International Journal of Health and Medicine
E-ISSN: 3047-793X
P-ISSN: 3047-7948

Research/Review) Article

Evaluation of Hospital Management Information System (HMIS) Implementation to Improve Service Quality at Mother and Child Hospital

Annisa Wahyuni[1*], Nurhasanah Nasution[2], Riana Oktarina[3]

[1-3]Medical Records and Health Information Management, APIKES IRIS, Indonesia
* Corresponding Author: annisawahyuni@gmail.com[1]

Abstract: The Hospital Management Information System (SIMRS) is a key component in the digital transformation of healthcare services, aiming to enhance efficiency and service quality. This study evaluates the implementation of SIMRS at Mutiara Bunda Mother and Child Hospital and explores the challenges and opportunities for improvement. A qualitative case study approach was employed, with data collected through in-depth interviews, observations, and document reviews involving five key informants, including the medical records head, medical service manager, registration officers, and IT staff. The results show that the SIMRS covers registration, procedure input, laboratory, and pharmacy functions. However, issues such as delayed data entry by medical staff, limited equipment, lack of integration across service units, and absence of written user guidelines and regular training persist. The study concludes that although the SIMRS is in use at RSIA Mutiara Bunda, system optimization, staff capacity building, and stronger managerial support are crucial to fully realize its potential in improving service quality.

Keywords: Digital Health; Electronic Medical Records; Hospital Services; SIMRS; System Evaluation

1. Introduction

A hospital is a healthcare service organization that enables various trained and educated personnel to handle and manage health issues to restore and maintain health. Information technology plays a crucial role in today's healthcare services. The quality of information processing is a key success factor for healthcare service organizations. A good information system can support clinical workflows in many ways, thus contributing to better patient care (Pane et al., 2023). In the current digital era, Hospital Management Information Systems (HMIS) play an essential role in supporting clinical processes, decision-making, and competitive strategies.

In Indonesia, this is regulated under Law No. 44 of 2009 concerning hospitals, in which every hospital is required to conduct recording and reporting of all hospital operations in the form of a Hospital Management Information System (HMIS). Therefore, every hospital is obligated to implement HMIS using open-source systems (Dewi et al., 2021).

According to the Ministry of Health Regulation No. 82 of 2013, HMIS is an information technology system that integrates all hospital service processes into a network of coordination, reporting, and administrative procedures. HMIS aims to ensure fast, accurate, and precise information. Its functions include collecting, storing, processing, and documenting data related to patient services and hospital performance. However, the implementation of HMIS in several hospitals often encounters obstacles such as issues in standard operating procedures (SOP), unclear roles and organizational functions, and lack of managerial oversight (Theo et al., 2024).

Received: 22 September 2025
Revised: 06 October 2025
Accepted: 20 October 2025
Published: 24 October 2025
Curr. Ver.: 24 October 2025

A hospital accreditation team from the Indonesian Ministry of Health in 1998 found that 90% of regional general hospitals lacked a reliable management information system. The existing systems were only used for routine reporting to the health office. Consequently, "the standard service quality assurance in hospitals could not be consistently applied, making it impossible to ensure service quality." This caused stagnation in service indicators and hindered any potential progress (Darmawan, 2021). As of December 2021, the Ministry of Health reported that 3,120 hospitals were registered; 1,862 hospitals had implemented HMIS effectively, 169 had implemented it but it wasn't functioning well, and 1,089 hospitals had not implemented it yet (Syafira et al., 2024).

A study (Arifin et al., 2023) at Rafflesia Hospital in Bengkulu found that 80% rated the system performance as good, and 20% rated it as poor. 90% of the generated information was considered good, while 10% was not. Data security was rated good by 60% and poor by 40%. An initial survey conducted at Mutiara Bunda Hospital showed that the hospital had already implemented HMIS including the use of electronic medical records, but it was not yet fully operational or well-integrated. This condition prompted the researchers to conduct this study.

