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Performance Evaluation of Simrs Utilization in Optimizing Patient Services at the PKU Muhammadiyah Clinic in Nort Lombok

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Abstrak

Studi ini mengevaluasi kinerja pemanfaatan Sistem Informasi Manajemen Rumah Sakit (SIMRS) dalam mengoptimalkan layanan rawat jalan dan rawat inap di Klinik PKU Muhammadiyah, Lombok Utara, Indonesia, dan mengidentifikasi kendala utama serta langkah-langkah perbaikan. Desain evaluatif kualitatif diterapkan menggunakan observasi langsung, wawancara semi-terstruktur dengan sepuluh informan (staf klinik dan pasien), dan analisis dokumen. Data dianalisis menggunakan pendekatan analisis kualitatif interaktif dan kredibilitas diperkuat melalui triangulasi sumber dan metode. Temuan menunjukkan bahwa SIMRS mendukung peningkatan akses ke informasi pasien, pengurangan beban kerja administratif, dan prosedur layanan yang lebih nyaman. Namun, optimasi masih terbatas karena kompetensi pengguna dan literasi digital yang tidak merata, pelatihan yang tidak memadai, perangkat keras yang ketinggalan zaman, konektivitas internet yang tidak stabil, dan menu sistem yang tidak lengkap yang memerlukan pemrosesan manual paralel. Kendala-kendala ini berkontribusi pada inkonsistensi data, integrasi alur kerja yang terfragmentasi, dan tantangan dalam proses klaim asuransi. Meningkatkan kinerja SIMRS membutuhkan intervensi sosio-teknis terintegrasi, termasuk peningkatan kapasitas berkelanjutan, panduan pengguna yang lebih jelas dan akuntabilitas untuk entri data, peningkatan infrastruktur, penyempurnaan sistem yang selaras dengan alur kerja klinis, dan komitmen organisasi yang berkelanjutan.
Kata kunci: Sistem Informasi Manajemen Rumah Sakit, kinerja SIMRS, optimalisasi pelayanan pasien, evaluasi kualitatif, pelayanan kesehatan tingkat klinik.

Abstract

This study evaluated the utilization performance of the Hospital Management Information System (Sistem Informasi Manajemen Rumah Sakit/SIMRS) in optimizing outpatient and inpatient services at the PKU Muhammadiyah Clinic, North Lombok, Indonesia, and identified key constraints and improvement measures. A qualitative evaluative design was applied using direct observation, semi-structured interviews with ten informants (clinic staff and patients), and document analysis. Data were analyzed using an interactive qualitative analysis approach and credibility was strengthened through source and method triangulation. The findings indicate that SIMRS supports improved access to patient information, reduced administrative workload, and more convenient service procedures. However, optimization remains limited due to uneven user competence and digital literacy, insufficient training, outdated hardware, unstable internet connectivity, and incomplete system menus that require parallel manual processing. These constraints contribute to data inconsistencies, fragmented workflow integration, and challenges in insurance claim processes. Improving SIMRS performance requires integrated socio-technical interventions, including continuous capacity building, clearer user guidance and accountability for data entry, infrastructure upgrades, system refinement aligned with clinical workflows, and sustained organizational commitment.
Keywords: Hospital Management Information System, SIMRS performance, patient service optimization, qualitative evaluation, clinic-level health services.

INTRODUCTION

The rapid advancement of information technology has fundamentally transformed the way public services are organized and delivered. Digital-based service systems are increasingly adopted to provide faster access, higher accuracy, and better quality information, making their use no longer optional but mandatory in many sectors. This transformation is driven by the demand for efficiency and effectiveness in service provision, particularly in public services that

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directly affect citizens' welfare. The health sector, however, has historically lagged behind other sectors in adopting comprehensive digital systems, despite the fact that health services constitute a basic right that must be fulfilled by the state. In Indonesia, this obligation is explicitly stated in Law No. 36 of 2009 on Health, which mandates the provision of accessible and quality health services for all citizens.

