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Research Article

The Effectiveness of Electronic Medical Records for Outpatient Installations at the Mojolangu Health Center, Malang City

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Abstract

The implementation of electronic medical records (EMR) is a strategic step in improving the efficiency, effectiveness, and quality of health services in primary care facilities such as Community Health Centers. This study aims to determine the effectiveness of the use of EMR in the outpatient installation of the Mojolangu Community Health Center, Malang City. The study used a qualitative descriptive method through observation and interviews with two informants in the medical records section. The results showed that the EMR system was used consistently every working day (6 days/week), during service hours (±5 hours/day), without significant obstacles. EMR has been shown to improve access to medical information, accelerate services, and minimize recording errors. This study recommends increasing human resource training and strengthening infrastructure to optimize the implementation of EMR.

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Introduction

Electronic Medical Records (RME) is an important step in modernizing the healthcare system in Indonesia. The implementation of RME in health facilities, especially health centers, has the potential to improve service efficiency, reduce medical errors, and speed up the decision making process in patient treatment. Puskesmas as the spearhead of public health services, especially in the regions, need to utilize technology to improve the quality of services.

Outpatient services are a service unit that treats patients who receive outpatient services at Puskesmas which have a large number of visits. This requires the efforts of the Puskesmas in improving outpatient services through technological developments. Puskesmas must improve the quality of health services by adopting technological developments in order to compete effectively with other health service institutions (Wirajaya & Dewi, 2020). The implementation of electronic medical records in health centers can be a solution to minimize obstacles that occur in medical records. Faida (2020) stated that the obstacles faced in the use of manual (paper-based) archiving systems include the time required to search for long patient data and difficulties in collecting scattered patient health record information.

Electronic medical records are a system that allows the digital storage of patient data, replacing traditional paper-based methods (Dwijosusilo & Sarni, 2018). The implementation of electronic medical records is vital for management in overcoming medical record challenges because it can ensure the integrity and accuracy of data, as well as being a solution step in improving financial efficiency, access, and service quality at Puskesmas. Its existence allows for faster and easier access for medical personnel to retrieve the necessary information, reduces the risk of data loss or duplication, and improves coordination of

care between professionals. Regulation of the Minister of Health Number 269 of 2008 concerning Medical Records, provides a strong legal basis and gives hope for the implementation of electronic medical records in Indonesia (Faida, 2020). The effectiveness of electronic medical records (RME) can be assessed in terms of frequency of use and daily time usage. According to Ansori, et, al (2024) also explained that the effectiveness of electronic medical records (RME) can be assessed from two main aspects, namely the frequency of use and daily usage time, the frequency of use measures how often RME is used in the health service process, while the use of daily time measures how long RME is used in one day.

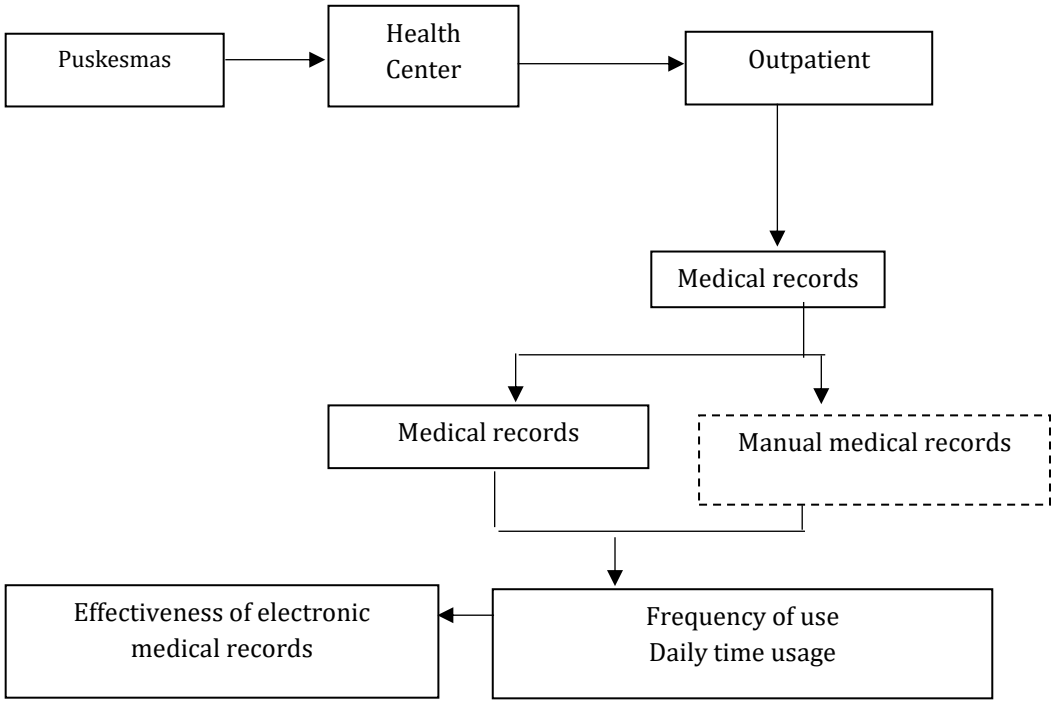

Figure 1. Research Concept Framework

The Mojolangu Health Center, which will begin implementing RME in 2024, faces challenges in the implementation of this technology, especially in terms of infrastructure, human resource training, and medical data management. Therefore, it is important to assess the effectiveness of the use of RME in the outpatient installation of the Mojolangu Health Center, to see if this system is really able to improve the efficiency of services and the quality of patient medical data.