2. Related Word or Literature Review

Research results (Arifin et al., 2023) at Rafflesia Hospital Bengkuli obtained an evaluation from the system performance aspect showing that the system performance was good by 80% and considered not good by 20%. The information generated was good by 90% and not good by 10%. Data security was good by 60% and not good by 40%.

Medical Record

Based on the Regulation of the Minister of Health concerning Medical Records No. 269 of 2008, a medical record is a file containing notes and documents about the patient's identity, examinations, treatments, procedures, and other services that have been provided to the patient. According to the Regulation of the Minister of Health of the Republic of Indonesia No. 24 of 2022 (Kemenkes RI, 2022) regarding medical records, an Electronic Medical Record is a medical record created using an electronic system intended for the administration of medical records.

The purposes of maintaining medical records are: 1. to improve the quality of healthcare services; 2. to provide legal certainty in the administration and management of medical records; 3. to ensure the security, confidentiality, integrity, and availability of medical record data; and 4. to realize the administration and management of digital and integrated medical records (Permenkes RI, 2008).

Hospital Management Information System

Gene E. Thompson and Iva Handelman in 1978 simply described the importance of information in hospital management by focusing on the medical service management process. According to them, medical service management is a continuously repeating cycle. Hospital management essentially consists of three stages: (1) strategic planning conducted by top management, (2) managerial control carried out by middle managers, and (3) operational control performed by operational management (Darmawan, 2021).

According to the Standard Accreditation Instrument book, 1st edition, 2022, information technology systems in healthcare services consist of a set of arrangements that include data, information, indicators, procedures, technology, devices, and human resources that are interconnected and managed in an integrated manner to guide actions or decisions that are useful in supporting the improvement of service quality and health development. To achieve optimal results in the implementation of a health information system, a Hospital Information Management System (SIMRS) is required, serving as a medium in the form of information and communication technology systems that process and integrate all hospital service workflow processes through coordination networks, data collection, reporting, and administrative procedures to obtain information accurately and appropriately.

Hospital Management Information System (HMIS) is a system that functions as a comprehensive information system managing all hospital administrative processes, including patient diagnosis and treatment services, medical records, pharmacy, drug inventory, billing, human resource databases, employee payroll, and accounting functions. This system is

designed to be monitored by management. The implementation of HMIS in hospitals can address various challenges (Pane et al., 2023).

3. Proposed Method

This research was conducted at Mutiara Bunda Mother and Child Hospital from February to April 2025. It used a qualitative design. Informants were selected through purposive sampling. Data collection methods included observation, interviews, and document review.

4. Results and Discussion

Based on the observations conducted by the researcher, the findings regarding HMIS implementation at Mutiara Bunda Mother and Child Hospital are summarized in Table 1.

Table 1. Observation Results of the Evaluation of Hospital Management Information System (HMIS) Implementation at Mutiara Bunda Mother and Child Hospital.

No	Variabel yang diteliti	Ada	Tidak ada	Keterangan
1	Tesks			
	a. Patient data input item			Item is available in HMS
	b. Diagnosis item	V		Item is available in HMS
	c. Procedure item	V		Item is available in HMS
	d. Medication item	V		Item is available in HMS
	e. Polyclinic integration	V	V	HMIS is not yet integrated with the polyclinic unit
2	Technology			
	a. Server			Server is available
	b. Network	V		Network is available
	c. Computer	V		Computer is available
	d. Keyboard	V		Keyboard is available
	e. Mouse	V		Mouse is available
	f. Training and Socialization	V V		HMIS training and socialization have been conducted
	g. HMIS user manual		V	No HMIS user manual or guidebook available
3	Profile Suitability			
	a. Service status	V		Service status is available in HMIS
	b. Report	V		Reports are available in HMIS
4	Perfomance			
	a. Fast service	V		Service using HMIS is fast
	b. Accurate reports	V		Reports from HMIS are accurate

Based on the observation results in Table 1 conducted by the researcher at Mutiara Bunda Mother and Child Hospital, the Hospital Management Information System (HMIS) used is considered adequate both in terms of menu features that support staff tasks and the tools required to operate the system. However, the HMIS has not yet been integrated with several units that are deemed crucial for hospital services, such as the polyclinic unit. Additionally, there is no user manual available, and no specific training or socialization has been conducted regarding the use of the HMIS for registration officers who utilize the system in performing their duties.