Alongside global digitalization trends, the health sector has gradually shifted from conventional, paper-based information management to computer- and internet-based systems. One of the most prominent innovations in this area is the Hospital Management Information System (Sistem Informasi Manajemen Rumah Sakit / SIMRS), which functions as an integrated platform for managing clinical, administrative, and reporting processes. According to Ramesh et al. (2020), SIMRS represents a critical component of health information technology designed to move beyond basic clinical data standardization by offering a more comprehensive view of patient care. As patient data volumes increase and disease management becomes more complex, the demand for SIMRS to support diagnosis and the management of both communicable and non-communicable diseases has grown substantially. Furthermore, SIMRS has been shown to reduce medical errors and support more accurate clinical decision-making by improving data availability and consistency.

Beyond its clinical benefits, SIMRS also enables interconnection with other hospital subsystems, including pharmacy, laboratory, radiology, and other data-processing units. This integration allows health facilities to streamline workflows and improve coordination across service units. Islam et al. (2018) emphasize that such interoperability is a major advantage of SIMRS, as it enhances efficiency and supports comprehensive patient management. Nevertheless, the literature also highlights that the successful utilization of SIMRS is highly dependent on organizational readiness, user capacity, and supporting infrastructure, suggesting that the presence of the system alone does not guarantee improved performance.

The importance of SIMRS becomes even more pronounced in low- and middle-income countries with a high disease burden. Mashamba-Thompson and Crayton (2020) argue that these contexts face an increasing need for health information systems that enable effective and efficient surveillance, monitoring, and reporting. Accurate diagnostic access, outbreak monitoring, and timely reporting require health systems supported by fast and reliable digital resources. Empirical evidence further suggests that the implementation of SIMRS can reduce direct patient contact and administrative congestion, for example through online registration systems that shorten queues and minimize unnecessary exposure. These findings reinforce the view that SIMRS is not only a technological tool but also a strategic instrument for strengthening health system resilience and service quality. (Rohendi, 2019; Ima & Purwadhi, 2021)

In the Indonesian context, the implementation of SIMRS is also strongly driven by regulatory frameworks. Law No. 44 of 2009 on Hospitals obliges health facilities to conduct systematic recording and reporting of all operational activities through SIMRS. This mandate is further reinforced by the Minister of Health Regulation No. 1171 of 2011, which states that every hospital and clinic is required to implement a hospital or clinic information system. In addition, the integration of SIMRS with the national health insurance system introduces further operational complexity. The INA-CBGs payment mechanism, regulated under the Minister of Health Regulation No. 27 of 2014, requires accurate clinical coding and synchronized inpatient and outpatient data to ensure appropriate reimbursement. In this regard, Pamukti (2016) explains that BPJS Health was established to guarantee the fulfillment of basic living needs through social health protection, making accurate service documentation a crucial element for both service continuity and financial sustainability.

Despite these regulatory and technological imperatives, practical challenges in SIMRS

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utilization remain significant, particularly at the clinic level. Klinik PKU Muhammadiyah Lombok Utara has adopted an open-source SIMRS platform (SIMRS GOS using the SIMRS Khanza application) to support outpatient and inpatient services. However, preliminary observations and interviews indicate multiple operational constraints. In outpatient services, errors in data entry such as incorrect clinic selection during registration—lead to patient misrouting and waiting inefficiencies. Incomplete disease codes within the system and unstable internet connectivity further disrupt data input processes. In inpatient services, inconsistencies between admission and discharge data have resulted in discrepancies in BPJS claims, particularly related to drug usage and consumable medical supplies, which can exceed reimbursement quotas and financially disadvantage the clinic. Moreover, limited staff capacity and low digital literacy contribute to difficulties in operating SIMRS effectively, as many system menus and functions are not fully understood by frontline personnel.

These conditions highlight a critical issue: while SIMRS is formally implemented, its performance in supporting optimal patient services is not yet assured. Inadequate data accuracy and incomplete reporting increase the risk of compromised information, undermining the very objectives of digital health systems. This situation underscores the importance of evaluating SIMRS not merely as a technical application, but as a socio-technical system that depends on human capability, organizational processes, and technological reliability.

