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EXAMINATION OF THE CONVERTION FROM MANUAL TO ELECTRONIC MEDICAL RECORDS TO SUPPORT THE PERFORMANCE OF SERVICES AT OUTPATIENT UNIT IN THE X HOSPITAL BANDUNG

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Abstract : The goal of this study is to examine the processes involved in the switch from paper to electronic medical records in order to improve the effectiveness of outpatient health services, which are still plagued by a number of concerns. These issues included: 1. Limited but functional hardware and network infrastructure for IT. 2. A lack of medical recorder training results in service bottlenecks. 3. During this transition period, medical recorders are less experienced with the process of switching from manual to electronic medical records, even though patient comfort demands prompt, accurate, precise, and efficient delivery of medical care. In order to provide hospitals and medical record staff with assessment material that will help them serve patients more effectively, the author of this study uses a qualitative approach as a benchmark or reference when analyzing the transition process and also supports hospital progress.

IndexTerms **– Electronic Medical Record, Transsition, Effectivity, Manual Medical Record, Examination Medical Record**

I. INTRODUCTION

According to Law of the Republic of Indonesia Number 36 of 2009 Clause 1. Health is defined as a state of overall well-being, including physical, mental, spiritual, and social aspects, which enable individuals to lead socially and economically productive lives (Law of the Republic of Indonesia Number 36 of 2009).

According to Lahaji (2020), quality health services are those that meet the demands of the community or of people for medical attention while adhering to high professional standards and making equitable, efficient, and effective use of available resources. Hospital in accordance with Article 1 of Minister of Health Regulation No. 30 of 2020. an organization that offers comprehensive individual health services, including emergency, outpatient, and inpatient care.

The hospital serves as a resource for community health centers for health services, particularly in the area of healing and recovery, as its primary duty is to coordinate patient efforts toward healing and recovery. The whole public should have access to healthcare through government-owned facilities. The hospital always aims to provide the community with high-quality services, both in terms of its non-medical and medical offerings. Medical Record is one of the hospital's non-medical services. An essential part of overseeing hospital services is keeping accurate medical records. (Yuliani, 2016:56)

A medical record is a written document that can be in paper or electronic format that documents different aspects of a patient's health. Examples of this information include integrated patient progress records, or CPPT, which is a typical term for assessment results, treatment plans, and treatment execution. KARS (2019:353 In line with Health Minister Regulation No. 24 of 2022. Medical records are documents that include information about the identify of the patient as well as details about their examinations, treatments, and other actions.

The term "electronic medical record" (RME) refers to the process of using information technology tools to gather, store, process, and retrieve data from patient medical records in a hospital. This data is kept in a database management system that integrates several medical data sources (Handiwidjojo, 2015: 38). In the field of healthcare, electronic medical records are a

significant information technology advancement that, when applied properly, can yield highly positive outcomes. Shahmoradi and associates, 2017:643.

Research on electronic medical records was done at a hospital by Amin et al. (2021: 439). His research revealed a number of issues with the deployment of electronic medical record switching, including error systems, crude system designs, officers who lack computer proficiency as well as power outages. Human resource support, hardware, financing, leadership, training, and technical assistance are the elements that go into making the deployment of medical records successful.

Hospital X in Bandung City will begin using electronic medical records in January 2024. The current electronic medical records are still being modified to better meet user preferences and demands, which is a crucial step in creating the perfect electronic medical record. (Atton and associates, 2012:713). Hospital x in Bandung City even though it has used electronic medical records, the manual medical records is still being used because there are several form files for the inpatient unit that still require authentication from patients and doctors, in the form of signatures and forms that are not yet available on the electronic medical record website in contrast to outpatient units that have all used electronic medical record files.

The process of transitioning itself is the change from one state of affairs to another; these changes might be in the realms of employment, money, and other areas of life. Transition is a process that takes time and may involve several steps or phases. In order to manage it, preparations and modifications must be made, such as making backup plans.

