultation entries across 3 services
- Sampling: Purposive

METHODOLOGY (Contd.)

Data Collection Tool

- Microsoft Excel sheet with fields for:
- Hospital Information System (HIS) reports- DRISHTI

Inclusion Criteria

- All OPD patients with a recorded referral and follow-up conversion
- status on EP (Electronic Prescription) :
- Cash / Corporate,
 - TPA,
 - International

METHODOLOGY (Contd.)

Exclusion Criteria

- Patients with missing or incomplete referral or conversion data
- PSU and EWS category patients

Data Analysis

- Microsoft Excel used for:
- Software: Microsoft Excel – V Look up
- Descriptive statistics (mean, percentage, totals)
- and bar charts for department wise trends and comparisons
- $\text{Variance} = \text{Conversion Month2} - \text{Conversion Month1}$
- $\text{Conversion Rate} = \text{Converted Cases} / \text{Drop Down Advised}$

RESULTS

Sample Overview

- Time frame: January – March 2025
- Data sourced from Hospital Information System (HIS)
- Total departments observed: **25**
- Data covered:
 - i. OPD consultations
 - ii. Drop-down referrals advised (Lab, Radiology, Pharmacy)
 - iii. Actual conversions (service availed by patient)

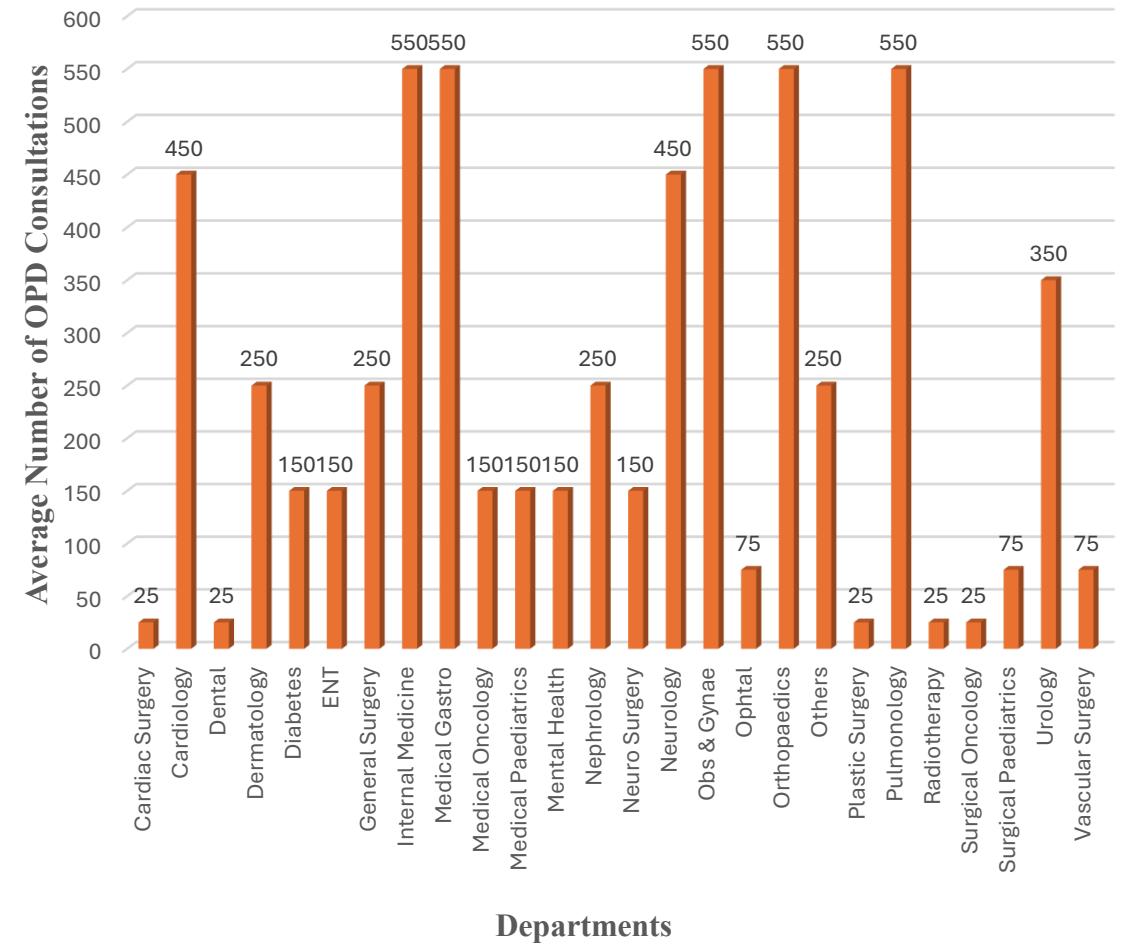
Data Analysis Method

- Microsoft Excel used for cleaning and averaging, and classification analysis
- **Variables:** Monthly consultation count, referrals advised, and service conversions
- Departments categorized based on average monthly conversions (e.g., 0–5, 6–15, 16–25)
- **Mean values** calculated for each department across the 3 months
- Results visualized using **tables, bar graphs, and color-coded ranges** to indicate conversion efficiency.

OPD Departments by Average Monthly Consultations

- Highest OPD consultations were in:
 - Obstetrics & Gynaecology (550)
 - Medical Gastroenterology (550)
 - Internal Medicine (550)
 - Orthopaedics (550)
- Lowest were in:
 - Dental, Cardiac Surgery, and Plastic Surgery (25 each)

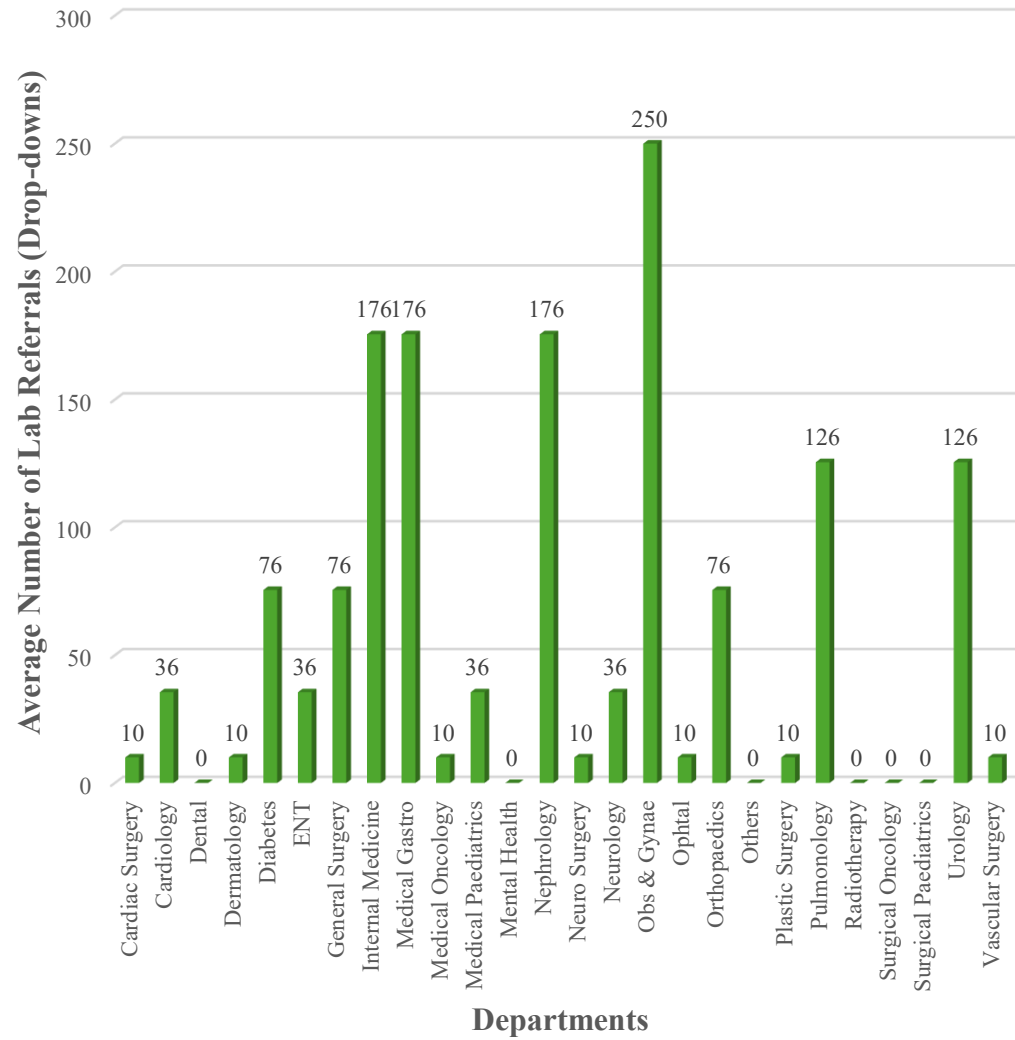
Bar Chart of Department-Wise OPD Consultation Categories



