

Medical Records Management System

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A B S T R A C T

As one of the important factors supporting health center services, medical records should have a sustainable medical data management system to support optimal health care. The purpose of this study was to investigate how the medical record management system is implemented using the PIECES method at the UPTD Puskesmas Batauga. The research method used is a qualitative method with a descriptive approach. Data were collected through interview techniques, observation, documents, and literature. This research was conducted at UPTD Puskesmas Batauga in 2024. The findings of the data analysis indicate that the medical record management system from: 1) In terms of performance, the system has provided support and assistance in meeting the needs of Puskesmas in various ways; 2) In terms of information, the system has been able to provide the necessary information, although not to its fullest potential due to occasional issues with the system's ability to store information; 3) In terms of economics, the system has the potential to help minimize hospital expenses; 4) In terms of control, the system has proven effective and practical in preventing errors, and has been adequate in input, process, and output activities; 5) In terms of efficiency, the system has not been well integrated due to obstacles encountered by employees, both within and outside the system. It can be concluded that the medical record management system at UPTD Puskesmas Batauga is functioning well in several aspects, but further optimization is necessary to address remaining obstacles or disturbances.

INTRODUCTION

Medical records are one of the important factors supporting health center services. Medical records greatly determine the continuity of health services. Continuity of medical data in medical record files is an absolute must in maintaining the value of good medical records to support maximum health care, in line with the Regulation of the Minister of Health No. 24 of 2022 explaining that Medical records are documents containing data on patient personality, examination, healing, activities, and various administrations that have been submitted to the patient. Electronic medical records are medical records created by utilizing an electronic framework planned for medical record surveys. Medical records and Welfare Information are someone who passes the Medical Records and Welfare Information examination in accordance with the provisions of laws and regulations and guidelines (khoerul ummah, 2022).

The data processing process in medical records is highly dependent on the completeness, accuracy, timeliness and quality of data in the collection and arrangement of medical record files. Recording medical records is often considered as one of the factors that can increase the workload of health care providers such as doctors, nurses and other health workers. The level of busyness of doctors and nurses often causes medical record files to be incomplete and not returned on time. This results in obstacles for medical record officers in completing data processing. Poor data processing reflects the poor quality of medical records. For this reason, medical record file records are something that needs to be analyzed in depth so that they can be processed and produce appropriate and accurate health information. The data processing process in medical records is highly dependent on the completeness, accuracy, timeliness and quality of data in the collection and arrangement of medical record files. Recording medical records is often considered as one of the factors that can increase the workload of health care providers such as doctors, nurses and other health workers. The level of busyness of doctors and nurses often causes medical record files to be incomplete and not returned on time. This results in obstacles for medical record officers in completing data processing. Poor data processing reflects the poor quality of medical records. For this reason, medical record file records are

something that needs to be analyzed in depth so that they can be processed and produce appropriate and accurate health information (Nurfadhilah, 2017).

The organization of medical records can begin when the patient enters the Health Center, then the health worker who provides health services to the patient records the patient's medical data. Management will continue as long as the patient receives services at the Health Center, including storage and release of medical records from storage to serve patient treatment, medication, or loan requests. Another purpose, Medical records are related to registration, data processing and reporting of information needed for Health Center activities. The process of processing medical records starts from Assembling, Coding, Tabulation (Indexing), Analysis, and finally Storage (Filing) (Rizqiyah & Ernawaty, 2016).

Based on the results of previous research conducted by (Pohan et al., 2022) on the management system of Medical Records of the Merauke Regency Public Health Center, there are difficulties in data processing such as scattered files because they are piling up. Files are sometimes misplaced or not in the right place, making it difficult for officers to find the Medical Record files. Naming and numbering of Medical Record files at the Merauke Regency Public Health Center is done computerized, and also manually. In the process of searching for data, the naming and numbering system for medical record files sometimes Medical Record employees experience difficulties in processing data, for example scattered data or irregular data archiving, accumulation of patient data, polyclinic data, outpatient data so that Medical Record employees sometimes make mistakes in processing data (Pohan et al., 2022).