Due to the fact that Hospital X in Bandung City still needs the handwritten signatures of physicians and patients on medical record documents for inpatients, the transfer has not been fully implemented. Naturally, this is a result of the lack of electronic signature capabilities. Prior to the implementation of electronic medical records, physicians maintained paper medical records containing patient treatment histories. This is because some patient data was not fully entered into the system. Medical records need to show previously saved data and be easily accessible. Nurhayati and Nugrahaeni, 2018: 96.

Effectiveness, according to Winata (2020: 10), is the accomplishment of organizational objectives using resources that are efficient in terms of input, process, and output. When the objectives of preventing, treating, and regaining health are met in a timely way and the advantages are recognized by individuals, families, communities, and groups, health services are considered effective.

Winata (2020: 10) defines effectiveness as the achievement of organizational goals through the use of resources that are efficient with respect to input, process, and output. Health services are deemed effective when the goals of preventing, treating, and restoring health are achieved in a timely manner and the benefits are acknowledged by individuals, families, communities, and groups.

Preliminary observations of the outpatient unit at Hospital X Kota Bandung's switch from manual to electronic medical records indicate that there are still a number of issues, including internet network issues, error-prone morbis systems, and officers who are still getting used to the new system. This is because there was insufficient training during the switch from manual to electronic medical records, thus more careful planning is required to ensure that the transition goes well. The author is eager to discuss the final project with the title in light of the aforementioned issue. “EXAMINATION OF THE CONVERTION FROM MANUAL TO ELECTRONIC MEDICAL RECORDS TO SUPPORT THE PERFORMANCE OF SERVICES AT OUTPATIENT UNIT IN THE X HOSPITAL BANDUNG”

II. RESEARCH METHODOLOGY

This study takes a descriptive approach while using qualitative approaches. The investigation was carried out between March and April of 2024, a period of two months. Direct observation and interviews are the methods utilized to acquire data. In order to identify transitory transitions, this study focuses on features of Man, Method, Material, Machine, and Money.

III. RESULTS AND DISCUSSION

A. Result

The findings from observations and interviews regarding the switch from manual to electronic medical records are viewed through the lens of the five Ms: man, material, machine, method, and money. Researchers' research revealed a number of benefits and challenges throughout the transition process, including:

Table 1. Analysis Result

Aspect	Definition	Comparison	
		Strength	Weakness
Man	is crucial because a job cannot function at all without cops.	Medical records officers have received training in electronic medical records. Training is held once a week.	Officers believe they are not familiar with the EMR system. Police continue to perceive inadequate training. Four of the eleven medical records officers lack training.
Material	is a barrier pertaining to computer networks and systems.	Installing LAN cables to connect each level to the internet networks, as well as setting up a computer SIMRS server unit and an internet server unit	VClaim dan Morbis Internet that is still slow, network that is still unstable to access VClaim and Morbis
Machine	Machine components—such	fully functional server that	

Aspect	Definition	Comparison	
		Strength	Weakness
	as scanners—that are utilized in medical records or efficient machine utilization	takes the shape of a generator and contains input or entered patient medical records	There have been no additions or improvements to the electronic medical record system's supporting infrastructure, and computers in the registration department frequently take a long time to load.
Method	procedure or technician	Handle and transfer data between the old and new SIMRS Two professionals from the MORBIS application are brought in to help RME adapt.	If there are issues with the hospital's SIMRS application, you will have to wait a long period for the morbis to arrive because there are no experts in charge of managing it.
Money	pertains to the administration of funding for all medical record-keeping activities, including the acquisition of supplies and equipment.	Distribute the costs of the many sectors that will need to make the conversion to RME, such as expert technician salary, generators, and server equipment.	There are no budgetary resources available to support the creation of more electronic health records.

B. Discussion

a) Review of Medical Record Transitions.

Early in January 2024, Hospital X in Bandung will begin the transition from manual to electronic medical records. Initially, the transition encountered a number of challenges, such as the officers' unfamiliarity with the electronic system, a sluggish internet network, and an error-prone morbis system.