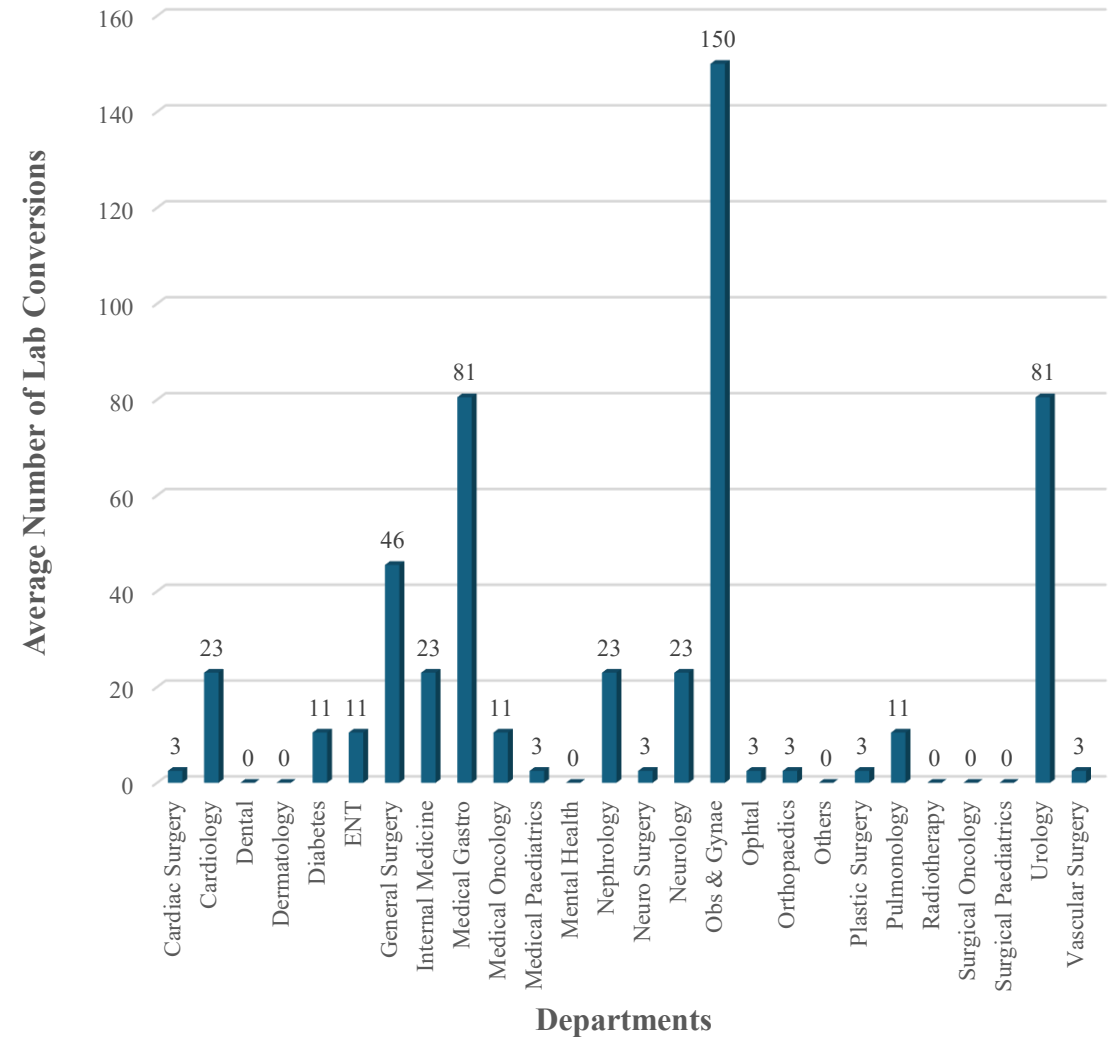
Laboratory Referrals – Advised vs Converted

- High referrals: Obs & Gynae (250), Internal Medicine (176), Medical Gastro (176)
- Highest conversions: Obs & Gynae (150), Medical Gastro (81)
- Departments with zero conversions: Dental, Dermatology, Mental Health, Surgical Oncology, etc.

