REVIEW OF READINESS FOR IMPLEMENTATION OF ELECTRONIC MEDICAL RECORDS

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A B S T R A C T

RME is very important for management to manage health problems because it provides integration and accuracy and can also be a solution to increase cost efficiency, improve access and quality of service at the Puskesmas. This study aims to review the readiness of electronic medical record implementation in Waborobo Health Center. This research was conducted at Waborobo Health Center in 2024. The method used is using a descriptive type of approach with a qualitative approach and the method of data collection techniques using interview methods, and observation. Data collection tools using interview guidelines, observation sheets. The results of this study were obtained in the aspect of man, there is still a lack of medical record personnel who are original graduates of medical recorders, there is also no IT officer. In the material aspect, the number of wi-fi available is only one unit so that the internet network connection is unstable due to a lot of usage. In the machine aspect, there are no computers available for each room at the Waborobo puskesmas so that the application of electronic medical records cannot be applied as a whole. In the aspect of method, at this time electronic medical records have not been used, namely still using the manual system. In the aspect of money, there is already a budget for electronic medical records as well as a budget for computer maintenance and other needs. In the information aspect, there is already cooperation with third parties in the implementation of medical records, socialization has been carried out but training has not been carried out.

INTRODUCTION

Health facilities must improve the quality of service by using the latest technology to remain competitive. One of these technological advances is electronic medical records. The use of medical records involves the application of information technology for the collection, storage, processing, and retrieval of data contained in patient medical records in health facilities, by utilizing a database management system that combines various sources of medical information (Amelinda Jeannette Sulistya, 2021).

Medical records containing notes and documents about patient identity, examinations, treatments, actions and other services that have been provided to patients. Medical records aim to support orderly administration in order to improve health services in health centers. Every service or action provided to patients must be recorded in the medical records and kept confidential by not providing information about patients to unauthorized parties (Wahyuni, 2023) .

The application of health information technology in the health sector that is currently trending globally is Electronic Medical Records (EMR). EMR is a health information subsystem that has begun to be widely applied in Indonesia. EMR is believed to be able to improve the quality of care and play a role in patient safety (Sudirahayu Harjoko, 2017).

Electronic Medical Records (EMR) are essential for management in dealing with health issues, as they offer integration and accuracy, while also serving as a means to improve cost efficiency, accessibility, and quality of service in Health Centers. Information Technology (IT) provides many advantages over paper for storing and retrieving patient data. The implementation of EMR has many obstacles, such as lack of infrastructure and structure, information technology complications, inadequate needs assessment, financial constraints, high costs, and problems related to software, hardware, and data exchange standards. This will help in identifying processes and priority scales, as well as in building operational functions to facilitate the optimization of EMR implementation (Susilo and Ihksan, 2023).

A preliminary study conducted by researchers on March 22, 2024, revealed that Waborobo Health Center has not adopted Electronic Medical Records (EMR) and is still using manual Medical Records. This reliance on paper results in medical record documents being too thick, long communication between service providers, and delays in patient registration because staff refer to the

patient visit register book, thus hindering timely service delivery. Waborobo Health Center can utilize electronic medical records to speed up patient registration, facilitate data entry, and reduce paper use.

METHODOLOGY

The methodology used is descriptive with a qualitative approach. The time of this research was carried out from March to June 2024. This research was conducted at the Medical Records Unit of the Waborobo Health Center located at Jalan Padat Karia, Waborobo Village, Betoambari District, Baubau City. Participants in this study were the Head of the Medical Records Division and two medical records officers. The subject of the study regarding the adoption of electronic medical records is the Readiness Factor obtained from the 5 dimensions M + 1I. The data collection method was carried out by observation and interviews. The research instruments used in this study were Observation Sheets, Interview Guidelines, and Stationery. Data processing and analysis were carried out by data reduction, data presentation modification, and data verification.

RESULTS & DISCUSSION

Based on Health Human Resources (HR) are health workers (including strategic health workers) and supporting/supporting health workers who are involved and work and dedicate themselves to health efforts and management. An organization can run well if it has competent health resources. Health HR who have competence will certainly support the success of the implementation of health activities, programs, and services. The type and number of workers at the Waborobo Health Center in 2022 are 30 people.

