

Operational Analytics & MIS-Based Decision Making

Improving Diagnostic Service Efficiency

A Case Study of Crystal Diagnostic Centre, Thane

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MBA Healthcare Analytics (2024–2026)

Crystal Diagnostic Centre, Thane | 02 March – 31 May 2026

Faculty Guide: Dr. Ritu Vashistha | **Industry Mentor:** Dr. Devendra Patil

Internship Overview

About the Internship

Organization: Crystal Diagnostic Centre, Thane

Exposure: Operations, MIS Reporting, Healthcare Analytics

Internship Objectives

- Understand diagnostic centre workflow
- Study MIS reporting process
- Analyse operational and financial data
- Develop KPI dashboards
- Support data-driven decision making
- Gain practical healthcare analytics exposure

Study Context

Organization:	Crystal Diagnostic Centre
Location:	Thane, Maharashtra
Duration:	02 Mar – 31 May 2026
Services:	Sonography, Doppler, X-ray, Pathology
Focus:	MIS & Healthcare Analytics
Guide:	Dr. Ritu Vashistha
Mentor:	Dr. Devendra Patil

Methodology & Scope of Study

Data Source

- MIS operational database
- Confidentiality-compliant
- academic dataset

Study Period

01 April 2026 –30 May 2026

Analytical Areas

- Patient volume analysis
- Revenue analysis
- Collection efficiency
- Payment behaviour
- Service utilization
- KPI & Dashboard reporting

Dataset Summary

622

Total Records

622

Unique Patients

31

Study Types

0

Missing Values

Internship Activities Performed

✓ MIS Workflow

Understanding MIS structure and operational workflow of the diagnostic centre

✓ Data Collection & Preparation

Collected, cleaned, and organized operational datasets for analysis

✓ KPI Monitoring

Tracked key performance indicators for patient volume, revenue, and collections

✓ Dashboard Development

Built Excel-based dashboards for visualizing operational and financial trends

✓ Operational Analytics

Applied descriptive analytics to identify patterns and performance insights

✓ Reporting & Interpretation

Prepared analytical reports and interpreted findings for managerial use

Operational KPI Dashboard

Performance Snapshot — Apr–May 2026

622

Total Visits

₹12.84L

Total Billed

₹10.50L

Total Collected

81.8%

Collection Rate

₹2.34L

Outstanding

₹2,064

Avg Bill / Visit

520 Visits — Paid (83.6%)

29 Visits — Balance (4.7%)

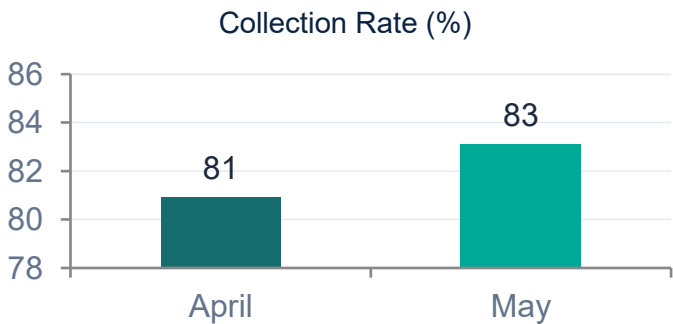
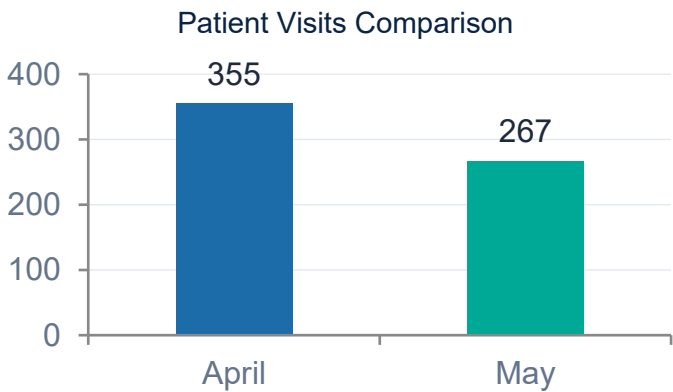
73 Visits — Free (11.7%)

