

## IMPLEMENTATION OF ELECTRONIC MEDICAL RECORDS USING THE DOCTOR'S OFFICE QUALITY INFORMATION TECHNOLOGY (DOQ-IT) METHOD

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### ABSTRACT

According to the Regulation of the Minister of Health of the Republic of Indonesia no. 24 of 2022, health facilities must implement Electronic Medical Records no later than December 31, 2023. In order to comply with these regulations, health facilities need to prepare all components needed in the implementation of electronic medical records. The purpose of this study was to analyze the implementation of electronic medical records using the DOQ-IT method at the Padang Pasir Health Center. This research is quantitative with a descriptive approach. The sample in the study was 40 officers related to EMR. The data collection method used a questionnaire. The assessment of readiness for each component used the EHR Assessment and Readiness scoring by Doctor's Office Quality - Information Technology (DOQ-IT). The variables studied were human resources, organizational work culture, leadership governance and infrastructure. The total score at the Padang Pasir Health Center in the implementation of electronic medical records was 133.550 in category III, which is very ready in the implementation of electronic medical records. Implementation of electronic medical records for human resources 4.3, organizational work culture 4.1, organizational work culture 4.3, infrastructure 4. Judging from the four components, in general, Padang Pasir Health Center is very ready in implementing electronic medical records, but overall it cannot be said to be ready because it does not have the latest SOP, there are still complaints from officers, in one of the polyclinics there is still one account used together in the implementation of electronic medical records.

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### 1. INTRODUCTION

Community Health Center (Puskesmas) is a health service facility that organizes public health efforts and first-level individual health efforts, prioritizing promotive and preventive efforts in its working area. Puskesmas are re-regulated by the new Minister of Health Regulation, namely Permenkes 43 of 2019 concerning Puskesmas. Permenkes 43 of 2019 concerning Puskesmas states that Puskesmas is a Health Service Facility (Faskes). A Health Service Facility is a place used to organize health service efforts, both promotive, preventive, curative and rehabilitative carried out by the government, local government and/or community. Puskesmas have the task of implementing health policies to achieve health development goals in their working area. (Kermentkes RI, 2019).

Readiness assessment is an important step to identify issues that must be prioritized in supporting the optimization of EMR implementation in the future. One of the theories used to assess the readiness of implementing electronic-based applications, including electronic medical records, is the Doctor's Office Quality-Information Technology (DOQ-IT). The readiness assessment method based on the DOQ-IT theory involves four parameters, namely human resources, infrastructure, work culture, and leadership governance (Masyufah et al., 2021). The higher the score obtained for each parameter, indicates a higher level of readiness in implementing EMR in the work process at health facilities (Sriwati, 2021).

The Doctor's Office Quality-Information Technology (DOQ-IT) method is also defined as an assessment instrument to assess the readiness of implementing electronic medical records in health service facilities created on a national initiative so that deficiencies in preparation can be identified before implementing the electronic medical records (Doctor's Office Quality-Information Technology, 2009).

The readiness analysis needs to involve aspects, namely: Human Resources, Evaluation of staff skills and knowledge related to RME, and the availability of adequate human resources to implement RME. Organizational work culture, understanding the extent to which the organization's work culture supports the adoption of RME, including the level of awareness and acceptance of change. Governance and Leadership, assessing the existing governance structure and the role of leadership in facilitating the implementation of RME, including support from Padang Pasir Health Center management. Infrastructure, checking the availability of technology and information systems needed to support RME, such as hardware, software, and communication networks (Ministry of Health of the Republic of Indonesia, 2022).