Based on the results of initial observations conducted by researchers at the Batauga Health Center UPTD, it was found that medical record management was not optimal, one of which was the absence of a special room for storing files which caused the work space and document space to merge, a mismatch between the distance and storage shelves based on service standards. Determination of the diagnosis by a doctor without being specific will cause misfiles and human errors when officers will make reports internally or externally because it will affect the process of compiling and planning the Health Center. Health institutions will get less than optimal results if they use the wrong report. The data entry process requires a match between events, accurate, and reliable to be used as information in making reports completely, in detail and on time. To facilitate the method of analysis, an analysis method is offered with the PIECES framework which is described in 6 analysis focuses, namely Performance, Information, Economy, Control, Efficiency, and Service. The results of the PIECES analysis are documents of system weaknesses which are recommendations for improvements that must be made to the system that will be further developed for improvements from the previous system. From this explanation, prospective researchers feel the need to research the Medical Records Management System at the Batauga Health Center UPTD.

METHODOLOGY

In this study, the researcher used a qualitative method. According to Yusuf (2019), qualitative research is a strategy that emphasizes the search for meaning, understanding, concepts, symbols, characteristics, descriptions or symptoms for a natural and holistic phenomenon and multimethods using several techniques, prioritizing quality, and the data is presented in descriptive or narrative form. The researcher used a qualitative method with a descriptive approach, namely the researcher observed, interviewed, and documented directly about the Medical Records Management System at the Batauga Health Center UPTD, South Buton Regency. The results of this study are in the form of recordings, interviews, photos, personal documents and other information that can be used to obtain Medical Records data at the Batauga Health Center UPTD. The research design uses PIECES analysis, namely analyzing the Performance Aspect, Information Aspect, Economy Aspect, Control Aspect, Efficiency Aspect, Service Aspect.

Data analysis techniques in this study consist of data reduction and data presentation. In this study, data presentation will be presented in the form of narrative text.

RESULTS AND DISCUSSION

(Performance) Performance Analysis

Related to the results of the interviews conducted at the Batauga Health Center UPTD in terms of performance. As expressed by the informant, the analysis of the performance of medical record management in the Health Center has supported all the things needed by the Health Center.

Table. 1 Informant Statements Regarding Performance Analysis

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| "Yes, so far, the management of medical records at the Batauga Health Center UPTD has supported all the things needed by the Health Center, such as recording and storing patient data, security and privacy, fast and easy data access, support for administrative processes and increased efficiency. Therefore, the system must be designed to reduce the administrative workload so that medical personnel can focus more on patient care." | FF. Female. 29 years old. Responsible. RM |
| "Yes, it is already supportive, the things needed are available in the system and if a system error occurs, some data will be lost. So far, in my opinion, the presentation and storage of reports in the medical record management system are consistent." | HI. Female. 41 years old. BPJS Pcare Officer |
| "Yes, it supports it, but if the system experiences an error and data is lost, it will take a long time to re-enter it because the data must be written again from the beginning, because data input is still manual and currently the data presentation is consistent." | LA. Male. 29 years old. Responsible for RM Storage |
| "Yes, the functions in the system already support it, the effect is that the time and storage of the presentation of reports in the medical record system are consistent." | SI. Female. 34 years old. RM Registration Officer |
| "Well, the function of the medical record management system so far has been supportive and the effects that arise if the system experiences an error will definitely be a bit complicated, because the patient data will be rechecked one by one because some of the data is still manual." | YO. Female. 25 years old. RM Registration Officer |
| "Yes, it already supports the deck, what is needed is available in the system because in our place the data processing is done daily because before the file is stored it is assembled first then stored and the report is presented every month for reporting. So the presentation and storage of reports in the medical record management system are consistent." | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

In this study, six respondents from UPTD Puskesmas Batauga gave their views on the medical record management system implemented in terms of performance. The results of the interviews provide an overview of the effectiveness of the system in supporting administrative and clinical needs, as well as the challenges faced. Findings from the interviews to evaluate the strengths and weaknesses of the system based on respondent responses.

Based on the interview results, all respondents agreed that the medical record management system at the Batauga Health Center generally supports the needs of the Health Center. They acknowledged that the system meets various important aspects such as recording and storing patient data, security and privacy, and fast and easy data access. This shows that the system is designed to cover the main features needed in medical record management.

1. FF, stated that the system already supports all the needs of the Health Center, including data recording and storage, security, access, and administration.
2. HI and SI, also confirmed that the system supports administrative and clinical needs, although there are some issues related to system errors.
3. YO, highlighted that the system already supports the required functions but still faces challenges when system errors occur.

