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Factors Contributing to Incomplete of Manual and Electronic Medical Record (EMR) Entries in Hospital

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Abstract

Introduction: A complete medical record is defined as one that is fully completed by Healthcare Professionals (HCPs) within ≤ 24 hours after the patient is discharged. In the third quarter of 2022, X Regional Hospital recorded the highest percentage of incomplete inpatient medical records in October, totaling 465 incomplete records (32.68%). This study aims to analyze the factors contributing to the incompleteness of inpatient medical record documentation at the hospital using Lawrence Green's behavioral theory, focusing on predisposing, enabling, and reinforcing factors.

Methods: This qualitative study employed data collection techniques such as observation, documentation, and interviews to nine informants, comprising one head of the medical records department, four attending physicians, three nurses, and one head of the inpatient ward. The data were analyzed through data reduction, data presentation, and conclusion drawing, followed by providing improvement recommendations.

Results: The findings indicate predisposing factors include limited staff knowledge about medical record documentation. Enabling factors involve an insufficient number of computers, incomplete training attendance, and unawareness of Standard Operating Procedures (SOP) on medical record completeness. Reinforcing factors include the absence of punishment for non-compliance.

Conclusion: Improvement efforts include conducting regular socialization, monitoring, and evaluation of SOP implementation for medical record completeness; proposing additional computers; organizing seminars and training on medical record documentation for medical record staff and HCPs; and implementing a reward and punishment system to enhance HCP performance in completing inpatient medical records.

Keywords: completeness, hospital, medical record

Introduction

The completeness of medical record documentation involves the process of reviewing or analyzing the contents of medical records related to service documentation and assessing the completeness of the data within (1). The indicators of a high-quality medical record include

completeness, accuracy, timeliness, and compliance with legal requirements (2). A complete medical record is one that is 100% filled out by each Healthcare Professional (HCPs) within ≤ 24 hours after completing outpatient care or after an inpatient has been discharged (3).

Based on the results of a preliminary study, it was found that X Regional General Hospital has implemented a hybrid medical record system for inpatient services, combining manual medical records and electronic medical records (EMRs). The documentation of inpatient medical records has not yet met the standard of 100% completeness. The percentage of incomplete inpatient medical record documentation can be seen in Table 1 below.

Table 1. Percentage of Incomplete Inpatient Medical Record Documentation at X Regional General Hospital, October - December 2022

No	Month	Complete	Percentage	Incomplete	Percentage
1.	October	958	67,32%	465	32,68%
2.	November	887	71,19%	359	28,81%
3.	December	878	71,38%	352	28,62%
	Total	2724	69,86%	1175	30,14%

Source: Secondary Data from X Regional General Hospital (2022)

Table 1 illustrates the percentage of incomplete inpatient medical record documentation at X Regional General Hospital from October to December 2022. The highest percentage of incompleteness was recorded in October 2022, at 32.68%, equivalent to 465 medical records. This situation at X Regional General Hospital does not comply with the Hospital's Minimum Service Standards (SPM), which require that medical record documentation must be 100% complete within ≤ 24 hours after the patient has completed their care. The incompleteness of medical record documentation hinders the management process of medical records, affects the quality of medical record services, disrupts continuity of care, and impacts patient safety.

The impact of incomplete medical record documentation is that it hampers the performance of medical record staff at X Regional General Hospital when carrying out subsequent medical record management steps, such as data input for reports and the BPJS Kesehatan (Health Insurance) patient claim process. This is because the medical records must be returned to the relevant inpatient ward for completion first. Incomplete medical records hinder the fulfillment of patients' rights to their medical record contents, obstruct the provision of medical records as evidence in legal cases, complicate the disease classification and coding process, and delay the preparation of hospital reports and insurance claim submissions.

The incompleteness of medical record documentation at X Regional General Hospital is suspected to be caused by the lack of discipline among staff in filling out medical records. This occurs due to the high workload and the frequent movement of doctors between different hospitals. The limited time available to doctors is one of the main factors contributing to the incompleteness of medical records (4). Additionally, the lack of understanding among staff about the importance of medical record completeness also plays a role, as evidenced by the unfilled sections for patient identification and the authentication of the attending physician (DPJP). Insufficient knowledge can lead to staff overlooking the importance of medical records, which ultimately results in records not meeting the required procedures (5).

The incompleteness of medical records at X Regional General Hospital is suspected to be caused by enabling factors, such as the large number of forms that must be completed and the disorganized arrangement of these forms. This situation makes it difficult for doctors to fill out medical records completely. Additionally, healthcare workers, including doctors, nurses, and medical record staff, have not received specialized training on medical record documentation. Although there are Standard Operating Procedures (SOPs) in place, in practice, the medical records are still not fully completed and do not reach 100% completeness. According to Yuniati & Rifa'i (2018), non-compliance by doctors and nurses with the SOPs is also one of the causes of this incompleteness (6).

Reinforcing factors that are suspected to influence the occurrence of incomplete medical record documentation include the lack of enforcement of punishment for healthcare staff who fail to properly complete medical records. One of the causes of incomplete medical records is the absence of sanctions when inpatient records are not fully completed (5). Erawantini et al. (2022) explain that the implementation of punishments is necessary for staff who make mistakes, as it motivates them to avoid repeating the same errors (7).