This study aims to evaluate the effectiveness of the use of Electronic Medical Records at the Mojolangu Health Center by focusing on two main aspects: frequency of use and daily usage time. By understanding the extent to which RME is accepted and optimized by medical staff, it is hoped that the results of this research can contribute to improving the quality of health services in health centers and encouraging the adoption of technology in other health facilities.

This research has several benefits both theoretically and practically. Theoretically, this research is expected to provide a deeper understanding of the implementation of information technology in the health sector, especially related to Electronic Medical Records. The practical benefits are that the results of this research can be the basis for the Mojolangu Health Center and other health facilities to improve the implementation and training related to the RME system, as well as provide recommendations to improve the quality of health services.

For the government, the results of this research are expected to provide input on the policy of implementing Electronic Medical Records at the Puskesmas level, as well as how this system can be

integrated more widely in Indonesia. In addition, this research is also useful for the community, as one of the references on how the implementation of RME can improve the quality of health services at the health center level.

Materials and Methods

Electronic Medical Records (RMEs) have been extensively researched in various hospitals and other healthcare facilities. Previous studies have shown that RME is able to improve service efficiency, reduce medical errors, and facilitate access to medical information. According to Kadek Sri Ayunita Dewi et al. (2022), the use of a web-based RME system at the Buleleng Regency Regional General Hospital can speed up the time to provide patient medical records. Another study by Desy Lukitawati (2023) shows that the medical record tracking system at RSIA KMC helps officers find out the last position of medical records, but still needs to develop a system. RME has proven to be effective in improving the quality of service, but challenges such as inadequate training and infrastructure remain obstacles.

Electronic Medical Record Concept

Electronic Medical Records (RMEs) are digital systems used to record, store, and manage patients' medical information. According to the Minister of Health Regulation No. 24 of 2022, RME is expected to replace paper-based manual medical records. RME provides ease of access to data, reduces human error, and improves operational efficiency. The use of RME at the Mojolangu Health Center can improve the quality of outpatient services by reducing patient waiting times and improving coordination between departments.

Technology in Health Services

The use of information technology in healthcare has shown positive results. An integrated health information system (SIS) can improve coordination between healthcare facilities, such as between laboratories, pharmaceuticals, and other departments. The application of technology such as RME also supports bioethical principles, such as beneficence (benefits for patients), autonomy (better access by patients), and justice (justice in the provision of medical services). This technology has great potential in improving the quality and efficiency of health services in health centers.

Research Design

This study uses a qualitative descriptive approach, which aims to describe and understand the phenomenon of the use of Electronic Medical Records in the outpatient installation of the Mojolangu Health Center. This approach was chosen because it allows researchers to explore the factors that influence the use of RME and gain a deeper understanding of the user experience.

Data Collection

Data was collected through direct observation of the use of RME at the Mojolangu Health Center, as well as interviews with two informants working in the medical records department. The interview technique was conducted in a semi-structured manner, allowing researchers to dig deeper into the barriers and benefits of using the RME system. In addition, the analysis of medical record documents is also carried out to evaluate the frequency of use and time required to access medical data.

Research Instruments

The main instrument in this study is interview and observation guidelines. Interview guidelines are designed to ensure that the information collected covers important aspects of the effectiveness of RME, including frequency of use, duration of daily use, and its impact on patient care. Observations were made to record how RME is used in the context of health services in health centers.

Data Analysis

Data obtained from interviews, observations, and document analysis were analyzed using thematic analysis techniques. The data will be grouped based on key themes, such as system usage, barriers found, and impact on service efficiency. The results of this analysis were then used to draw conclusions about the effectiveness of RME at the Mojolangu Health Center.

Results and Discussion

Based on the results of observations and interviews at the Mojolangu Health Center, the use of Electronic Medical Records (RME) went quite smoothly, although there were some technical obstacles, such as network problems that sometimes hindered the process of medical data input. RME is routinely used by medical staff every day during operating hours. The time it takes to access patient data is faster compared to manual systems, which previously took longer to search and find patient data in physical files.

The use of RME at the Mojolangu Health Center has been proven to increase the efficiency of health services, by accelerating the process of registration and access to patient medical data. One significant result was a reduction in patient wait times, which previously took longer when using manual systems. However, some technical constraints such as network interference and data access speed need to be considered to improve the effectiveness of using RME. Comparison with previous research shows that the implementation of RME in primary health facilities such as health centers does bring many benefits, although its implementation requires considerable adaptation.