Interview Results

This study was conducted at Mutiara Bunda Mother and Child Hospital. There were five informants interviewed by the researcher, consisting of the Head of Medical Records, the IT Officer, and three registration staff. The characteristics of the informants in this study are presented in Table 2 as follows:

Table 2. Characteristics of research informaant.

No	Informant Code	Position	Last Education	Age	Gender
1	Informant 1 (Inf-1)	Head of Medical Records	Associate Degree in Medical Records	24 years	Female
2	Informant 2 (Inf-2)	Medical and Nursing Services Manager	Bachelor of Medicine	44 years	Female
3	Informant 3 (Inf-3)	Registration Officer	Associate Degree in Medical Records	25 years	Female
4	Informant 4 (Inf-4)	Registration Officer	Associate Degree in Medical Records	25 years	Female
5	Informant 5 (Inf-5)	IT Officer	Bachelor of Science (S.Si)	23 years	Male

This research was conducted at Mutiara Bunda Mother and Child Hospital. Five informants were interviewed, consisting of the Head of Medical Records, the IT Officer, and three registration officers. The information obtained from the interviews regarding the implementation of the Hospital Management Information System (HMIS) at Mutiara Bunda in 2024 is summarized as follows:

Medical Record Management and Completion Workflow

The workflow starts from patient registration, recording medical data, to archiving—both in physical and digital forms via HMIS. All informants stated that the medical record completion procedure has a clear workflow. However, there are still obstacles in its implementation, particularly regarding delayed documentation and file returns from the treatment rooms due to the transition from manual to electronic systems.

"The workflow already has an SOP, but the medical team often delays filling out medical records, so we face difficulties during the archiving process." (Inf-1). "Sometimes doctors prioritize patients, so documentation is delayed. We often discuss this in meetings." (Inf-2).

The interviews revealed that RSIA Mutiara Bunda already has standard operating procedures (SOPs) for the medical record workflow, from registration to archiving, manually and via HMIS. However, delays remain a challenge, especially since the transition from manual to electronic systems hasn't been smooth. This is common in health facilities implementing digital systems, where changing healthcare workers' behavior becomes a key challenge (Putri et al., n.d.).

Delays are also affected by the priority given to direct patient care, causing postponed documentation. This is in line with (Agustina, 2022) who noted that workload and time constraints are major barriers to timely medical record completion.

Policy, Evaluation, and Monitoring of Medical Records

Policies to ensure the completeness and timeliness of medical record filling have been implemented, including the obligation to fill in records within a maximum of 2x24 hours after service. Evaluations are carried out periodically by the medical records team and the quality team."Evaluations are carried out every month with indicators of completeness of filling and return time. If there is anything missing, it is immediately reported to management." (Inf-1).

However, evaluation efforts have not been fully effective due to limited human resources and not all units following up on evaluation results optimally. "We sometimes conduct evaluations, but follow-up from service units is not optimal." (Inf-1).

The policy of completing medical records within a maximum of 2x24 hours after service has been implemented, and evaluations are conducted regularly. However, challenges in the effectiveness of evaluation follow-up are still evident. Limited human resources (HR) and a low quality culture in some service units are obstacles to optimizing monitoring (Putri et al., n.d.). For monitoring to be effective, full support from unit leaders and a reward-punishment system based on performance indicators are needed (Pane et al., 2023).

Implementation and Functions of SIMR

SIMRS has been used to support service processes ranging from patient registration and medical data input to archiving. According to Inf-5, this system helps integrate units, but it is not yet fully optimized due to technical factors and user behavior.

