A Comparative Analysis of Patient Service Efficiency Using Electronic Medical Records and Conventional Medical Records at Dr. Harjono S. Ponorogo Regional General Hospital

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Abstract. Medical records are a crucial component in hospital health services. With technological advancement, Electronic Medical Records (EMR) are expected to improve service efficiency. This study aims to identify and compare the efficiency of patient services using EMR and Conventional Medical Records (CMR) at RSUD Dr. Harjono S. Ponorogo. This research employed a qualitative comparative method with data collected through observation and interviews. The study involved five informants: a doctor, a nurse, a conventional medical record officer, an electronic medical record officer, and an IT staff member involved in medical record management. The results show that EMR is more efficient in terms of time, cost, data security, information access, and reporting. CMR still holds advantages in direct physical access without relying on technology. It is concluded that EMR implementation supports faster and more integrated patient services. Therefore, hospitals are encouraged to adopt EMR systems comprehensively.

Keywords: Conventional Medical Records; Efficiency; Electronic; Medical Records; Patient Services.

1. BACKGROUND

Hospitals require efficient information systems to support patient care. Electronic Medical Records (EMR) have emerged as a solution to the limitations of conventional systems, such as slow documentation and difficulties in accessing data. The Indonesian government has mandated the implementation of EMR through the Ministry of Health Regulation No. 24 of 2022. However, its implementation still faces challenges, including infrastructure readiness and human resource adaptation. This study was conducted to compare the efficiency of patient services between conventional and electronic medical records at Dr. Harjono S. Ponorogo Regional General Hospital, focusing on aspects of time, cost, data access, security, and reporting, in order to support more optimal healthcare services.

2. THEORETICAL STUDY

Hospital services are supported by a well-structured information system, particularly through medical record management. Conventional medical records are manual documents that are still widely used but have limitations in terms of speed, security, and efficiency. In contrast, Electronic Medical Records (EMR) emerge as a technological innovation designed to accelerate information access, improve data accuracy, and enhance the efficiency of patient care.

EMR is considered superior in terms of time efficiency, cost, data security, system integration, and reporting. However, its implementation requires adequate infrastructure and well-prepared human resources. The efficiency theory relevant to this context refers to the optimization of inputs (time, labor, and cost) to produce maximum service outputs.

Previous studies, such as those by Kusuma (2022) and Widiyanto (2023), indicate that EMR is more efficient than manual systems, particularly in terms of faster access and saving storage space. This study builds upon these theories and findings to examine more deeply the implementation of the hybrid medical record system applied at Dr. Harjono S. Ponorogo Regional General Hospital.

Implicitly, this research is based on the hypothesis that electronic medical record systems are more efficient than conventional systems in patient care services.

3. RESEARCH METHODS

This study employs a qualitative approach with a comparative method, aiming to compare the efficiency of patient services between conventional medical records and electronic medical records at Dr. Harjono S. Ponorogo Regional General Hospital. The research informants consist of five individuals directly involved in patient services and medical record management: a doctor, a nurse, a conventional medical record officer, an EMR officer, and an IT staff member.

Data collection techniques were carried out through observation and in-depth interviews using an interview guide as the primary instrument. Data validity was tested through source and technique triangulation, which confirmed that the data were valid and consistent.

The data were analyzed using a qualitative descriptive method, which includes data reduction, data presentation, and conclusion drawing. The research model adopted the 5M approach (Man, Machine, Material, Method, Measurement) to describe the factors influencing the efficiency of patient services. Each aspect was analyzed by comparing the conventional and electronic systems.

4. RESULTS AND DISCUSSION

The study was conducted at Dr. Harjono S. Ponorogo Regional General Hospital from January to February 2025, using direct observation and interviews with five key informants: a doctor, a nurse, a conventional medical record officer, an EMR officer, and an IT staff member. The research setting reflects a hybrid medical record system, where some outpatient clinics have implemented EMR while others still rely on conventional methods.

Data Collection and Analysis Process

Data were collected through field observations and structured interviews. This process produced two types of data: 1) General data, covering respondent profiles and the current condition of the hospital's medical record systems. 2) Specific data, consisting of interview findings related to experiences and efficiency in using medical record systems.

The analysis was carried out using a descriptive qualitative approach and categorized based on the five aspects of the 5M framework: Man (human resources), Machine (technology), Material (facilities), Method (work procedures), and Measurement (efficiency assessment).

Research Result

The results of this study show that the implementation of Electronic Medical Records (EMR) at Dr. Harjono S. Ponorogo Regional General Hospital has had a significant impact on the efficiency of patient services compared to conventional medical records (CMR). Based on interviews with five informants—comprising a doctor, a nurse, a conventional medical record officer, an EMR officer, and an IT staff member—it was found that the process of retrieving and inputting patient data using EMR takes less than five minutes, while the conventional system requires more time due to the need to manually search for physical documents. The integration of EMR with the Hospital Management Information System (SIMRS) also facilitates access to supporting services such as laboratories, pharmacies, electronic prescriptions, and referrals, thereby streamlining patient care workflows.

An analysis based on the 5M approach reveals the following: 1) Man: EMR implementation requires human resource adaptation, but after adequate training and familiarization, staff members felt supported, as their tasks became faster and more accurate. 2) Machine: The use of computers and internet networks contributes to efficiency, although initial technical difficulties were encountered. 3) Material: EMR significantly reduces the need for paper, folders, and ink, making it more cost-efficient than the conventional system. 4) Method: The patient care workflow becomes more structured with EMR, while the manual processes in the conventional system often caused delays. 5) Measurement: EMR excels in speed, data accuracy, security, and ease of reporting.

Discussion

The research findings reinforce theories stating that EMR improves work efficiency and service quality (Triyanti & Weningsih, 2018; Chaudhry et al., 2012). In addition, these findings are consistent with Kusuma (2022), who demonstrated that EMR reduces both time and operational costs.

However, there are still challenges, such as staff adaptation to technology and infrastructure readiness, which remain the primary obstacles to the full implementation of EMR. This indicates that efficiency is determined not only by the system itself but also by the readiness of human resources and organizational support..

5. CONCLUSIONS AND SUGGESTIONS

This study concludes that the electronic medical record (EMR) system is more efficient than the conventional medical record system in terms of service time, operational costs, data access and integration, security, and reporting. The conventional system still has an advantage in terms of physical access and independence from technology; however, it is less efficient in the long run.

The implications of these findings indicate that the full implementation of EMR at Dr. Harjono S. Ponorogo Regional General Hospital needs to be supported by staff training, infrastructure improvements, and strong managerial commitment. This research also contributes to the theoretical references on efficiency in health information system–based services.

The researchers recommend that the hospital accelerate the transition toward full EMR implementation in order to improve the quality of patient care in an optimal and integrated manner.

THANKYOU NOTE

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