



Evaluation of the Healthical Hospital Management Information System Migration in Supporting Electronic Medical Record Implementation at RSKGM Bandung City

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Abstract. *The advancement of information technology in healthcare has encouraged hospitals to modernize digital work systems through Hospital Management Information Systems (SIMRS) integrated with Electronic Medical Records (EMRs). RSKGM Bandung City migrated from its previous SIMRS to SIMRS Healthical to support service efficiency, data management, and readiness for national health-data integration. This study evaluated the migration using the HOT-FIT framework, covering Human, Organization, Technology, and Net Benefit dimensions. A descriptive qualitative approach was used with in-depth interviews, direct observation, and documentation involving 20 staff members who used or were directly involved with SIMRS Healthical. Interview responses were categorized by HOT-FIT indicator and summarized descriptively; the reported user counts represent coded response frequencies rather than inferential statistics. The findings indicate that users generally perceived the system as supportive of EMR implementation, although challenges remained in user adaptation, feature understanding, interface usability, system performance, and migrated-data completeness and accuracy. Six users reported inaccurate or incomplete migrated data, highlighting the need for structured validation and reconciliation. Because the design was qualitative and descriptive, the findings indicate reported experiences rather than statistically significant effects or a ranking of HOT-FIT dimensions. Strengthening training, system optimization, data-validation procedures, and continuous evaluation is recommended. By supporting reliable digital health information and continuity of hospital services, the study is relevant to SDG 3 (Good Health and Well-Being) and SDG 9 (Industry, Innovation and Infrastructure).*

Keywords: SIMRS Healthical; Electronic Medical Record; System Migration; HOT-FIT; RSKGM Bandung City

1. Introduction

The advancement of healthcare service digitalization requires hospitals to manage information more rapidly, accurately, and in an interconnected manner. As service institutions, hospitals are required not only to provide clinical care but also to carry out administration, medical record management, and reporting effectively. The Hospital Management Information System (SIMRS) has become one of the essential tools because it is able to integrate various service processes, ranging from patient registration and medical record documentation to unit services and technology-based reporting. An integrated system is expected to improve service quality, reduce delays in data access, and enhance work effectiveness in every service unit (Kamal et al., 2024). Several previous studies on medical record system migration in specialized hospitals have found that the system migration process requires thorough preparation, including the readiness of human resources, <https://journal.scitechgrup.com/index.php/jsi>

technological infrastructure, and workflow adjustments, to ensure that system implementation can proceed optimally (Larasugiharti et al., 2023). In addition to fulfilling regulatory requirements, EMR implementation also contributes to improving the efficiency and effectiveness of health services, although its success is influenced by organizational readiness, human resources, and technological infrastructure (Fatmasari, 2024). Based on these findings, research on the SIMRS Healthical migration at RSKGM Bandung City is highly urgent in order to identify the distinctive challenges faced by dental and oral specialist hospitals and to formulate optimization measures so that the migration process runs smoothly, data security and completeness are maintained, and health services remain uninterrupted.

The urgency of using SIMRS has increased following the issuance of Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 concerning Medical Records. This regulation requires healthcare facilities to implement electronic medical records in accordance with applicable standards. Hospitals therefore need to adapt their information systems to better support the implementation of EMR (Ministry of Health of the Republic of Indonesia, 2022). RSKGM Bandung City is one of the healthcare facilities that has migrated from its previous SIMRS to SIMRS Healthical as part of its digital transformation efforts. This migration is expected to accelerate access to patient information, improve the quality of medical record data management, and support service integration needs. Despite its considerable potential, SIMRS implementation in practice often faces various challenges, such as system maintenance issues and infrastructure constraints. System migration is therefore not merely a matter of replacing an application; it also involves the readiness of human resources, organizational support, technological quality, and compatibility with obstacles such as differences in user proficiency, features that are not yet fully aligned with workflows, technical disruptions, and the risk of incomplete migrated data. These issues have caused delays in service processes and lengthened patient queues.

Evaluation is therefore necessary so that the migration process is assessed not only in terms of the system's existence but also its compatibility with user and organizational needs. The HOT-FIT framework evaluates health information systems through the interaction of Human, Organization, Technology, and Net Benefit dimensions and is appropriate for examining implementation beyond technical performance alone (Yusof et al., 2008). Based on this background, the present study aims to evaluate the implementation of the SIMRS Healthical migration in supporting EMR implementation at RSKGM Bandung City using the HOT-FIT approach. Strengthening integrated digital health information systems can support continuity and quality of healthcare services (SDG 3: Good Health and Well-Being) while contributing to resilient digital health infrastructure and innovation (SDG 9: Industry, Innovation and Infrastructure).

