

## Overview of the Implementation of Electronic Medical Records in the Inpatient Unit of Sayang Rakyat Hospital

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### ABSTRACT

This study aims to describe the implementation of Electronic Medical Records (RME) in the inpatient unit of Sayang Rakyat Hospital and identify components that are still manual and obstacles that arise. Using a qualitative descriptive method through interviews and observations of medical record officers, the study found that although RME has been implemented since August 2022 and supported by four months of training, some documents such as entry-exit summaries, informed consent, and operation reports are still done manually due to the limitations of the system format. The implementation of RME in outpatient reaches 80% and inpatient is around 70%. The main obstacles include network disruption, resistance of health workers, and lack of advanced training. The research concludes that the implementation of RME shows progress, but requires infrastructure upgrades and competency strengthening for digital integration to be fully achieved.

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## **INTRODUCTION**

Electronic Medical Record (RME) or Electronic Health Record (EHR). RME is a digital record that stores a patient's health information comprehensively, including demographic data, medical history, examination results, diagnosis, treatment, and other medical procedures. The main goal of the implementation of RME is to replace the paper-based manual recording system so that data management becomes more efficient, accurate, and accessible to health workers (WHO, 2015).

In Indonesia, RME is defined as a document that contains patient identity data, examinations, treatments, and other services that are created and stored electronically. Based on the Minister of Health Regulation No. 24 of 2022, the use of RME aims to improve the quality of services, provide legal certainty, and ensure the security, confidentiality, and availability of medical record data. This regulation is a strong legal basis for all health service facilities in supporting national digital transformation (Ministry of Health of the Republic of Indonesia, 2022). In line with this, Akhmad & Arief (2024) stated that the obligation to implement RME in all health facilities is a strategic step to strengthen an integrated national health information system.

Various studies show that the implementation of RME in Indonesia still faces challenges. Research by Maylina et al. (2024) at Bantuan Hospital 05.08.03 Sidoarjo revealed that although outpatient services have fully used RME since 2023, inpatient services are still hybrid between manual and electronic systems. Meanwhile, Putri et al. (2024) highlighted the main obstacles in the implementation of RME, including limited human resources, technological infrastructure, and lack of ongoing training for health workers. These obstacles have an impact on work efficiency and patient safety, as manual systems are more susceptible to recording errors and information delays (Ita Bagus Argentina et al., 2020).

Based on the results of observations made by researchers at Sayang Rakyat Hospital, the implementation of RME has started since August 2022, covering outpatient and inpatient services. During the transition period, human resource training was carried out for four months so that the system could be operated optimally. Currently, the implementation of RME in outpatient units has reached around 80%, but there are still two polyclinics that use a manual system. On the other hand, the implementation in the inpatient unit has not been fully integrated because some processes, such as compiling medical resumes, recording actions, and radiology examination results, are still carried out manually.

This condition shows that although the implementation of RME at Sayang Rakyat Hospital has shown progress, the digitalization process still faces challenges in terms of technical, infrastructure, and human resource readiness.

## **LITERATURE REVIEW**

Electronic Medical Records (EMR) is a digital-based medical record system developed to improve the efficiency, accuracy, and quality of healthcare services. According to the literature, EMR allows for the storage and management of patient data in an integrated manner, making it easier for healthcare workers to access information quickly and appropriately in clinical

decision-making. Various studies have stated that the implementation of EMR can improve service quality through more complete recording, reduce medical errors, speed up administrative processes, and support data integration between service units. In the context of inpatient units, the success of EMR implementation is greatly influenced by the system's ability to adapt complex clinical workflows, real-time documentation needs, and more intensive interprofessional coordination than outpatient services. Although it offers many benefits, the process of implementing EMR still faces a number of challenges, such as user resistance, limited digital competencies of health workers, technological infrastructure constraints, system usability problems, and concerns about the security and confidentiality of patient data.

