

Assessing the Implementation and Impact of Paperless Records at the Calamba City Health Office

Jerome Ismhael A. Obe¹, Joel John A. Dela Merced²

<https://orcid.org/0009-0008-6386-0856>¹

<https://orcid.org/0000-0002-1459-5274>²

St. Bernadette of Lourdes College^{1,2}

jobe@sbhc.edu.ph¹ , jdelamerced@sbhc.edu.ph²

ABSTRACT

The implementation of paperless records management systems has become an essential strategy in modernizing healthcare services and improving the efficiency of clinical documentation. This study assessed the implementation and impact of the paperless records management system at the Calamba City Health Office, focusing on efficiency and workflow, accuracy and record quality, user satisfaction and adaptation, system accessibility and usability, technical and operational challenges, and privacy and security. Guided by the Technology Acceptance Model (TAM), the study employed a sequential explanatory mixed-methods research design that combined quantitative and qualitative approaches.

Keywords: Paperless records management system, healthcare services, clinical documentation, efficiency, workflow, accuracy, record quality, user satisfaction, accessibility, usability, privacy, security, technology acceptance model (TAM)

INTRODUCTION

The healthcare sector is increasingly adopting paperless records management systems to improve efficiency, accuracy, and accessibility of patient information. In the Philippines, this initiative supports the Philippine eHealth Strategic Framework and Plan (PEHSFP), promoting digital healthcare in local facilities. The Calamba City Health Office has implemented a paperless records system to enhance service delivery and reduce administrative workload. However, limited local research has evaluated its effectiveness, particularly in the context of challenges such as unstable internet connectivity and resource constraints. This study aims to assess the system's implementation, identify its benefits and challenges, and provide recommendations to improve its sustainability, reliability, and overall performance.

Statement of the Problem

1. This study measured the perceived usefulness (PU) of the paperless records management system at the Calamba City Health Office in terms of efficiency and workflow, accuracy and record quality, user satisfaction, and adaptation
2. This study assessed the perceived ease of use (PEOU) and other external variables in the adoption of paperless records management in terms of: System accessibility and usability; Technical and operational challenges; and Privacy and security
3. This study determined if there is a significant relationship between the impact of the paperless records management system and the level of system effectiveness.
4. The study aimed to identify any challenges or obstacles encountered during the implementation process and provide recommendations for improvement.

Scope and Delimitations

This study assesses the implementation of the paperless records management system at the Calamba City Health Office and examines its effects on efficiency, accuracy, record retrieval, user satisfaction, staff training, communication, and patient care. It identifies implementation challenges and provides recommendations for improvement. The study is limited to the Calamba City Health Office, relies on staff responses, and excludes long-term impacts, future system changes, and financial or technical maintenance. Conducted during the first and second quarters of 2026, with completion expected in May, it focuses on healthcare workers using the system in daily operations while acknowledging external factors that may influence.

Review of Related Literatures

Clinical documentation records patient information to support quality care, communication, and decision-making. Traditional paper-based records, while effective, face risks such as loss, inconsistency, and damage. Electronic Medical Records (EMRs) have transformed healthcare by improving documentation quality, accessibility, efficiency, and patient safety. Studies show EMRs enhance communication, reduce medical errors, save time, and improve patient satisfaction. However, challenges remain, including limited digital literacy, inadequate infrastructure, resistance to change, and inconsistent adoption. Guided by the Technology Acceptance Model, research highlights perceived usefulness and ease of use as key factors influencing EMR acceptance. Continued training, system improvements, and infrastructure development are essential for successful implementation.

Theoretical Framework

The study is anchored on the **Technology Acceptance Model (TAM)** developed by **Davis (1985)**. According to TAM, an individual's acceptance and continued use of a technology depend primarily on two constructs:

- **Perceived Usefulness (PU)** – the degree to which a person believes that using the paperless records management system improves job performance.
- **Perceived Ease of Use (PEOU)** – the degree to which a person believes that the system is easy to learn and operate.

Conceptual Framework

The study examines how perceived usefulness and perceived ease of use influence the effectiveness of the paperless records management system at the Calamba City Health Office. It evaluates system efficiency, accuracy, usability, security, and user satisfaction to assess implementation outcomes and provide recommendations for improving the system's overall performance and effectiveness.

METHODOLOGY

This study employs a sequential explanatory mixed-methods design, combining surveys and interviews to evaluate a paperless records system at the Calamba CHO, and uses statistical and thematic analyses to provide comprehensive results and interpretation.

Research Design

This study employed a sequential explanatory mixed-method research design. According to Bowen et al. (2025), this approach included two major phases: the collection of quantitative data from survey questionnaires, followed by the qualitative collection of data from observed trends among respondents. This approach is used to assess the impact of the paperless records management system at the City Health Office in Calamba, Laguna.

Research Steps

The study was conducted at the Calamba City Health Office (CHO) in the province of Laguna. The population of Calamba City continues to be among the fastest-growing in the CALABARZON region (Bagarinao, 2015), creating a massive and diverse workload for its CHO. This workload requires managing holistic medical care, ranging from maternal and child health programs and sanitation permits to critical disease surveillance. Crucially, the CHO manages vital public health statistics that directly affect the city's ability to respond effectively to disease outbreaks. An implementation of a paperless system is therefore expected to be essential for streamlining medical records, ultimately improving both patient care and overall community health outcomes.