Based on the issues mentioned above, the incompleteness of medical record documentation is suspected to be caused by the behavior of healthcare personnel involved in filling out the records. The existing problems align with Lawrence Green's theory (1980) in Notoatmodjo (2014), which states that behavior is influenced by three main factors: predisposing factors, enabling factors, and reinforcing factors (8). Therefore, this study aimed to analyze the factors contributing to the incompleteness of medical record documentation at X Regional General Hospital.

Methods

This study applied a qualitative research approach. The variables in this study included predisposing factors (knowledge, education, and attitudes), enabling factors (facilities, training, medical record forms, and SOPs), and reinforcing factors (punishment). Data collection was conducted from January to March 2024. Data were gathered through observations, documentation, and interviews with 9 informants, consisting of 1 head of medical records, 4 attending physicians (DPJP), 3 nurses, and 1 head of the inpatient ward. Data saturation was tested through source triangulation and technique triangulation.

The data were analyzed through data reduction, data presentation, and drawing conclusions regarding the factors contributing to the incompleteness of inpatient medical record documentation. The researchers confirm that this study has no ethical issues, as evidenced by the Ethical Approval Letter No. 287/PL17.4/PG/2024 issued by the Ethics Committee of Politeknik Negeri Jember.

Results

Predisposing Factor

Predisposing factors are those that facilitate the occurrence of a behavior. In this study, the predisposing factors consisted of the knowledge, education, and attitudes of the staff. Knowledge, in this context, refers to the understanding of Healthcare Professionals (HCPs) regarding medical record documentation. The findings of the study are illustrated by the following interview excerpt.

> "Yes, I know. The identification items include the full name, date of birth, medical record number, gender, and patient ID number. Authentication, for example, is seen in the informed consent for every medical procedure and nursing action, which includes signatures. Important reports include the informed consent, diagnosis, operation reports, and anesthesia reports for every medical procedure and nursing action" (The 6th Informant, 2024)
>
> "I am not aware of the detailed items, but in the summary, there is the patient's medical history, physical examination and its findings, supporting examinations, and the treatment during hospitalization, including the prescribed home treatment. This makes follow-up visits easier" (The 2nd Informant, 2024).
>
> "I don't have a thorough understanding of those items, but they must be filled out" (The 4th Informant, 2024)

The interview results show that not all staff members understand which items need to be filled out in the medical records. Statements from informant 2 and informant 4, as attending physicians (DPJP), indicate that their knowledge was still lacking regarding the details of the items that need to be completed in inpatient medical records. Meanwhile, the knowledge of the nurses, as seen from informant 7 and informant 8 in this study, demonstrates a good

understanding of identification items, important reports, and the authentication of medical records.

The researcher then inquired about the informants' knowledge regarding the standard time for completing medical records fully, and the following results were obtained.

> "I'm not sure" (The 2nd Informant, 2024)
>
> "Yes, it must be completed within 2x24 hours after the patient is admitted" (The 7th Informant, 2024)
>
> "Yes, I know. It should be completed within 1x24 hours after the patient is discharged" (The 1st Informant, 2024)

The results of the study showed varying levels of knowledge regarding the Standard Operating Procedure (SOP) for the time frame of completing inpatient medical records. The regulation on the deadline for completing medical records, as outlined in the Hospital Minimum Service Standards (SPM), is ≤ 24 hours after outpatient services are completed or after an inpatient is discharged from the hospital. Based on the study findings, it can be concluded that knowledge is a contributing factor to the incompleteness of inpatient medical record documentation.

Education in this study refers to the informants' highest level of education in relation to completing inpatient medical records in the hospital. The study results regarding the education of staff involved in filling out inpatient medical records are shown in the table below.

Table 2. Education Level of Informants

No.	Informant	Roles	Education
1.	Informant 2	Attending Physician	Internal Medicine Specialist
2.	Informant 3	Attending Physician	Internal Medicine Specialist
3.	Informant 4	Attending Physician	Internal Medicine Specialist
4.	Informant 5	Attending Physician	Internal Medicine Specialist
5.	Informant 6	Inpatient Ward Nurse	Bachelor's Degree in Nursing
6.	Informant 7	Inpatient Ward Nurse	Nursing Profession
7.	Informant 8	Inpatient Ward Nurse	Nursing Profession

Source: Primary Data (2024)

The results of the study showed that the educational background of staff involved in the completion of medical records aligns with the minimum qualifications required for healthcare personnel. The minimum educational qualification for healthcare staff is a Diploma III in health-related fields, while medical professionals must hold at least a professional education qualification in health (9). It can be concluded that education is not a contributing factor to the incompleteness of inpatient medical record documentation.

Attitude in this study refers to the response of staff regarding the incompleteness of inpatient medical record documentation. Attitude is the individual's reaction or response to a stimulus or object (8). The results of the study are shown in the following interview excerpt.