Based on the results of the research on the aspect of frequency of use of electronic medical records, it is effective, because the use of electronic medical records in the frequency of use as many as 6 times/week or 24 times/month of the use of electronic medical records at the Mojolangu Health Center, Malang City, as long as health services are not there are obstacles and are used properly.

Medical records are writings / records / documentation that chronically and systematically describe and explain a person's medical history. According to PMK No. 24 of 2022, it defines that Electronic Medical Records (RME) are medical records made using an electronic system intended for medical record operators. Electronic medical records are documents that contain patient identity data, examination history, treatment, actions, and other services provided to patients that are created using an electronic system intended for medical record management (Ministry of Health of the Republic of Indonesia, 2022). Electronic medical records are part of the health center information system (SIP). In accordance with the Regulation of the Minister of Health of the Republic of Indonesia No. 31 of 2019 concerning the Information System of the Health Center, it is stated that SIP is an order that provides information to assist the decision-making process in carrying out the management of the health center in achieving the goals of its activities (Ministry of Health of the Republic of Indonesia, 2019).

The use of RME is able to reduce administrative burdens, speed up the recording process, and minimize data input errors (Ismandani et al., 2023). The adoption of digital technology in the work system can increase individual productivity and reduce work stress. Healthcare workers who experience direct benefits from the use of RMEs, such as smoother patient information flows and reduced manual work, tend to show higher levels of satisfaction with the work environment (Wahyudi & Wahab, 2024). RME acts as a motivating factor because it allows healthcare workers to focus more on the clinical aspects of their work, such as patient service, rather than administrative tasks. In addition, a smoother work experience and less frustration due to a less efficient manual system reinforce a positive perception of the workplace (Muhlizardy et al., 2024).

Frequency of use refers to how often an electronic medical record is used during work, whether it is used consistently in each activity, prepared for use at all times, rarely used in daily routines or used only occasionally. In addition, the frequency of use is no less important where frequency is the number of repetitions of behaviors or behaviors that are carried out repeatedly, either intentionally or unintentionally. Frequency refers to something that can be measured by counts or by time (Wahyuliarmy & Sari, 2021).

The use of electronic medical records is said to be effective in terms of frequency of use of RME can be seen in the ability of RME to be used in a certain amount without causing problems, even if it is used repeatedly. Efficiency in the use of EMRs refers to the system's ability to optimize workflows, reduce time spent on administrative tasks, and improve the accuracy and availability of patient data (Gusni & Yunengsih, 2024). In line with the research of Ansori, et, al (2024), who said that electronic medical records are said to be effective, when the RME system can be petrified to align with tasks correctly and improve an accurate work system even though the use of the system is used repeatedly.

One of the challenges found was the integration of RME with other systems, such as patient and laboratory registration systems. Coordination between departments needs to be improved so that integrated

medical data can be easily accessed by all parties involved in the service. This will increase collaboration between medical personnel and speed up the patient care process.

The application of technology that supports a worker's primary tasks can increase job satisfaction, which ultimately reinforces the influence between health worker satisfaction and the effectiveness of the system implemented (Simbolon et al., 2024). The daily use of electronic medical records (EMR) has a significant relationship with the speed of health services, this is because EMRs that support work such as EMR system support in their daily use are not problematic (Dubale et al., 2023). With consistent daily use, health workers get practical benefits such as quick access to patient data, more accurate recording, and reduced errors in the administrative process (Alhur, 2023).

Daily time usage is the length of time spent using electronic medical records every day during work, whether it is more than 6 hours in a day, used multiple times a day, or even used continuously. The use of electronic medical records is the frequency of use of electronic medical records during work and the process of using electronic records containing health information where electronic medical records have begun to be implemented in various health services, the use of electronic medical records in health services must be good (Rahmatulloh 2017)

The use of electronic medical records in daily times is declared effective if electronic medical records are used throughout the day without any problems with the RME system. According to Rahmatulloh (2017), the effectiveness of electronic medical records is assessed from the aspect of daily used time, which is the daily use of electronic medical records during work such as being used >6 hours and even continuously. In line with the research of Ansori, et, al (2024), who said that electronic medical records are said to be effective, when the RME system can be petrified to match the medical record task for a certain amount of time.

Conclusion

The use of Electronic Medical Records at the Mojolangu Health Center has been proven to be effective in improving the efficiency of outpatient services, reducing patient waiting times, and making it easier to access medical information. Although there are several technical obstacles that need to be overcome, RME provides many benefits in improving the quality of health services at the health center level. This research shows that the implementation of information technology in the health sector can accelerate medical decision-making and improve coordination between medical staff.

Based on the results of this study, some suggestions that can be given are as follows the Mojolangu Health Center needs to increase training for medical staff so that they are more skilled in using the RME system. Technology infrastructure, such as internet networks, needs to be strengthened to reduce disruption when accessing medical data. Further integration between RME and other systems in the Puskesmas is needed to maximize the potential of this system in improving service efficiency and coordination.

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