Although previous studies have extensively discussed the benefits of SIMRS and health information systems in improving service quality and efficiency (Ramesh et al., 2020; Islam et al., 2018; Mashamba-Thompson & Crayton, 2020), empirical evidence on how SIMRS performs in small- to medium-scale clinics—particularly in resource-constrained and non-urban settings—remains limited. Existing research tends to focus on hospitals or adoption outcomes, while fewer studies examine operational-level performance issues such as data synchronization, coding accuracy, staff capacity, and their implications for patient services and insurance claims. This lack of context- specific evaluation constitutes a significant research gap.

The novelty of this study lies in its comprehensive evaluation of SIMRS performance at the clinic level by simultaneously examining outpatient and inpatient service workflows using an open-source SIMRS platform. By linking technical system use with human resource capacity, organizational practices, and regulatory demands, this study offers a nuanced understanding of how SIMRS functions in real service settings. This approach extends existing literature by providing empirical insights into the practical challenges and improvement strategies for SIMRS utilization beyond large hospital environments.

Based on the identified problems and research gap, this study aims to:

1. evaluate the performance of SIMRS in supporting the optimization of patient services at Klinik PKU Muhammadiyah Lombok Utara;
2. identify the key constraints in SIMRS utilization that hinder optimal patient service delivery; and
3. analyze the efforts undertaken to overcome these constraints in order to enhance SIMRS performance and service quality.

METHODS

Research Design and Approach

This study employed a qualitative research design with an evaluative approach to examine the performance of the Hospital Management Information System (Sistem Informasi Manajemen Rumah Sakit / SIMRS) in supporting the optimization of patient services. A qualitative approach was chosen because it enables an in-depth understanding of real operational conditions, user experiences, and organizational processes related to SIMRS utilization. According to Arikunto (2006), qualitative research parameters are used to explore, deepen, and validate phenomena whose effectiveness or implementation remains uncertain. In

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line with Sugiyono's perspective, the unit of analysis in qualitative research is a social situation consisting of place, actors, and activities that interact dynamically.

The research focused specifically on the clinical information subsystem of SIMRS, particularly the outpatient and inpatient modules, as these modules are directly related to patient service delivery and operational workflows. The study aimed to capture how SIMRS is utilized in practice, identify existing constraints, and explore improvement efforts within the clinic context.

Research Site and Timeframe

The research was conducted at Klinik PKU Muhammadiyah Lombok Utara, Indonesia. This site was selected because the clinic has implemented SIMRS as part of its management and reporting system. Preliminary observations and an initial field study indicated the presence of several obstacles in SIMRS utilization, especially within outpatient and inpatient clinical information subsystems. These conditions made the clinic a relevant and information-rich setting for evaluating SIMRS performance. The research was carried out according to a planned research schedule, encompassing preparation, fieldwork, data analysis, and reporting stages. The timeframe was designed to allow sufficient engagement with participants and iterative analysis of the collected data.

Research Stages

The research process was conducted through four main stages: Pre-field stage, which included defining the research focus, aligning theoretical perspectives, reviewing research instruments, obtaining research permission, and preparing the research proposal. Fieldwork stage, during which the researcher conducted in-depth interviews and direct observations at the research site. Data analysis stage, involving interpretation and analysis of data in accordance with the research objectives and contextual conditions. Reporting stage, which focused on compiling and synthesizing research findings into a coherent research report.

Participants and Data Sources

The study involved ten participants selected as key informants based on their direct involvement in SIMRS utilization and patient service processes at the clinic. The participants included clinic personnel who were knowledgeable about outpatient and inpatient service workflows and SIMRS operation. Two types of data sources were used: Primary data, obtained directly from informants through in-depth interviews. These data provided firsthand insights into experiences, challenges, and perceptions related to SIMRS utilization. Secondary data, consisting of documents, records, reports, and archival materials relevant to SIMRS implementation and clinic operations. Secondary data were used to support and validate findings derived from primary data (Sugiyono, 2011).

