

MANAGEMENT READINESS IN IMPLEMENTING ELECTRONIC MEDICAL RECORDS AT THE MELAI COMMUNITY HEALTH CENTER

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A B S T R A C T

Readiness in implementing electronic medical records is crucial to ensure optimal utilization of the system. This study aims to assess the readiness of management elements in preparing for the implementation of electronic medical records at Melai Community Health Center. The research methodology employed a descriptive approach with a qualitative perspective, utilizing data collection through observation, interviews, and document analysis. The results show that the human aspect is not yet fulfilled, as there is a shortage of medical record personnel who are graduates of medical record programs, and there are no IT officers. The material aspect is not yet ready, as there is a lack of Wi-Fi networks in each room and the network connection is unstable. In terms of machinery, all rooms are equipped with computers. In terms of methods, there are no standard operating procedures (SOPs) for electronic medical records. In terms of money, there is a budget for electronic medical records and other needs. In conclusion, based on the five aspects of management, Melai Community Health Center is not yet fully prepared for the implementation of EMR.

INTRODUCTION

Digital transformation in healthcare is part of the government's efforts to improve the quality of healthcare services through the use of information technology. One form of this transformation is the implementation of electronic medical records (EMR), which are now mandatory in all healthcare facilities as stipulated in Minister of Health Regulation No. 24 of 2022. Electronic medical records play an important role in storing patient identity data, examination history, medical procedures, and laboratory results in one integrated system. According to Widayanti et al. (2023), EMRs can improve service quality by providing healthcare professionals with fast and accurate access for clinical decision-making. Additionally, research by Rika Andriani et al. (2022) shows that EMR can reduce the risk of clinical errors, increase patient satisfaction, and speed up the documentation process. With these various benefits, EMR not only supports health administration but also serves as an important instrument for realizing safer and more efficient services in Indonesia.

However, the implementation of RME in the field does not always go as expected due to various limitations. A common phenomenon is the uneven readiness of health facilities, especially community health centers, in providing adequate facilities, infrastructure, and human resources. Noor et al. (2024) emphasize that many community health centers still face obstacles in terms of internet network infrastructure, limited medical recording personnel, and the absence of standard operating procedures. For example, research by Kapitan et al. (2023) at the Bandar Negara Husada Regional General Hospital shows that although technology and management support are quite good, operational personnel training is still weak. Meanwhile, research by Emrianti et al. (2024) reveals that the readiness of EMR users is often hampered by organizational work culture and leadership governance. This gap indicates a phenomenon of management unpreparedness in integrating digital technology into primary health services, which, if not addressed immediately, can reduce the effectiveness of the health care system.

In this study, the theoretical basis used is the management concept with five main elements known as 5M, namely man, material, machine, method, and money (Faida & Muhadi, 2021). The man element emphasizes the readiness of a competent workforce in the field of medical records, the material element relates to infrastructure such as the internet network, the machine element includes computer hardware and its supporting equipment, the method element relates to standard operating procedures, while the money element concerns budgetary support. This theory is highly relevant for assessing an organization's readiness to adopt new technologies, including in primary health care services. Using a descriptive qualitative approach, this study attempts to describe the factual conditions related to the readiness of the Melai Community Health Center in implementing EHR. This

approach is considered appropriate because it can explore the direct experiences of health workers and the factors that influence the success of implementation (Mekarisce, 2020). This theoretical framework is expected to provide a comprehensive understanding of the supporting factors and obstacles in the adoption of RME.

The urgency of this research lies in the need to accelerate the digital transformation of health that is being promoted by the government. In accordance with the mandate of Minister of Health Regulation Number 24 of 2022, RME must be implemented in all health facilities, including community health centers, which are at the forefront of public health services. However, reality shows that there are gaps in readiness between regions, especially in areas with limited human resources and infrastructure. Previous studies have mostly been conducted in large hospitals, while studies at the community health center level are still relatively limited. Therefore, this study is novel in that it examines the readiness of management elements at the Melai Community Health Center, which only began implementing RME in 2024. Furthermore, the results of this study are expected to provide a realistic picture of the readiness of primary services in facing the challenges of digital transformation, as well as provide input for policymakers to develop more targeted strategies.