Average Laboratory Advised

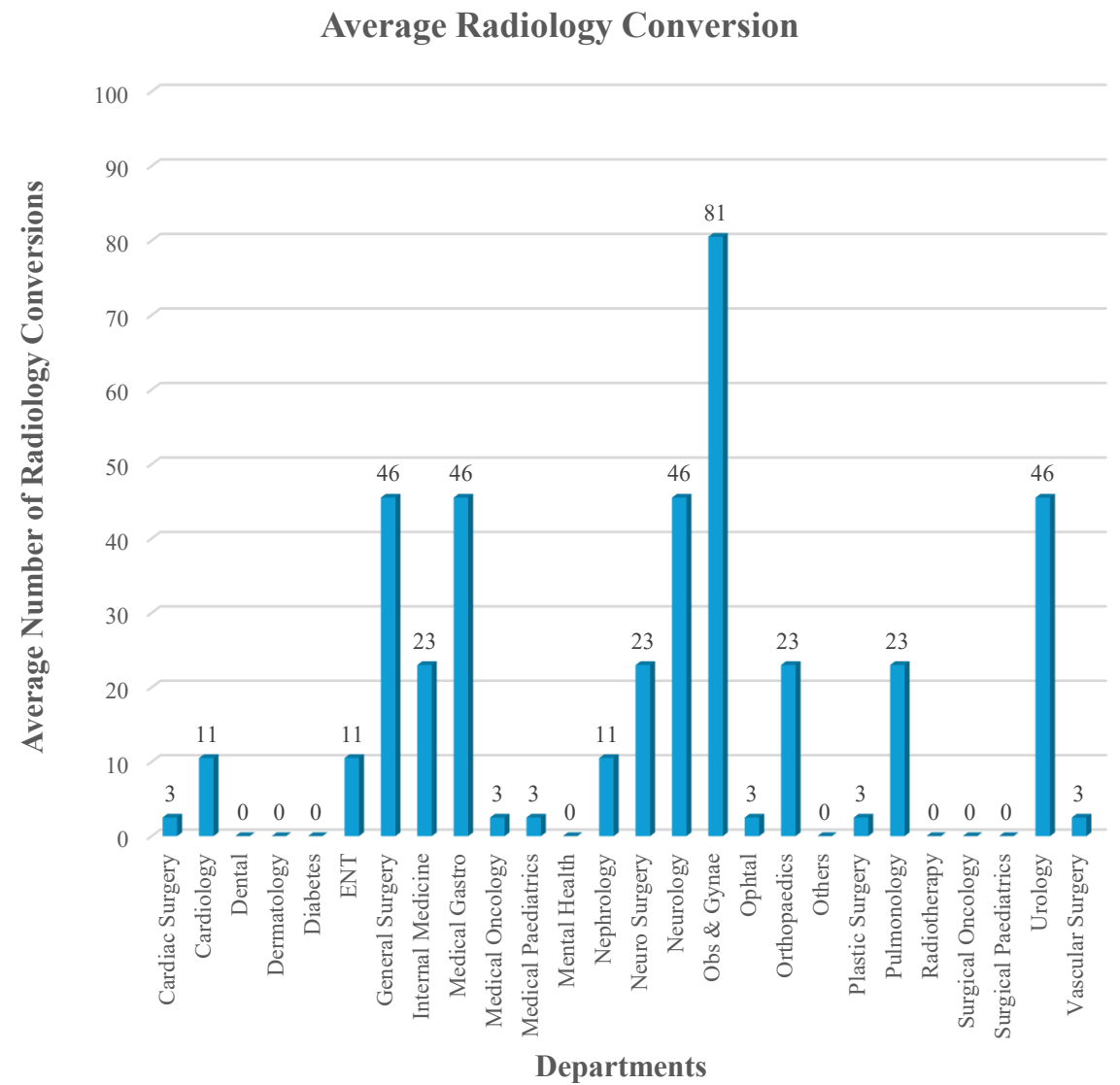