The types and number of Health Human Resources at the Waborobo Health Center in 2022 can be seen in the following table:

Table 1. Number Of Health Human Resources At Waborobo Health Center In 2022

Types of Health Workers	Number of people)
General practitioners	2
Dentist	1
Nurse	8
Midwife	5
Pharmacist	2
Public health	4
Environmental Health	1
Nutrition	1
Medical Laboratory Technician	1
Health Support/Auxiliary Personnel	5
Total	30

Source: Waborobo Health Center Profile, 2022

Readiness for Implementing Electronic Medical Records Reviewed from the Human Factor

PERMENKES No. 24 of 2022 concerning Medical Records stipulates that the person in charge of keeping medical records is a medical recorder or other health worker who has undergone training in electronic medical record services.

The Man element is a human resource factor, namely officers involved in returning inpatient medical record files. Incomplete medical record files greatly affect the return of medical record files because if the medical record files are not complete, it will take longer for the files to return to the medical record installation, especially if there are doctors and nurses who do not comply with the applicable SOPs, resulting in a pile-up of files in the inpatient room (Shafieian, 2020).

Table 2. Observation Results of Readiness for Implementing RME in the *Human Aspect*

Objects observed	There is	There isn't any
Medical records officer	√	
IT Officer		√
The ability of medical records officers to operate computers	√	
Information technology related training		√

Source: Primary Data, 2024

The results of observations and interviews conducted at the Waborobo Health Center showed that the readiness of the implementation of medical records, especially human resources, was still inadequate. This was evidenced by the unavailability of medical record personnel with a bachelor's degree, the unavailability of IT experts to facilitate the implementation of electronic medical records, and the absence of training related to information technology. The results of this study are in line with previous research conducted by Nuranni (2023) at Bangkalan Regional Hospital which showed that most medical record officers, both those with medical record education and high school/vocational school graduates at Lukas Bangkalan Regional Hospital, had never attended electronic medical record training.

Readiness for Implementing Electronic Medical Records Reviewed from *Material* Factors

Materials include semi-finished materials (raw materials) and finished materials (Wardhina and Rahmadiliyani, 2022).

Table 3. Observation Results of Readiness for Implementing RME on *Material Factors*

Objects observed	There is	There isn't any
Wi-Fi	√	
Wi-fi in every room		√
Stable Network Connection		√

Source: Primary Data, 2024

The results of observations and interviews conducted at the Waborobo Health Center showed that the readiness of the implementation of medical records, especially regarding the material aspect, was inadequate. This was mainly due to the absence of additional Wi-Fi networks in each room and unstable internet connections due to excessive use of the existing single Wi-Fi. These limitations are quite significant obstacles to the implementation of electronic medical records as a whole at the Waborobo Health Center.

This is in line with previous research conducted by Amin et al. (2021). In addition to the RME system which is still under development, material constraints that affect the implementation of RME include inadequate servers and internet networks. The limitations of servers and inadequate networks, coupled with the RME system which is still under development, are significant obstacles to the implementation of RME.

Identifying Readiness for Implementing Electronic Medical Records Reviewed from *Machine Factors* (Facilities)

Machine consists of tools and materials including facilities and infrastructure. Facilities and infrastructure are all objects that are moving or not moving. In this case, the distance between the medical record installation and the inpatient room is very influential, especially since there are no supporting tools in returning the medical record files such as trolleys (Shafieian, 2020).

Table 4. Observation Results of Readiness for Implementing RME on *Machine Factors*

Objects observed	There is	There isn't any
Computers, *Printers*	√	
Computer Crashed		√
Computer can be run	√	
Computer Care	√	

Source: Primary Data, 2024

Based on the results of observations and interviews conducted at the Waborobo Health Center, the readiness of the implementation of medical records from a technological perspective is still inadequate. In particular, there are no computers in every room, thus hampering the implementation of electronic medical records as a whole due to inadequate supporting facilities. In addition, the existing computers are already six years old, but are still maintained to maintain their quality and durability.

