



Analysis of Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Hospital

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KEYWORDS	ABSTRACT
Readiness, Transition, Electronic Medical Record	The transition from manual to electronic medical records (EMR) is becoming a global trend in healthcare, driven by the Indonesian Ministry of Health's policy to improve service quality and efficiency in patient data management. This study aims to assess the readiness of Muhammadiyah Bandung Hospital to transition from paper-based medical records to EMR in outpatient registration. This descriptive qualitative study involved 5 informants, with data collected through interviews and direct observations. The results indicate that Muhammadiyah Bandung Hospital is ready to transition from paper-based to EMR in outpatient registration, although further engagement with key personnel in the polyclinic (PPA) and improvements in other factors such as infrastructure and staff training are needed. In conclusion, while the hospital shows good readiness, comprehensive strategies are required to ensure a smooth and effective transition.

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INTRODUCTION

Hospitals, according to the Regulation of the Minister of Health of Indonesia Number 3 of 2020 concerning Hospital Classification and Licensing, are health service institutions that provide plenary individual health services that provide inpatient, outpatient, and emergency services (Kemenkes RI, 2020). Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 Article 4 concerning Medical Records, this regulation states that every Health Service Facility is required to hold an Electronic Medical Record (Peraturan Menteri Kesehatan RI, 2022)

WHO defines a medical record as a documented collection of data about an individual's health created during contact with the health system (WHO, 2007). Medical records development is in line with technological advances in the field of hospital services, namely the emergence of Electronic Medical Records (RME) (Mousa, 2021; Nurmaidah et al., 2024)

Electronic Medical Record in the Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 concerning Medical Records, Electronic Medical Records (RME) are Medical Records made using an electronic system intended for the implementation of Medical Records (Asyfia et al., 2023; Deharja et al., 2022). More specifically, RME is an electronic document that contains patient identity data, demographic data, social data, clinical/medical data, and various clinical events from the beginning of the service process to the end of various data sources (multimedia) and has an active function to provide support for medical decision making (Eryanan, 2022; Ginting, 2024).

Electronic medical records in 2024 in Health Service Facilities are targeted to be 100%. This is related to Minister of Health Regulation Number 21 of 2020 concerning the Ministry of Health's Strategic Plan for 2020-2024 (Peraturan Menteri Kesehatan RI, 2020).

Transition readiness is the ability of an individual or organization to navigate the transition successfully (Bridges, 2000). Strategies must be created to support and convince the transition process. The transition from paper medical records to RME requires preparation so that the application can run optimally (Beddewela et al., 2021; Hidayah et al., 2023; Manggala & Setyonugroho, 2023)

Effectiveness is the ability to complete the right work and achieve the desired goals with optimal results (Ennimay et al., 2022). The effectiveness of outpatient registration is defined as the ability to process patients quickly, accurately, and efficiently, thereby minimizing waiting times and maximizing patient satisfaction (WHO, 2010). The use of EMR in outpatient enrollment has the potential to increase effectiveness and efficiency significantly (Miller et al., 2019; Overhage & McCallie Jr, 2020).

Preliminary studies show that Muhammadiyah Bandung Hospital has begun to implement RME in the outpatient registration department starting from the beginning of 2024, but it has not been fully realized because it is still limited to facilities and infrastructure. The transfer of electronic medical records is important for Muhammadiyah Bandung Hospital because it implements Minister of Health Regulation Number 21 of 2020 related to the Ministry of Health's Strategic Plan for 2020-2024 2024, the target of implementing RME in Facilities 100% Health Services (Thamrin et al., 2023). Research by Rifki Kapitan, Achmad Farich, and Agung Aji Perdana in 2023 concerning the Analysis of Readiness for the Application of Electronic Medical Records at Bandar Negara Husada Hospital, Lampung Province, found that Bandar Negara Husada Hospital is generally ready to implement RME, but must make efforts to improve several aspects (Kapitan et al., 2023b). Therefore, before switching to electronic medical records, it is necessary to carry out a readiness assessment. This readiness assessment is analyzed from 5 aspects, namely Man, Method, Material, Machine, and Money (5M). Based on this, researchers have an interest in carrying out a study entitled "Analysis of Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital".

METHOD

This type of research is descriptive with a qualitative approach (Sugiyono, 2015). Descriptive qualitative research is research that produces detailed and in-depth descriptions of a social phenomenon through naturalistic and holistic means. This research was conducted when researchers conducted Field Work Practices (PKL) at Muhammadiyah Bandung Hospital in the period from March to May 2024. Data collection techniques were carried out through interviews with five medical record officers and direct observation. The object of this study is "Readiness of Muhammadiyah Bandung Hospital for the transition of Manual Medical Records to RME."

RESULT

Muhammadiyah Bandung Hospital located in Bandung City. Readiness to transition from Manual Medical Records to Electronic Medical Records at RS Muhammadiyah Bandung researchers conducted observations and interviews. The results of these interviews and observations are based on the identification of man (human resources), method (method), material (materials or tools required in the activity), machine (machine), and money (money required).

Man (Human Resources)

Law Number 36 of 2009 concerning Health, Health workers are everyone

Based on the results of interviews and observations that staff at Muhammadiyah Hospital are required to be able to have knowledge and skills to use the electronic medical record system. Muhammadiyah Hospital has IT staff specifically for this transition readiness. All staff and IT have conducted training and briefings virtually and directly for readiness to switch manual medical records to electronic medical records.

Method (Method)

In implementing a new policy, in general, the Health Office will provide a Technical Guideline to provide further details to health service facilities, but for this transitional policy, Muhammadiyah Bandung Hospital has its own guidelines and SOPs.