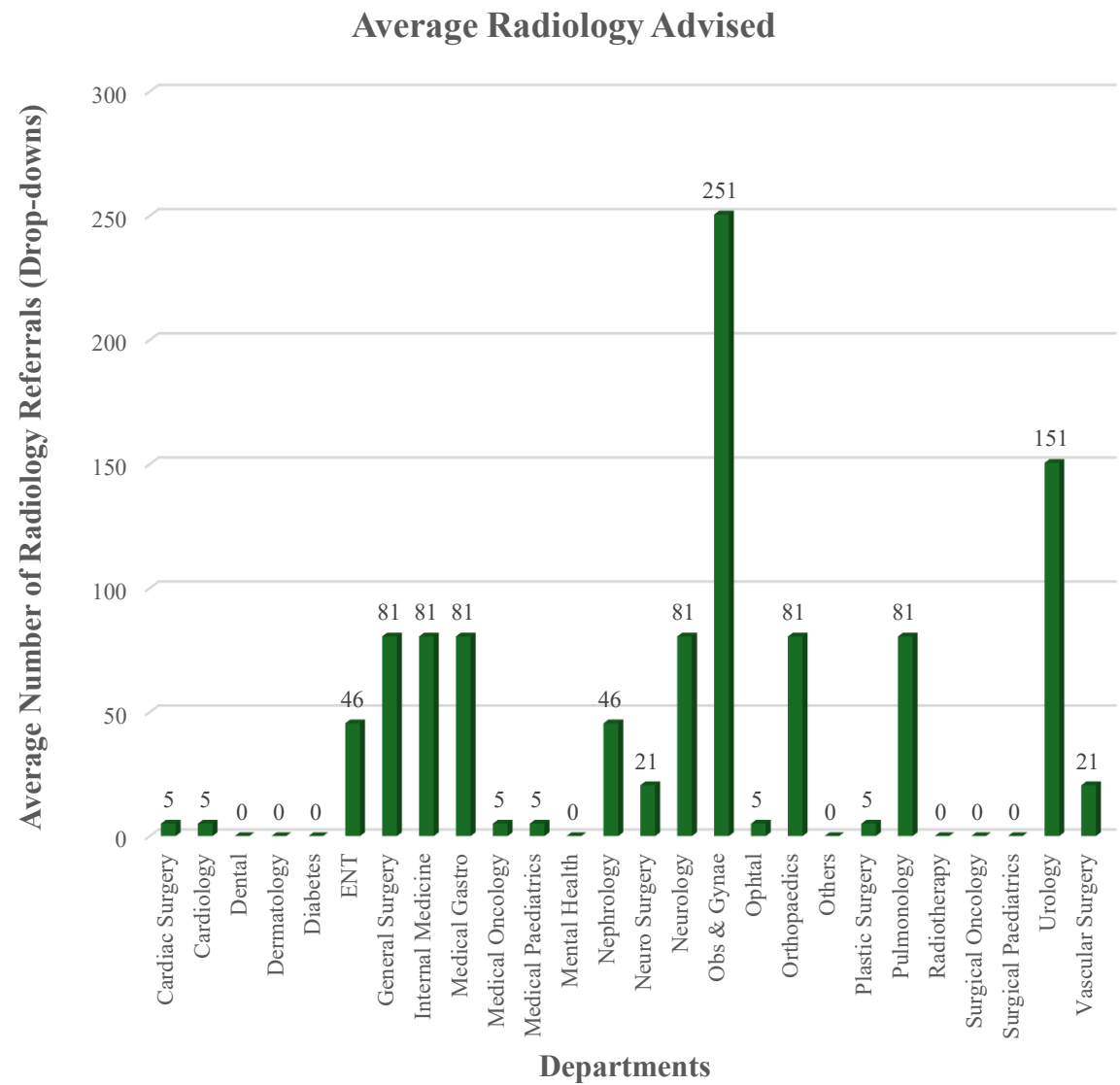