In Indonesia, the obligation to implement EMR has been strengthened through the Minister of Health Regulation No. 24 of 2022 as part of the digital transformation of health, but its implementation in various hospitals shows different levels of readiness. Previous research has found that many hospitals are still facing partial implementations and have not completely eliminated manual processes, especially in inpatient units that have higher workloads. This condition is relevant to Sayang Rakyat Hospital, which has started implementing EMR since 2022 but is still experiencing problems in optimizing the use of the system in inpatient units. Based on these research gaps, studies on the overview of EMR implementation in inpatient units are important to assess the extent to which the system has been running, inhibiting factors, and development opportunities that can improve service effectiveness.

## **METHODOLOGY**

This study uses a qualitative descriptive method to describe in depth the implementation of Electronic Medical Records (RME) in the inpatient unit of Sayang Rakyat Hospital. This approach aims to provide a systematic and factual picture of the RME implementation process, the obstacles faced, and the components of medical records that are still managed manually (Fenilho & Ilyas, 2023). The research was carried out at Sayang Rakyat Hospital, South Sulawesi from May to June 2025.

The research informants consisted of a Chief Medical Record Officer and two Medical Records Officers who were purposively selected for their direct involvement in the use of the RME system. Data was collected through semi-structured interviews and participatory observation to obtain information about the level of implementation of electronic systems, components that are still managed manually, and obstacles faced during implementation. The data obtained was analyzed using narrative analysis, which is a technique that interprets the meaning and patterns of the results of interviews and observations in the form of thematic descriptions. The results of the analysis were then presented descriptively in the form of a narrative describing the actual conditions of the implementation of RME in the inpatient unit of Sayang Rakyat Hospital.

