Journal of Public Health for Tropical and Coastal Region (JPHTCR)
Journal homepage: https:/ejournal2.undip.ac.id/index.php/jphtr/index
ISSN: 2597- 4378

Factors Contributing to the Incompleteness of Manual and Electronic Medical Record Entries in Hospital

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Abstract

Introduction: In the third quarter of 2022, X Regional Hospital reported the highest rate of incomplete inpatient medical records in October, with 465 cases (32.68%). Incomplete medical documentation negatively impacts service quality, continuity of care, and patient safety. This study aimed to examine the factors contributing to the incompleteness of inpatient medical records at the hospital, using Lawrence Green's behavioral theory.

Methods: This qualitative study utilized data collection methods including observation, documentation, and interviews with nine informants: one head of the medical records' department, four physicians, three nurses, and one head of the inpatient ward. Data were analyzed through a process of reduction, presentation, and conclusion drawing, which was followed by the development of recommendations for improvement. The analysis focuses on three key components: predisposing, enabling, and reinforcing factors.

Results: The findings indicated that the predisposing factors were two informants who had a low level of knowledge about medical record documentation. Enabling factors were the 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 regular socialization, monitoring, and evaluating the implementation of Standard Operating Procedures (SOPs) for ensuring medical record completeness. Additionally, more computers, seminars and training sessions on medical record documentation for the staff and healthcare professionals (HCPs) are needed. Furthermore, reward and punishment system in completing inpatient medical records is recommended.

Keywords: behavior; completeness; electronic medical record; factors; hospital.

DOI: https://doi.org/10.14710/jphtcr.v8i1.25860

Article History: Received: 29th January 2025, revised: 16th April 2025 accepted: 23th April 2025

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 [1]. The indicators of a high-quality medical record include completeness, accuracy, timeliness, and compliance with legal requirements [2]. A complete medical record is 100% filled out by each Healthcare Professional (HCP)

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 implementation of EMR should have reduced the incompleteness in medical record documentation [4]. However, the documentation of inpatient medical records at X Regional General Hospital has not yet met the standard of completeness. The percentage of incomplete inpatient medical record documentation from October to December 2022 can be seen in Figure 1. The highest percentage of incompleteness was recorded in October 2022, at 32.68% or 465 medical records.

This situation at X Regional General Hospital did not comply with the Hospital's Minimum Service Standards (SPM), which require that medical record documentation should be 100% complete within ≤ 24 hours after the patient has completed their care. The incompleteness of medical record documentation held up the management process, affected the quality of medical record services, disrupted the continuity of care, and impacted on patient safety.

The impact of incomplete medical record documentation continued to the subsequent process management steps, such as data input for reports and the National Health Insurance (BPJS Kesehatan) claim process. The incomplete medical records must be returned to the relevant inpatient ward for completion. Furthermore, incomplete medical records disrupted the fulfillment of patients' rights to be get their medical record data, obstruct the provision of medical records as evidence in legal cases, complicate the disease classification and coding process.

The incompleteness of medical record documentation at X Regional General Hospital was believed to be sourced from staff lack of discipline in completing medical records. This issue was further exacerbated by the high workload and the frequent transfer of doctors between hospitals. The doctors' limited time availability was the primary factor contributing to the incomplete medical records [5]. Additionally, the lack of understanding among staff about the importance of medical record completeness also played a role, as shown by the unfilled sections for patient identification and the authentication of the responsible physician (DPJP). Staff's insufficient knowledge on the importance of medical record results in unmet procedures' records [6].

The incompleteness of medical records at X Regional General Hospital was 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, had not received specialized training on medical record documentation. Although there were Standard Operating Procedures (SOPs) in place, in practice, the medical records were still not fully completed. According to Yuniati & Rifa'i (2018), non-compliance by doctors and nurses with the SOPs was also one of the causes of this incompleteness [7].

One of the reinforcing factors suspected to contribute to the incomplete medical record documentation was the absence of punishment for healthcare workers who failed to complete medical records. The lack of sanctions, when inpatient medical records were not fully completed, is considered one of the reasons behind this issue [6]. Erawantini et al. (2022) also explained that implementing sanctions or punishments was necessary for staff who made mistakes, to motivate and prevent the recurrence of similar errors. [8].

