

**ANALYSIS OF THE READINESS OF ELECTRONIC MEDICAL RECORD (EMR)  
IMPLEMENTATION NUSING THE DOCTOR'S OFFICE QUALITY-  
INFORMATION TECHNOLOGY (DOQ-IT)  
METHOD AT RSUD HAJI ABDOEL MADJID BATOE MUARA BULIAN**

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**ABSTRACT**

*Regulation of the Minister of Health of the Republic of Indonesia requires that all health facilities be expected to have implemented electronic medical records in accordance with the provisions no later than 31 December 2023. The aim of this research is to analyze to determine the readiness to implement electronic medical records which will be carried out from May 2024 to January 2025 at RSUD Haji Abdoel Madjid Batoe Muara Bulian using the Doctor's Office Quality – Information Technology (DOQ-IT) method. The type of research used is descriptive quantitative using research instruments in the form of questionnaires involving a population of 219 officers with a total sample of 76 officers consisting of doctors, nurses and medical records officers. The results of the analysis show that the level of readiness for RME implementation at the Haji Abdoel Madjid Batoe Muaro Bulian Regional Hospital is very ready with a total score of 100.21 which is an accumulation of the readiness scores for each measurement indicator. The level of readiness for implementation in the variables is, 1) human resources of 20.17 from a maximum score of 25 in the very ready score range 2) organizational work culture of 33.41 from a maximum score of 45 in the quite ready score range, 3) leadership governance of 30.91 out of a maximum score of 40 is in the quite ready score range, 4) IT infrastructure of 23.4 is in the very ready score range. And it is hoped that the hospital should evaluate SOPs and procedures related to improving the organization's work culture.*

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## 1. INTRODUCTION

Quality health services are a basic need that must be met by every health facility. Patient satisfaction is the main indicator in assessing the quality of services provided by hospitals (Maisarah, Suparti & Budi, 2022). Along with the development of technology, health information systems have become one of the most important elements in improving the efficiency and effectiveness of health services. One of the technological innovations currently being adopted by health care facilities is the Electronic Medical Record (RME). RME aims to improve the quality of health services through more accurate, faster, and integrated patient data management (2).

The implementation of RME is not only aimed at digitizing patient records, but also improving coordination between health professionals and minimizing medical errors (3). However, according to WHO (8), the implementation of RME requires careful preparation in terms of regulation, human resources, and information technology infrastructure. Previous research by Pratama & Darnoto (5) showed that organizational readiness greatly determines the success of RME adoption.

Although RME has many benefits, its implementation in Indonesia still faces many obstacles. Based on a survey conducted by the Indonesian Hospital Association (PERSI), only 12% of hospitals have implemented RME optimally (7). One of the main factors that hinder the implementation of RME is the readiness of health facilities in terms of human resources, organizational culture, leadership governance, and information technology infrastructure (1).

RSUD Haji Abdoel Madjid Batoe Muara Buliant has started to adopt the RME system since 2023 as part of its efforts to improve the efficiency of medical services. However, there are still some obstacles in its implementation, such as the lack of preparedness of medical personnel in operating the system, resistance to changing from manual to digital methods, and limited technological infrastructure. Therefore, this research aims to analyze the readiness of RME implementation at RSUD Haji Abdoel Madjid Batoe Muara Bulian using the DOQ-IT method, which assesses readiness from the aspects of human resources, organizational culture, leadership governance, and information technology infrastructure.

## 2. METHODS

This research is a descriptive quantitative research with a Case Study approach that discusses the readiness of Haji Abdoel Madjid Batoed Hospital in implementing Electronic Medical Records (RME) using the Doctor's Office Quality-Information Technology (DOQ-IT) method in 2024. The study population was 219 health workers, while the research sample consisted of 76 respondents selected using proportional random sampling method. The research variables include preparedness in the aspects of human resources, organizational culture, leadership governance, and information technology infrastructure.

## 3. RESULTS AND DISCUSSION

### 1. Readiness of Electronic Medical Record Implementation at RSUD Haji Abdoel Madjid Batoe Muara Bulian

The results of the implementation of the QIT command at RSUD Haji Abdoel Madjid Batoejika are shown in the graphical area of readiness as shown below.