Respondents reported that the medical record management system has consistency in presenting and storing data. WS, noted that reports are presented consistently every month after the assembly process. LA and SI also confirmed that the presentation of data in the system has been consistent.

However, some respondents such as HI and YO noted that if an error occurs in the system, data can be lost or must be corrected manually, which requires additional time. This indicates that even though consistency in data presentation has been achieved, the system still faces challenges in terms of error handling.

Some of the key issues identified include:

1. **System Errors and Data Deletion:** Several respondents reported that errors in the system can result in data loss and require time-consuming re-entry, as mentioned by LA and YO.
2. **Manual Processes:** Respondents such as YO highlighted that some data is still managed manually, which exacerbates the impact of system errors.
3. **Time and Efficiency:** SI and HI mentioned that time and efficiency issues often arise when data is lost and needs to be repaired, indicating that the system may not fully address operational efficiency issues.

Medical record management systems are expected to reduce administrative workload to allow healthcare professionals to focus on patient care. Respondents such as FF emphasized that systems should be designed to reduce administrative workload. While there is recognition that systems support administrative processes, challenges related to manual data entry and system errors indicate that there is room for improvement.

Overall conclusion, the medical record management system at UPTD Puskesmas Batauga has met many expected needs, including recording, storage, security, and data access. Consistency in data presentation is also recognized as a strength of the system. However, challenges such as system errors, data loss, and manual processes still exist and require attention. To improve efficiency and reduce administrative workload, it is important for the Puskesmas to continue to improve the medical record management system, including addressing issues related to system errors and improving automation processes.

(Information) Information Analysis

Related to the results of the interviews conducted at the Batauga Health Center UPTD, in terms of information, it can be received well, although it is not optimal and has not fully helped the existing work depending on the amount of data stored well by the system.

Table 2. Informant Statements Regarding Information Analysis

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| <i>"Yes, so far the medical record management system at the Health Center has provided the information needed by officers and patients such as patient medical history, operational data, clinical guidelines, and reporting and analytics. Sometimes after recording manual data and then entering it back into the computer, it is discovered that there is a pile of patient data. Usually because patients often forget that they have come for a check-up as a patient at this Health Center, and forget to bring their patient card so they forget that they have come here before."</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"If the system is well received, if the information produced is easy to understand, its accuracy can be checked again and it can be seen if there is double recording because some patients stated that they were new patients but after being checked it turned out that they had already come for treatment at this Health Center."</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"Yes, it can be accepted well and accurately, but there are still many things that need to be improved, the information produced is sometimes accurate, sometimes not, if there is a lot of workload, it is produced late, but if there are few patients, it is usually not late, therefore it must be checked again and if there is duplicate recording, it will be corrected."</i> | LA. Male. 29 years old. Responsible for RM Storage |
| <i>"Yes, all the information in the system is easy to understand and the patient data has been stored properly, the problem with the patient data is that the patient data already existed previously but it says the patient is new, sis."</i> | SI. Female. 34 years old. RM Registration Officer |
| <i>"It can be accepted well, the information produced is sometimes accurate and sometimes not, if there is any, it could be caused by patients stating that they are new patients, so that double recording occurs."</i> | YO. Female. 25 years old. RM Registration Officer |
| <i>"Okay, so far the information system provided has been effective and can be understood well by patients."</i> | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

In the evaluation of the medical record management system at the Puskesmas, six respondents provided their views on the effectiveness of the system in providing the information needed by officers and patients. The interview results are described further.

a. Provision of Information

All respondents agreed that the medical record management system at the Health Center has provided various important information needed by both medical personnel and patients. This information includes:

- Patient Medical History: Historical health data required for patient evaluation and care.
- Operational Data: Information regarding operations and procedures performed
- Clinical Guidelines: Instructions and guidelines for proper clinical management
- Reporting and Analytics: Data used for reporting and analyzing system performance and effectiveness.

Respondents such as FF and SI confirmed that the system provides the necessary information well and patient data is stored neatly.

b. Quality and Accuracy of Information

The quality of information generated by the system is an important concern. Based on the respondents' responses:

- a) HI stated that the information generated is easy to understand, verifiable, and helpful in detecting duplicate recordings.
- b) LA added that although the system can generate accurate information, sometimes delays in data processing can occur, especially when the work volume is high.