"The main modules, such as registration, laboratory, and pharmacy, are already running. But there are still units that are not consistent in their data input." (Inf-5)

Registration officers (Inf-3 and Inf-4) feel that SIMRS has helped speed up the administrative process: "We used to have to fill out forms manually, but now we just enter the NIK and the data comes up immediately." (Inf-3) However, the system sometimes experiences technical problems such as slow speeds or going offline, which affects patient queues. "When the network is slow, services are disrupted. Patients often complain." (Inf-4)

SIMRS at Mutiara Bunda Hospital has supported various service functions such as registration, laboratory, and pharmacy. However, inconsistent data input by some units and technical glitches such as slow connections are serious obstacles. This shows that network infrastructure support and user skills are very important in the successful implementation of SIMRS (Syafira et al., 2024).

According to Inf-3 and Inf-4, SIMRS can speed up administrative processes, but its effectiveness is highly dependent on daily technical conditions. System delays can cause queues and patient complaints, so system reliability and backup plans are crucial to maintaining service continuity (Marselinus et al., n.d.).

Coordination Between Units and Management Support

Coordination between the medical records unit and the SIMRS installation is considered to still need improvement. Some informants mentioned that cross-unit collaboration is still limited to times when technical problems occur or there are delays in data entry.*"Coordination only happens when there is a problem; it should be more proactive." (Inf-2)* Management support is considered important in the form of providing training, adequate computer equipment, as well as strict policies regarding delays in filling out forms. *"We need regular training and additional equipment because computers are still limited in some rooms." (Inf-2) "There needs to be commitment from management to discipline units that are often late in entering data." (Inf-5))*

Coordination between units is still limited, mainly carried out only when facing technical issues. Ideally, coordination should be proactive and structured, for example through regular cross-unit communication forums. Management support in the form of training, equipment procurement, and strict policies is very important to strengthen the implementation of the Hospital Information System (SIMRS) (Putri et al., n.d.).

The limited availability of computers in some rooms hinders smooth workflow, and regular training becomes one of the solutions hoped for by the staff to improve their competence in using the Hospital Information System (SIMRS)(Waruwu et al., 2024).

Constraints on System Usage and Maintenance

Some common challenges include limited equipment, lack of training, and delays in data entry by medical personnel. In addition, there are issues with access authorization systems and the availability of real-time data. *"Sometimes the data we need has not been entered yet, even though it is required for services." (Inf-3) "SIMRS helps, but if the users do not understand it, it still remains slow." (Inf-5) To address this issue, some informants suggested the development of a simpler system interface and work unit-based training. "The user interface should be more user-friendly and in accordance with the workflow of each unit." (Inf-1)*

The issues that arise include delays in data input, device limitations, and a less intuitive user interface. In addition, access authorization systems and real-time data availability remain weaknesses. It is necessary to develop a more user-friendly interface that aligns with the workflow of the unit so that users can operate the system efficiently (Yudarmawan et al., 2020).

The key to the success of SIMRS lies not only in its technology but also in high user adoption. Therefore, a training approach based on work units and strengthening change management is greatly needed to build a digital culture within the hospital organization (Yudarmawan et al., 2020).

5. Conclusions

Overall, the management of medical records and the implementation of the Hospital Information Management System (SIMRS) in this hospital have been running fairly well, but improvements are still needed in terms of data entry discipline, optimization of SIMRS functions, and cross-unit coordination. Management support in the form of training, additional equipment, and strict oversight policies is highly needed to enhance the efficiency and effectiveness of the medical records management information system.

Author Contributions: Conceptualization, A.W., N.N., and R.O.; Methodology, A.W.; Validation, A.W., N.N., and R.O.; Formal analysis, A.W.; Investigation, A.W.; Resources, N.N. and R.O.; Data curation, A.W.; Writing—original draft preparation, A.W.; Writing—review and editing, N.N. and R.O.; Visualization, A.W.; Supervision, N.N.; Project administration, R.O. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by LPPM Apikes Iris

Data Availability Statement: The data supporting the findings of this study were obtained from interviews, observations, and internal hospital documents at RSIA Mutiara Bunda. Due to privacy and institutional policy restrictions, the data are not publicly available but may be obtained from the corresponding author upon reasonable request.