By conducting this implementation analysis, it is expected to identify the obstacles that need to be overcome after the implementation of EMR. One method that can be used to determine the implementation of a technology is the Doctor's Office Quality-Information Technology (DOQ-IT) method. The DOQ-IT method with EHR Readiness Starter Assessment is a method needed for implementation analysis from the aspect of human resource conditions, organizational work culture, leadership governance, and information technology infrastructure which contains a readiness assessment checklist so that it can determine the readiness of the picture regarding the sustainability of the electronic medical record development program. So that it can create an effective and efficient EMR system at the Padang Pasir Health Center. So the researcher is interested in raising the title "Analysis of the Implementation of Electronic Medical Records with the Doctor' Office Quality-Information Technology (DOQ-IT) Method".

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## 2. METHODS

This study uses quantitative with a descriptive approach. According to (Sugiyono, 2016) Quantitative Research is a study that presents data in the form of numbers as the results of its research. Descriptive research method is a method in researching the status of a group of people, an object, a condition, a thought, or a current event. The descriptive method is used to create a systematic, factual and accurate description or description of existing phenomena. This study uses the technique data retrieval through questionnaire and observation.

### Population And Sample

#### Population

Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers (Sugiyono, 2016:80). The population in this study was all officers who used rme at Padang Pasir Health Center totaling 70 people.

#### Sample

Sample is part of the number and characteristics owned by the population (Sugiyono, 2016:81). The sample used in this study is total sampling, namely the entire population is used as a sample so that the sample in the study is all officers who use rme at Padang Pasir Health Center, totaling 70 people.

#### A. Variables

The variables in this study are the readiness of RME implementation at Padang Pasir Health Center using the DOQ-IT method, as follows:

1. Human Resources Variables.
2. Organizational Work Culture Variables.
3. Leadership governance variables, and

#### 4. Infrastructure Variables.

#### B. Research Instruments

Research instruments are tools or facilities used by researchers in collecting data to make their work easier and the results better (accurate, complete and systematic) so that they are easier to process (Saryono, 2013). The instruments that will be used in this study are:

#### Scoring

Assessment and readiness by the modified and adapted Doctor's Office Quality- Information Technology (DOQ-IT). Higher levels of readiness for each element are indicated by higher scores.

*Table 3.1 Assessment Scores*

Score	Information
0-1	Not ready
2-3	Just Ready
4-5	Very Ready

Source: (Franklin, 2005; Sudirahayu et al, 2017)

The higher the score, the higher the level of readiness for each element. The overall assessment results will be interpreted according to the specified value group.

Table 3.2 of RME Implementation Readiness Assessment

Range Score Every Range	Interpretation	Information
III 97 – 140	Scores in this range indicate that the human resources, organizational work culture, governance and leadership and infrastructure of the Health Center are ready for utilization. RME as well as can overcome possible challenges For success RME adoption	Health Center Ready For RME implementation
II 44 – 96	Scores in this range indicate that, there are good capabilities in some components of readiness, but there are also some weaknesses in some components. Further identification and anticipation are needed. on component Which weak, so that implementation can stay runs well	Enough Health Center Ready For RME implementation
I 0 – 43	Scores in this range indicate weaknesses in several components that are critical to successful RME implementation. Identification and planning are needed. in a way comprehensive before move forward in adoption and implementation	Health Center Not Yet Ready For RME implementation

Source: Doctor's Office Quality-Information Technology (DOQ-IT, 2009)

#### Questionnaire

Approach commonly used for giving scores in the questionnaire, this research questionnaire uses the technique Scale Likert. According to the definition put forward by Sugiyono (2014:132), Scale Likert used to measure attitudes, opinions, and perception a person or group against phenomenon social. The questionnaire in this study has translated and approach commonly used for giving scores in the questionnaire, this research questionnaire uses the technique Scale Likert

According to the definition put forward by Sugiyono (2014:132), Scale Likert used to measure attitudes, opinions, and perception a person or group against phenomenon social. The questionnaire in this study has translated and modified from DOQ-IT tools according to condition Health care facilities in Indonesia. Each Question item is given score answer between 1 to 5.