Data Collection Methods

Data collection was conducted using the following techniques: Observation, Direct observation was carried out to examine actual conditions at the clinic, including physical infrastructure, system usage practices, and user interactions with SIMRS. Observation allowed the researcher to gain contextual understanding of how SIMRS operates within outpatient and inpatient service environments. In-depth interviews were conducted using semi-structured interview guidelines to explore participants' experiences, knowledge, and perspectives regarding SIMRS utilization. This method enabled flexibility in probing issues related to system functionality, staff capacity, workflow integration, and service constraints. Documentation served as a supporting data source, including institutional documents, system reports, and relevant administrative records. These materials were used to complement observation and interview data.

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Data Analysis Techniques

Data analysis followed the interactive model proposed by Miles and Huberman (2014), consisting of four interconnected stages:Data collection, involving the compilation of interview transcripts, observation notes, and documents relevant to the research focus. Data reduction, where raw data were selected, summarized, and organized to identify key themes and patterns related to SIMRS performance and utilization constraints. Data display, which involved presenting data in the form of narrative descriptions, thematic matrices, and conceptual relationships to facilitate interpretation. Conclusion drawing and verification, where findings were interpreted and validated to ensure that conclusions accurately reflected empirical evidence.

To enhance analytical rigor, qualitative data analysis software NVivo was used. NVivo supports systematic coding and organization of qualitative data based on actual participant experiences (in vivo coding). According to Bazeley and Jackson (2007), NVivo facilitates efficient management of large volumes of unstructured data and supports transparency in the analytical process. Data sources analyzed in NVivo included internal sources (interview transcripts, field notes, and images), external sources (books and journal articles), researcher memos, and analytical matrices.

Trustworthiness and Data Validity

To ensure data credibility and trustworthiness, this study applied triangulation techniques as recommended by Sugiyono (2011). Two forms of triangulation were used: Source triangulation, conducted by comparing data obtained from different informants (such as clinic staff and service users) to ensure consistency and accuracy of findings. Technique triangulation, performed by cross-checking data collected through interviews, observations, and documentation. When discrepancies were identified, further clarification was sought to confirm the most reliable information. Through these procedures, the study ensured that the findings reflected actual conditions at the research site and met qualitative research validity standards.

RESULTS AND DISCUSSION

Performance of SIMRS in Supporting the Optimization of Patient Services at PKU Muhammadiyah Clinic, North Lombok Optimizing the use of the Hospital Management Information System (Sistem Informasi Manajemen Rumah Sakit, SIMRS) is not merely a matter of implementing a digital system, but rather of leveraging its available features effectively to deliver stronger operational outcomes. For healthcare facilities, the overarching objective remains the provision of high-quality patient care while maintaining resource efficiency, controlling costs, and ensuring the smooth continuity of daily operations. In practice, however, achieving these goals requires a strategic approach to maximizing SIMRS potential, particularly in addressing recurring barriers such as insufficient training, resistance to change, and the underutilization of system capabilities. Consequently, SIMRS optimization can contribute substantially to operational efficiency, clinical outcomes, and patient satisfaction when implemented through a deliberate and systematic approach (Dharmawan et al., 2022).

A core strategy for SIMRS optimization is comprehensive capacity building for all personnel, ranging from administrative staff to clinical providers. Effective SIMRS use requires users to understand its functional modules and how they align with service workflows. Physicians, nurses, and other clinical staff need to be proficient in entering and retrieving patient data accurately and promptly, while administrative teams require competency in patient registration, billing processes, and inventory management. Continuous and regularly updated training programs are therefore essential to reduce human error and ensure that staff can fully utilize the system's capabilities (Effendy et al., 2024; Hadian et al., 2023; Sahidillah & Rohendi, 2016).