This is in line with research conducted by Sulistya (2021) which states that the implementation of electronic medical records requires adequate computer resources.

Readiness for Implementing Electronic Medical Records Reviewed from *Methods* Factors

The method or procedure elements used in returning inpatient medical record files are references to the SOP regarding the return of inpatient medical records (Shafieian, 2020).

Table 5. Observation Results of Readiness for Implementing RME on the *Method Factor*

Objects observed	There is	There isn't any
Conventional service flow	√	
RME service flow		√
RME Usage SOP		√
RME organizing team		√
RME Framework		√

Source: Primary Data, 2024

The results of observations and interviews at the Waborobo Health Center showed that the readiness of implementing medical records, especially in terms of methodology, is still inadequate. Currently, electronic medical records have not been utilized; the facility still relies on a manual system. In addition, there is no special team formed to manage electronic medical records, so there is no framework for compiling electronic medical records and standard operating procedures (SOPs).

Readiness for Implementing Electronic Medical Records Reviewed from the Money Factor

The Money element used is the budget needed to return inpatient medical record files. The preparation of the budget is expected to help in carrying out the funding needs needed in an activity in the medical record installation including the activity of returning medical record files from the inpatient room to the medical record installation (Shafieian, 2020).

Table 6. Observation Results of Readiness for Implementing RME on *Money* Factors

Objects observed	There is	There isn't any
Electronic medical records budget	√	
Computer Maintenance Budget	√	
Budget for stationery needs, and others	√	

Source: Primary Data, 2024

The results of observations and interviews at the Waborobo Health Center showed that financial readiness for the implementation of electronic medical records has been established, because there is already a budget allocation for electronic medical records and computer maintenance and other needs. If the budget for computer implementation is still lacking, additional consultations will be carried out with the leadership to adjust the budget to the needs of electronic medical records.

Readiness for Implementing Electronic Medical Records Reviewed from *Information Factors*

Information is very much needed so that the results of something done can be more perfect. A work process will not develop well if it cannot receive and filter information from outside (Shafieian, 2020).

Table 7. Observation Results of Readiness for Implementing RME on the *Information Factor*

Objects observed	There is	There isn't any
Information about electronic medical records	√	
Third party (Cooperation)	√	
RME Socialization	√	
RME Training		√

Source: Primary Data, 2024

The results of observations and interviews at the Waborobo Health Center showed a fairly high level of readiness for the implementation of medical records related to the information aspect. Information about electronic medical records is available, and cooperation with third parties for the management of medical records has been established. Socialization has been carried out, but training has not been carried out.

These results are in line with the findings of Yoga et al. (2020). Management support is essential to encourage the use of electronic medical records and establish policies related to electronic medical

records. Management support is essential for the implementation of a new system, as management authority over the necessary resources, goals, and strategies can significantly facilitate the process.

CONCLUSION

Human aspect, it has not been fulfilled because there is still a lack of medical record personnel who are original medical record graduates, there are not enough IT personnel to support electronic medical record activities, and there has been no training on this information technology. The unavailability of a wi-fi network in every area and an unstable internet network due to excessive wi-fi use indicate that the material is not ready. From the *machine aspect* , it is not ready, especially the Waborobo Health Center still lacks computers in every room so that it cannot implement electronic medical records comprehensively because the supporting facilities and infrastructure are inadequate. The method is not ready, namely still using a manual system and not having a team that can form an electronic medical record implementation team. As a result, the framework for compiling electronic medical records cannot be determined. From a financial perspective, it is ready, namely it has been budgeted for electronic medical records, computer maintenance, and so on. From an information perspective, everything is ready, namely there is no budget for the procurement of electronic medical records, computer maintenance costs, and so on. for example, information about electronic health records is already available, and third parties are working together to manage medical records; socialization has been carried out, but training has not.

The limitation of this research is that it only examines the scope of the Waborobo Health Center, so the author does not know the readiness of implementing electronic medical records in other health centers in Baubau City.

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