Criteria evaluation Scale Likert can be found in the table presented the following:

**Table 3.3 Criteria Evaluation**

Criteria Evaluation Abbreviation	Criteria Evaluation	Score
STS	Strongly Disagree	1
TS	Don't agree	2
RG	Doubtful	3
S	Agree	4
SS	Strongly agree	5

Source: Sugiyono (2014: 132)

#### a. Technique Data collection

Research data obtained from various technique data collection. Technique collection the data is asfollowing:

##### **Observation :**

Researcher visit health center on sand moreover formerly researcher discuss with staff service health and ask about the use of medical records electronics , from aspect facility Desert Health Center have used rme, researchers discuss on admission registration that The features contained in the RME are appropriate,officers feel that after the RME has been installed,it has improved speed service , network also available at Padang Health Center sandis just the network often appears and disappears , the information is in accordance with that provided for the report requested monthly service health.

##### **Questionnaire :**

Researchers begin distributing questionnaire in the month June June 10 , 2024 to all staff health using rme there are 70 people, the questionnaires were returned researchers only had 40 questionnaires , researchers gather questionnaire that has been back about the statementAnd The answers filled in are about the sub variables of HR, organizational work culture , and governance. manage leadership , and infrastructure .

##### **Literature Study**

Literature study conducted by researchers do search know moreover First , read the journal about the analysis implementation implementation of rme, then collect information from previousresearch results on the application of medical records electronics .

##### **Data Analysis**

Data analysis studied in this study was quantitative. done on from all over Respondent collected . data analysis will refers to activities carried out after data from all respondents or other data sources collected . This activity involves data grouping based on variable And type respondents, data tabulation based on variable from all respondents, data presentation related to the research topic, as well as do calculation to answer problem formulation later ".

## 2. RESULTS AND DISCUSSION

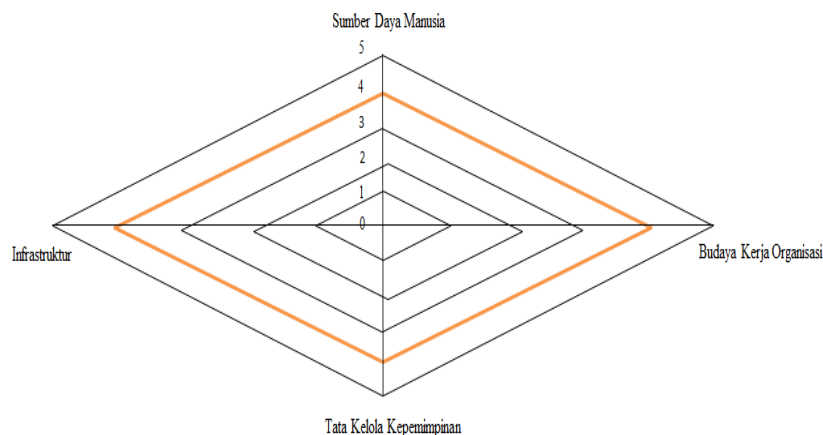
This study used the HER Assessment and Readiness scoring , by Doctor's Office Quality – Information Technology (DOQ-IT), an assessment implementation in every component variables that refer to ranges every component variable not ready (0-1), score quite ready (2-3), and score very ready (4-5). Implementation implementation of medical records electronic divided into 3 categories, namely Category I not ready (0-43), category II score quite ready (44-96), category III very ready (97-140). As for The technique for scoring this research uses a scale liker t in this research questionnaire. Every component statement awarded with a score answer range 1-5 with STS criteria (Strongly Disagree) witha score of 1, TS criteria (Disagree), with a score of 2, RG criteria (Undecided) with a score of 3, S criteria(Agree) with a score of 4, and SS (Strongly Agree) with a score of 5.

