



Assessment of Medical Record Document Completeness in Inpatient Units Before and After STARKES Accreditation in a Private Hospital

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Abstract. The Hospital Minimum Service Standards include several key components, one of which is the vital management of medical records. Achieving 100% completeness in medical record documentation is a key indicator of success in the health sector, and it significantly influences the level of hospital accreditation. Therefore, this research aims to assess the completeness of medical record documents in inpatient units based on three essential forms, including Entry and Exit Summary, Clinical Notes, and Informed Consent. This assessment was carried out both before and after STARKES accreditation in a private hospital. The data used in this research include the complete recapitulation of medical record documents during two distinct periods, which were from October to December 2022 (before) and February to April 2023 (after accreditation). To achieve the aforementioned objective, a qualitative research methodology was employed, utilizing a descriptive method. Furthermore, the data collection process entailed the calculation of average data as well as conducting interviews to gain comprehensive insights. The data was meticulously processed using specialized software to determine the proportion of completeness and identify any differences before and after the accreditation. After analyzing the research data, the obtained results showed that the completeness of the three forms, both before and after STARKES accreditation, fell short of the prescribed standards. Strikingly the Paired Sample T-Test indicated that there was no statistically significant difference in the completeness of inpatient medical records during the two phenomena. As a result, it is imperative to emphasize the need for regular monitoring and evaluation of standard achievement, as well as the implementation of effective motivational strategies for officers responsible for ensuring the completeness of medical record documents.

Keywords: Medical Record Completeness, Hospital Minimum Service Standard, Medical Record Management.

1 Introduction

Hospital accreditation is a recognition of the quality of hospital services, based on a government-approved assessment of whether the hospital meets the necessary standards. The primary purpose of accreditation is to continuously enhance the quality of healthcare services provided by hospitals, thereby ensuring the well-being of the human resources present in the hospital and the community at large [1]. In addition to delivering excellent medical services, the importance of supportive services, such as medical records, cannot be understated. Among the crucial components considered during accreditation is the completeness of these records, which acts as an indicator for evaluating the medical services rendered.

The implementation of accreditation activities involves assessing the completeness of medical record documents, particularly emphasizing *Medical Record and Health Information Management* (MRHIM) element number 12. This element centers on performance improvement efforts. In this regard, hospitals regularly conduct evaluations and assessments of medical records, focusing on specific assessment criteria like MRHIM 12. C, which examines aspects such as completeness, timeliness, legibility, and compliance with a certain group of regulations [2]. Complete medical records are defined by fulfilling indicators related to filling completeness, accuracy, and timeliness. Specifically, these records must reach a 100% completeness rate within 24 hours after a patient is discharged from the hospital [3].

It is imperative to understand that accurate and comprehensive data or information in medical records are among the criteria used to assess the quality of healthcare services provided in hospitals. On the other hand, indicators such as completeness of content, accuracy, timeliness, and compliance with regulatory criteria play a significant role in assessing the quality of medical records. Incomplete medical records can be influenced by several factors, including human resources, equipment, techniques, materials, and budget constraints. Other contributing factors include communication gaps, busy schedules for doctors, heavy workload for medical record staff, lack of tools to print medical record forms, absence of meeting spaces, the absence of a checklist to determine completeness, insufficient socialization, absence of medical record policies, lack of reward or punishment systems, irregular arrangement of medical record forms, and an excessive number of different types of medical records [4].

Some internal/individual factors have been found to influence the performance of medical record officers. These factors include talent, competence, motivational elements, external influences, organizational management (resources), quality of leadership, and organizational strategy [5].

The hospital observed in this research is categorized as a type C facility with a bed capacity of 106. This facility was established in 2008 and its medical staff comprises 86 professionals consisting of general practitioners, specialists, sub-specialists, and dental practitioners. Additionally, the hospital is equipped with qualified nursing,

midwifery, medical support, and non-medical staff. Recently, between 25th and 28th January 2023, the hospital underwent a STARKES accreditation assessment, resulting in plenary category accreditation. It is imperative to point out that despite achieving accreditation status, the completeness of the medical records in this hospital still did not meet the *Minimum Service Standards* (MSS) set by the Decree of the Minister of Health.

Based on the medical record quality report after accreditation, the percentage of completed medical records in February was 98%, indicating 18 incomplete files out of a total of 855 inpatient patients treated. In March, the completeness declined further to 93%, with 68 incomplete medical record files out of a total of 941 patients attended to. Based on these observations, it is evident that the percentage of medical record completeness experienced a monthly decline following the hospital's accreditation.