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In addition to training, system customization to match facility-specific needs is critical. SIMRS platforms are generally configurable, yet genuine optimization depends on tailoring the system to reflect the clinic's workflow patterns, service processes, and organizational structure. This includes configuring cross-unit integration (for example, emergency services, outpatient care, and inpatient care) to improve information exchange and interdisciplinary coordination. A customized SIMRS is more likely to address operational bottlenecks directly, whether the priority is increasing patient throughput, reducing waiting times, or strengthening inventory accuracy. Alongside customization, the facility must ensure that SIMRS maintenance and updates are performed consistently, including software upgrades, bug fixes, and security patches. Sustained updating safeguards system performance, reduces the risk of data breaches, and prevents compatibility issues, while also supporting compliance with evolving healthcare regulations, coding standards, and clinical procedures (Hasibuan et al., 2024).

Optimization also requires clear performance measurement. Healthcare facilities should define key performance indicators (KPIs) that are directly influenced by SIMRS utilization, such as patient satisfaction, service turnaround time, resource utilization, and financial performance. Routine monitoring of these KPIs enables management to evaluate whether the system is producing the intended outcomes or whether operational adjustments are needed. Moreover, trend and pattern analysis from SIMRS-generated data can help identify inefficiencies or service bottlenecks that require corrective action. Interprofessional collaboration between information technology teams and clinical staff is equally vital, given that healthcare professionals possess context-specific insights into how digital systems can be utilized more effectively in clinical environments. Their continuous involvement strengthens the alignment between system functionality and evolving service needs (Puspita et al., 2024).

From an organizational perspective, SIMRS implementation and optimization represent a strategic pathway to improving healthcare facility performance by integrating operational, administrative, and clinical functions within a single platform. One of the most prominent advantages is operational efficiency through the automation of administrative tasks such as registration, scheduling, and billing. Automation reduces administrative workload and allows staff to focus on higher-value functions. SIMRS also supports real-time access to patient records, enabling clinicians to make faster, more informed decisions while reducing the risk of errors caused by incomplete or outdated information. Faster access to accurate data can improve interdepartmental coordination, accelerate care processes, and ultimately strengthen clinical outcomes (Radjab & Mandasari, 2022).

Another advantage is the availability of data-driven insights that can inform evidence-based decision-making. By collecting and analyzing patient and service data comprehensively, healthcare facilities can identify patterns, monitor operational performance, and plan improvements grounded in empirical evidence. For example, analytics can support resource allocation, refine patient flow management, and forecast future service demand, including staffing requirements and expected demand for specific medical services. SIMRS may also help facilities meet regulatory and healthcare standards by maintaining accurate clinical records and supporting compliance with data privacy requirements (Kurnawan et al., 2024).

Nevertheless, SIMRS implementation also presents challenges. A major issue is system integration, particularly when facilities already operate specialized applications such as electronic medical records (EMR), laboratory information systems (LIS), and pharmacy management systems.

Integrating heterogeneous systems into a unified SIMRS platform is often complex and time-consuming. Where integration is incomplete, information silos may occur, resulting in fragmented data that is difficult to access across departments, weakening coordination and potentially compromising both efficiency and service quality (Iqbal et al., 2024). System

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complexity is another barrier. Because SIMRS is designed to support diverse functions, users may experience difficulties if the interface is not intuitive or if system configurations do not align with daily workflows. In some contexts, excessive reliance on system outputs may also reduce users' independent judgment, underscoring the need to position SIMRS as decision support rather than a substitute for clinical reasoning (Siregar et al., 2024).

Within the broader healthcare sector, SIMRS adoption is considered strategically important due to the specialized and complex nature of healthcare operations, reinforcing the need to evaluate how SIMRS use contributes to service quality improvements (Andi Dermawan Putra et al., 2020).

Human resource readiness remains a decisive factor. High performance and productivity are closely linked to staff quality, including task-oriented behavior and accountability. Evidence indicates that hospital knowledge management strategies and information system development are more effective when supported by strong commitment and solidarity among IT personnel, responsive IT support services, and clear standard operating procedures (SOPs). Facilities also require basic IT competencies among staff and adequate infrastructure to support stable system operation (Prabawa et al., 2022).