Table 4. 6 Interpretation Human Resources, Organizational Work Culture, Leadership Governance, Infrastructure

Component Study	N	Mean	Average Value	Category
Source Power Man	40	29.70	4.2	Very Ready
Culture Work Organization	40	41.03	4.1	Very Ready
Governance Leadership	40	33.93	4.2	Very Ready
Infrastructure	40	28.50	4	Very Ready
<b>Total</b>		133.5	5.12	

Based on table 4.6 is known fourth variable from 40 respondents score overall at Padang Pasir Health Center with score 133.5 score This enter on category III 98-145 which indicates that Desert Health Center very Ready in implementation implementation record medical electronics. Assessment This covers For fourth evaluation variable is at on range 4-6 which means very ready, Research This in line with (Hapsari& Mubarakah, 2023) increasingly tall the score shown every component from each components.

Figure 4. 1 RME Implementation Area Graph at Padang Pasir Health Center



Source: Eka Wild Faida & Amir Ali 2021

Information:Implementation Areas implementation of RME

Based on chart Figure 4.2 is known level implementation implementation record medical electronic on health center field sand source Power man with score 4.2 stated very ready, culture Work organization withscore 4.1 stated very ready, set manage leadership with score 4.2 stated very Ready And infrastructure with score 4 is stated very ready, if seen on Figure 4.2 is located on line orange For every measured variables by researcher .

Source Power man get very ready value in implementing medical records electronics. Officers at Padang Pasir Health Center , with score (4.2), there are 11 people with range age 20-30 11 people (27.5%), 9 people with age range 31-40 years (22.5%), there are 10 people with range age 41-50 years (25%), and Thereare 10 people with range age >50 years (25%).

This matter Show that age productive have influence Enough big to performance officer, in matter This For performance in operate record medical electronics (Faida & Ali 2021). Organizational work culture considered very ready to carry out medical records electronics. Respondents Strongly Agree should SOPs should be created immediately so that medical records are more prepared for implementation. With the SOPs that have been created, it can become. guidelines for officers when implementation implementation of medical records electronics. Governance leadership considered very ready in implementing medical records electronics . Respondents agreeThe Unit Head should carry out socialization about training And use of medical records electronics. Giving socialization And training aims to enable officers to carry out medical records electronics well in its use.

Infrastructure considered very ready in implementing medical records electronics. Desert Health Center has own adequate computer for the implementation of medical records electronics. Strong security Also required in the medical records system electronics . Health centers that have own computers can be Wrong one form of readiness Implementation implementation of medical records electronics. However, for components in the infrastructure such as constraints network And BPJS *bridging* is still ongoing often occurs in the application of RME, and security Still There is shortage where there are several officers filling in the statement in the questionnaire about strong security disagreed which means that in the polyclinic Still There is complain about There is only 1 account for medical record use electronics used one to be together

### 3. CONCLUSIONS

Based on component variable source Power human, organizational work culture, governance manage leadership, infrastructure Padang Pasir Health Center is very ready for implementation implementation of medical records electronics. with a total score of 133.55 included in category III very ready, the score indicated by the range 97-140 is indicated that Padang Pasir Health Center is very ready for implementation implementation of medical records electronics . Implementation level implementation of medical records electronics on components variable below this

1. Sub Components Variables source Power Humans at Padang Pasir Health Center show The veryready score is 4.2.
2. Sub Components Variables organizational work culture at Padang Pasir Health Center show Thevery ready score is 4.1.
3. Sub Components Variables order manage leadership at Padang Pasir Health Center show Thevery ready score is 4.2.
4. Sub Components Variables Infrastructure at Padang Pasir Health Center show Very ready score is 4.

#### Suggestion:

1. Should be party Desert Health Center quick update SOP or create the latest SOP related to Medical Records Electronics got a good score high in several components, such as sources Power human, organizational work culture, governance manage leadership And infrastructure.It is very important immediately update or create Related Standard Operational Procedures (SOP) procedures in implementation implementation of medical records electronics. This can help in the implementation implementation of medical records electronic in accordance the rules that have been made will later be used to improve quality service health.
2. The officer should given training related use of medical records electronics. This will give skillsin operating in utilizing the system very well.
3. This research can be further developed by further research on implementation. implementation ofmedical records electronics

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