Strong operational performance · Opportunity to improve receivable management

Monthly Performance Analysis

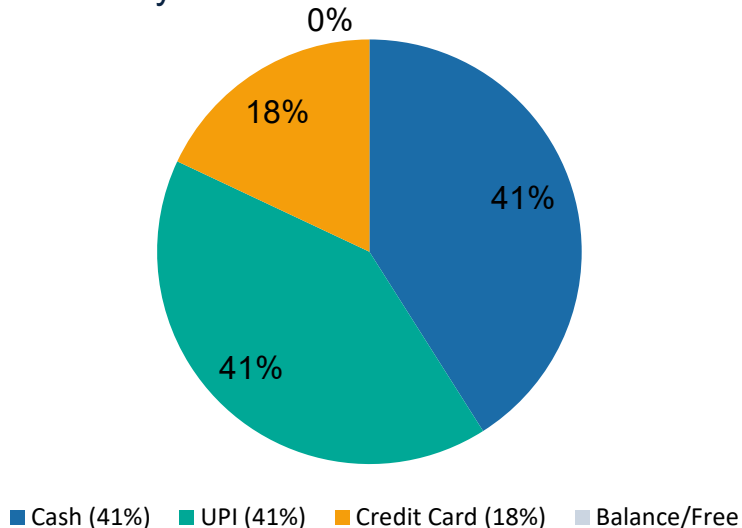
Metric	April 2026	May 2026
Patient Visits	355	267
Billed Revenue	₹7.72 Lakh	₹5.12 Lakh
Collected Revenue	₹6.24 Lakh	₹4.26 Lakh
Outstanding Balance	₹1.47 Lakh	₹0.87 Lakh
Collection Rate	80.91%	83.10%

💡 Key Insight: Although patient volume reduced in May, collection efficiency improved from 80.91% to 83.10%, indicating stronger revenue realization in the second month.



Payment Behaviour & Collection Insights

Payment Mode Revenue Share



💡 Digital payments (UPI) are now equally dominant as cash — reflecting growing patient adoption of fintech in healthcare.