Initial findings indicate that the Melai Community Health Center already has computers in every room and special budgetary support for the implementation of RME, so the machine and money aspects are relatively ready. However, the man aspect has not been fulfilled because there is only one staff member with a medical records background, and there are no IT officers specifically handling the information system. The material aspect is also still weak because internet connectivity is not yet widespread and network quality is often unstable, while the method aspect is not yet ready because there are no SOPs related to the use of EMR. These conditions show that management readiness is still partial and needs improvement in several aspects. Therefore, the purpose of this study is to assess the readiness of management elements in the implementation of EMR at the Melai Community Health Center, identify the obstacles encountered, and provide practical recommendations to support the successful implementation of the electronic medical record system at the primary health care level.

METHODOLOGY

This study uses a qualitative approach with a descriptive research type, which aims to describe phenomena factually and in depth in accordance with conditions in the field (Mochamad Nashrullah, 2023). The data used consists of primary and secondary data. Primary data was obtained through in-depth interviews, observations, and documentation, while secondary data was obtained from documents and official records relevant to the implementation of electronic medical records (Ardiansyah et al., 2023).

The population of this study was all management personnel at the Melai Community Health Center, with the sample determined using purposive sampling techniques. Informants were selected based on their direct involvement in medical record management, such as the head of the health center, the person in charge of medical records, administrative staff, and related health personnel. The study was conducted at the Melai Community Health Center, Batupoaro District, Baubau City, from February to July 2025.

The research instruments consisted of semi-structured interview guidelines and observation sheets designed based on the 5M framework (man, material, machine, method, and money). Interviews were used to gather in-depth information from key informants, observations were conducted to assess infrastructure conditions, and documentation was used to supplement the data from interviews and observations (Husnullail, 2024).

Data collection was conducted systematically using triangulation techniques, both in terms of sources and methods, to maintain the validity and reliability of the information. The collected data were analyzed using thematic analysis techniques, which included data reduction, data presentation, and conclusion drawing. This analysis was carried out repeatedly until consistent patterns of findings were obtained that could answer the research objectives (Spradley & Huberman, 2024).

RESULTS & DISCUSSION

The characteristics of the research informants consisted of six people with different positions and educational backgrounds, as shown in Table 1. These variations included the head of the health center, the head of administration, the person in charge of medical records, nurses, midwives, and administrative staff. The diversity of informants was important because it allowed researchers to

obtain more comprehensive data from various perspectives directly involved in the implementation of RME. Mekarisce (2020) emphasizes that the diversity of respondents in qualitative research can strengthen the validity of the findings.

Table 1. Informant Characteristics

No	Informant Code	Types of Informants	Age	Position
1	Source Triangulation (US)	Key Informant	29	Head of Community Health Center
2	Informant 1 (AL)	Informant	27	Administrative Officer
3	Informant 2 (GN)	Informant	25	Doctor
4	Informant 3 (UM)	Informant	30	Person in Charge of Medical Records
5	Informant 4 (NM)	Informant	24	Midwife
6	Informant 5 (DS)	Informant	32	Registration Officer

Source: Primary Data, 2025

In terms of human resources (HR), the observation results show that there is only one RMIK staff member, no RME training has ever been conducted, and there are no IT officers available (Table 2). This condition indicates low HR readiness. Kapitan et al. (2023) found similar results, namely that the limited number of trained personnel is a major obstacle to the implementation of RME in health facilities. Meanwhile, Widayanti et al. (2023) emphasized that the success of service digitization is highly dependent on the competence of the implementing personnel. Thus, increasing human resource capacity through training and adding IT personnel is an urgent need.

Table 2. Observation Results of RME Implementation Readiness in the Man Aspect

No	Observation Object	There is	None
1	RMIK Human Resources	√	
2	Training in the use of information technology	√	
3	IT officers		√
4	Workload of officers	√	
5	Ability of medical record officers to operate computers	√	

Source: Primary Data, 2025

In terms of material aspects (infrastructure), the Melai Community Health Center has a Wi-Fi network in two locations, but the quality is unstable and does not cover all rooms (Table 3). This has resulted in delays in patient data input. Noor et al. (2024) stated that the internet network is a key factor in the successful implementation of health information systems. Similar obstacles were also reported by Wati et al. (2024), who highlighted that limited budgets for information technology have an impact on digital health infrastructure. Therefore, network improvements and internet coverage expansion are a priority.