Empirical findings in medical record management further illustrate SIMRS value. Studies report that prior to SIMRS adoption, document processing delays were substantial; after implementation, efficiency improved markedly through faster verification, reporting, billing, and administrative coordination, although such improvements often require increased or reallocated resources to sustain performance (Santosa et al., 2024). Community and patient education also remains relevant, as health service promotion can be strengthened through technology-based information strategies that inform the public about available services and encourage utilization (Kurniawan, 2021).

Organizational support is essential in this context. Facilities pursuing service optimization should align SIMRS implementation with their strategic vision, emphasizing system integration to reduce service complexity and enhance efficiency. Achieving these outcomes requires information systems that fit the facility's unique business processes rather than adopting a rigid, one-size-fits-all configuration (Fadilla & Setyonugroh, 2021).

Additional evidence suggests that SIMRS supports operational continuity and institutional development. Research in regional hospitals has shown improvements in service quality, operational efficiency, and managerial convenience following SIMRS implementation, which in turn strengthened patient satisfaction (Andi Dermawan Putra et al., 2020; Wardani et al., 2022).

However, optimization should be guided by robust SOPs. Strategic information management requires accurate procedural structures; even strong technology implementation may underperform without standardized operational guidance. The "4M" approach, involving people, money, materials, and methods, has also been used to explain how SIMRS can be managed to reinforce SOP-driven operations (Hakam, 2016; Silitonga, 2019).

In the specific context of PKU Muhammadiyah Clinic in North Lombok, SIMRS has delivered clear potential benefits for staff and patients compared with manual systems, including faster task completion, increased user productivity, and improved access to service information. Nevertheless, the system has not been fully effective due to limitations in human resource capacity. Evidence

indicates that constrained staff capability reduces the clinic's ability to operate SIMRS optimally, which in turn weakens service effectiveness (Nurhayati et al., 2019). Operationally, SIMRS utilization at the clinic has not yet generated meaningful innovation in input and output processes for outpatient and inpatient services. This condition is associated with outdated hardware and software since 2023, as well as unstable internet connectivity that disrupts system

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performance. These constraints collectively reduce SIMRS effectiveness and impede the emergence of new service innovations supported by digital systems at PKU Muhammadiyah Clinic, North Lombok.

Constraints in Utilizing SIMRS to Support the Optimization of Patient Services at PKU Muhammadiyah Clinic, North Lombok

Informant characteristics were obtained from in-depth interviews conducted throughout the study. A total of 10 informants were recruited, as they were considered capable of providing accurate and relevant information. The informants consisted of three outpatient staff members, three inpatient staff members, two outpatient patients, and two inpatient patients. The informant characteristics are summarized in Table 1.

Table 1. Informant Profile

No.	Informant Group	Code	Sex	Age (years)	Education
1	Staff (Outpatient)	PJ1	Male	56	Diploma (D3)
2	Staff (Outpatient)	PJ2	Female	38	Senior High School
3	Staff (Outpatient)	PJ3	Female	27	Diploma (D3)
4	Staff (Inpatient)	PI1	Female	45	Bachelor's (S1)
5	Staff (Inpatient)	PI2	Male	35	Bachelor's (S1)
6	Staff (Inpatient)	PI3	Male	21	Senior High School
7	Patient	P1	Female	39	Not reported
8	Patient	P2	Female	34	Not reported
9	Patient	P3	Male	40	Not reported
10	Patient	P4	Male	43	Not reported

This study employed in-depth interviews with outpatient and inpatient staff and with outpatient and inpatient patients at PKU Muhammadiyah Clinic, North Lombok. Interview questions explored the input, process, and output components of SIMRS implementation, with emphasis on how these components enable or constrain service optimization.