However, some respondents reported inaccurate information caused by double recording. YO and HI noted that patients often did not remember their previous visit history or forgot to bring their patient card, causing the system to record them as new patients.

1. Challenges of Double Recording

Double recording was a problem frequently mentioned by respondents. This problem occurs when:

- a. Patients Claim to be New Patients: Some patients are not aware that they have visited the Puskesmas before, so their data is re-recorded. This results in data backlog and potential duplication.
- b. Delays in Data Processing: LA highlighted that when there is a lot of work, data can be processed late, which exacerbates the problem of double recording.

This challenge highlights the need for additional mechanisms to identify and address data duplication, such as a more stringent verification system and training for patients on the importance of carrying their patient cards.

2. System Effectiveness

Respondents generally felt that the existing information system was quite effective and easy to understand. WS noted that the information system provided was effective and easy for patients to understand, although some issues remained. However, it is important to note that the effectiveness of the system can be affected by:

- a. Data Consistency: Ensuring that the data generated is accurate and free from duplication.
- b. System Ability to Handle Errors Improve the system to be more responsive to recording errors and minimize the impact of data duplication.

Overall, it can be concluded that the medical record management system at the Health Center has succeeded in providing important information needed by officers and patients. The information generated includes medical history, operational data, clinical guidelines, and reporting and analytics. However, there are significant challenges related to the accuracy of the information, especially in terms of double recording due to patient misidentification. To improve the effectiveness of the system, the following are needed:

- 1) Improvement in Verification Mechanism: Reducing the risk of double recording with a better verification system
- 2) Training and Education: Increasing patient awareness of the importance of carrying their patient card and medical history
- 3) Improved Data Processing System: Reduce delays in data processing, especially during peak periods.

With proper handling of this issue, the medical record management system can be more effective in supporting administrative and clinical needs in the Community Health Center, as well as ensuring that the information produced remains accurate and useful for all parties involved.

(Economy) Economic Analysis

Related to the results of interviews conducted at the Batauga Health Center UPTD, in terms of economy, it is said that the use of this system can minimize the health center's expenses, is the use of available time resources effective with available manpower and resources needed in the care and control of the patient registration information system.

Table 3. Informant statements related to economic analysis

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| <i>"Yes, if the system currently used has minimized the creation of patient data processing reports, it has not been fulfilled properly, because the existing system is also not perfect, there are still many shortcomings, new. The system needs to be improved again, but it will require additional costs, if the system is going to be improved. The costs incurred now can indeed provide more benefits than before, which were manual, but it is not yet efficient and less than optimal because there are many obstacles like before, such as input data processing, editing, output still has many obstacles and takes a long time. if the problem of system maintenance costs is only the cost of repairing the system if a system error occurs "</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"So far, in making reports on patient data processing, it has not been fulfilled properly, there are many obstacles such as the number of patients who come in the morning so that officers are overwhelmed, and the cost of system maintenance, and system repairs, these costs incurred so far have been able to provide more benefits, but the costs incurred are still high, especially for system maintenance if there is an error, and I think it is not efficient."</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"If it is said to minimize, yes, dear, if the problem of time available with the number of available personnel depends on the number of patients who register at that time. For maintenance and control of the system, the costs incurred are still high, especially for system maintenance if there is an error"</i> | LA. Male. 29 years old. Responsible for RM Storage |
| <i>"Well, in my opinion, in terms of patient data management and so on, it is still not good as stated earlier, it depends on the number of patients who come. So far, if the system is in error, it will be fixed immediately and that uses costs, "</i> | SI. Female. 34 years old. RM Registration Officer |
| <i>"Yes, it depends, sir, if the system does not experience any missing or errors, it depends on the number of patients, sir, and as I said earlier, if there is a system error, it will be repaired immediately and will require costs."</i> | YO. Female. 25 years old. RM Registration Officer |
| <i>"Yes, if the system currently used has minimized, in making patient data processing reports it has not been fulfilled properly, because the existing system is also not perfect, there are still many shortcomings so it must be really examined and it takes a long time. There is a fee if the input system is an error"</i> | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

In the evaluation of the medical record management system at the Puskesmas, six respondents provided an overview of the economic aspects of the system. Their answers highlighted issues of cost, efficiency, and effectiveness of the system in the context of patient data management. The interview results are described further.

a. Cost and Benefit Expenditure

FF and HI acknowledged that the current medical record management system has provided more benefits compared to the previous manual method. However, they also noted that the costs incurred for system maintenance and repair are still significant. These costs include:

- System Maintenance: Costs to keep the system functioning properly, including routine maintenance and repair costs.
- System Repair: Additional costs required when the system experiences damage or errors.