> "I agree and am willing to complete the medical records within 1 x 24 hours after the patient is discharged" (The 1st Informant, 2024)
>
> "Each healthcare provider must be responsible for completing the medical records and must ensure they are filled out completely and on time" (The 3rd Informant, 2024)
>
> "Yes, it is mandatory because in healthcare services, every action taken for each patient must be documented" (The 7th Informant, 2024)

The interview results showed that all informants demonstrated a positive attitude, where each healthcare provider has the obligation and responsibility to complete the medical records within a maximum of 1x24 hours after the patient is discharged from the hospital. It can be

concluded that attitude is not a contributing factor to the incompleteness of inpatient medical record documentation.

Enabling Factor

Enabling factor is a factor that facilitate the occurrence of behavior. In this study, enabling factors consisted of facilities, training, medical record forms, and SOPs. In this study, facilities are defined as resources such as computers used to support the completion of inpatient medical records, which have started to implement electronic medical records (EMR). The research findings regarding facilities are shown in the following interview excerpt.

> "The number of computers is insufficient, so there is often a queue to share with other healthcare providers" (The 2nd Informant, 2024)
>
> "The number is not adequate because I cannot remember all the patient data. If tablets were provided, it would support my service to patients" (The 5th Informant, 2024)
>
> "The computers are sufficient, but the number is still lacking" (The 9th Informant, 2024)

The interview results showed that there were two computers available at the nurse station. However, the number was still insufficient to meet the needs of the healthcare providers, causing them to wait in line to use the computers. The implementation of Electronic Medical Records (EMR) is closely tied to the use of computers and the EMR system applied in the healthcare facility. Therefore, it can be concluded that the lack of facilities is a contributing factor to the incomplete filling of inpatient medical records.

Training in this study refers to the activities conducted by healthcare providers to improve their competencies in filling out inpatient medical records, both manual records and Electronic Medical Records (EMR). Each staff member who has received training is expected to achieve consistency in knowledge, attitude, and skills between experienced and newly hired staff, ensuring they perform their tasks according to established procedures. The research findings regarding training are presented in the following interview excerpts.

> "Not all staff members attended the seminar, perhaps due to limited time or because the institution did not mandate or organize the seminar" (The 6th Informant, 2024)
>
> "It was mentioned in a meeting about effective communication, and I have also been a resource person for EMR training for other healthcare staff" (The 3rd Informant, 2024)

The interview results indicated that not all staff involved in completing inpatient medical records have participated in training. Only some staff members have attended internal or external training or seminars related to filling out electronic medical records (EMRs). The reason why not all informants have participated in training was due to their busy work schedules, which leave little time to attend seminars. Additionally, the institution has neither organized seminars nor enrolled staff in training programs on completing inpatient medical records. It can be concluded that the lack of training provided to all staff is a contributing factor to the incomplete filling of inpatient medical records.

Medical record forms in this study refer to the documents used for recording the healthcare services provided to inpatients. Documentation of healthcare services performed by attending physicians, nurses, and other healthcare professionals at X Regional General Hospital is currently carried out in a hybrid manner, both manually and electronically. The results of the study regarding whether the structure of the current medical record forms facilitates the healthcare professionals (HCPs) in completing medical records are presented in the following interview excerpts.

> "Manual medical records are not efficient because there are still some repeated items" (The 1st Informant, 2024)

"Manual medical records are inefficient, while electronic medical records are much simpler" (The 5th Informant, 2024)

"Electronic medical records are well-organized, so I haven't encountered any significant issues" (The 9th Informant, 2024)

The study results indicated that the content and structure of manual medical records are still inefficient, as some items are repeated. These forms could be combined with other medical record forms but are instead created separately, resulting in numerous types of medical record forms. In contrast, the implementation of electronic medical records (EMR) features a complete and organized structure tailored to each form type, making it easier for healthcare providers to fill in the EMR. The implementation of EMR can reduce redundancy or repetition of similar or identical items that often occur with manual medical records, as EMR forms are designed to be simpler and more user-friendly. It can be concluded that the content and structure of manual medical records contribute to the incompleteness of inpatient medical record documentation.

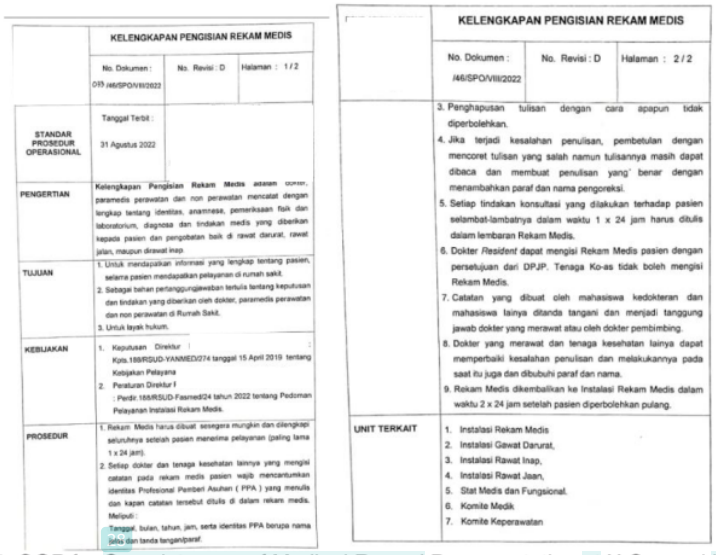
The SOP in this study refers to the guidelines used by healthcare providers to ensure the complete documentation of inpatient medical records. The SOP serves as a reference and directive for carrying out routine tasks, particularly related to the behavior of healthcare providers, ensuring that the medical record documentation process adheres to the established regulations. The results of the study regarding the availability of the SOP are illustrated by the following interview excerpts.