Input SIMRS implementation at PKU Muhammadiyah Clinic, North Lombok is shaped mainly by human resources and supporting infrastructure. From the staff perspective, outpatient units reported uneven staffing adequacy and limited user capability in operating and managing SIMRS data, which is reinforced by minimal training and the absence of a clear user guide in the outpatient area.Infrastructure constraints were dominated by unstable internet connectivity, while hardware– software issues were generally reported as infrequent; software updates and SOP-based implementation were acknowledged, but inconsistent data entry discipline led to continued manual documentation. In inpatient units, staff availability was generally viewed as sufficient, supported by periodic training and limited soft-file guidelines; however, communication gaps, reluctance to ask for clarification, slow internet, and outdated hardware since 2023 reduced overall readiness. From the patient perspective, staff competence and access to information were perceived positively, yet service completeness was constrained by limited specialist availability and certain medical equipment, which sometimes required referrals.

Process In outpatient services, SIMRS-supported data collection and processing were described as largely automated and helpful for administrative and claims-related tasks, but manual recapitulation persisted because not all clinical actions were captured in the system, particularly in specific subsystems. Data storage was mostly automatic, while reporting often remained manual (e.g., to coordinators), reducing the benefits of system automation. In inpatient services, data collection and processing were also intended to be integrated, but manual work continued due to incomplete subsystem integration and inconsistent data entry discipline. Storage generally occurred automatically, yet gaps in available action menus required delayed manual input. Reporting was not fully automated and often relied on printed summaries, contributing to inconsistencies between

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reported and stored data and affecting financing claims. From the patient perspective, service processes were generally perceived as easy and timely, although registration delays and limited service availability (specialists/equipment) were noted.

Output, Overall, staff in both outpatient and inpatient units perceived SIMRS as improving work effectiveness by accelerating data access, supporting faster documentation, and facilitating claims processes. However, manual duplication remained common as a risk-control practice and as a response to system gaps. Patients reported benefits such as online registration, simpler administrative procedures, and better access to service information, although these advantages were reduced when service capacity (specialists/equipment) and operational constraints (internet, outdated hardware, inconsistent data entry) disrupted smooth system use.

Efforts to Address Constraints in SIMRS Utilization to Optimize Patient Services at PKU Muhammadiyah Clinic, North Lombok

Referring to the Indonesian Ministry of Health Regulation No. 82/2013, the Hospital Management Information System (SIMRS) is an information and communication technology system that processes and integrates hospital service workflows through coordination, reporting, and administrative procedures to produce timely and accurate information as part of the health information system. In the context of PKU Muhammadiyah Clinic, North Lombok, the improvement agenda should be directed at strengthening the input–process–output chain so that SIMRS can function as an integrated service and reporting platform rather than being supplemented by repeated manual work. From the input side, the primary corrective actions focus on human resources and infrastructure readiness. Although staffing quantity was generally perceived as adequate, staff competency in operating SIMRS was not consistently aligned with system requirements, particularly in outpatient services. Therefore, structured socialization and continuous training are necessary to increase operational capability and improve system use consistency (Lahijani, 2017). This should be complemented by standardized operational manuals that are accessible across all subsystems, especially where outpatient staff reported the absence of user guidance. Equally important is strengthening work discipline and accountability for data entry by shift to reduce incomplete entries and the resulting manual duplication, which has been identified as a recurring issue in SIMRS implementation when responsibility for entry is uneven (D. M. Putra & Vadriasmi, 2020). On the infrastructure side, efforts should prioritize stabilizing internet connectivity, replacing or upgrading hardware that has not been updated since 2023, and improving SIMRS configuration (e.g., completing action/diagnosis menus) to avoid "double work" and strengthen automation. These components are critical because inadequate readiness of human resources, hardware, software, and network capacity reduces service effectiveness and system performance (Putra et al., 2022), while sustained investment is often needed for maintenance, updates, and operational continuity (Rabiulyati & Nurwahyuni, 2023).

From the process side, improvement should target the full database cycle (data collection, processing, storage, and reporting) to reduce manual recapitulation and improve data consistency. Although integration is designed to be automatic, manual work persists because some clinical actions are not captured in the system, particularly in certain outpatient subsystems. Accordingly, SIMRS needs periodic updating and alignment with clinical workflow needs to ensure action recording completeness and faster documentation (Choizin, 2017). Reporting also requires attention because manual forms and printed summaries weaken automation benefits and can produce inconsistencies between reported and stored data; standardized SIMRS-generated reporting templates and clearer reporting governance are therefore necessary (Putra, 2022). At the same time, strengthening traceability through access control and audit trails supports data integrity and reduces administrative risks in financing claims (Putra, 2022).