Cash

Transactions: 219 Revenue: ₹4.31L Share: 41.0%

UPI

Transactions: 211 Revenue: ₹4.30L Share: 40.99%

Credit Card

Transactions: 93 Revenue: ₹1.89L Share: 18.0%

Payment Status Distribution

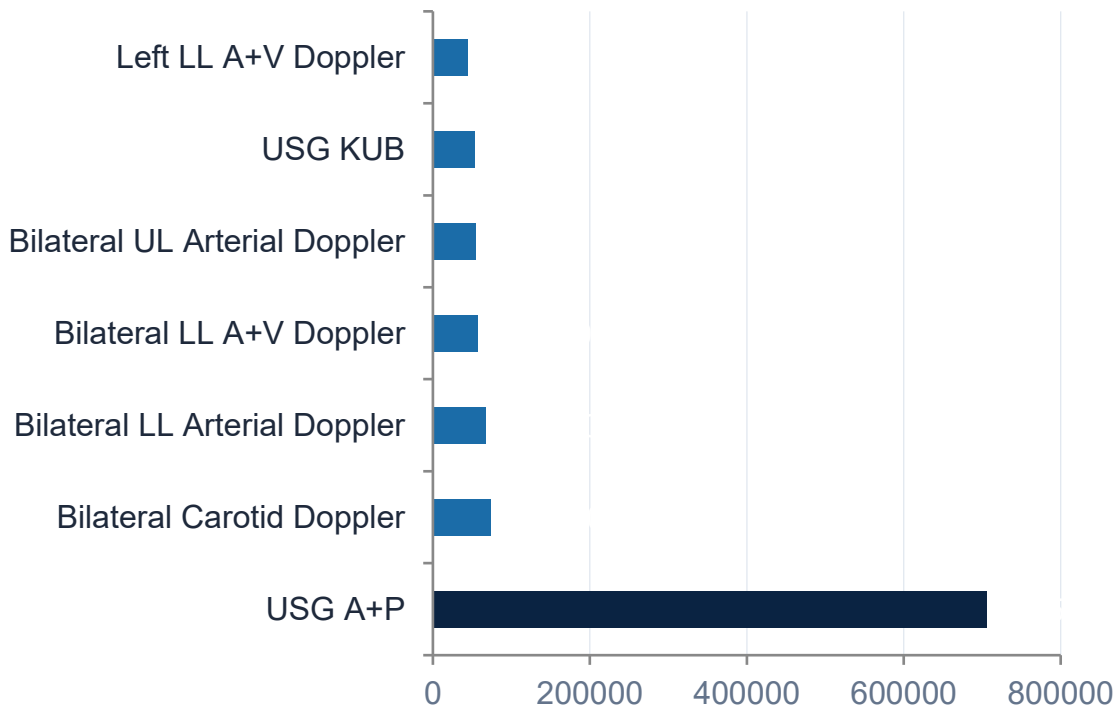
520
PAID

29
BALANCE

73
FREE

Service Utilization Findings

Top Procedures by Revenue



Key Highlights

USG A+P

₹7.06L | 55% share

Carotid Doppler

₹73.6K | 5.7% share

LL Arterial Doppler

₹67.2K | 5.2% share

⚠ Revenue is highly concentrated in sonography & Doppler procedures — diversification should be considered.

Key Learnings from the Internship

01 Healthcare MIS

Practical exposure to MIS systems, data entry, record-keeping, and reporting structures in a real diagnostic centre.

02 Dashboard Development

Built Excel-based KPI dashboards for visualizing patient flow, revenue, payment, and service utilization trends.

03 Revenue & Analytics

Applied descriptive analytics techniques for revenue monitoring, collection efficiency analysis, and operational assessment.

04 Healthcare Workflows

Gained hands-on understanding of patient registration, billing, sonography operations, and MIS-based management.

05 Analytical Skills

Strengthened data cleaning, KPI computation, chart development, and managerial interpretation capabilities.

06 Academic Linkage

Applied MBA Healthcare Analytics concepts — KPI monitoring, MIS theory, operational analytics — in a live setting.

★ All six learning areas bridge the gap between classroom MBA curriculum and real-world healthcare operations.

Challenges Observed & Recommendations

⚠ Challenges Observed

- Managing multiple operational datasets simultaneously
- Maintaining data consistency across reporting periods
- Limited historical data for trend interpretation
- Converting raw MIS data into actionable insights
- Balancing routine operations with analytical work

✓ Recommendations

- Strengthen routine KPI monitoring practices
- Introduce real-time MIS dashboards for management
- Improve receivable tracking and payment follow-up
- Enhance data standardization across MIS systems
- Expand healthcare analytics across all service areas
- Develop predictive analytics for demand forecasting
- Promote digital payment adoption and reconciliation

Conclusion

01

Improved Operational Visibility

MIS and healthcare analytics enabled management to monitor patient flow, revenue, and service performance effectively.

02

Data-Driven Decision Support

KPI dashboards and structured MIS reports supported faster, more informed managerial decisions.

03

Revenue & Collection Insights

Analytics helped identify collection performance (81.8%), outstanding balances, and improvement opportunities.

04

Beyond Clinical Applications

Healthcare analytics contributes significantly to operational management, not just clinical outcomes.

05

Foundation for Excellence

Data-driven management supports long-term operational efficiency and organizational sustainability in diagnostic centres.

Thank You

Questions & Discussion

Presented By:

Yanagandul Badrinath Murli

MBA Healthcare Analytics (2024–2026) | IIHMR University, Jaipur

Internship: Crystal Diagnostic Centre, Thane | Faculty Guide: Dr. Ritu Vashistha

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