

**LYING-IN CLINIC INFORMATION MANAGEMENT SYSTEM
FOR BUHI MUNICIPALITY**

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Master in Information Technology
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Sorsogon, Philippines 4700

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LENI GIRLIE MORALDE IDIAN

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Author : Lenie Girlie M. Idian

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This study specifically aimed to develop an Lying-In Clinic Information Management System For Buhi Municipality by ensuring that all patient records are comprehensive and up-to-date. Key features of the system include storing detailed patient profiles, medical histories, test results, current medications, and treatment plans, while providing real-time updates to maintain accuracy and accessibility. Additionally, the system seeks to optimize workflow efficiency by automating critical



tasks such as appointment scheduling and patient documentation, streamlining operations and reducing administrative burdens.

The study also focused on improving inventory management by implementing real-time tracking to ensure the availability of necessary supplies while avoiding stockouts or overstock situations. Automated alerts for low stock levels or approaching expiration dates were included to facilitate timely reordering and avoid disruptions. Furthermore, the system incorporates support for clinical decision-making through decision-support tools that leverage patient data and evidence-based guidelines for accurate and timely treatment decisions. Predictive analytics were also utilized to anticipate patient needs, identify potential complications, and optimize resource allocation using historical data and trends. Lastly, the system was evaluated based on ISO 25010 standards, assessing key quality characteristics such as functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability, ensuring that the system meets high standards of quality and user satisfaction.

During the development and after testing and evaluation of the developed system, the following findings have been established: The study successfully developed an Enhanced Patient Care System that integrates comprehensive patient records, including patient profiles, medical histories, test results, current medications, and treatment plans, while ensuring real-time updates for accuracy and



accessibility. It effectively integrated optimized workflow efficiency by automating tasks such as appointment scheduling and patient documentation, streamlining operations and reducing manual administrative work. The inventory management system was enhanced by implementing real-time tracking to ensure the availability of necessary supplies and setting automated alerts for low stock levels or approaching expiration dates, preventing shortages and enabling timely reordering. Additionally, the study developed a system that supports clinical decision-making by providing decision support tools that utilize patient data and evidence-based guidelines for accurate treatment decisions, while using predictive analytics to anticipate patient needs, identify potential complications, and optimize resource allocation. Finally, the system was evaluated using ISO 25010 standards, confirming that it meets expectations in terms of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability.

Based on the findings of this study, the following conclusions were formulated: The study successfully developed an Enhanced Patient Care System that integrates comprehensive patient records with real-time updates, ensuring accurate and accessible information for improved healthcare delivery. The system effectively enhanced workflow efficiency by automating tasks like appointment scheduling and patient documentation, leading to streamlined operations and reduced manual administrative work. Additionally, the system improved the inventory management system by incorporating real-time tracking and automated alerts, ensuring the



availability of supplies and preventing shortages through timely reordering. The developed system also enhances clinical decision-making by utilizing decision support tools and predictive analytics to improve treatment accuracy, anticipate patient needs, and optimize resource allocation. Finally, the system was evaluated using ISO 25010 standards, confirming that it meets expectations across all key quality characteristics, including functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability, with an overall rating of 3.61, indicating that the developed system meets expectations.

Based on the conclusions drawn from this study, the following recommendations were formulated: First, it is essential to continually update and maintain the Enhanced Patient Care System while exploring further integration with other healthcare systems to enhance data sharing and interoperability. Additionally, expanding the automation features by incorporating additional tasks and processes can further maximize workflow efficiency and reduce administrative burden. Continuous monitoring of inventory trends and refining the real-time tracking and automated alert system will optimize supply levels and enhance the efficiency of reordering processes. The decision support tools and predictive analytics should be further refined to incorporate more diverse data sources, improving treatment accuracy and enhancing the system's ability to anticipate patient needs. Regular evaluations based on ISO 25010 standards should be conducted to ensure the system continues to meet expectations and identify potential improvements in functionality,



Aemilianum College Inc.
Master in Information Technology
Piot, 4700 Sorsogon City, Sorsogon, Philippines

vi

performance, and other key quality characteristics. Lastly, gathering continuous feedback from end-users and stakeholders will help identify operational challenges or areas for enhancement, ensuring the system evolves to meet changing healthcare needs and technological advancements.