## RESEARCH RESULT

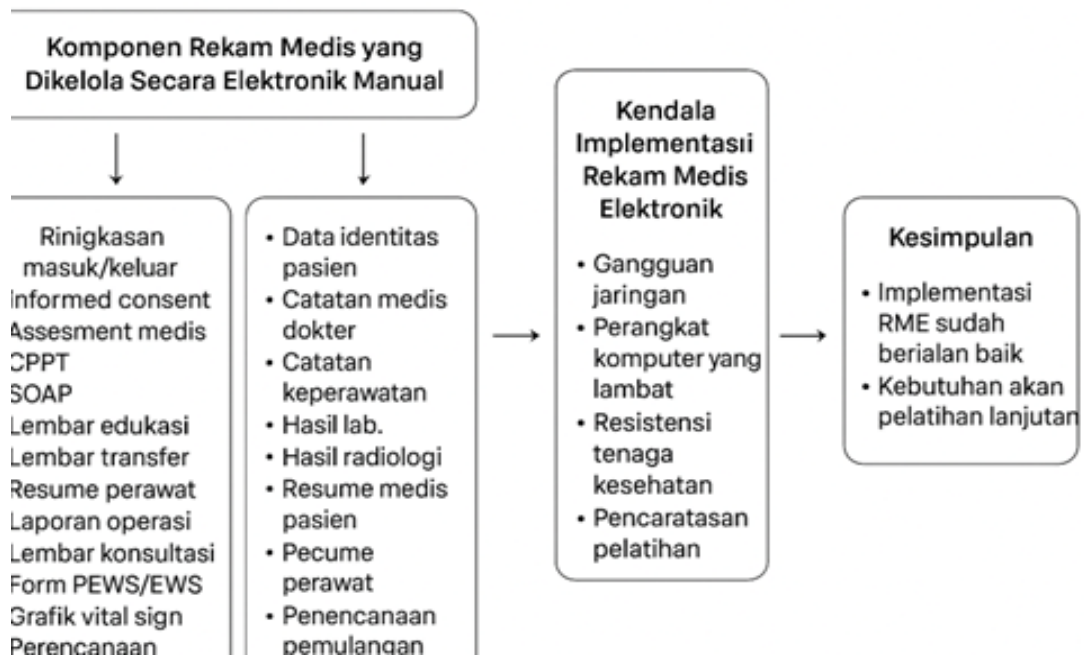


Figure 1. Medical Record Components

The research, which was carried out at the Sayang Rakyat Regional General Hospital from June 23 to July 23, 2025, involved three informants, namely the Head of the Medical Record Installation and two Skilled Medical Recorders. Based on the results of interviews and observations, it is known that the implementation of Electronic Medical Records (RME) in inpatient units has not been fully running optimally because there are still several components of medical records that are managed manually, such as entry and exit summaries, informed consent, general consent, medical assessments, CPPT, SOAP, education sheets, internal transfers, treatment resumes, surgery reports, consultation sheets, PEWS/EWS forms, vital signs graphs, as well as patient discharge planning. The informants explained that the document is still managed manually because the Hospital Management Information System (SIMRS) has not provided the appropriate format or complete filling items. In addition, the manual document management process starts from the registration administration to filing in the medical record unit after the patient goes home, involving various health workers such as doctors, nurses, medical record officers, and administrative officers. However, some of the components of medical records that have been electronically integrated include patient identity data, medical records of doctors and nurses, laboratory and radiology results, patient medical resumes, as well as non-medical records and hospital billing.

In terms of implementation constraints, the informant said that the implementation of RME in inpatient units has reached around 70% and shows good progress, but still faces some technical and non-technical obstacles. The main obstacles found include internet network disruptions, slow computer devices, and limited features in the system. In addition, there is still resistance from some health workers who are more accustomed to using manual recording.

Even though training has been carried out, further coaching is still needed so that all staff understand the use of RME well. The support from the hospital management is considered quite good, especially in efforts to provide a stable internet network and the procurement of new devices to support the performance of the system. Other efforts made include evaluation meetings, document reviews, and socialization to all units to increase awareness and consistency in the use of electronic systems. In general, the implementation of RME in the inpatient unit of Sayang Rakyat Hospital has been running well and progressively, although it still needs improvements in terms of infrastructure, consistency of implementation, and readiness of human resources so that the system can be implemented comprehensively in all service lines.

## DISCUSSION

Based on the results of research that has been conducted on the Implementation of Electronic Medical Records (RME) in the Inpatient Unit of Sayang Rakyat Hospital, it can be seen that the implementation of this electronic system has gone quite well but is not optimal. The results of the interviews show that most of the components of medical records are managed electronically, but there are still a number of important documents that are still done manually. Components that are still managed manually include entry and exit summaries, informed consent, general consent, medical assessment, CPPT, PEWS/EWS forms, surgery reports, vital sign graphs, and nursing resumes. Meanwhile, components that have switched to electronic systems include patient identity data, doctors' medical records, laboratory test results, radiology results, medical resumes, as well as recording of procedures and billing. This condition shows that the Hospital Management Information System (SIMRS) used at Sayang Rakyat Hospital does not cover all the needs of the hospitalization form as a whole.

The results of this study are in line with the findings of Amin et al. (2021) who stated that there are still many hospitals in Indonesia that have not fully implemented RME due to limited systems, infrastructure, and human resources. The manual recording process is still used to support the completeness of patient files due to the lack of a suitable digital format in SIMRS. Thus, the medical record workflow is still hybrid, where manual and electronic systems run simultaneously. This condition has the potential to cause data duplication, the risk of file loss, and delays in the process of patient data input and analysis.

Nevertheless, the results of the study show that there is a strong commitment from the hospital in improving the RME system. The Head of Medical Records and related officers actively conduct routine evaluations, inter-unit coordination meetings, and review of medical records documents to adjust the format and needs of digital forms. This collaborative effort is a positive indicator that the hospital is committed to achieving a fully integrated medical record system. This is in line with the provisions of the Minister of Health Regulation Number 24 of 2022, which requires every health service facility to carry out a comprehensive RME no later than December 31, 2023.