Respondents such as FF identified that although the system provides benefits, the efficiency of the system is not optimal due to various obstacles such as processing input data, editing, and output which takes a long time.

b. Constraints in Data Management

Constraints faced in data management also contribute to cost expenditure. Respondents such as LA and SI noted that the number of patients coming in can affect the efficiency of the system. As the number of patients increases, the workload of officers also increases, which can slow down the data processing process and increase operational costs.

- LA stated that the time required to manage data depends on the volume of patients registering at a given time.
- SI mentioned that the system needs to be repaired if there is an error, which involves additional costs.

c. System Limitations and Improvement Costs

Based on the answers from YO and WS, respondents reported that the medical record management system is still far from perfect. These limitations include:

- System Functionality Limitations: The system does not fully meet the needs in making reports and processing patient data.

- b) **Repair Costs:** Additional costs are required when the system experiences errors. This includes the time and resources required to fix the problem, which can interfere with operational efficiency.

Most respondents stated that although the system has reduced some workloads compared to manual methods, the system still needs improvement to achieve higher efficiency. FF and HI emphasized that the existing system is not yet fully efficient and optimal because there are still many obstacles, such as data processing and repairs that require additional time and costs. Overall, it can be concluded that the medical record management system at the Puskesmas shows that spending on system maintenance and repair is still an important issue. Although the system has increased benefits compared to manual methods, several challenges remain, including:

- 1) **Maintenance and Repair Costs:** Significant costs are required to maintain and repair the system.
- 2) **System Efficiency:** The system is not yet fully efficient, with issues related to data processing, editing, and output requiring attention.
- 3) **System Limitations:** The existing system does not fully meet the needs in reporting and data processing, requiring additional improvements.

(Control) Control Analysis

Related to the results of interviews conducted at the Batauga Health Center UPTD, in terms of system security and control, although there are system restrictions, it is still not safe and under control because there are still parties who can access the system.

Table 4. Informant Statements Related To Control Analysis

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| <i>"Yes, so far, thank God, if the system suddenly goes offline, when it comes back online, the previously inputted data is still there. There are indeed restrictions on system access here, but not everyone can access it because they have been given a password and apart from the officers who have the obligation, namely the leaders of the Health Center themselves".</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"It has happened, but if the system suddenly goes offline, then what was previously entered is still available. And the security issue Yes, there are indeed restrictions on system access, not everyone can access the information system because they have been given a password, System supervision here is still very lacking, yes, even though there are access restrictions, everyone who knows the password can still access it. If there is a human error or input error, it will be fixed immediately, so before it is saved and sent to the medical record, the patient data is checked by the officer who is responsible for that section, "</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"Here there are restrictions, not everyone can access it because they have been given their own password. I think system supervision here is still lacking, there should be security protection to secure the system, if damage/error occurs, it can be handled quickly and accurately, the anticipation is so that there are no errors in patient data"</i> | LA. Male. 29 years old. Responsible for RM Storage |
| <i>"Yes, there are already restrictions on the system, so only authorized officers can access it and if there is a data error due to human error or system error, it will be rechecked and the wrong part will be fixed."</i> | SI. Female. 34 years old. RM Registration Officer |
| <i>"During the current system, if suddenly the electricity goes out and causes the system to go offline, the inputted data is still there, there is a possibility of system security issues, because I think the password can still be accessed, so more improvements are needed. And the problem is if there is a human error problem, the data will be reprocessed, "said the professor.</i> | YO. Female. 25 years old. RM Registration Officer |
| <i>" security issues Yes, there are indeed restrictions on system access, not everyone can access the information system because they have been given a password, system supervision here is still very lacking, yes, even though there are access restrictions, everyone who knows the password can still access it. "</i> | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

In the evaluation of the control of the medical record management system at the Batauga Health Center, the answers from six respondents provided an overview of the effectiveness and challenges in system control. The interview results obtained are further described.

a. Access Security

The medical record management system at the UPTD Batuaga Health Center is equipped with an access restriction mechanism, which includes:

- 1) **Use of Password:** The system can only be accessed by authorized officers, which is guaranteed by a password (FF, HI, SI, YO, WS).