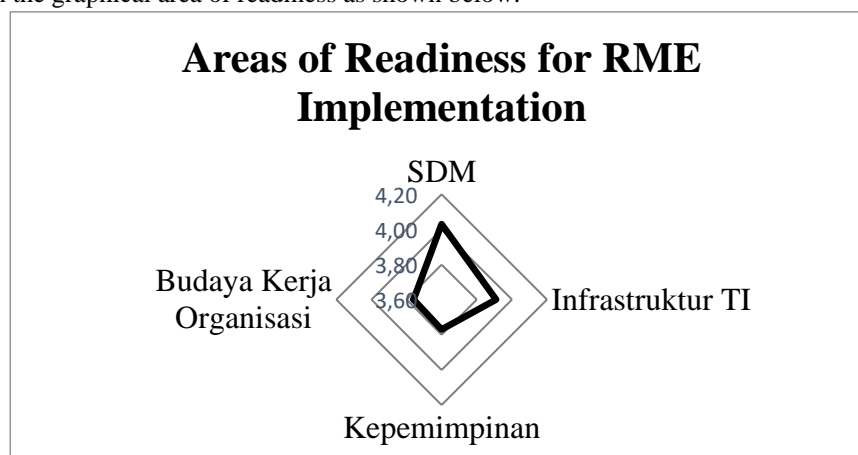


Figure 4. 2. Areas of Readiness for Implementation of Electronic Medical Records

The area connected with the thick line in Figure 1 shows the readiness area for RME implementation at H. Abdoel Madjid Batoes Hospital as a whole. It can be seen that the most prepared variable with the highest score is Human Resources with an average score of 4.03. Next in second place is the IT Infrastructure variable with an average per-item score of 3.91. Meanwhile, the variable with the lowest scorers is the organizational culture variable with an average per-item score of 3.76.

**2. Aspects of Human Resources (HR) at RSUD Haji Abdoel Madjid Batoe Muara Bulian**

Readiness of Electronic Medical Record Implementation Based on the Human Resources (HR) Aspect based on the answers that have been filled in the research questionnaire, namely the human resources component consists of 2 indicators, namely the availability of staff who get an average score of 4.07 with the category Very ready and the training indicator which gets an average score of 4.0 with the category Very ready. Overall, the human resources component received an average score of 4.0 with a category of Very Ready. This means that the HR aspects can be used and can provide benefits in the performance of RME implementation readiness (perceived usefulness).

**3. Aspects of Work Culture and Organization at RSUD Haji Abdoel Madjid Batoe Muara Bulian**

Based on the cultural component of organizational work, it can be seen that the cultural component of organizational work consists of 3 indicators, namely the cultural indicator gets an average score of 3.6 with a category of sufficiently prepared, the RME process flow indicator gets an average score of 3.8 with a category of sufficiently prepared, and the patient involvement indicator gets an average score of 3.8.

averaged 3.8. Therefore, as a whole, the organizational culture component received an average score of 3.73 with a category of sufficient readiness. From the assessment of organizational culture readiness, a score of 33.41 out of a maximum score of 45 was obtained. This means that there is sufficient understanding regarding the changes in organizational culture that might occur if RME is implemented. Detailed exploration and planning are needed to anticipate differences in opinion and understanding as possible impacts related to changes in organizational culture.

**4. Aspects of Leadership Governance at RSUD Haji Abdoel Madjid Batoe Muara Bulian**

Readiness to implement the Governance Leadership Aspect is seen from the components of Leadership, Strategy and Information Technology Management Support. Based on the answers that have been filled in on the questionnaire, the governance and leadership component consists of 4 indicators, namely the leadership indicator getting an average score of 4.0 with a very ready category, the strategy indicator getting an average score of 3.8 with a fairly ready category, the IT Management Support indicator getting an average score of 3.8 with a fairly ready category, and Accountability getting an average score of 3.4 with a fairly ready category. Therefore, as a whole, the governance and leadership components received an average score of 3.77 in the moderately prepared category. From the assessment of the readiness of governance and leadership, a score of 30.9 out of a maximum score of 40 was obtained. This indicates that there is sufficient understanding of the value of RME in decision-makers and the need for detailed exploration and discussion regarding strategy and management support.

**5. Aspects of Infrastructure at RSUD Haji Abdoel Madjid Batoe Muara Bulian**

Based on the answers that have been filled in on the questionnaire, the IT infrastructure component consists of 3 indicators, namely the IT infrastructure indicator gets an average score of 3.9 with a fairly ready category, and the budget indicator gets an average score of 3.9 with a fairly ready category. and Information Management gets an average score of 4.0 with a fairly ready category. Therefore, the IT infrastructure component as a whole gets an average score of 3.9 with a fairly ready category. From the infrastructure readiness assessment, a score of 23.4 out of a maximum score of 30 was obtained, indicating that the information technology capacity is very ready and the possibility of success in RME adoption is quite high.