Average Laboratory Conversion



Radiology Referrals – Advised vs Converted

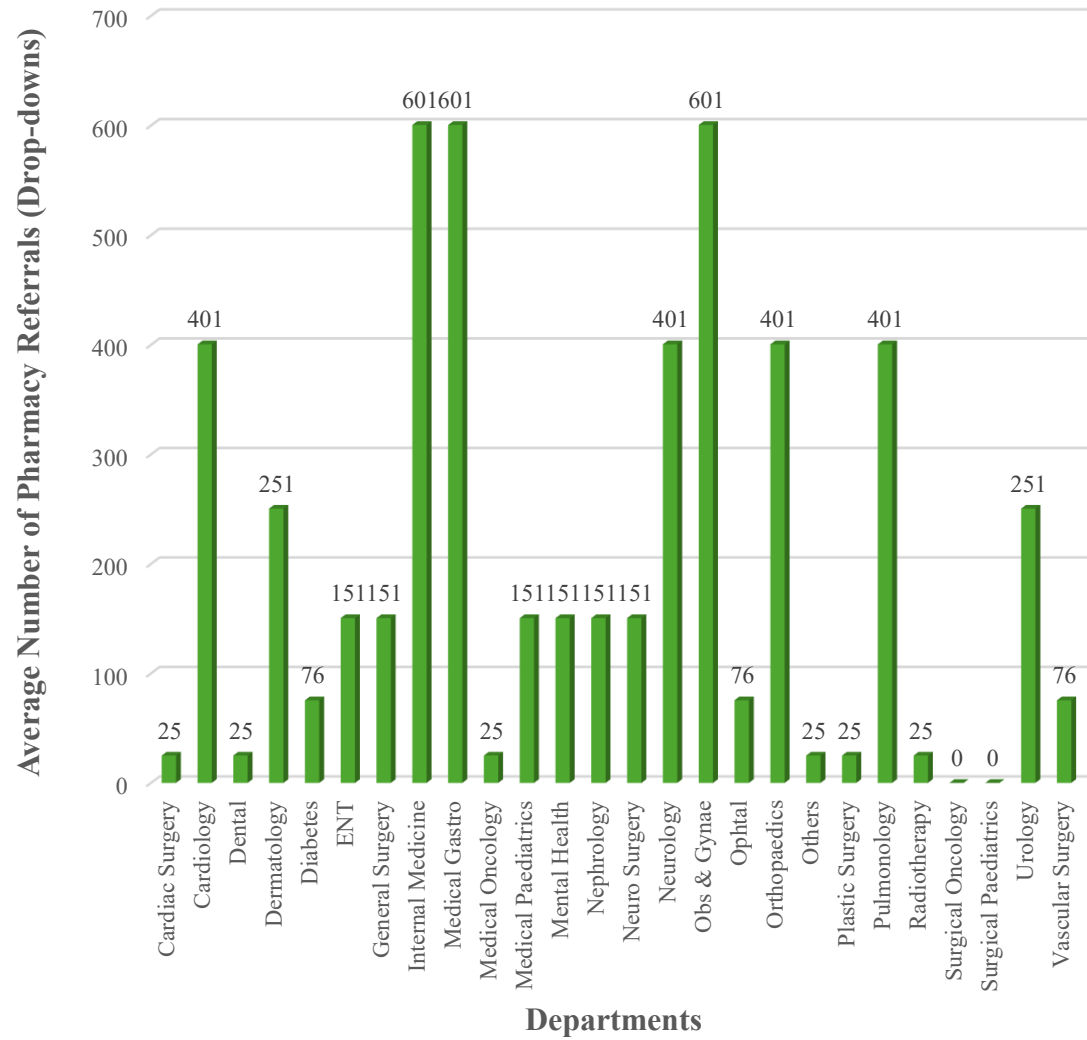
- High referrals: Obs & Gynae (251), Urology (151), Internal Medicine & others (81)
- Highest conversions: Obs & Gynae (81), Medical Gastro (46)
- Zero or poor conversions: Dental, Mental Health, Surgical Oncology