"I am not aware of the SOP, so I cannot understand it yet" (The 6th Informant, 2024)

"Yes, there is an SOP, and I understand its contents" (The 8th Informant, 2024)

"I have never been aware of the SOP" (The 5th Informant, 2024)

The interview results indicated that not all staff members are aware of the availability of the SOP. Therefore, the researcher conducted observations and found the existence of an SOP for inpatient medical record documentation, as shown in the following image.



KELENGKAPAN PENGISIAN REKAM MEDIS

	No. Dokumen : 035 /46/SPO/VIII/2023	No. Revisi : D	Halaman : 1 / 2
STANDAR PROSEDUR OPERASIONAL	Tanggal Terbit : 31 Agustus 2022		
PENGERTIAN	Kelengkapan Pengisian Rekam Medis adalah dokter, paramedis perawatan dan non perawatan mencatat dengan lengkap tentang identitas, anamnese, pemeriksaan fisik dan laboratorium, diagnosa dan tindakan medis yang diberikan kepada pasien dan pengobatan baik di rawat darurat, rawat jalan, maupun dirawat inap.		
TUJUAN	1. Untuk mendapatkan informasi yang lengkap tentang pasien, selama pasien mendapatkan pelayanan di rumah sakit. 2. Sebagai bahan pertanggungjawaban tertulis tentang keputusan dan tindakan yang diberikan oleh dokter, paramedis perawatan dan non perawatan di Rumah Sakit. 3. Untuk layak hukum.		
KEBIJAKAN	1. Keputusan Direktur : Kota 188/RSUD-YANMED/074 tanggal 15 April 2019 tentang Kebijakan Pelayana 2. Peraturan Direktur I : Perdir.188/RSUD-Fasmed/24 tahun 2022 tentang Pedoman Pelayanan Instalasi Rokam Medis.		
PROSEDUR	1. Rekam Medis harus dibuat sesegera mungkin dan dilengkapi seluruhnya setelah pasien menerima pelayanan (paling lama 1 x 24 jam). 2. Setiap dokter dan tenaga kesehatan lainnya yang mengisi catatan pada rekam medis pasien wajib mencantumkan identitas Profesional Pemberi Asuhan (PPA) yang menulis dan kapan catatan tersebut ditulis di dalam rekam medis. Meliputi : Tanggal, bulan, tahun, jam, serta identitas PPA berupa nama jelas dan tanda tangan/paraf.		

KELENGKAPAN PENGISIAN REKAM MEDIS

	No. Dokumen : /46/SPO/VIII/2022	No. Revisi : D	Halaman : 2 / 2
	3. Penghapusan tulisan dengan cara apapun tidak diperbolehkan. 4. Jika terjadi kesalahan penulisan, pembetulan dengan mencoret tulisan yang salah namun tulisannya masih dapat dibaca dan membuat penulisan yang benar dengan menambahkan paraf dan nama pengoreksi. 5. Setiap tindakan konsultasi yang dilakukan terhadap pasien selambat-lambatnya dalam waktu 1 x 24 jam harus ditulis dalam lembaran Rekam Medis. 6. Dokter *Resident* dapat mengisi Rekam Medis pasien dengan persetujuan dari DPJP. Tenaga Ko-as tidak boleh mengisi Rekam Medis. 7. Catatan yang dibuat oleh mahasiswa kedokteran dan mahasiswa lainya ditanda tangani dan menjadi tanggung jawab dokter yang merawat atau oleh dokter pembimbing. 8. Dokter yang merawat dan tenaga kesehatan lainya dapat memperbaiki kesalahan penulisan dan melakukannya pada saat itu juga dan dibubuhi paraf dan nama. 9. Rekam Medis dikembalikan ke Instalasi Rekam Medis dalam waktu 2 x 24 jam setelah pasien diperbolehkan pulang.		
UNIT TERKAIT	1. Instalasi Rekam Medis 2. Instalasi Gawat Darurat, 3. Instalasi Rawat Inap, 4. Instalasi Rawat Jaan, 5. Stat Medis dan Fungsional. 6. Komite Medik 7. Komite Keperawatan		

Figure 1. SOP for Completeness of Medical Record Documentation at X General Hospital

The results of the observation and documentation in the image above explain the procedures for filling out medical records, such as documenting all forms of services and actions provided to patients, along with the authentication or identification of the healthcare provider at the end of the notes recorded in the medical records. It also outlines the steps to be taken in case of errors in recording the medical records. This is in accordance with the Minister of Health Regulation Number 24 of 2022, which states that medical records must be created by the healthcare provider, containing patient identity data, examinations, treatments, actions, and other services provided to the patient (10).

The existing SOP should be socialized to all personnel involved in the completion of inpatient medical records. The results of the study are shown in the following interview excerpt.