From the aspect of human resources, the results of the interviews showed that two out of three informants had participated in training in the use of RME, which had an impact on improving skills and work efficiency. However, there are still health workers who have not received formal training, so they tend to experience difficulties in operating the system. The lack of this training has an impact on the low adaptation to new technology and is one of the reasons why some officers are more comfortable using manual recording. These findings are consistent with the research of Eryanan et al. (2022) who explained that age factors, work habits, and lack of training are the main causes of health workers' resistance to the use of electronic systems.

In addition to the human resource factor, technical obstacles are also significant obstacles in the implementation of RME at Sayang Rakyat Hospital. Unstable internet network disruptions, slow computers, and hardware limitations cause delays in the recording and data access process. These technical obstacles have a direct impact on the smooth running of services in inpatient units. This phenomenon is reinforced by research by Amin et al. (2021) who stated that most hospitals in Indonesia face similar obstacles, especially in terms of inadequate technological infrastructure and network quality.

However, the hospital management's support for the development of RME should be appreciated. Based on the results of the interviews, the management of Sayang Rakyat Hospital has made efforts to provide a more stable internet network, add computer devices, and encourage the increase in human resource capacity through training and technical guidance. This support shows that there is good synergy between the management and the medical record unit in supporting digital transformation according to the national health system transformation agenda.

Thus, it can be concluded that the implementation of RME at Sayang Rakyat Hospital has shown significant progress, although there are still technical and non-technical obstacles that need to be overcome. Successful implementation of RME as a whole.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the results of the research at Sayang Rakyat Hospital, it can be concluded that the implementation of Electronic Medical Records (RME) in the inpatient unit has not been fully optimal, because there are still a number of components of medical records that are managed manually, such as entry and exit summaries, informed consent, medical assessments, CPPT, surgery reports, and nursing resumes. This condition is caused by the limitations of the format in the SIMRS system which does not cover all the needs of the inpatient form as well as technical obstacles that still occur frequently, such as internet network disruptions, system errors, and inadequate hardware. Nevertheless, improvement efforts continue to be made through infrastructure improvements, officer training, and hospital management support so that the implementation of RME in the future can run more effectively, efficiently, and fully integrated in supporting the quality of health services.

Based on the results of this study, it is suggested that educational institutions strengthen learning materials related to the challenges and solutions of implementing Electronic Medical Records (RME) to prepare students to face real conditions in the field. The author is expected to continue to develop insights and knowledge in the field of health information technology, especially RME management, to improve the quality of subsequent research. In addition, PMIK personnel need to play an active role in evaluating and improving the system so that the implementation of RME can run more effectively and efficiently. The results of this research are also expected to be a source of information for readers to understand the real conditions of the implementation of RME in inpatient units and contribute ideas in the development of digital-based health systems.

### **ADVANCED RESEARCH**

Future research is advised to adopt a more comprehensive and advanced methodological approach to deepen the understanding of Electronic Medical Record (RME) implementation challenges in inpatient units. Subsequent studies may employ mixed methods combining system usability testing, workflow analysis, and quantitative measurements of efficiency or error reduction to evaluate the actual impact of RME on clinical processes. Researchers could also explore the readiness of hospital digital infrastructure using standardized frameworks such as HIMSS EMRAM, assess user acceptance through technology adoption models like UTAUT or TAM, and identify the extent to which system interoperability supports continuity of care. Comparative studies across multiple hospitals or provinces would be beneficial in mapping variations in RME implementation and identifying best practices that can be replicated nationally. Furthermore, future research opportunities include developing prototype solutions or decision-support modules tailored to inpatient needs, as well as conducting longitudinal studies to measure improvements after technological or procedural interventions. Such advanced research efforts will contribute significantly to strengthening digital health transformation and ensuring that RME systems in Indonesia achieve optimal performance and maximal benefit for healthcare delivery.

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