The healthcare workers' behavior involved in the recording process was suspected to be the cause of the incompleteness of medical record documentation. This issue aligns with Lawrence Green's theory (1980) as cited in Notoatmodjo (2014), which states that behavior is influenced by three main factors: predisposing factors, enabling factors, and reinforcing factors [9], Therefore, this study aimed to analyze the

factors contributing to the incompleteness of medical record documentation at X Regional General Hospital. The findings of this study were expected to provide input to the hospital regarding policies on medical record documentation.

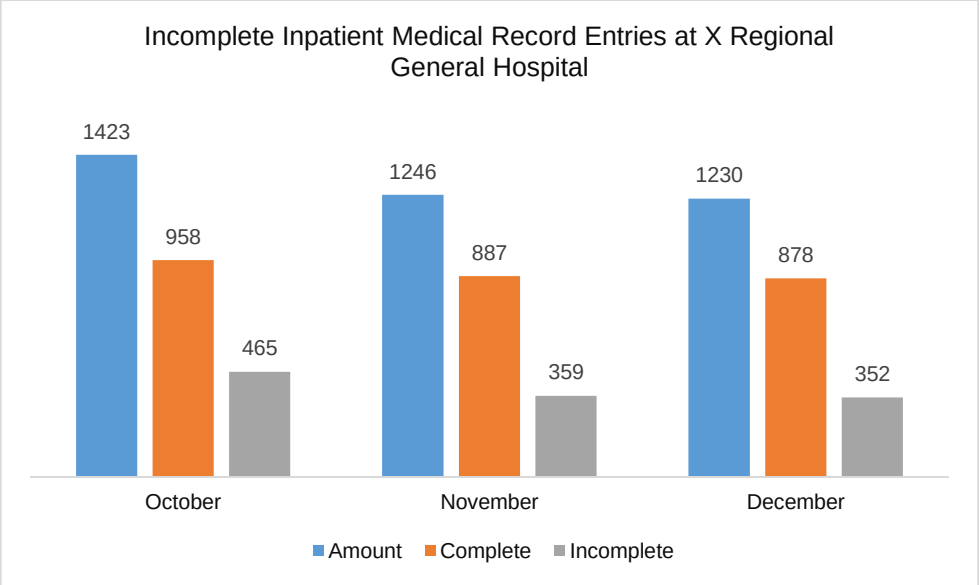


Figure 1. Completeness of Medical Record Entries at X Regional General Hospital X

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 in-depth interviews using an interview guide on 9 informants of 1 person, the head of medical records' department, 4 physicians (DPJP), 3 nurses, and 1 head of the inpatient ward. The selection of informants was based on the criterion that the informants were involved in completing both manual and electronic medical records for the Kenanga inpatient ward. The Kenanga ward was chosen as from October to December 2022, it had the highest percentage of incomplete records, which was 29.09%.

Data saturation was tested through source triangulation and technique triangulation. Source triangulation was carried out by comparing the interview results from one informant to another, while triangulation technique was done by comparing the interview results with the findings from observation and documentation. Data were analyzed through data reduction, data presentation, and concluding the factors contributing to the incompleteness of inpatient medical record documentation. The researchers confirmed 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 the factors 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 research findings showed that not all informants had good knowledge regarding the completion of both manual and electronic medical records. Although

the majority of informants had good knowledge, there was one informant with an adequate level of knowledge and two informants with low level of knowledge. The interview results that reflect the informants' knowledge are presented in the following interview excerpts.

"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 indicated that not all staff members were fully aware of which items need to be completed in the medical records. Statements from Informant 2 and Informant 4, as the physicians (DPJP), indicated that their knowledge were still lacking on the detail items that needed to be completed on inpatient medical records. The knowledge of the nurses, as seen by Informant 7 and Informant 8 in this study, demonstrated 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 for 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 was a contributing factor to the incompleteness of inpatient medical record documentation.

The results of the study showed that the educational background of staff involved in the completion of medical records aligned with the minimum qualifications required for healthcare personnel. The minimum educational qualification for healthcare staff was a third year Diploma in health-related fields, while the medical professionals must hold at least a professional education qualification in health [11]. It can be concluded that education was 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 [9]. 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 was not a contributing factor to the incompleteness of inpatient medical record documentation.