- 2) Access Restriction: Respondents stated that not everyone can access the system, only those who have authority (FF, HI, LA, YO).

However, several respondents, such as HI and WS, expressed concerns that despite access restrictions, the system could still be accessed by people who knew the password, indicating a potential security risk. LA added that system supervision was still lacking, and suggested the need for additional protection such as security protect to secure the system.

b. Handling Offline Systems

Respondents reported that although the system sometimes experienced offline problems, the data that had been inputted remained safe. This indicates an effective data recovery mechanism. FF and YO noted that when the system was offline, the data that had been entered was still available after the system was back online. This indicates a robust data storage system to prevent data loss.

c. System Supervision and Security

Several respondents mentioned that system supervision still needs to be improved: HI and WS indicated that although there were access restrictions, supervision was still considered lacking. There is still a possibility that the system can be accessed by people who know the password, increasing the risk of unauthorized access.

d. Error Handling (Human Error)

In terms of error handling, such as human error or system errors: HI and SI explained that if there is an error in the data or human error, the responsible officer will immediately recheck and correct it before the data is stored permanently. YO also confirmed that if there is an error, the data will be reprocessed, indicating that there is a procedure to ensure data accuracy.

e. Need for System Improvement

Most respondents emphasized the need for system improvement and enhancement: FF and HI mentioned that the system still needs improvement to improve efficiency and security. LA suggested additional protection such as security protect to reduce security risks and ensure the system can handle damage or errors quickly and accurately. Based on interviews with six respondents, it can be concluded that the control of the medical record management system at the UPTD Batauga Health Center: (1) Access Security: The system uses passwords to limit access, but there are concerns that security supervision is still lacking. There is a need for improvement in supervision and additional protection to reduce the risk of unauthorized access. (2) Offline Handling: The system has an effective mechanism to ensure data remains secure even if an offline problem occurs. This reflects a reliable data recovery system. (3) Supervision and Security: System supervision needs to be improved to ensure that only authorized personnel can access the system and prevent unauthorized access. (4) Error Handling: The system already has procedures to handle human error and system errors by checking and correcting data before it is saved. (5) System Improvement: There is a need for system improvement to increase efficiency and security, including additional protection and tighter supervision.

Efficiency) Efficiency Analysis

Related to the results of interviews conducted at the Batauga Health Center UPTD in terms of efficiency, the existing system has not been well integrated, because employee performance still has many obstacles from within and outside the system

Table 5. Informant Statements Related To Efficiency Analysis

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| <i>"The current system has been used well and to the maximum, but in its implementation it cannot be said to be efficient because the system has not fully assisted the existing work, due to technical constraints (computer errors) and non-technical (from the system itself), more or less like that. Indeed, the number of employees currently available is not enough to meet the workload in the patient registration system section, so far the information produced is in accordance with what is needed"</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"The existing system has been used well and optimally by all employees but is not yet efficient, yes it is still constrained by the number of employees that are still lacking. The number of employees currently is not enough to run the system, it is not yet efficient, not yet appropriate and not yet on target, because the workload is very high, and only a few are in this section"</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"So far, the system used by the officers here has been good and well, but it is not yet effective so it cannot be said to be appropriate, on target or efficient, yes, it is still in the process of being improved, and the information produced so far is useful."</i> | LA. Male. 29 years old. Responsible for RM Storage |

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|--|---|
| <i>"The current system has been used well and to the maximum, but in its implementation it cannot be said to be efficient because the system has not fully assisted the existing work, due to technical constraints (computer errors) and non-technical (from the system itself), more or less like that. Indeed, the number of employees currently available is not enough to meet the workload in the patient registration system section, so far the information produced is in accordance with what is needed"</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"The existing system has been used well and optimally by all employees but is not yet efficient, yes it is still constrained by the number of employees that are still lacking. The number of employees currently is not enough to run the system, it is not yet efficient, not yet appropriate and not yet on target, because the workload is very high, and only a few are in this section"</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"Currently the system used is appropriate and good and the information produced is in accordance with needs"</i> | SI. Female. 34 years old. RM Registration Officer |
| <i>"Yes, I think the system currently being used is appropriate, as is the information produced."</i> | YO. Female. 25 years old. RM Registration Officer |
| <i>"Yes, so far the system used is good, as stated, the information produced is appropriate"</i> | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