Data Collection and Sample Selection

The researcher secured permission from the Calamba City Health Office and distributed questionnaires with informed consent and clear instructions. Data confidentiality was ensured under the Data Privacy Act of 2012, with only authorized personnel collecting responses. Semi-structured interviews were also conducted, recorded, and transcribed for thematic analysis. Data collection occurred during the 2nd to 3rd week of April 2026, followed by analysis in the 4th week. Both quantitative and qualitative data were processed using appropriate methods.

Data Analysis Methods

The data were analyzed using thematic analysis, a qualitative method for identifying patterns or themes. The study followed Braun and Clarke's 2006 six-step framework: familiarization, coding, searching for themes, reviewing, defining, and writing up. Analysis was flexible and iterative. Two theme types were used: semantic (explicit meanings) and latent (underlying ideas inferred from the literature) to guide qualitative interpretation of the data.

Research Hypotheses and Validation

There is no significant relationship between the use of the paperless records management system and its effectiveness in efficiency, accuracy, user satisfaction, and improvements in patient care among Calamba City Health Office (CHO) staff. There is a significant relationship between the use of the paperless records management system and its effectiveness in efficiency, accuracy, user satisfaction, and improvements in patient care among Calamba City Health Office (CHO) staff.

Study Limitations and Ethical Considerations

In the conduct of this research study, all data will be collected with rectitude. The researcher will ensure that no code of conduct will be violated. Every participant in this research study will be respected, and their information will be treated with the highest level of

confidentiality throughout the research process. Before proceeding with the interview, the researcher will secure consent from each participant and inform them of their right to withdraw from the study at any time without consequences. During the interview, the researcher will not place any participant in a situation that could put them in harm's way, whether physical or psychological. The assessment of their answers will be subject to the Data Privacy Act of 2012. The researcher obtained ethical certification from the Ethics Review Board (ERB) for the conduct of data collection. The aforementioned document is attached as an appendix to this study.

RESULTS AND DISCUSSION

The study shows that the paperless records system significantly improves efficiency, accuracy, and user satisfaction in the City Health Office. Respondents strongly agreed that it speeds up workflows, reduces errors, and enhances real-time data access. Accuracy and record quality ranked highest, followed by user satisfaction and efficiency. However, challenges such as internet instability, technical issues, and user resistance persist. Overall, findings confirm strong system effectiveness, supported by statistical significance and a strong positive correlation between impact and performance.

SUMMARY

The study found that the paperless records system improves workflow efficiency, reduces documentation errors, and enhances real-time data accuracy. Users reported high satisfaction and strong system accessibility, especially during operations. While the interface is user-friendly, onboarding and training remain areas for improvement. Privacy and security are generally trusted, though technical challenges such as internet dependency and system lag persist. Overall, the system is effective but requires continued technical support, enhanced training, and infrastructure improvements for optimal performance.

CONCLUSIONS

The paperless records system is an effective digital solution for improving healthcare record management at the City Health Office. It enhances efficiency, accuracy, and user satisfaction while ensuring strong data privacy and accessibility. However, its effectiveness is limited by infrastructure issues, user resistance, and training gaps. Despite these challenges, statistical results confirm a significant positive impact and strong correlation between system use and effectiveness. Therefore, the system is a reliable tool for healthcare modernization but requires continuous improvement.

RECOMMENDATIONS

The study recommends improving internet infrastructure and system stability to reduce downtime and delays. Regular training programs should be implemented to enhance digital literacy and support first-time users. Strengthening onboarding procedures can improve system adaptation and usability. Technical upgrades should address system lag and repetitive encoding issues. Management should also reinforce data security awareness among staff. Future improvements should focus on offline access features and long-term digital integration strategies to ensure sustained efficiency, reliability, and user satisfaction.

ACKNOWLEDGMENTS

The researchers express sincere gratitude to the City Health Office staff and participants for their cooperation and valuable insights during the data collection process. Appreciation is extended to the Ethics Review Board for granting approval and ensuring ethical compliance. Special thanks are given to the research advisers and mentors for their guidance and support throughout the study. Gratitude is also extended to family and friends for their encouragement. Above all, the researchers acknowledge the Almighty for wisdom, strength, and perseverance.

REFERENCES

- Acacio-Claro, P. J., Estuar, M. R. J. E., Villamor, D. A. R., Bautista, M. C. G., Pulmano, C. E., & Sugon Jr, Q. M. (2024). Understanding adoption of Electronic Medical Records (EMRs) during a health emergency: an analysis of EMR usage logs from rural health facilities in the Philippines. *Acta Medica Philippina*, 58(22), 7.
- Aljarrah, E., Elrehail, H., & Aababneh, B. (2016). E-voting in Jordan: Assessing readiness and developing a system. *Computers in Human Behavior*, 63, 860-867.
- Alzamaie, R., & Miraj, S. (2024). Impact of Electronic Health Records on Patient Confidentiality, Measuring the Perception of Health Care Professionals in Eastern Saudi Arabia. *Journal of Health Care and Research*, 5(1), 26.
- Bagarinao, R. T. (2015). A Spatial Analysis of Population Growth and Urbanization in Calamba City Using GIS. *Journal of Nature Studies*, 14(2), 1-13.
- Basil, N. N., Ambe, S., Ekhaton, C., Fonkem, E., & Nduma, B. N. (2022). Health records database and inherent security concerns: A review of the literature. *Cureus*, 14(10).