Enabling Factor

Enabling factor is a factor that facilitates 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 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, these computers were still insufficient to meet the needs of the healthcare providers. Thus, they had 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, the lack of facilities was a contributing factor to the incomplete filling of inpatient medical records.

Training in this study referred to the activities conducted by healthcare providers to improve their competencies in filling out inpatient medical records, both manual and Electronic Medical Records (EMR). Each staff member who had trained was expected to achieve consistency in knowledge, attitude, and skills between experienced and newly hired staff, ensuring they performed 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 had participated in the training. Only some staff members had attended internal or external training or seminars related to the electronic medical records (EMRs). The reason why not all informants participated in training was due to their busy work schedules, which left little time to attend seminars. Additionally, the institution has neither organized seminars nor enrolled staff in training programs. It can be concluded that the lack of training provided to all staff was 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 physicians, nurses, and other healthcare professionals at X Regional General Hospital was carried out in a hybrid manner, manually and electronically. The answers regarding the structure of the current medical record forms 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 were inefficient due to the repetition items. These forms could be combined with the other forms but they were created separately. In contrast, the electronic medical records (EMR) featured a complete and organized structure to be filled in easier. The implementation of EMR reduced redundancy of similar items on the manual medical records. EMR forms were 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 direction for carrying out routine tasks, particularly to ensure 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 Figure 2.

The observation results, as it's shown in Figure 2 explained the procedures for filling out the medical records, such as documenting all service forms and actions provided to patients, along with the authentication of the healthcare provider at the end of the records. It also outlined the steps to be taken in case of errors in recording the medical records. This is following the Minister of Health Regulation Number 24 of 2022, which stated that medical records must be created by the healthcare provider, containing patient identity data, examinations, treatments, actions, and other services provided to the patient [12].

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 had been carried out, but not regularly, so some staff members not receiving the SOP socialization. It can be concluded that the lack of SOP socialization was 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 was the punishment given by supervisors to doctors and nurses who failed to complete the medical records, to prevent the repeated mistakes. 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 had been given to staff who failed to complete the medical records. When the HCP 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 was a contributing factor to the incompletion of inpatient medical records.

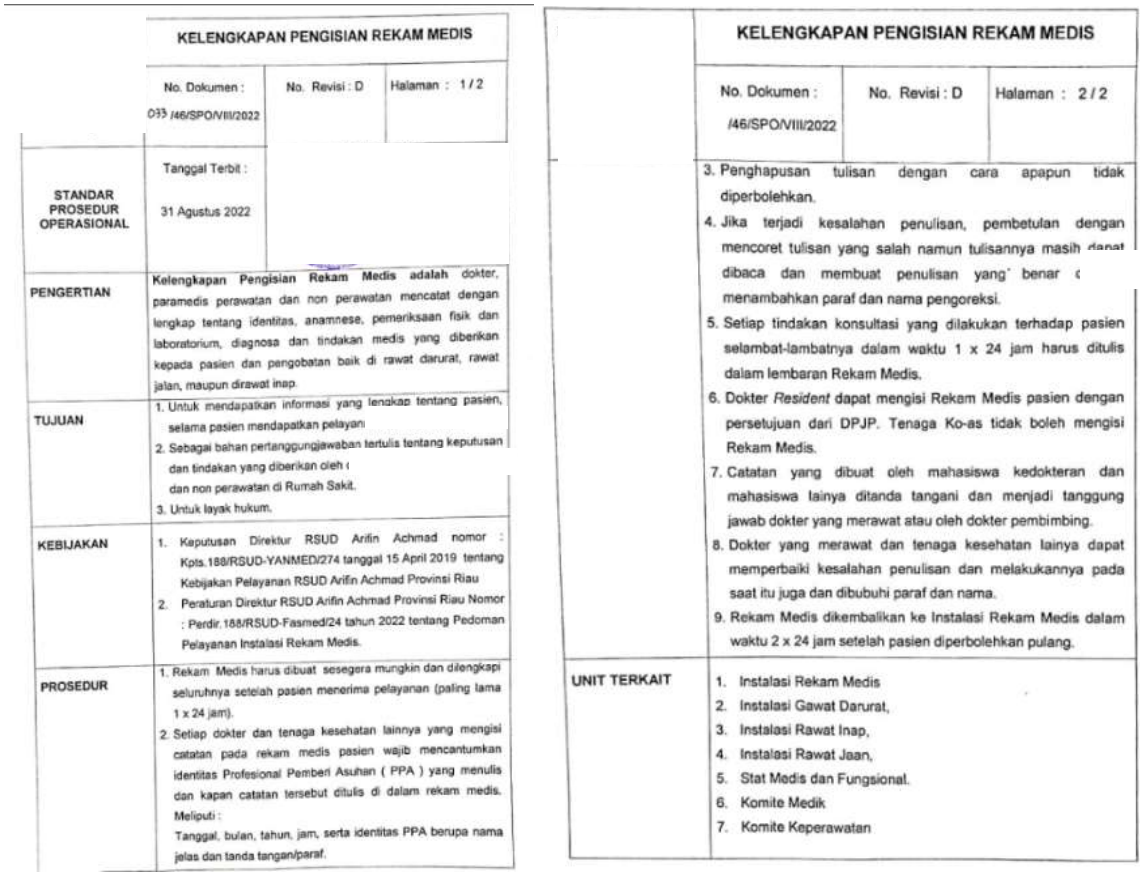
Table 1. Interview Results on Informants' Knowledge on Medical Record