Based on the results of interviews with six respondents at the Batauga Health Center UPTD, the efficiency of the medical record management system was identified as an area that requires attention and improvement. Respondents' answers revealed various aspects related to system efficiency, including technical and non-technical constraints, as well as challenges faced by employees. The following scientific discussion outlines the findings from the interviews regarding system efficiency.

a. Constraints in System Efficiency

FF and HI identified that although the current system is being used well, its efficiency is still not optimal. The constraints faced include: Technical Constraints: Such as computer errors that can disrupt the operational process of the system. Non-Technical Constraints: Problems originating from the system itself, such as limited features or imperfect integration. Number of Employees: Respondents revealed that the current number of employees is not sufficient to handle the workload in the patient registration section, which has an impact on system efficiency.

HI added that the high workload and insufficient number of employees mean that the system cannot yet be called efficient, appropriate, or on target. This shows that challenges in efficiency are not only related to the system itself but also to the available human resources.

b. System Effectiveness Level

Respondents such as LA, SI, YO, and WS acknowledged that the medical record management system has been used well and the information produced is in accordance with needs. However, several respondents such as LA also stated that the system is not yet fully effective.

System Effectiveness: Although the information produced is useful, the system is not yet fully effective in meeting all operational needs. Respondents stated that the system is still in the process of being improved and cannot yet be said to be appropriate or efficient. SI, YO, and WS noted that the information produced by the system is in accordance with needs. However, they did not provide further comments on the efficiency aspect of the system. This shows that although the information output is adequate, there is still room for improvement in terms of system processes and integration.

c. Need for Improvement

Overall, the answers from the respondents indicate that the medical record management system at the Batauga Health Center requires several improvements to increase its efficiency:

- 1) System Integration: The system needs to be improved to be better integrated to reduce existing technical and non-technical constraints.
- 2) Number of Employees: Increasing the number of employees may be needed to handle the workload more efficiently.
- 3) System Improvement: Continuously make improvements to the system to improve the effectiveness, efficiency, and integration of the system.

Based on the interviews, the conclusions regarding the efficiency of the medical records management system at the Batauga Health Center: (1) Technical and Non-Technical Constraints: The system faces technical constraints, such as computer errors, and non-technical constraints, such as

system limitations. This affects the overall efficiency of the system. (2) Number of Employees: The current number of employees is considered insufficient to handle the existing workload, resulting in the system not being fully efficient or appropriate. (3) System Effectiveness: Although the information generated by the system is in accordance with needs, the system is not fully effective and requires further improvement. (4) Improvement and Enhancement: There is an urgent need to improve system integration and possibly increase the number of employees to improve the overall efficiency of the system.

By paying attention to these aspects, the Batauga Health Center can improve the efficiency of its medical records management system, which in turn will improve the quality of service and patient data management.

(Service) Service Analysis

Related to the results of the interviews conducted at the Batauga Health Center UPTD, in terms of service, it has provided maximum service and so far there have been no complaints from patients or their families.

Table 6. Informant Statements Related To Service Analysis

| | |
|--|--|
| <i>"Yes, the current system is updated regularly. The current system has contributed more to the Health Center and patients and so far there have been no significant complaints from patients or from the patient's family. Thank God, so far the information produced is accurate, consistent and reliable."</i> | FF. Female. 29 years old. Responsible. RM |
| <i>"Yes, the system is updated regularly, when compared to the previous one, the current system has provided a better contribution, and so far there have been no complaints from any party. and can provide accurate information"</i> | HI. Female. 41 years old. BPJS Pcare Officer |
| <i>"It has provided a better contribution, although it is not yet optimal because there are still several technical and non-technical obstacles, and so far there have been no significant complaints or complaints from patients or patient families and the information produced is accurate."</i> | LA. Male. 29 years old. Responsible for RM Storage |
| <i>"Yes, it's regular, in my opinion, it's in accordance with what users need, both staff and patients."</i> | SI. Female. 34 years old. RM Registration Officer |
| <i>"The deck update system has been used as much as possible by medical records staff and has provided more and more accurate contributions"</i> | YO. Female. 25 years old. RM Registration Officer |
| <i>"Yes, bro, so far it has been appropriate, bro, and can serve what we need along with accurate information."</i> | WS. Female. 24 years old. RM Registration Officer |

Source: Primary Data, 2024

Based on the answers from six respondents regarding the medical record management system service at the Batauga Health Center UPTD, it can be concluded that this system has experienced several positive achievements although there are still areas for improvement. The interview results are described further.

a. System Updates and Contributions

Respondents such as FF, HI, LA, SI, YO, and WS stated that the medical record management system is updated regularly and provides positive contributions to the Health Center and patients.

