Implementation of Electronic Medical Records at the Registration Desk of Muhammadiyah Ponorogo General Hospital

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Abstract. Electronic Medical Records (EMR) are digital systems that play an important role in improving the efficiency and accuracy of healthcare services, particularly in the patient registration process. This study aims to understand the implementation process of EMR, identify the challenges faced, and evaluate the effectiveness of EMR usage at the registration desk of Rumah Sakit Umum Muhammadiyah Ponorogo. This research uses a qualitative method with a descriptive approach. The data collection techniques used include in-depth interviews with the head of medical records, registration officers, and the information technology team, as well as direct observation and documentation. Data analysis was conducted through the stages of data reduction, data presentation, and conclusion drawing. The research results show that the implementation of RME at Rumah Sakit Umum Muhammadiyah Ponorogo can accelerate the patient registration process from 10–15 minutes to less than 5 minutes, improve data accuracy, and facilitate coordination between units. The challenges faced include network disruptions, data input errors, and staff adaptation to the new system. Improvement efforts are carried out through regular training, periodic evaluations, and enhanced coordination with the information technology team. In conclusion, the implementation of RME at the registration desk of Muhammadiyah General Hospital has proven to support faster, more accurate, and intregated service, in line with the national policy of digital transformation in the health sector. This research recommends improving infrastructure quality, strengthening training for officers, and refining standard operating procedures to support the sustainability of the RME system.

Keywords: Digital Systems; Electronic; Implementation; Medical Records; Patient Registration.

1. BACKGROUND

The implementation of electronic medical records (EMR) is one way hospitals are encouraged to improve service quality digitally through advancements in information technology in the healthcare industry. This technology allows for the electronic capture and maintenance of patient data, which improves accuracy, speeds up information access, and reduces recording errors. Minister of Health Regulation Number 24 of 2022 regulates the implementation of RME in Indonesia and requires all healthcare facilities to have this system by the end of 2023 at the latest. However, there are still a number of obstacles that need to be overcome before RME can be implemented in various institutions, especially in terms of infrastructure preparation, human resources, and system adaptation. However, there are still a number of obstacles in its implementation, including network disruptions, data entry errors, and the inability of officers to adapt. This study is crucial for identifying existing barriers, assessing the feasibility of RME implementation, and developing necessary improvement initiatives. It is hoped that the findings of this research will drive digital transformation in the healthcare industry and provide suggestions for creating a more ideal RME system.

2. THEORETICAL STUDY

A digital system called electronic medical records (EMR) is used to store patient medical data in a regular and cohesive manner. To improve the quality of care, healthcare providers can easily obtain patient identification information, medical history, supporting examination findings, medical procedures, and care records using this system. RME must be implemented by all healthcare institutions as part of the digital transformation of healthcare services, in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022. According to Rogers' (2003) theory of innovation adoption, which states that five factors – relative advantage, compatibility, complexity, trialability, and observability of results – determine the successful implementation of technological innovations, the application of RME is theoretically highly related to this theory.

In a hospital setting, managerial support, human resource expertise, and infrastructure readiness all have a significant impact on the effective implementation of RME. According to research by Cahyani (2022), the implementation of RME at Wava Husada Hospital accelerates the registration process and improves data accuracy. According to Hadiansyah & Wahab (2024), RME reduces recording errors and makes it easier for units to coordinate. Purwanti et al. (2024) reported similar results, showing that RME helps improve patient satisfaction and reduce waiting times. However, the implementation of RME will not be without difficulties, including staff resistance to the new system, data entry issues, and network disruptions.

This is supported by Saputri & Yuliana (2022), who emphasize the importance of continuous training and human resource readiness for the best transition from a manual system to a digital system. The success of RME also depends on having a backup system in case of network disruptions and a user-friendly system architecture (Setiawan & Prabowo, 2022). As a result, implementing RME involves more than just adopting new technology; it also entails changing the work culture in hospitals. The implementation of RME at the registration desk of Muhammadiyah General Hospital Ponorogo will be studied using this theoretical study as a basis for understanding the effectiveness, challenges, and necessary improvement tactics..

3. RESEARCH METHOD

This study uses a descriptive methodology and a qualitative approach. While the descriptive approach aims to methodically describe the process of implementing Electronic Medical Records (EMR) at the registration desk of Muhammadiyah General Hospital Ponorogo, the qualitative research uses information gathered from primary data sources to gain a deeper understanding of the phenomenon. Five registration officers, one information technology team member, and the head of medical records served as informants in this study. Purposive sampling, which is the process of selection based on specific criteria considered capable of providing in-depth information in accordance with the research objectives, was used to select informants.