Informant	Correct Answer	Number of Questions	Percentage (%)	Description
Informant 1	4	4	100%	A good level of knowledge
Informant 2	2	7	28.57%	A low level of knowledge
Informant 3	7	7	100%	A good level of knowledge
Informant 4	3	7	42.86%	A low level of knowledge
Informant 5	7	7	100%	A good level of knowledge
Informant 6	7	7	100%	A good level of knowledge
Informant 7	5	7	71.43%	An adequate level of knowledge
Informant 8	6	7	85.71%	A good level of knowledge
Informant 9	4	4	100%	A good level of knowledge

The categorization of knowledge level according to Arikunto (2013) as cited in Pani (2020) [10]:
Percentage of correct answers 76 - 100%: Good level of knowledge
Percentage of correct answers 56 - 75%: Adequate level of knowledge
Percentage of correct answers < 55% : Low level of knowledge

Table 2. Education Level of Informants

No.	Informant	Roles	Education
1.	Informant 2	Physician	Internal Medicine Specialist
2.	Informant 3	Physician	Internal Medicine Specialist
3.	Informant 4	Physician	Internal Medicine Specialist
4.	Informant 5	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



KELENGKAPAN PENGISIAN REKAM MEDIS

No. Dokumen : 033 /46/SPO/VIII/2022	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 pelayan 2. Sebagai bahan pertanggungjawaban tertulis tentang keputusan dan tindakan yang diberikan oleh dan non perawatan di Rumah Sakit. 3. Untuk layak hukum.
KEBIJAKAN	1. Keputusan Direktur RSUD Arifin Achmad nomor : Kpts.188/RSUD-YANMED/274 tanggal 15 April 2019 tentang Kebijakan Pelayanan RSUD Arifin Achmad Provinsi Riau 2. Peraturan Direktur RSUD Arifin Achmad Provinsi Riau Nomor : Perdir.188/RSUD-Fasmed/24 tahun 2022 tentang Pedoman Pelayanan Instalasi Rekam 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 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 2. SOP for Medical Record Documentation Completeness at X Regional General Hospital

Discussion

Predisposing Factor

Knowledge refers to the result of human sensory perception or understanding of an object obtained through the senses. Knowledge of the cognitive domain is a crucial area in shaping an individual's behavior [9]. 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 [13].

Furthermore, not all staff were aware of the items that needed 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) [12]. 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, and

anesthesia report), and proper documentation (clear and legible writing, use of abbreviations, correction of writing errors, and marking of empty lines) [14].

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 [8]. 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 [6]. 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 [9]. The higher the education level of a doctor, the more they will understand the benefits of filling out medical records thoroughly and completely [15]. 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 [16].

The hospital should develop policies to provide physicians (DPJP) and nurses with the opportunities to enhance their knowledge in completing medical records through training, seminars, or webinars. Training is beneficial for developing individual skills, abilities, knowledge, or attitudes that improve employee behavior to achieve set goals. Continuous training should be provided to Healthcare Professionals (HCPs) in operating electronic medical record entry systems to reduce the number of incomplete medical records [17]. The training program provided to HCPs at X Regional General Hospital can increase awareness of the importance of complete medical records and improve staff skills in completing medical records, consistently record patient care results in the medical records accurately. Staff will be more attentive to the completeness of medical records if they have a high level of knowledge about the usefulness of medical records.