"Never, but it should be socialized" (The 2nd Informant, 2024)
"Yes, during the new employee orientation at X Regional General Hospital" (The 7th Informant, 2024)

The research findings indicated that not all staff have attended the socialization of the inpatient medical record filling SOP. In addition, the socialization of the inpatient medical record filling SOP at X Regional General Hospital has been carried out, but not regularly. This has led to some staff members not receiving the socialization of the rules outlined in the SOP. It can be concluded that the lack of SOP socialization is a contributing factor to the incompleteness of inpatient medical record filling.

Reinforcing Factor

The reinforcing factor refers to the factors that strengthen the occurrence of a behavior. In this study, the reinforcing factor is the punishment given by supervisors to doctors and nurses who fail to complete the medical records, to prevent the same mistakes from happening again. The research findings are shown in the following interview excerpt.

"None so far" (The 4th Informant, 2024)
"Yes, a verbal warning with a requirement to complete the medical records thoroughly" (The 6th Informant, 2024)
"There is none, it has not been implemented" (The 1st Informant, 2024)

The results of the study showed that no punishment has been given to staff who fail to complete the medical records thoroughly. When a HCPs did not complete the medical records, whether manual or EMR, only a verbal warning was given to complete the records. It can be concluded that the absence of punishment is a contributing factor to the incomplete completion of inpatient medical records.

Discussion

Predisposing Factor

Predisposing factors are those that facilitate the occurrence of behavior. In this study, the predisposing factors consist of knowledge, education, and attitudes of the staff. Knowledge refers to the result of human sensory perception or understanding of an object obtained through the senses. Knowledge or the cognitive domain is a crucial area in shaping an individual's behavior (8). The research findings showed that not all staff were aware of the standard time for completing inpatient medical records. The rule for the time limit for completing medical records, as stated in the Hospital's Minimum Service Standards (SPM), is ≤ 24 hours after outpatient services are completed or after the inpatient patient's discharge. A similar finding was observed in the study by Swari & Verawati (2022), where one of the factors contributing to the incomplete inpatient medical records in hospitals was the staff's lack of knowledge regarding the deadline for completion, the benefits, and the impact of incomplete medical records (11).

Furthermore, not all staff were aware of the items that need to be filled in the inpatient medical records. Minister of Health Regulation No. 24 of 2022 explains that the content of Electronic Medical Records (EMR) includes administrative documentation (recording of patient registration data) and clinical documentation (the results of healthcare services provided to patients in healthcare facilities) (10). Further explanation regarding the types of medical record items that must be fully completed, both manually and electronically, consists of four classifications, including patient identification items (patient name, medical record number, date of birth, and gender), authentication/validity of documentation (stamp/name of the healthcare provider, signature of the healthcare provider, professional title, date and time of documentation), important reports (initial assessment, general consent, medical summary, informed consent, anesthesia report, and anesthesia report), and proper documentation (clear and legible writing, use of abbreviations, correction of writing errors, and marking of empty lines) (12).

The knowledge possessed by the staff involved in the completeness of medical records influences their behavior in filling out the records. Incomplete inpatient medical records may occur due to the lack of knowledge among healthcare staff in completing the records (7). Staff are more likely to pay attention to the completeness of medical records if they have a high level of knowledge regarding the importance of medical records (5). Knowledge can be influenced by education. Education is understood as an activity or process of learning to enhance or develop the abilities and insights of the educational target (8). The higher the education level of a doctor, the more they will understand the benefits of filling out medical records thoroughly and completely (13). Nurse education is directly related to behavioral changes, so nurses tend to be more careful in filling out medical records due to their awareness of the importance of documentation and the legal consequences of errors in filling out medical records (14).

Education is closely related to an individual's knowledge and behavior, where the higher the level of education, the broader the individual's knowledge, leading to positive attitudes and behaviors (15). The researchers believe that the alignment of the educational level of personnel involved in medical record documentation affects their behavior when documenting healthcare services, whether in manual or electronic records. This is because healthcare personnel who meet the minimum educational qualifications will have a foundation of knowledge about the importance of complete medical records. Furthermore, with the transition from manual to electronic medical records, personnel will not find it too difficult if their educational background aligns, as they will have received information and acquired knowledge and skills related to the implementation of electronic medical records (EMR).

Behavior can be influenced by attitude. Attitude is a person's internal reaction or response to a stimulus or object (8). The Minister of Health Regulation No. 24 of 2022 stipulates that the management of medical records is the responsibility of each doctor, dentist, or other healthcare personnel (10). Although the HCPs have a positive attitude, this has not been optimally realized in daily practice, especially regarding compliance with medical record documentation for inpatients, as there were still instances of incomplete documentation. The research findings indicated that the completion of medical records by HCPs was often delayed due to the workload of the attending physician (DPJP), who have a large number of patients, making the available time for filling out medical records very limited. Additionally, some physicians worked at other hospitals as well.

The busyness experienced by HCPs, particularly the attending physician (DPJP), is often cited as the main reason for the incomplete medical records, both manual and electronic. This busyness should not be an excuse, as one of the responsibilities of the HCPs is to ensure the completion of medical records. Despite the large number of patients, the completion of medical records depended on the individual HCPs. In principle, if the concerned HCPs recognized that this was part of their duty, they should be able to allocate time to fulfill this responsibility (16). The failure to complete medical records is, among other reasons, due to the doctor’s busyness, the high volume of patients, the doctor prioritizing service delivery, and the time-consuming nature of record completion (5).