The shift from manual medical information storage on paper to digital storage in electronic medical record systems is known as the "paper-to-digital" transition. This shift encompasses the management of medical records using electronic technologies and the conversion of data from paper to digital format. Any time there is a change in a medical record, it can have an impact on many other aspects of the practice, such as information security and data management.

b) Analysis Aspects

- **Man Aspects**

The transition from manual to electronic medical records is described in the title of this scientific article. The Minister of Health Regulation No. 22 of 2022 further supports this transition by dictating that medical recorders must already possess a Registration Certificate and a License to Practice with a minimum education of D3 Medical Records. The Man aspect at Hospital X Bandung City contains 11 medical recorders. This is significant because medical records are the primary key in health services. Therefore, of the 11 medical record officers at Hospital X in the city of Bandung, only seven have completed training. Despite this, the officers are still unfamiliar with the transition process because not all of the officers have completed training in Electronic Medical Records. Therefore, in order for services to be more convenient and quick, hospital management must also regularly conduct regular training to increase the knowledge of officers. They can also hold evaluations to help officers by identifying areas where challenges arise during the transition, which takes about five months. As a result, hospital X has further supplied IT personnel to assist with issues. The Electronic Medical Record Transition at Hospital X Bandung City is ready from a human perspective, based on the explanation provided by the author.

- **Aspek material**

The most crucial component of the switch from manual to electronic medical records is the material aspect, which should be handled with extreme care by hospitals and officials to ensure a smooth and well-organized transfer. In order to facilitate this transition, internet networks and SIMRS servers are among the facilities and infrastructure that are in place. However, there are still challenges or issues that arise during this phase of the process, such as: errors occurring in the SIMRS and MORBIS applications; an unstable internet network; and the sudden reversion of the applications to their original versions due to the use of the same user by other officers. Thus, the author might draw the conclusion that hospital X's material aspect flaws stem from the lack of a data backup or alternate storage solution for the Simrs data server. For this reason, the material transformation is complete; servers and other networks nevertheless need to be much improved upon.

One component of this infrastructure is an internet network. Hospital X in Bandung City is prepared, materially speaking, to switch from paper medical records to electronic ones thanks to a robust internet network, floor-to-ceiling internet connections, and the installation of one internet server and one SIMRS unit.

- **Aspek machine**

A machine can be a generator, computer, or server. In order to eliminate the necessity for manual medical records and maintain data protection, hospitals in Bandung City must convert their servers to electronic medical records. This means that all patient data must be merged. For the service to be optimized, an upgrade is also necessary. Hospitals require computers to assist their operations, particularly with regard to Electronic Medical Records. Registration and patient report preparation will be facilitated by data from validated electronic medical records. The generator at Hospital X in Bandung City needs to be upgraded so that the service can continue to function normally even in the event of a power loss. Currently, the generator is unable to power on all of the hospital's electronic gadgets. Time can be saved and work can be made easier with the machine element. Using this feature to streamline work time will be very beneficial and convenient.

This machine aspect is crucial to the manual to electronic transition stage because without it, the process will not proceed. In hospital x, the implementation of Morbis and Simrs applications requires a robust infrastructure, such as computers, servers, networks, and generators. Since hospital x's computers are still relatively new, there are no issues with them at all. It is necessary to update or add servers and networks to support the medical record system, as they have not been done previously. The network is less stable, which leads to errors and delays in patient service. Additionally, hospital X's generator is not prepared enough for a sudden power outage, which prevents the generator from turning on several computers, forcing the service to be performed manually.

- **Aspek method**

Standard operating procedures serve as one of the working records for the technique part of the transition to electronic medical records. Recently, an electronic medical record was released by the Ministry of Health. Health care facilities must follow certain operational procedural criteria while implementing electronic medical records, according to a new law released by the Ministry of Health. Each healthcare facility's demands and resource availability must be taken into consideration while creating standard operating procedures, with the help of any current regulations. In order to make SPO electronic medical records, Hospital X in Bandung City has a health facility that does so in a certain way. Specifically, data is managed and transferred from the old SIMRS to the new SIMRS, and two specialists from the Morbis application are brought in to perform the transition of electronic medical records. This element of the technique has the advantage of accelerating work and having easily randomizable hurdles; nevertheless, it has the drawback of having no professionals who can shift new sims to old, meaning that patients must wait a lengthy period for the Morbis to arrive to the hospital.