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 [18]. 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 difficulties 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 [9]. 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 [12]. 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 physician (DPJP), who has a large number of patients, which will resulted in limited time available for medical records filling. Additionally, some physicians also worked at the other hospitals.

The busyness experienced by HCPs, particularly the physician (DPJP), is often cited as the main reason for 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 [19]. The other cause of failure to complete medical records were the service delivery prioritization by doctor, and the time-consuming nature of record completion [6].

Enabling Factor

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, despite the availability of computers, the number was still insufficient when compared to the number of HCPs using the EMR. This led to delays 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 [20].

Training is a systematic process designed to develop an individual's skills, abilities, knowledge, or attitudes that change employee behavior to achieve set goals [21]. Training should be provided to staff in an effort to enhance skills and behavioral change 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 [22]. The improvement of healthcare service quality needs to be continuously trained [23]. 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 [17]. 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 [24].

Documentation of healthcare services performed by attending physicians, 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 the 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 [25].

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 [13]. 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 [26]. 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 [8]. The lack of awareness among some X Regional General Hospital staff about the availability of the SOP has resulted in a 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 regularly. Thus, some staff members did not receive proper dissemination of the regulations outlined in the SOP. Irregular dissemination of the SOP can impact the completeness of medical records (25). If new HCP 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, some physicians might fail to complete medical records comprehensively, particularly in the authentication section.

The hospital should implement policies to conduct comprehensive dissemination of Standard Operating Procedures (SOPs) for completing manual medical records to all HCPs staff responsible for medical record documentation. The implementation of dissemination, monitoring, and evaluation of SOP application is necessary to ensure that HCPs staff complete medical records following existing standards and meet the established target—medical records should be completed within 24 hours after patient discharge. SOPs serve as guidelines and instructions for carrying out routine work processes, particularly in guiding PPA behavior to ensure that medical record entries comply with applicable regulations [1]. The lack of routine SOP socialization can affect the completeness of medical records [27].

In addition, the hospital should provide training to staff involved in the completion of both manual and electronic medical records, as well as ensure the availability of adequate computer facilities required by HCPs staff. Healthcare facilities are obligated to provide the necessary infrastructure to support medical record management. Computer technology and information systems are used to support electronic health documentation, aiming to improve service quality and ensure long-term security, as medical records cannot be deleted [5]. The availability and adequacy of essential facilities, especially computers for operating the electronic medical record (EMR) system, significantly influence staff behavior in completing EMR.

Reinforcing Factor

The application of punishment at X Regional General Hospital has not yet been carried out optimally. When the HCP failed to complete medical records, either manually or electronically, 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 [12]. 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 [5]. 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 [28].

The absence of punishment for healthcare workers providing patient services can lead to incomplete medical record documentation [6]. 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 [29]. Therefore, hospitals need to implement a punishment system to prevent negative behavior and minimize the occurrence of incomplete inpatient medical record documentation.

The hospital should implement a policy involving the imposition of punishments for incomplete medical record documentation. This can be done by having the management evaluate reports on medical record completeness and impose sanctions on inpatient wards and PPA staff who fail to complete documentation following the standard timeframe for inpatient medical record (DRM) entry. The purpose of imposing punishments is to motivate staff who commit errors or violations to stop engaging in improper behavior and to encourage positive conduct.

Research Limitations

This study was conducted qualitatively, so the findings are only applicable to the hospital where the research was conducted and cannot be generalized to other hospitals or healthcare facilities.

Conclusion

The incompleteness of medical record documentation, both manual and electronic, remains an issue at X Regional General Hospital. This issue was caused by several factors, including 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, limited number of staff who were trained, 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 affirms that this study complies with ethical standards, as evidenced by Ethical Approval Letter No. 287/PL17.4/PG/2024, issued by the Ethics Committee of Politeknik Negeri Jember.

Acknowledgment

The researchers express their sincere gratitude to X Regional General Hospital for granting permission to conduct this study. Appreciation is also extended to all informants for their valuable contributions and willingness to share data and information for research purposes.

Funding

The researcher declares that this study was not funded by any party.

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.

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