**6. Relationship between Human Resources and Readiness to Implement Electronic Medical Records at RSUD Haji Abdoel Madjid Batoe Muara Bulian**

Based on the results of statistical calculations using bivariate correlation tests between the readiness of HR aspects on the readiness of RME implementation, the value of  $r = 0.768$  is obtained, which means that there is a very strong relationship that HR aspects can be used and can provide benefits in the performance of RME implementation readiness (perceived usefulness). This is in line with

research (11) that to make it easier to use RME and to help the success of RME implementation, it is necessary to know how to use the computer, namely the ability to operate the computer properly.

**7. Relationship between work culture and organization to readiness to implement electronic medical records at RSUD Haji Abdoel Madjid Batoe MuaraBulian.**

Based on the results of statistical calculations using the bivariate correlation test between the aspects of work culture and organization on the readiness of RME implementation, the value of  $r = 0.607$  is obtained, which means that there is a very strong relationship that the aspects of work culture and organization can be used and can provide benefits in the performance of the readiness of RME implementation (perceived usefulness). Indicating that there is an understanding related to RME, where officers support and understand the importance of RME and the benefits that will be obtained from the application of RME.

The results of research at RSUD Haji Abdoel Madjid Batoemen show that health workers understand that electronic medical records can provide a solution in reducing the use of paper, increasing the effectiveness and efficiency of work and facilitating health services. 38.16% of the respondents felt that the administrative and clinical processes that will be included in the current and proposed Electronic Medical Records, including the estimated volume of increase in the number of patients and staffing will increase the workload of the respondents while requiring them to adapt to the system and work culture that will be implemented.

**8. Relationship between Leadership Governance and Readiness to Implement Electronic Medical Records at RSUD Haji Abdoel Madjid Batoe MuaraBulian**

Based on the results of statistical calculations using the bivariate correlation test between the Leadership Governance Aspect and the Readiness for RME implementation, the value of  $r = 0.748$  is obtained, which means that there is a very strong relationship that the Leadership Governance Aspect can be used and can provide benefits in the performance of RME implementation readiness (perceived usefulness). This indicates that RSUD Haji Abdoel Madjid Batoem has a good governance and leadership capacity but still has shortcomings in several components such as IT management where additional resources and more time are needed in the RME design process. It is considered that the number of officers should be matched with the number of workloads so that the productivity of the officers can increase and be more optimal.

**9. Relationship between Infrastructure and Readiness to Implement Electronic Medical Records at RSUD Haji Abdoel Madjid Batoe MuaraBulian**

Based on the results of statistical calculations using the bivariate correlation test between the IT Infrastructure Aspect and the Readiness for RME implementation, the value of  $r = 0.705$  is obtained, which means that there is a very strong relationship that the IT Infrastructure Aspect can be used and can provide benefits in the performance of RME implementation readiness (perceived usefulness), indicating that Haji Abdoel Madjid Batoe Hospital has sufficient IT capacity for RME implementation.

The results of the analysis conducted at RSUD Haji Abdoel Madjid Batoediketahu that the hospital is working with vendors to maintain the security of the use of electronic medical records, in preparing the security of the patient database, this is in line with the results of research (3) which states that there is a relationship between IT infrastructure and readiness to use electronic medical records with a p value of  $0.000 < 0.05$ . However, despite this, the infrastructure at RSUD Haji Abdoel Madjid Batoem still requires improvement along with the increase in the number of patients and also in order to face future challenges, so that in the implementation of the use of RME can be implemented as a whole and integrated into all parts

#### 4. CONCLUSIONS

Based on the results of the research, it can be concluded that the Haji Abdoel Madjid Batoe Muara Bulian Hospital is in a very ready category in implementing electronic medical records (RME). Aspects of human resources, organizational culture, leadership governance, and information technology infrastructure have a good level of readiness, although there are still some obstacles that need to be improved. Continued training is needed for health workers to improve their skills in using RME, as well as strengthening internal regulations to support the implementation process. In addition, improving information technology infrastructure is also an

important factor that needs to be considered so that the implementation of RME can run more optimally and effectively in improving the quality of health services in this hospital

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