Faktor Enabling

Enabling factors are those that facilitate the occurrence of a behavior. In this study, enabling factors consisted of facilities, training, medical record forms, and Standard Operating Procedures (SOP). Facilities in this research refer to the infrastructure and resources available to support the process of filling out inpatient medical records, including the use of computers and Electronic Medical Records (EMR). The implementation of EMR was inseparable from the use of computers and the EMR system applied in healthcare facilities. There were two computers available at each nurse station. The completion of medical records by HCPs at X Regional General Hospital faced challenges, as, despite the availability of computers, the number was still insufficient when compared to the number of HCPs using the EMR. This led to delay in completing medical records, as there was often a queue among HCPs to use the computers alternately.

The implementation of EMR requires hardware support, which can include computers, laptops, or tablets. Healthcare facilities are obligated to provide the necessary resources to implement medical records. The availability and adequacy of facilities, particularly computers, to run the EMR program, will affect the behavior of staff when filling out the EMR. The insufficient number of computers used causes delays in filling out the EMR, leading to many records remaining incomplete when patients finish receiving healthcare services, as staff must take turns entering data into the computers. This results in failing to meet the minimum service standard for completing EMR ≤ 24 hours after outpatient services or after a hospitalized patient is discharged. A study by Dhamar and Rahayu (2020) also found a similar issue, where inadequate computer resources, due to their limited number, hindered staff from completing medical record data (17).

Training is a systematic process designed to develop an individual's skills, abilities, knowledge, or attitudes that change employee behavior to achieve set goals (18). Each staff member who has received training is expected to possess the same abilities as those who have been working for a longer period, ensuring that they can perform their tasks according to established procedures. Training should be provided to staff as an effort to enhance skills and change behavior in completing medical records, both manual and electronic.

The behavior of staff in completing inpatient medical records can be influenced by various factors, one of which is training to improve their ability and skills in filling out medical records (19). The improvement of healthcare service quality needs to be continuously trained (20). Ongoing training should be provided to doctors in operating both manual and electronic medical records, so that the number of incomplete medical records can be minimized (21). Furthermore, the transition from manual medical records to implementing the EMR system requires socialization and training to ensure that all staff, both clinical and administrative, can adapt to the use of EMR (22).

Medical record form is instrument used to document the healthcare services provided. Documentation of healthcare services performed by attending physician, nurses, and other HCPs at X Regional General Hospital is currently done in a hybrid manner, both manually and electronically (EMR). This is because some medical record forms have not yet been transformed into EMR, such as informed consent forms, medical summaries, surgery reports, anesthesia reports, and surgical preparation forms, as these still require the signatures of attending physician (DPJP), other HCPs, patients, or the patient's family.

The research findings indicated that the content and structure of manual medical records are not efficient, as some items are repeated. Meanwhile, the EMR system has a complete structure that aligns with the type of form, making it easier for HCPs to fill out. The implementation of EMR reduces the use of paper-based medical record forms (paperless). The paperless system of entering patient medical records into the computer requires HCPs to input complete patient data for it to be saved (23).

The arrangement and efficiency of forms, as well as the content items within manual and electronic medical record forms, significantly influence the behavior of HCPs in completing EMR documentation. Therefore, the design of forms must be made efficient, as unstructured

forms or disorganized content items can cause HCPs to overlook certain sections of the medical record. Well-ordered forms facilitate the delivery of healthcare services and patient treatment (11). Unsystematic forms and those lacking essential content components are major causes of incomplete medical record documentation. This can result in inadequate data collection, delays in documentation, inaccurate information, and doctors rushing to complete patient medical records.

SOP serves as a reference outlining the stages related to work activities (24). It is utilized as a guideline and directive to complete routine work processes, particularly regarding the behavior of HCPs, ensuring that the recording process in medical records adheres to existing regulations (1). The findings of this study indicated that not all staff members were aware of the existence of an SOP for inpatient medical record documentation. This aligns with the study by Erawantini et al. (2022), which found that some staff members lack understanding and are unable to properly implement the SOP for medical record documentation because the SOP is only available in the medical records unit (7). The lack of awareness among some X Regional General Hospital staff about the availability of the SOP has resulted in limited understanding of the procedures for completing medical records. This issue is attributed to insufficient SOP dissemination.

The dissemination of the SOP for inpatient medical record documentation at X Regional General Hospital has been conducted but not on a regular basis. This has resulted in some staff members not receiving proper dissemination of the regulations outlined in the SOP. Irregular dissemination of the SOP can impact the completeness of medical records (25). Because if new HCPs staff begin working at X Regional General Hospital after the SOP dissemination, they will not receive training related to the SOP for inpatient medical record documentation. As a result, attending physician may exhibit behavior such as failing to complete medical records comprehensively, particularly in the authentication section.

Faktor Reinforcing

The reinforcing factor is an element that strengthens the occurrence of a behavior, which in this case involves the implementation of punishment. The application of punishment at X Regional General Hospital has not yet been carried out optimally. When a HCPs fails to complete medical records, either manually or through the EMR system, they were only given verbal reprimands to complete the medical records.