In-depth interviews, direct observation of patient registration procedures using EMR, and document studies on guidelines, activity reports, and data used in electronic medical records are some of the methods used to collect data. Data reduction, data display, and conclusion drawing steps are used in data analysis. Source triangulation methods and techniques were used to verify the data. This study was conducted at Muhammadiyah General Hospital in Ponorogo between February and April 2025.

4. RESULTS AND DISCUSSION

Results

Data Collection Process

From February to April 2025, this research will be conducted at Muhammadiyah General Hospital in Ponorogo. Five registration officers, one IT team member, and the head of medical records were interviewed in-depth to collect data. Additionally, a documentation study was conducted utilizing work instructions and activity reports, as well as direct observation of the registration procedure using Electronic Medical Records (EMR).

Analysis of EMR Implementation Results

Conditions Before and After EMR Implementation

Before EMR implementation, patient registration was done manually using paper forms or books. This procedure may result in long queues and inaccuracies in record-keeping, and takes 10 to 15 minutes per patient. Patient registration time decreased to less than five minutes after EMR was implemented. This approach not only speeds up service but also reduces data entry errors, makes patient information more accessible, and streamlines collaboration between units.

Table 1. Comparison of Conditions Before and After RME Implementation.

Aspect	Before RME	After RME
Registration time	10–15 menit	< 5 menit
Recording media	Manual (paper)	Electronic
Risk of data errors	High	Low
Inter-unit coordination	Less than optimal	Smoother

Source: Interview and observation results 2025

Challenges in RME Implementation

Network Disruptions: The main factor hindering the smooth registration procedure during implementation is network disruptions. The registration procedure must be temporarily suspended if there is a connection disruption, causing delays in service and inconvenience for patients.

Data input errors: Data input errors still occur, especially when the system is first implemented. This is caused by staff members entering data incorrectly or a lack of technical knowledge about the RME system. The resulting data quality and service procedures may be affected by these inaccuracies.

Staff adaptation challenges: It takes longer for employees accustomed to manual systems to adjust. Some employees initially resisted the new approach because they felt "safer" using outdated techniques.

Discussion

The research results show that the efficiency of administrative services increased when RME was used in the registration section. This supports the findings of Hadiansyah and Wahab (2024), who stated that RME can significantly reduce workload and increase the productivity of administrative staff. An important component in healthcare service delivery is improving the accuracy of patient data recording, which is largely made possible by the implementation of RME. Digitally stored data facilitates monitoring, assessment, and clinical decision-making. Nevertheless, one of the key determinants of the success of implementing this system is the readiness of infrastructure and human resources.

Muhammadiyah General Hospital in Ponorogo continues to face similar issues to those found in the study by Purwanti et al. (2024), including a lack of training and user rejection of the new system. Therefore, to ensure the best possible implementation of RME, an appropriate change management strategy is needed. One of the strengths of RME is the integration of systems between units. Interdepartmental workflows are simplified by

interconnected systems. However, network capacity and backup systems must be expanded, and the risk of system outages must be considered.

Implications of Research Findings

Implications for Theory The idea that digital transformation can accelerate service processes, improve data accuracy, and facilitate cross-unit coordination through the use of RME is supported by this study. These findings provide factual support for the urgent need to digitize healthcare services in order to improve service quality in the contemporary era.

Implications for practice Practically, other hospitals wishing to adopt a similar system can use the successful RME implementation of Muhammadiyah General Hospital Ponorogo as an example. To ensure the system runs as efficiently and sustainably as possible, strategic steps such as strengthening infrastructure, creating comprehensive SOPs, and offering continuous training to employees must be considered.

5. CONCLUSION AND RECOMMENDATION

According to research conducted, the use of Electronic Medical Records (EMR) at the registration desk of Muhammadiyah General Hospital in Ponorogo can speed up the patient registration process, improve data accuracy, and facilitate coordination between service units. The introduction of Electronic Medical Records (EMR) reduced registration time to less than 5 minutes with a lower error rate compared to before, when registration took 10 to 15 minutes with a significant potential for errors. However, a number of challenges remained during the implementation phase, including staff adaptation issues, network disruptions, and data entry problems. To ensure system performance, improvement initiatives have been implemented through frequent training, repeated assessments, and better collaboration with the IT team.

According to this research, hospitals must continuously improve the quality of their technology networks and infrastructure, provide ongoing training for all registration staff, and regularly create and update standard operating procedures. To evaluate the system's effectiveness and identify problems early on, continuous assessment should also be conducted. The limitation of this study is that it only examined the registration unit and missed the broader impact of implementing RME on other units. To provide a more complete picture of the digital transformation of hospital services, future research is suggested to investigate the implementation of RME in other units, such as outpatient, inpatient, or support facilities.

THANK YOU SPEECH

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