- **Aspek money**

Achieving the success of the Electronic Medical Record Transition heavily depends on the financial component or budget. The Bandung City hospitals have a set budget for the transition to electronic medical records. Funds are allocated for the installation of electronic medical records, including both the initial and ongoing costs. This budget is intended to pay for various equipment costs as well as the acquisition of equipment that will help with the implementation of the digitization of medical records. For instance, the cost of servers, generator sets, and expert technician salaries are among the industries where the shift to RME is required. Hospital X Bandung City lacks financial resources in that there isn't more money allocated for the development of medical records beyond what it has up to this point due to the electronic medical record transition budget. When evaluating Hospital X in Bandung City in terms of budget availability, the strategy for the Electronic Medical Record Transition is deemed to have been supported by funding at this point, and the hospital is deemed ready to adopt an EMR system.

c) Factors of Medical Record Transitions.

Manual RM to RME Switching Factor

- Reduce the work of RM officers in searching for files
- Insufficient number of human resources
- Limited storage space
- Improve service quality
- Speed up service time.

d) Steps of Medical Record Transitions.

There are several stages of transition from Manual Medical Records to Electronic Medical Records, including:

- Electronic Medical Record (RME) Recognition
- Training on the use of RME
- Patient data input
- Menu on RME system
- RME data migration
- Digitization of medical records
- Storage and security
- System integration

In order to improve patient care, reduce clinic errors, enhance document quality storage, enhance service quality, and expedite patient data access, health care facilities organize their electronic medical records. These records play a critical role in the delivery of healthcare services.

The goal of implementing electronic medical records is to increase the effectiveness of medical record services by reducing the amount of space needed to store medical record files, increasing data integration between hospital management systems and other systems to reduce human error, and facilitating quick and easy access to information. Handwritten medical records are still used in certain hospitals and healthcare facilities; these records are often lengthy, slow, prone to errors, and ineffective. Additionally, some hospitals have not adopted electronic medical records due to a variety of reasons, such as the

unreliability of data security, the need for medical recorders to undergo extensive training and adaption, and the availability of poor internet networks.

e) Constraints of Medical Record Transisition

Problems Arising from the Transition of Electronic Medical Records in Supporting Service Effectiveness in the Outpatient Unit of Hospital X Bandung City:

- Internet network that is often slow.
- Officers who are still adapting.
- The morbis system used often errors.

f) Effort to Overcome Problems of Medical Record Transision

Efforts to overcome the problem of obstacles in the transition of electronic medical records in supporting the effectiveness of services in the Outpatient Unit of Hospital X Bandung City:

- With a network system that is not good at all, it is necessary to increase the LAN network (Local Area Network) so that officers can be more effective in working and there are no continuous network obstacles.

  It is necessary to hold training and education on the use of electronic medical records at least once a week, so that training and socialization can increase understanding of use in electronic medical records
- Need to improve the system quickly so that operational quality performance can be used smoothly.

C) CONCLUSION

Early in January 2024, Hospital X in Bandung will begin the transition from manual to electronic medical records. Initially, the transition encountered a number of challenges, such as the officers' unfamiliarity with the electronic system, a sluggish internet network, and an error-prone morbis system. Along with the use of electronic systems to maintain medical records, this transfer incorporates data from paper format to digital format. Data management and information security are only two examples of the many medical procedures that can be impacted by changes in medical records. These are just two examples of the processes that alter throughout transitions. EMRs, or electronic medical records, are crucial to the healthcare industry because they can decrease human error, increase care quality, and cut down on data entry time. But since some institutions still retain records by hand, utilizing this method tends to be laborious, slow, error-prone, and ineffective.

Researchers discovered a number of issues with electronic medical records, including mistakes, out-of-date software, poor computer usage, and a lack of adaptability and training. Electronic medical records are more effective when they take into account certain factors, such as hardware, budget, training, and technical environment. Bandung City Hospital Despite having used electronic medical records, the inpatient unit continues to use manual medical records because, unlike the outpatient units, which have all used electronic medical record files, the inpatient unit still needs patient and physician authentication in the form of signatures and forms that are not yet available on the website..

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