The incompleteness in filling out medical records constitutes a violation of Regulation No. 24 of 2022 issued by the Ministry of Health, which mandates the responsibility of HCPs staff to complete medical records immediately after patients receive healthcare services (10). Regulations established by an institution must be consistently adhered to. In cases of violations, it is necessary to implement clear sanctions by management through an open and transparent process (4). Punishment is imposed on staff who commit errors or violations to motivate them to exhibit positive behavior. Therefore, the enforcement of strict sanctions is expected to minimize the occurrence of incomplete inpatient medical records (26).

The absence of punishment for healthcare workers providing patient services can lead to incomplete medical record documentation (5). The lack of an enforced punishment system may result in negative behavior, as there are no deterrent sanctions for failing to complete medical records properly. Consequently, staff may perceive the incompleteness of medical records as a minor issue (27). Therefore, hospitals need to implement a punishment system to prevent negative behavior and minimize the occurrence of incomplete inpatient medical record documentation.

Conclusion

The incompleteness of medical record documentation, both manual and electronic, remains an issue at X Regional General Hospital. This was caused by several factors, including a lack of staff knowledge about the detailed items that need to be filled out and the standard time for completing medical records, the limited number of computers available for EMR entry, staff who have not undergone training, and a lack of awareness about the SOP for medical record

completeness. Additionally, the absence of punishment for staff who fail to complete medical records also contributes to the problem. Recommendations include regular SOP dissemination, increasing the number of computers, providing staff training, and implementing punishment to improve the completeness of medical record documentation.

Ethics approval

The researcher confirms that this study does not involve any ethical issues, as evidenced by the Ethical Approval Letter No. 287/PL17.4/PG/2024 issued by the Ethics Committee of Politeknik Negeri Jember.

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Author Contribution

NSN formulated the research concept, collected data, and analyzed the data. GA formulated the research concept and wrote the manuscript. AD analyzed the research data, and GEJS developed the research instruments.

References

1. Safitri AR, Dewi DR, Yulia N, Rumana NA. Tinjauan Kelengkapan Pengisian Rekam Medis Rawat Inap di Rumah Sakit As-Syifa Bengkulu Selatan. Indones J Heal Inf Manag [Internet]. 2022 Feb 2;2(1):1–6. Available from: https://ijhim.stikesmhk.ac.id/index.php/ojsdata/article/view/39
2. Wardani EK, Suyanto R. Analisis Sistem Pengelolaan Rekam Medis di RSUD Bayu Asih Purwakarta,. J Compr Sci [Internet]. 2022 Sep 15;1(2):55–64. Available from: https://jcs.greenpublisher.id/index.php/jcs/article/view/13
3. Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Nomor 129 Tahun 2008 tentang Standar Pelayanan Minimal Rumah Sakit. Jakarta: Kementerian Kesehatan Republik Indonesia; 2008.
4. Putri AK, Nurmawati I, Santi MW, Swari SJ. Faktor Penyebab Ketidaklengkapan Pengisian Berkas Rekam Medis Pasien Rawat Inap. J Penelit Kesehat Suara Forikes. 2022;13(4):894–901.
5. Wirajaya MK. Faktor Faktor yang Mempengaruhi Ketidaklengkapan Rekam Medis Pasien pada Rumah Sakit di Indonesia. J Manaj Inf Kesehat Indones [Internet]. 2019 Oct 4;7(2):158–65. Available from: https://jmiki.aptirmik.or.id/index.php/jmiki/article/view/158
6. Yuniati E, Rifa'i A. Analisis Kuantitatif Lembar Resume Medis Rawat Inap Pasien Penyakit Dalam Periode Tahun 2018 Di Rumah Sakit Islam Gondanglegi. Heal Care Media. 2020;4(1):25–31.
7. Erawantini F, Agustina EA, Nuraini N, Dewi RDC. Faktor Penyebab Ketidaklengkapan Pengisian Dokumen Rekam Medis Rawat Inap di Rumah Sakit: Literature Review. J Manaj Inf Kesehat Indones [Internet]. 2022 Mar 2;10(1):94–104. Available from: https://jmiki.aptirmik.or.id/index.php/jmiki/article/view/94
8. Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2012.
9. Pemerintah Indonesia. Undang-undang (UU) Nomor 17 Tahun 2023 tentang Kesehatan. Jakarta: Pemerintah Indonesia; 2023.
10. Kementerian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Nomor 24 Tahun 2022 tentang Rekam Medis. Jakarta: Kementerian Kesehatan Republik