2. Methods

Based on the background described above, this study employed a descriptive qualitative approach. This approach was selected because the study aims to obtain an in-depth description of the SIMRS Healthical migration process in supporting the implementation of the Electronic Medical Record (EMR) at RSKGM Bandung City. The research focus was directed toward the experiences, perceptions, obstacles, and benefits perceived by users during system use. Accordingly, the assessment covered not only the existence of the application but also its utilization in medical record service and data management activities.

The study was conducted at RSKGM Bandung City from 2 to 31 March 2026. The study involved 20 hospital staff members who used or were directly involved with SIMRS Healthical, including medical record officers, healthcare professionals, and information technology staff. Eligibility was therefore based on direct experience with the system during the migration and EMR implementation process. The available study record does not provide a numerical distribution of informants by professional group, a detailed recruitment pathway, or a formal data-saturation criterion. Accordingly, the findings should be interpreted as perspectives from the participating users rather than as a representation of every professional group or work unit in the hospital.

Data were collected through in-depth interviews, direct observation, and documentation. In-depth interviews were used to explore users' experiences and perspectives in using the system; observation was conducted to directly observe the system's use in healthcare operational activities; while documentation was used to obtain supporting data in the form of documents, reports, and policies to complement and strengthen the research data (Febrita et al., 2021). The research instruments used were an interview guide, an observation sheet, and a documentation sheet developed in accordance with the research focus. The interview guide was used to direct the process of eliciting information from informants, while the observation and documentation sheets were used to record the conditions of system implementation and to collect relevant documents.

Data analysis followed qualitative data reduction, data display, and descriptive conclusion drawing (Hardani et al., 2020; Miles et al., 2019; Sugiyono, 2024). Interview, observation, and documentation findings were first reduced and categorized according to the study focus, then mapped to the Human, Organization, Technology, and Net Benefit dimensions. For indicators reported numerically in Tables 1-4, interview statements were categorized by whether they reflected a positive experience or an identified limitation for the relevant indicator, and the number of informants represented in each category was tallied. These counts are descriptive coding summaries of the 20 informants and are not inferential statistics. An informant could contribute responses to more than one HOT-FIT indicator because each indicator addressed a different aspect of system use. The available research record does not document a separate inter-coder adjudication procedure for ambiguous statements; therefore, frequencies are presented cautiously as summaries of clearly categorized responses, while observation and documentation were used to contextualize the interview findings.

The evaluation model used was HOT-FIT, encompassing the Human, Organization, Technology, and Net Benefit dimensions. This model was selected because it supports a comprehensive examination of health information system implementation by considering the fit among users, organizational readiness, technological quality, and perceived benefits (Tawar et al., 2022; Yusof et al., 2008).

3. Results and Discussion

Research results were obtained through in-depth interviews, observation, and documentation of SIMRS Healthical users at RSKGM Bandung City. The evaluation was organized according to the four HOT-FIT dimensions. Tables 1-4 present descriptive coding summaries; user counts indicate how many of the 20 informants expressed a clearly categorized response for the stated indicator and should not be interpreted as statistical estimates or hypothesis-test results.

3.1. Human Aspect

Table 1. Descriptive Coding Summary For the Human Aspect

No	Indicator	Research Result
1	Ease of system use	12 users stated that the system could be used fairly easily. However, 8 users still considered the system not fully user-friendly, owing to differences in experience and technological proficiency.
2	Work effectiveness	The system's benefits for daily work have not been evenly felt. This is related to several features that are not yet fully aligned with user needs and service workflows.
3	Understanding of system features	14 users had understood the system's main features. However, 6 users had not utilized them optimally, indicating the need for further socialization and mentoring.
4	Support for performance	SIMRS Healthical was considered to help users' work and support EMR implementation. Nevertheless, a small proportion of users had not experienced the system's support to the fullest extent.
5	User adaptation	Most users had been able to adapt to the new system, although some users remained unaccustomed to it, so the migration process had not been fully optimal.

As summarized in Table 1, most participating users described SIMRS Healthical as fairly easy to use and supportive of EMR implementation, while some users reported that the system was not fully user-friendly, feature understanding remained uneven, and adaptation had not been completed. These findings indicate a continuing need for user mentoring and role-specific training. The Human findings indicate variation in users' ability to understand system features and adapt to the new system. This condition is important because the benefits of an EMR depend not only on technical availability but also on whether the interface and workflow support users' clinical and administrative tasks. Qualitative evidence from hospital clinicians similarly shows that EMR usability concerns can involve intuitiveness, workflow fit, system response time, and stability (Lloyd et al., 2024). In the present study, these observations are interpreted as reported user experiences rather than as a ranking of the Human dimension against other HOT-FIT dimensions.