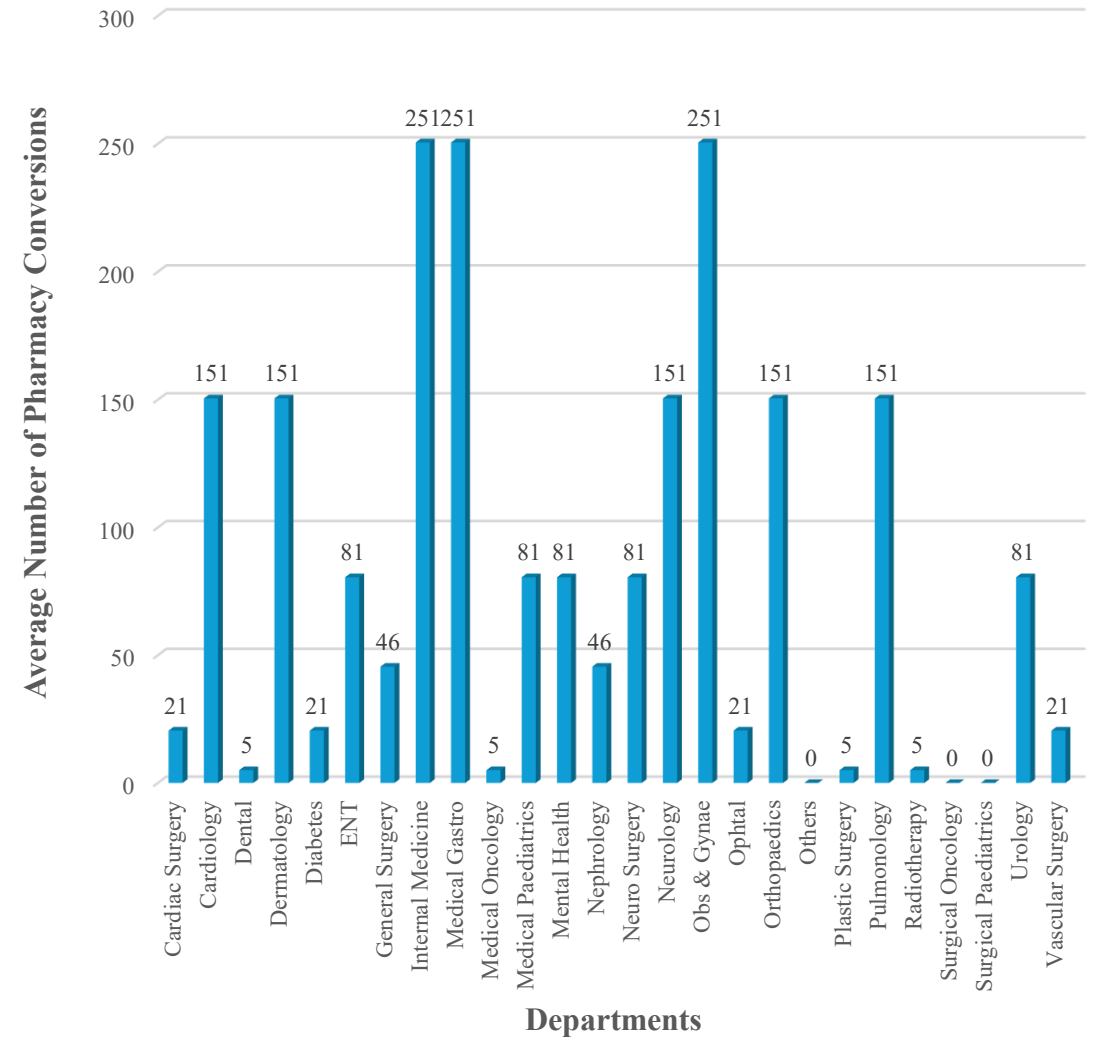
Pharmacy Referrals – Advised vs Converted

- High referrals and conversions from: Obs & Gynae, Internal Medicine, Medical Gastro
- Low conversions in: Dental, Plastic Surgery, Oncology
- Reflects inefficiencies in medication dispensing or patient follow-up