Acknowledgments: The authors would like to express their sincere gratitude to the management and staff of RSIA Mutiara Bunda for their assistance and participation in this study. The authors also acknowledge the use of AI-assisted tools under human supervision for language refinement and formatting support.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

Agustina, E. A. (2022). Faktor penyebab ketidaklengkapan pengisian dokumen rekam medis rawat inap di rumah sakit: Literature review. *Jurnal Manajemen Informasi Kesehatan Indonesia, 10*(1), 104. https://doi.org/10.33560/jmiki.v10i1.403

Arifin, I., Heltiani, N., & Duri, I. D. (2023). Evaluasi sistem informasi manajemen rumah sakit (SIMRS) di Rumah Sakit Rafflesia Bengkulu. *Jurnal Manajemen Informasi Kesehatan (Health Information Management), 8*(2), 93–99. https://ojs.stikessaptabakti.ac.id/jmis/article/view/441

Darmawan. (2021). *Manajemen rumah sakit*. Penerbit Adab.

Dewi, W. S., Ginting, D., Gultom, R., Pasca, S., Magister, S., & Masyarakat, K. (2021). Evaluasi sistem informasi manajemen rumah sakit di instalasi rekam medis RSUP H. Adam Malik dengan metode Human Organization Technology Fit (HOT-FIT) tahun 2019. *Jurnal Ilmiah*, 6(1), 2502–7786. http://jurnal.uimedan.ac.id/index.php/JIPIKI

Kemenkes RI. (2022). *Peraturan Menteri Kesehatan Republik Indonesia*. 9, 356–363.

Marselinus, K., Hermawan, C., Astrid, S., Dewi, K., Parulian, A. A., Mailintina, Y., Endang, N., Aisyah, F., Auliyah, N., Pertiwi, M., Rinia, I., Sri, D., Ria, W., Bhisma, E., Prasaja, J., Hadi, A., Tutut, W., Yunita, P., Noor, E. I., … Mardian, A. (n.d.). *Manajemen administrasi rumah sakit*.

Pane, M. S., Fanisya, N., Rizkina, S. R., Nasution, Y. P., & Agustina, D. (2023). Sistem informasi manajemen rumah sakit (SIMRS) untuk meningkatkan mutu pelayanan kesehatan di Indonesia. *Detector: Jurnal Inovasi Riset Ilmu Kesehatan, 1*(3), 1–14. https://doi.org/10.55606/detector.v1i3.1980

Permenkes RI. (2008). *PMK-No-269-Tahun-2008-Rekam-Medis*. In Permenkes RI (Vol. 7, Issue 7, p. 7).

Putri, D. N., Purba, S. H., Layana, K., Lubis, K., Golf, J. L., & Jangak, D. (n.d.). Tantangan dan solusi dalam implementasi SIMRS di rumah sakit pemerintah di Indonesia. *JRIKUF: Jurnal Riset Ilmu Kesehatan Umum, 3*, 13–22. https://doi.org/10.57213/jrikuf.v3i1.480

Syafira, A. C., Siregar, J. S., & Farashati, J. I. (2024). Faktor keberhasilan implementasi sistem informasi manajemen rumah sakit (SIMRS). *Jurnal Ilmiah, 13*(2).

Theo, D., Nasution, R. S., & Helvetia, D. I. K. (2024). Analysis of hospital organizations in the implementation of management information systems (SIMRS) at Dr. H. Yuliddin Away Tapaktuan Hospital, Tapaktuan District, South Aceh Regency in 2024. *Kp. Lalang, Kec. Sunggal, 7*(6). https://doi.org/10.32832/pro

Waruwu, M. D., Lase, D., Zega, Y., & Halawa, O. (2024). Pengaruh pelatihan terhadap efisiensi penggunaan sistem informasi manajemen rumah sakit (SIMRS) di Klinik Pratama Tabita Gunungsitoli. *YUME: Journal of Management, 7*(3), 883–890.

Yudarmawan, R. A., Kompiang, A. A., Sudana, O., Made, D., & Arsa, S. (2020). Perancangan user interface dan user experience SIMRS pada bagian layanan. *JITTER-Jurnal Ilmiah Teknologi dan Komputer, 1*(2).