Table 3. Observation Results of RME Implementation Readiness in Material Factors

No	Observation Object	There is	None
1	Wi-Fi	√	
2	Number of Wi-Fi networks		√
3	Wi-Fi network quality	√	
4	Challenges during preparation for the use of electronic medical records		

Source: Primary Data, 2025

The machine (hardware) aspect is relatively more prepared. Melai Community Health Center has computers in each service unit in good condition and printers in several rooms (Table 4). This supports the smooth operation of RME. Emrianti et al., (2024) found that the availability of technological facilities plays an important role in accelerating the transition from manual to electronic medical records. However, hardware without trained human resources will not be optimal, so strengthening the human and machine aspects must go hand in hand.

Table 4. Observation Results of RME Implementation Readiness in the Machine Factor

No	Observation Object	There is	None
1	Number of Computers	√	
2	Age of Computers		√

3	Computer Specifications		√
4	Computer Maintenance	√	
5	Computer Replacement		√
6	Computer Service/Repair	√	

Source: Primary Data, 2025

In terms of methods (methods/SOPs), the study found that to date there are no specific SOPs for the use of RME (Table 5). This can lead to differences in practice between officers. Faida & Muhadi, (2021) emphasize the importance of SOPs as guidelines that ensure work consistency. Meylani & Maya Hastuti, (2024) also mention that without SOPs, the effectiveness of health information system implementation will decline. Therefore, the development of RME SOPs is an urgent need before the system is implemented.

Table 5. Observation Results of RME Implementation Readiness in the Method Factor

No	Observation Object	There is	None
1	Medical Record Service Flow	√	
2	Standard Operating Procedures		√
3	Overview/Plan for RME Implementation	√	

Source: Primary Data, 2025

The final aspect, namely money (funding), shows that it is fairly well prepared. The Melai Community Health Center has a special budget to support the implementation of RME, sourced from the regional budget and government health program support (Table 6). This financial support includes the procurement of equipment, networks, and basic training. Rika Andriani et al., (2022) emphasize that adequate funding is crucial to the sustainability of the system. Widianoro et al. (2025) add that budgeting is part of the management function that acts as a control and planning tool. In addition, Meylani & Maya Hastuti (2024) emphasize that proper budget planning will support the effectiveness of digital health programs.

Table 6. Observation Results of RME Implementation Readiness in the Money Factor

No	Observation Object	There is	None
1	Use of Funds in RME Planning	√	
2	Special RME Budget	√	
3	Anticipatory Measures in Case of Insufficient RME Budget		√
4	Computer Procurement Funds		√
5	Computer Maintenance Funds	√	

Sumber: Data Primer, 2025

Overall, this study shows that management readiness at the Melai Community Health Center is still not comprehensive. The machine and money aspects are quite good, but the man, material, and method aspects are still weak. This is similar to the findings of Kapitan et al. (2023) and Emrianti et al. (2024), which emphasize that the success of digital health transformation is not only determined by the availability of technology and funds, but also by the readiness of human resources, infrastructure, and internal regulations. Thus, the research objective to assess the readiness of management elements in the implementation of RME has been achieved, while also providing recommendations that strengthening human resources, improving networks, and developing SOPs are strategic steps to support the successful implementation of RME in primary care.

CLOSING

This study aims to assess the readiness of management elements in facing the implementation of electronic medical records (EMR) at the Melai Community Health Center. The results show that of the five aspects of management analyzed, two aspects were assessed as ready, namely machine and money. In terms of machinery, there are five computers in each main room in good condition, as well as supporting devices such as printers, so that technically the facilities are adequate. In terms of money, there is a special budget from the regional budget and government program support allocated for the procurement of equipment, networks, and training, so that financial readiness can be said to be quite good. However, the other three aspects still face serious obstacles. The man aspect shows low readiness because there is only one medical recorder with an RMIK background, there has never been any special training, and there are no IT officers available. The material aspect is also inadequate

because the Wi-Fi network is only available at two points, with quality that is often unstable and does not reach all rooms. Meanwhile, the method aspect is considered not ready because there are no specific standard operating procedures (SOPs) related to the implementation of RME. Thus, the research objective has been answered that the readiness of management at the Melai Community Health Center is still partial, with strong readiness in terms of facilities and funds, but weak in terms of human resources, network infrastructure, and work procedures.

This study has several limitations that should be noted. First, the number of informants was limited to only six people consisting of management and certain health workers, so the findings may not represent the perspectives of all employees at the Melai Community Health Center. Second, this study was only conducted at one community health center, so the results cannot be generalized to all community health centers in other areas. Third, the data used is mostly qualitative and depends on the results of interviews and observations, so it is highly influenced by the subjectivity of the informants. In addition, the limited research time of only six months was also an obstacle in conducting long-term observations on the sustainability of RME implementation.

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