Indonesia; 2022.
11. Swari SJ, Verawati M. Faktor Penyebab Ketidaklengkapan Pengisian Rekam Medis Pasien Rawat Inap Di Rumah Sakit. J-REMI J Rekam Med dan Inf Kesehat [Internet]. 2022 Sep 22;3(4):269–75. Available from: https://publikasi.polije.ac.id/index.php/j-remi/article/view/3256
12. Giyatno, Rizkika MY. Analisis Kuantitatif Kelengkapan Dokumen Rekam Medis Pasien Rawat Inap Dengan Diagnosa Fracture Femur Di RSUD Dr. R.M. Djoelham Binjai. J Ilm Perekam dan Inf Kesehat Imelda [Internet]. 2020 Feb 29;5(1):62–71. Available from: https://jurnal.uimedan.ac.id/index.php/JIPIKI/article/view/349
13. Istirochah. Analisis Kepatuhan Dokter Dalam Mengisi Rekam Medis Di Rumah Sakit Umum Daerah Kabupaten Boyolali. Universitas Muhammadiyah Surakarta; 2016.
14. Pringgayuda F, Hasanah N, Daniah D. Hubungan Pengetahuan Perawat Dengan Kepatuhan Perawat Mengisi Identitas Pasien. J WACANA Kesehat [Internet]. 2020 Jan 24;5(2):565–73. Available from: https://jurnal.akperdharmawacana.ac.id/index.php/wacana/article/view/150
15. Orangbio TS, Wagey FW, Doda DVD. Faktor-Faktor Kelengkapan Pengisian Rekam Medis Elektronik Instalasi Rawat Jalan RSUP Prof Dr. R. D Kandou Manado. J Kesehat Tambusai. 2023;4(2):1210–23.
16. Husni M. Pengaruh Pengetahuan, Sikap dan Motivasi Terhadap Kepatuhan Dokter dalam Penulisan Diagnosis pada Resume Medis di RS Zahirah 2018. J Adm Rumah Sakit Indones [Internet]. 2018 Jun 26;4(3):184–97. Available from: https://scholarhub.ui.ac.id/arsi/vol4/iss3/2/
17. Dhamar EN, Rahayu MH. Pengalaman Perawat dalam Penggunaan Rekam Medis Elektronik di Rumah Sakit Panti Rini Yogyakarta. I Care J Keperawatan STIKes Panti Rapih [Internet]. 2020 Oct 23;1(2):141–50. Available from: http://ejournal.stikespantirapih.ac.id/index.php/jurkes/article/view/94
18. Sinambela LP, Sinambela S. Manajemen Kinerja: Pengelolaan, Pengukuran dan Implementasi Kinerja. Jakarta: Rajawali Pers; 2019.
19. Lestari DFA, Muflihatin I. Analisis Faktor Penyebab Ketidaklengkapan Rekam Medis Pasien Rawat Inap di Puskesmas Kotaanyar. J-REMI J Rekam Med dan Inf Kesehat [Internet]. 2020 Dec 30;2(1):134–42. Available from: https://publikasi.polije.ac.id/index.php/j-remi/article/view/2217
20. Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Nomor: HK.01.07/MENKES/312/2020 tentang Standar Profesi Perekam Medis dan Informasi Kesehatan. Jakarta: Kementerian Kesehatan Republik Indonesia; 2020.
21. Sari PI, Hatta GR, Nuraini A. Analisis Pengaruh Pengetahuan, Kepatuhan Dokter dan Peran Rumah Sakit Terhadap Kelengkapan Pengisian Berkas Rekam Medis Rawat Inap RSIA Brawijaya. J Manaj dan Adm Rumah Sakit Indones [Internet]. 2023 Nov 1;7(4):369–78. Available from: https://ejournal.urindo.ac.id/index.php/MARSI/article/view/3566
22. Hamdani JN, Santi MW, Rachmawati E, Sabran S. Analisis Kesiapan penerapan Rekam Medis Elektronik di Rumah Sakit. J Penelit Kesehat Suara Forikes. 2022;13(Nomor Khusus November):82–91.
23. Muliatifa AY, Astuti R, Wulandari F. Kesiapan Petugas dalam Peralihan Dokumen Rekam Medis Manual ke Paperless pada Unit Rekam Medis Puskesmas Kedungmundu Kota Semarang. J Dunia Kesmas. 2021;10(1):1–9.
24. Nabillaa DR, Hasin A. Analisis Efektivitas Penerapan Standard Operating Procedure (SOP) Pada Departemen Community & Academy RUN System (PT Global Sukses Solusi Tbk). Sel Manaj J Mhs Bisnis Manaj. 2022;1(6):58–75.
25. Sholihah G, Pamungkas G, Tamara MD, Ruhyat E, Tusrini W. Evaluasi Kelengkapan Pengisian Dan Ketepatan Waktu Pengembalian Berkas Rekam Medis Pasien Rawat Inap Di Rumah Sakit Khusus Paru Kabupaten Karawang Tahun 2023. Sekolah Tinggi Ilmu Kesehatan Dharma Husada Bandung; 2023.
26. Mahanani ES. Tingkat Disiplin Dan Tanggungjawab Tenaga Medis Dalam

Penyelenggaraan Rekam Medis Dan Hubungannya Dengan Keterlambatan Pengembaliannya (Studi di RS Bhayangkara Pusdik Brimob Watukosek, Gempol Pasuruan). J Mitra Manaj [Internet]. 2020 Oct 28;4(10):1440–8. Available from: http://e-jurnalmitramanajemen.com/index.php/jmm/article/view/474

27. Kencana G, Rumengan G, Hutapea F. Analisa Kepatuhan Pengisian Berkas Rekam Medis di Instalasi Rawat Inap Rumah Sakit X. J Manaj Kesehat Yayasan RSDr Soetomo [Internet]. 2019 May 28;5(1):27–37. Available from: http://jurnal.stikes-yrsds.ac.id/index.php/JMK/article/view/127

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