Average Pharmacy Advised



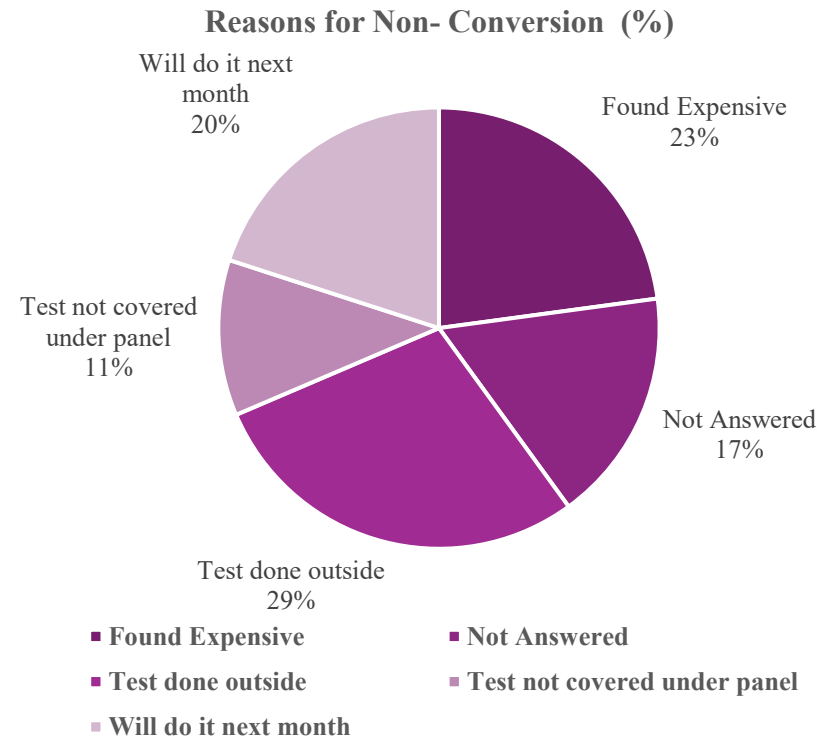
Average Pharmacy Conversion



Reasons for Non-Conversions

- **Top Barriers Identified:**

- Test done outside hospital: 29%
- Found expensive: 23%
- Will do next month (patient delay): 20%
- Not answered or unreachable: 17%
- Not covered under panel: 11%



CONCLUSION

Overall conversion efficiency from OPD to Laboratory, Radiology, and Pharmacy reflected varied departmental performance.

1. **High-performing departments** like Obstetrics & Gynaecology, Internal Medicine, and Medical Gastroenterology showed:

- Strong referral volumes
- High conversion rates
- Better follow-up systems and clinical reliance on support services

2. In contrast, **low-performing departments** such as Dental, Dermatology, and Surgical units faced:

- Weak follow-through
- Operational or tracking gaps
- Patient disengagement issues.

CONCLUSION (Contd)

Key Insight:

- Referral conversion is not just a procedural outcome, but a **strategic indicator** of departmental integration, coordination, and service responsiveness.
- The study emphasizes the **need to shift focus** from referral generation to **referral completion**.
- Real-time **HIS dashboards**, standardized follow-up mechanisms, and integration of **conversion rates into department KPIs** are crucial.

Such reforms would:

- Bridge execution gaps
- Enhance care coordination
- Drive higher patient service utilization
- Reflect **maturity in hospital operations**

RECOMMENDATIONS

- **Real-Time Referral Tracking Dashboard:**
Develop a HIS-integrated dashboard to track referral status, pending actions, and department-wise performance.
- **Departmental Training on Referral Protocols:**
Conduct regular sessions for OPD and support service teams on timely referral closure, documentation, and follow-up standards.
- **Automated Alerts for Pending Referrals:**
Use SMS or HIS notifications for referrals pending beyond 24–48 hours to prompt follow-up and reduce patient dropouts.
- **Standardized SOP Review:**
Periodically update referral SOPs to ensure alignment across departments on advising, documenting, and tracking processes.
- **Monthly Referral Conversion Audits:**
Institutionalize department-wise audits to identify bottlenecks, drive RCA (Root Cause Analysis), and initiate corrective actions.

RECOMMENDATIONS (Contd.)

- **Patient Engagement Mechanisms:**
Use SMS, WhatsApp, or app reminders to prompt patients about pending tests or medications, improving follow-through.
- **Interdepartmental Coordination Review:**
Form a referral review committee to identify barriers across OPD, Radiology, and Pharmacy interfaces.
- **Referral Conversion as KPI:**
Include referral conversion performance in departmental KPIs to increase accountability and encourage service completion.

REFERENCES

1. Nakayuki M, Basaza AHD, Namatovu HK. Challenges affecting health referral systems in low- and middle-income countries: a systematic review. *East Afr J HealthSci*. 2021;5(4):809. Available from: <https://doi.org/10.47672/ejhs.809>
2. Zuckerman KE, Perrin JM, Hobrecker K, Donelan K. Barriers to specialty care and specialty referral completion in community health centers. *J Pediatr*. 2013;162(2):409–14.e1. Available from: <https://pubmed.ncbi.nlm.nih.gov/22929162/>
3. Desalegn D, Taye B, Belay G. Laboratory test utilization and referral accuracy among physicians: a cross-sectional study. *BMC Health Serv Res*. 2013;13:389. Available from: <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-13-389>
4. Pradhan K, John P, Sandhu N. Use of artificial intelligence in healthcare delivery in India. *J Hosp Manag Health Policy*. 2021;5:46–54. Available from: <https://jhmdp.amegroups.org/article/view/6765/html>
5. Jayadeepa S, Das S, Debbarma A, Sinha P. Teleradiology in Tripura: effectiveness of a telehealth model for remote areas. *J Family Med Prim Care*. 2021;10(1):77–82. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8011256/>
6. Burute N, Jankharia B. Teleradiology: the Indian perspective. *Indian J Radiol Imaging*. 2009;19(1):16–8. Available from: <https://doi.org/10.4103/0971-3026.45337>



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