These results are consistent with previous research evaluating SIMRS in supporting EMR implementation using the HOT-FIT model at RSUD Wangaya Denpasar. That study revealed that most users already had a good understanding of SIMRS owing to training, although system utilization had not been maximal because of remaining limitations in training, network disruptions, downtime, and the absence of a manual book as a usage guide (Benge et al., 2025). Although SIMRS implementation at RSKGM Bandung City offers many benefits, the research findings indicate that some users still experience difficulties. Continuous mentoring is therefore required. Training should not only be provided at the beginning of migration but should also be conducted routinely according to the needs of each work unit. This approach can help users understand system functions more practically, reduce usage errors, and improve system effectiveness in supporting EMR.

3.2. Organization Aspect

Table 2. Descriptive coding summary for the Organization aspect

No	Indicator	Research Result
1	Management support	Management and work units had provided good support for system implementation. This support still needs to be strengthened so that operational obstacles can be overcome and system sustainability maintained.
2	Inter-unit coordination	Coordination among work units in using SIMRS Healthical had run well. Cross-unit collaboration demonstrated organizational readiness to adopt the information system comprehensively.
3	Supporting facilities	Supporting facilities such as network and hardware were available and sufficiently adequate to support the operational activities of the hospital information system.

As shown in Table 2, participating users generally described management support, inter-unit coordination, and supporting facilities as adequate for SIMRS Healthical implementation. The findings nevertheless suggest that management support and periodic evaluation remain necessary to address operational problems and sustain system use. In the organizational dimension, the results show that management support, inter-unit coordination, and the availability of supporting facilities were already fairly good. This is an important asset because information system implementation requires organization-wide involvement, not merely the responsibility of the information technology unit. Strong organizational support helps users adjust their workflows and resolve obstacles that arise during system use.

These results are consistent with previous research concluding that organizational readiness, management commitment, and infrastructure support are key factors in the successful implementation of EMR (Fatmasari, 2024). Other research further emphasizes that inter-unit communication, organizational governance, and continuous evaluation are important commitments within the Organization dimension of the HOT-FIT model (Rahman et al., 2025). Although the organizational aspect has already shown positive results, evaluation must still be conducted periodically. Management support should not be limited to the initial implementation stage but must be continued through monitoring, evaluation, provision of suggestions, and system development. This effort is important to ensure that SIMRS Healthical can be used consistently and sustainably in supporting EMR.

3.3. Technology Aspect

Table 3. Descriptive coding summary for the Technology aspect

No	Indicator	Research Result
1	System display (UI/UX)	12 users considered the system display easy to understand. However, 8 users still experienced difficulties, indicating that the interface design and user experience need improvement.
2	System security	All users considered the system's security to be good and to provide a sense of safety, although periodic evaluation is still required.
3	Data-input speed	6 users considered the data-input process not yet optimal. This obstacle was influenced by the adaptation process, feature complexity, and certain technical constraints.

4	System access speed	Access speed was considered good. However, 5 users still experienced performance constraints, indicating the need for system and network optimization.
5	Data migration process	14 users considered the data migration process to have run well. However, 6 users reported that some migrated data were inaccurate or incomplete. The study did not document the specific error types or affected record fields; therefore, this finding is treated as a perceived data-quality concern requiring validation rather than a quantified migration-defect rate.

As summarized in Table 3, users generally described system security and access speed positively, while limitations were reported in interface usability, data-input speed, access performance, and the completeness or accuracy of migrated data. In particular, six users reported inaccurate or incomplete migrated data, indicating a need for targeted data validation rather than assuming that migration quality was uniformly satisfactory. From a technological perspective, SIMRS Healthical was generally perceived as functional, but reported limitations in interface design, data-input speed, access performance, and migrated-data quality remain relevant to EMR continuity. The six user reports of inaccurate or incomplete migrated data should be interpreted as perceived data-quality concerns; the available study data do not specify the exact error types, affected fields, number of records, or a verified migration-defect rate. Therefore, the study cannot quantify the magnitude of the migration problem beyond the participating users' reports.

