

SYNOPSIS

(For Dissertation Submission – 2025)

1. TITLE

Evaluation and Selection of a Suitable Hospital Information System (HIS) for Zydus Hospital, Ahmedabad: A Multi-Criteria Comparative Study

The title reflects the core objective of the dissertation: to assess, compare, and recommend the most appropriate Hospital Information System (HIS) platform to replace the existing HINAI system at Zydus Hospital, using a systematic and evidence-based approach.

2. INTRODUCTION

Hospital Information Systems (HIS) are at the heart of modern digital healthcare delivery. These systems unify administrative, clinical, financial, and diagnostic services within a hospital, thereby enabling efficient, data-driven, and patient-centered care. Zydus Hospital, a multispecialty tertiary care hospital in Ahmedabad, currently operates on the HINAI platform—a system that has been found increasingly inadequate in addressing the growing digital demands of the hospital.

Challenges with HINAI include outdated user interfaces, lack of EMR integration, limited modularity, poor vendor responsiveness, and insufficient interoperability with laboratory, pharmacy, and analytics systems. These shortcomings negatively impact clinical workflows, data accuracy, and patient outcomes.

This dissertation proposes a structured evaluation and comparison of modern HIS platforms that are better suited to Zydus Hospital's strategic vision. The study is of significant relevance at a time when Indian hospitals are rapidly transitioning to smart, scalable, and AI-integrated digital systems. The findings aim to support not only Zydus Hospital but also other healthcare institutions seeking similar transformation.

3. RESEARCH QUESTION

Which Hospital Information System platform provides the optimal alignment with Zydus Hospital's functional, technical, and strategic requirements, and can effectively replace the existing HINAI system?

4. OBJECTIVES

- To analyze and document the current limitations of the HINAI system at Zydus Hospital.
- To explore and shortlist modern HIS platforms with proven applicability in similar Indian healthcare environments.
- To design a multi-criteria evaluation model based on hospital-specific needs (functional, technical, operational).
- To compare the shortlisted HIS platforms using a weighted scoring matrix.
- To recommend the most suitable HIS platform for Zydus Hospital, considering both short-term operational needs and long-term scalability.

5. HYPOTHESIS

This study follows a descriptive and comparative model, and therefore does not include a hypothesis. However, the study assumes:

“Modern HIS platforms offer significantly better performance, flexibility, and integration features compared to legacy systems like HINAI, leading to improved operational and clinical outcomes.”

6. MATERIALS AND METHODS

STUDY DESIGN:

Descriptive, qualitative-cum-quantitative study based on multi-criteria decision-making (MCDM) principles.

SETTING:

Zybus Hospital, Ahmedabad – A 550+ bedded multi-specialty hospital with advanced diagnostic, surgical, and therapeutic facilities.

STUDY POPULATION:

- Inclusion Criteria:
 - Department heads (OPD, IPD, ICU, Pharmacy, Laboratory)
 - Administrative and IT personnel involved in HIS usage and evaluation
 - Vendor representatives providing demos or brochures of shortlisted HIS platforms
- Exclusion Criteria:
 - Staff not interacting with HIS or involved in decision-making
 - Incomplete responses or unavailable during data collection period

STUDY TOOLS:

- Functional walkthroughs of HINAI and vendor demo platforms
- Microsoft Excel-based scoring matrix for HIS evaluation
- Interview-based qualitative feedback from department stakeholders
- Vendor literature, technical brochures, and user manuals
- Case studies and whitepapers from peer-reviewed journals

DURATION OF STUDY:

March 2025 to July 2025 (4 months)

SAMPLE SIZE:

Not a clinical study – Data based on comparative evaluation of 7 HIS platforms and feedback from ~10–12 key hospital personnel.

SAMPLING TECHNIQUE:

Purposive sampling was used to identify stakeholders in administrative, clinical, and IT domains for qualitative feedback.

DATA COLLECTION PROCEDURE:

1. Conducted structured discussions with department heads using feedback checklists.
2. Reviewed live demos of shortlisted HIS platforms through vendor interactions.
3. Collected performance data from secondary literature, vendor documentation, and user testimonials.
4. Developed a scoring model using Excel to objectively compare systems.

OPERATIONAL DEFINITIONS:

- Functional Completeness: Availability of key hospital modules (OPD, IPD, pharmacy, etc.).
- Interoperability: Ability to integrate with EMR, LIS, and analytics software.
- UI/UX Quality: Ease of use, dashboard access, speed of navigation.
- Vendor Support: SLA availability, training programs, and upgrade commitments.
- Cloud Compatibility: Support for remote access and multi-site operation.

7. DATA ANALYSIS PLAN

- Tool Used: Microsoft Excel
- Scoring Method: Each HIS platform was rated on a scale of 1 to 5 across ~20 parameters.

- Weightage: Assigned based on stakeholder importance (e.g., EMR integration – 10%, UI/UX – 8%, Vendor support – 10%).
- Analysis: Final scores computed by multiplying performance score $\times$ weight for each parameter and summing them to rank the platforms.
- No inferential statistics used, as this is a qualitative-comparative study.

8. ETHICAL CONSIDERATIONS

- Verbal informed consent was taken from all participants involved in data collection.
- No patient-level or confidential medical data was used.
- Vendor data and hospital observations were used strictly for academic purposes.
- Neutral scoring was ensured without any commercial bias or influence.

9. IMPLICATIONS OF RESEARCH

This research will guide Zydus Hospital in selecting a future-ready HIS that aligns with its mission to deliver high-quality, data-driven, and patient-centered care. The study introduces a practical model for HIS evaluation that can be applied by other hospitals, especially in India, undergoing similar digital transitions. The research also contributes to healthcare management literature by offering a contextualized decision-support framework for HIS selection.

10. REFERENCES

Key references have been cited in Vancouver style in the dissertation and include:

- Gajanayake et al., *Framework for HIS Evaluation*, 2014
- Sen and Reddy, *Private vs Public HIS Implementation*, 2017
- Government of India's *e-Hospital Guidelines*
- Product brochures from Epic, Cerner, TrakCare, Meditech, Napier
- Case studies from Apollo, Narayana Health, Medanta