"Yes, the legal basis is the same, but we will adjust to the conditions in the hospital as well."

-Officer 1

Material (Materials Required)

Machine (Machine)

According to Mangkunegara (2020), a Machine is a tool used to improve the efficiency and effectiveness of a process. Machines can help humans get things done faster, more accurately, and with better quality. Electronic medical records require computers and other supporting devices in the process. At Muhammadiyah Bandung Hospital, there are already several computer units, including medical records and other health workers.

Money (Money Required)

Money is an important tool to achieve goals because everything must be calculated rationally (Silalahi & Sinaga, 2019) This is related to the budget used in managing medical records to improve the effectiveness of services in hospitals. The procurement of electronic medical records requires a large enough budget. RS Muhammadiyah Bandung already has a special budget for this transition readiness.

DISCUSSION

Readiness to Switch Manual Medical Records to Electronic Medical Records at Muhammadiyah Bandung Hospital

The transition of manual medical records to electronic medical records at Muhammadiyah Bandung Hospital has started since the end of 2023, especially in the outpatient registration section of polyclinics. Although there are still some parts that still use paper (paper based), for example, such as making SEP (Participant Eligibility Letter).

Effectiveness of Outpatient Registration at RS Muhammadiyah Bandung

During this transition process, it still exists because the service is still in the adjustment stage, and officers are not used to it. Over time, outpatient staff registered more quickly, such as registering new patients and searching for old patients. The waiting time for patients enrolled in outpatient care is, on average, 5-7 minutes. This is because patients only need to scan fingerprints (BPJS patients) and then are directed to wait at the intended polyclinic. The results of interviews with four outpatient registration officers said that officers were greatly helped by the existence of Electronic Medical Records (RME).

Identification is needed in the process of switching manual medical records to electronic medical records. The elements identified include a man (human resources), method (method), material (material or tool needed in activities), machine (machine), and money (money needed).

Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital based on the Man Factor (Human Resources)

The first factor, namely officers or men at Muhammadiyah Hospital, is that all staff who are in outpatient registration are required to have knowledge and skills in operating computers. In addition to staff in medical records, other health workers such as nurses and doctors must also have knowledge and skills in operating computers. In the interview, the officer also mentioned that there are still obstacles at PPA Polyclinic about this transition because doctors at Polyclinic are old and still want to write the results of their medical resumes. According to Shaolin in Wirajaya (2020), the beginning of the implementation of RME will result in a cultural shift that was originally conventional (paper-based) and then changed to electronic, which will have physical and physiological effects. Perhaps a more approach is needed to be able to socialize this transition and motivate staff to accept the implementation of electronic medical records at the hospital.

In addition, information technology experts are also needed to monitor the implementation of electronic medical records and become the person in charge if obstacles are found in its implementation (Widayanti et al., 2023). IT officers are also responsible for the security of data on the system from outside interference, such as hackers. Muhammadiyah Bandung Hospital already has special IT staff for this transition readiness and expertise in their fields. All staff or health workers in the hospital have conducted training on switching manual medical records to electronic medical records both virtually and in person.

Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital Based on Method Factors

The next factor is methods. With the new decision to switch manual medical records to electronic medical records, the management of Muhammadiyah Bandung Hospital already has standard procedures and health services, especially the management of outpatient registration. The presence of SOPs in health services is also important in order to create uniformity of services so that patients get fair and optimal services. However, there are still obstacles, such as doctors still asking for patient status from the medical record officer (paper-based). Electronic medical records facilitate every process of medical record sub-units, such as outpatient registration.

Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital based on Material Factors (Materials Needed)

The existing infrastructure or materials to support the transition at Muhammadiyah Hospital consist of strong electricity voltage and internet networks. In the implementation of the internet network, Muhammadiyah Bandung Hospital is classified as stable and fast because of the location of the hospital in the middle of the city. SIMRS obstacles can also be encountered because SIMRS often experiences technical problems, causing delays in outpatient registration services.

Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital Based on Machine Factors

The next factor is a machine. Electronic medical records require computers and other supporting devices in the process. Electronic medical records provide a lot of convenience and time efficiency in the process of health services. Muhammadiyah Hospital already has several computers in various health service units, but there is still a need for computer updates because they often experience errors during patient service. In addition, there needs to be periodic changes for other hardware, such as keyboards and mice, to make them comfortable for officers to use.

Readiness to Switch Manual Medical Records to Electronic Medical Records to Support the Effectiveness of Outpatient Registration at Muhammadiyah Bandung Hospital based on the Money Factor

The last factor is funds or money. This factor plays an important role in realizing the successful transition of manual medical records to electronic medical records. To realize electronic medical records at Muhammadiyah Bandung Hospital, they already have sufficient funds for this transition process. In interviews conducted by researchers with officers, it was stated that the hospital had a special budget/fund prepared for this transition and did not have a budget from the Health Office or other vendors. So, the funds needed for this transition readiness are borne by the hospital.

CONCLUSION

Muhammadiyah Bandung Hospital is ready to switch manual medical records to electronic medical records, which are quite mature. In the results of observations and interviews, several advantages were found, such as human resources who already have qualified knowledge and skills in operating computers, having SOPs that have been carried out, the availability of facilities and infrastructure such as computers that are already available, having a strong electric current and an internet network that is stable enough to support this transition process. However, Muhammadiyah Bandung Hospital also still has obstacles in PPA Polyclinic, which still requires a more transitional approach due to hospital staff compliance and requires efforts to improve other factors.

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