These results are in line with previous research showing that although the technological aspect of SIMRS has already reached a good category, obstacles such as a slow, error-prone, and not-yet-stable system remain, requiring continuous development (Prapti Wujani et al., 2025). This finding is further reinforced by a systematic review concluding that system quality, network stability, and data integration are the technological factors that most influence the success of SIMRS implementation (Rahman et al., 2025). Issues in data migration require particular attention because completeness and accuracy are essential for reliable use of electronic health information. In this study, the specific migration-error types and formal reconciliation logs were not available; consequently, recommendations are linked directly to the observed reports of incomplete or inaccurate data. RSKGM should apply structured pre- and post-migration validation, compare selected migrated records with their source records, document discrepancies, assign responsibility for correction, and repeat validation for high-risk data elements before routine use. Similar EHR data-quality evaluations emphasize completeness, accuracy, consistency, and validation as key requirements for integrated digital health data (Iriyanti et al., 2026). Operationally, unresolved migration discrepancies may require additional record checking and can delay confident use of information during patient care, although these downstream effects were not independently measured in the present study.

3.4. Net-Benefit Aspect

Table 4. Descriptive coding summary for the Net Benefit aspect

No	Indicator	Research Result
1	Work efficiency	The system improved work efficiency. However, 5 users had not fully experienced this benefit due to adaptation factors and technical constraints.
2	Service speed	The system accelerated service delivery. However, 7 users had not experienced this optimally due to operational constraints.
3	Reduction of data errors	The system improved recording accuracy through digitalization, although this had not been optimal for 5 users due to human error and limited validation.
4	Service quality	The system improved service quality through effectiveness, speed, and accuracy, although this had not been evenly felt due to technical constraints and user adaptation.
5	Decision-making support	The system supported decision-making by providing adequate information and had met the basic requirements for medical record digitalization.
6	Migration smoothness	System migration was considered fairly good. However, 8 users still experienced disruptions, indicating that the migration process had not run fully optimally.

As presented in Table 4, users reported benefits in efficiency, service speed, recording accuracy, service quality, and decision-making support; however, these benefits were not experienced uniformly because of adaptation, technical, operational, and validation constraints. Eight users also reported disruptions during the migration process, indicating that the transition was not fully optimal. In the Net Benefit dimension, participating users generally described improvements in work efficiency, service speed, service quality, and decision-making support. These statements represent perceived benefits reported by participants; the descriptive qualitative design did not measure effect size or statistical significance. Digitalization may reduce dependence on manual processes and improve access to information, but the extent of benefit depends on system quality, workflow fit, and user adaptation.

These results are consistent with previous research showing that the implementation of Electronic Medical Records through SIMRS provides benefits in improving service efficiency, accelerating access to information, and supporting more effective service processes. However, these benefits have not been optimally felt by all users because obstacles related to system quality remain (Sali Setiatin & Hanadia Maheswari, 2025). Although the system has already provided benefits, some users have not experienced its impact to the fullest extent. This condition indicates a gap between the system's potential and its actual utilization in the field. To narrow this gap, the hospital needs to increase feature utilization, strengthen user competence, improve system performance, and conduct routine evaluations so that the benefits of SIMRS Healthical can be felt equally by all users.

3.5. Study Limitations

This study has several limitations. It involved 20 participating SIMRS users, but the available research record does not specify the numerical distribution of participants across professional groups, the detailed recruitment procedure, or a formal saturation assessment.

The user frequencies presented in Tables 1-4 are descriptive summaries derived from categorized qualitative responses and should not be treated as inferential statistics. In addition, reports of inaccurate or incomplete migrated data were not supported by record-level migration logs or a detailed classification of error types. These limitations restrict generalization to all RSKGM staff and prevent estimation of the prevalence or magnitude of migration defects.

Conclusions

Based on the descriptive qualitative findings, the migration of SIMRS Healthical at RSKGM Bandung City generally supported EMR implementation from the perspectives of participating users. Reported benefits included improved work efficiency, faster access to information, support for recording accuracy, and assistance with service processes and decision-making. The HOT-FIT evaluation also identified continuing challenges across the Human and Technology dimensions, particularly user adaptation, uneven understanding of features, interface usability, system performance, and the completeness and accuracy of migrated data. These findings describe participant experiences and do not establish a statistically significant impact or demonstrate that any one HOT-FIT dimension is more important than the others.

Priority improvements include continuous role-specific training, system and network optimization, stronger user support, and a documented data-migration validation and reconciliation process. Because six users reported inaccurate or incomplete migrated data, validation should include comparison of migrated data with source records, discrepancy logging, correction, and re-verification before the data are relied upon routinely. Periodic HOT-FIT-based evaluation can then be used to monitor whether Human, Organization, Technology, and Net Benefit factors remain aligned as SIMRS Healthical and EMR use mature.

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Conflicts of Interest

The authors declare no conflict of interest.

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