From the output side, while SIMRS is perceived to provide positive impacts and usefulness

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for staff and patients, full optimization is constrained by user adoption challenges, system gaps, and operational limitations. Continuous user support and change management are required to reduce resistance and prevent user errors that can affect service quality. System refinement is also needed when outputs do not meet user expectations, even if the system is generally considered usable (Aji, 2017). Finally, strengthening cybersecurity and data protection should be included as an improvement priority given increasing exposure to data leakage and cyber risks in digital health information systems (Marietza & Agesty, 2023). Overall, these efforts are expected to reduce manual duplication, improve data integration, accelerate reporting and claims processes, and sustain patient service quality that is already perceived positively—where professional service behavior remains a key determinant of patient trust and satisfaction (Saragih et al., 2014; Akbar & Pratiwi, 2016).

CONCLUSION AND SUGGESTIONS

Conclusion

Based on the analysis and discussion, this study concludes that the performance of SIMRS in supporting the optimization of patient services at PKU Muhammadiyah Clinic, North Lombok has not been fully effective. The primary driver of this condition is limited human resource capacity in operating and managing SIMRS, particularly in terms of user competence, consistency in data entry, and work discipline. The findings indicate that high productivity and effective system utilization depend strongly on staff quality, including task-oriented behavior, responsibility, and organizational commitment, supported by solid knowledge management and IT-related teamwork.

The study also concludes that the main constraints in SIMRS utilization are concentrated in human resources and infrastructure readiness. Limitations include insufficient staff capability in certain units, unstable network connectivity, and inadequate supporting facilities. In addition, delayed upgrades of SIMRS hardware and software reduce system responsiveness and restrict the full use of system menus, which encourages the continuation of manual documentation and increases the risk of data inconsistency. These constraints highlight the importance of continuous software updates, bug fixes, and stronger security protocols, as well as regular system alignment with healthcare regulations, coding standards, and clinical procedures.

Finally, the study concludes that addressing SIMRS performance barriers requires an integrated improvement strategy focused on both capacity strengthening and infrastructure enhancement. Priority measures include upgrading and, where necessary, increasing human resources; implementing structured training and continuous user support to reduce resistance to digital workflows; improving supporting facilities and network reliability; and upgrading SIMRS hardware and software to ensure that all system functions can be implemented optimally. Collectively, these actions are expected to reduce manual duplication, improve data integration, and strengthen service efficiency and quality at the clinic.

Suggestions

For PKU Muhammadiyah Clinic, North Lombok, the first recommendation is to strengthen human resource capacity to ensure SIMRS can be used consistently and correctly across outpatient and inpatient services. This should be implemented through targeted staff development, including structured SIMRS socialization and regular training programs that focus on practical system use, data-entry accuracy, and subsystem coordination. In addition to training, management should assign clear roles and accountability for data entry by shift, supported by routine supervision and feedback, so that manual duplication and inconsistent documentation can be reduced.

The second recommendation is to improve supporting facilities and infrastructure that directly affect SIMRS performance. Priority actions include stabilizing the internet network to

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prevent disruptions in data entry and system access, ensuring sufficient computer availability for service points, and strengthening basic technical support so system problems can be resolved quickly without interrupting patient services. Infrastructure improvement is critical because unreliable connectivity and limited supporting facilities encourage staff to revert to manual workflows, which weakens the integration purpose of SIMRS.

The third recommendation is to conduct systematic hardware and software upgrades. The clinic should update outdated hardware and ensure software is routinely maintained through updates, bug fixes, and security improvements. At the functional level, the clinic should also ensure that SIMRS menus and action options reflect real clinical workflows so that staff do not need to record actions outside the system. These upgrades will allow staff to use SIMRS features more fully, reduce repetitive work, and improve the reliability of reports and claim-related documentation.

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