FF stated that the system is updated regularly and has provided better contributions, with accurate and consistent information. This shows that the system is able to meet needs both in terms of operations and delivery of information to patients.

HI also emphasized that the updated system provides better contributions than before, and there have been no significant complaints from patients or patient families. This shows that the system has overcome problems that may have existed in the previous version.

LA added that although the system provides better contributions, some technical and non-technical obstacles still exist. However, there have been no significant complaints, which indicates general satisfaction with the system's services.

b. User Satisfaction and Information Accuracy

Most respondents indicated that the system meets user expectations and provides accurate information: SI, YO, and WS emphasized that the system is in accordance with user needs, both from officers and patients. They confirmed that the information generated by the system is accurate, indicating the reliability of the system in presenting data. LA added that although there

are still some obstacles, the information generated remains accurate, reflecting the effectiveness of the system in managing medical record data.

c. General Performance and Satisfaction

All respondents indicated that the current system is quite good at providing services and information: FF and HI expressed that although the system has made a positive contribution, the system also indicates potential for further improvement in technical aspects.

YO and WS emphasized that the system is in accordance with user needs and provides accurate information, indicating satisfaction with the services provided by the system.

d. Weaknesses and Areas for Improvement

Although respondents were generally satisfied with the system, some also noted room for improvement: LA found that there were technical and non-technical obstacles that needed to be fixed to achieve maximum system effectiveness. Assessments from FF and HI indicated that further improvements were still needed to further improve system services.

Based on the interview, the following are conclusions related to the medical record management system service at the Batauga Health Center UPTD:

- 1) Regular Updates and Positive Contributions: The system is updated regularly and provides better contributions compared to the previous system. This contribution includes accurate and consistent information that meets the needs of both officers and patients.
- 2) User Satisfaction: Respondents indicated that the current system has met user expectations well, producing accurate information that meets needs.
- 3) Constraints and Improvements: Although there is general satisfaction, several technical and non-technical constraints still exist that require further attention. This indicates that although the system has provided good service, there is an opportunity for further improvement to achieve higher efficiency and effectiveness.

With continuous improvement and attention to existing constraints, the medical record management system at the Batauga Health Center can further improve its services and ensure user satisfaction and the reliability of the information provided.

CONCLUSION

Based on the Results of the Medical Record Management System Research Using the Pieces Method at the Batauga Health Center UPTD. South Buton Regency. In terms of Performance, the current Management System has been used well by employees and has made a positive contribution. However, there are still technical and non-technical obstacles that hinder the effectiveness and efficiency of system operations. In terms of Information, the System provides accurate and consistent information, meets user needs such as patient medical history, operational data, and reporting. However, there are problems with double recording due to patient errors in remembering previous visits or carrying patient cards. In terms of Economy, the System has reduced costs and increased benefits compared to the previous manual process. However, the cost of system maintenance and repair is still significant, and the system is not yet fully efficient due to the many technical and operational obstacles that exist. Control, the System is equipped with access restrictions involving passwords to maintain data security. However, system supervision is still considered lacking, with the potential for unauthorized access if the password is known. Input errors can be corrected by rechecking the data before it is saved. In terms of Efficiency, Although the system has reduced the workload compared to the manual method, the system is not yet fully efficient. There are still constraints in terms of time and data processing, which require attention for further improvement and optimization.

Service, The system provides better contributions and accurate information to users without significant complaints. The system is updated regularly and has improved services, although there are some.

The suggestions that can be given as a result of the evaluation for the Medical Records at the UPTD Batauga Health Center are as follows: The Medical Records management system at the UPTD Batauga Health Center should be further developed from manual medical record management to electronic medical record management (EMR) to create a more complex system according to the needs to get maximum results. It is hoped that patient registration officers need to increase awareness and discipline in maintaining the performance of the patient registration system. For health centers, it is better to improve the patient medical record management system so that the existing system

becomes better according to the needs of the Health Center and patients, thus helping employee performance in providing maximum service to patients.

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