The majority of incomplete medical record files in this hospital were found to be related to Entry and Exit Summary forms, Clinical Notes, and Informed Consent, all of which were typically filled out by *Care Giving Professionals* (PPA). Therefore, this research aims to examine the differences in the completeness of inpatient medical records both before and after the STARKES accreditation assessment at the observed facility.

2 Method

This research was conducted at a private hospital in Depok City, West Java, using a mixed methods approach, which incorporated both quantitative and qualitative methods. The quantitative method was employed to determine the proportion of completeness for the three types of forms each month and assess the significance of the differences observed before and after the implementation of STARKES accreditation implementation (Paired T-Test). Accordingly, the quantitative data were obtained from hospital documents pertaining to medical record completeness from October to December 2022 (Pre-Accreditation) and February to April 2023 (Post-Accreditation). These data were then processed using the statistical data processing software SPSS, and the obtained results were presented in a tabular format.

Conversely, a qualitative approach was employed to explore the causes of incomplete medical record files in the hospital, using the 5M framework (Man, Material, Machine, Method, and Money). In this research, however, it is expedient to note that no constraints were found related to the Money factor. Data for the qualitative aspect were collected through in-depth interviews with 3 informants consisting of the Head of the Medical Record Unit, the Medical Record Implementation Staff, and the medical practitioner in Charge of Nursing Floor 3 for Children. The collected data underwent manual processing using content analysis. This process involved transcribing the interviews and creating an interview matrix based on the content to facilitate the analysis and drawing of conclusions. The findings from the qualitative data were presented in a narrative format, making it more convenient for investigators to analyze and interpret the results.

3 RESULT

3.1 Completeness of Medical Records Based on Entry and Exit Summary Forms, Clinical Notes, and Informed Consent Before and After Accreditation

Standard Accreditation of Hospitals 2022 (STARKES) defines medical records as written or electronic evidence that encompass various patient health information, ranging from assessment results, care plans, treatment details, and patient progress notes, to discharge Summary, all of which are created and maintained by Care Giving Professionals (PPA) [2]. This PPA team comprises doctors, nutritionists, physiotherapists, pharmacists, and nurses, collectively responsible for providing care to patients [6]. The number of completed inpatient medical record documents based on the three forms filled out by the PPA before and after STARKES accreditation are presented in Table 1.

Table 1. Medical Record Completeness Based on Three Types of Prior Forms Awarded STARKES Accreditation

Form	October		November		December	
	Comple	Incomple	Comple	Incomple	Comple	Incomple
	te	te	te	te	te	te
	%	%	%	%	%	%
Entry and Exit Summary	814 (99,51)	4 (0,49)	798 (98,40)	13 (1,60)	837 (99,88)	1 (0,12)
Clinical Notes	766 (94,92)	41 (5,08)	743 (94,53)	43 (5,47)	808 (97,82)	18 (2,18)
Informed Consent	272 (99,63)	1 (0,37)	458 (100)	0 (0)	293 (100)	0 (0)

Source: Data processed by the author, 2023

Table 1 displays the extent to which forms adhere to the standard quality indicator of completeness. From the table, it can be seen that the Informed Consent form during November and December 2022 exhibited the highest level of completeness among all the forms analyzed. On the other hand, the completeness of other forms, namely the Entry and Exit Summary forms, Clinical Notes, and Informed Consent form in October still failed to reach the established standard of 100% completeness for medical records.

Table 1. .Completeness of Medical Records Based on 3 Types of Forms After STARKES Accreditation

Form	February		March		April	
	Comple	Incomple	Comple	Incomple	Comple	Incomple
	te	te	te	te	te	te
	%	%	%	%	%	%
Entry						
and Exit	843	12	927	13	796	8
Summar	(98,60)	(1,40)	(98,62)	(1,38)	(99,00)	(1,00)
y						
Clinical	826	19	869	68	740	63
Notes	(97,75)	(2,25)	(92,74)	(7,26)	(92,15)	(7,85)
<i>Informe</i>						
<i>d</i>	281	2	352	12	257	23
<i>Consent</i>	(99,29)	(0,71)	(96,70)	(3,30)	(91,79)	(08,21)

Source: Data processed by the author, 2023

From the information presented in Table 2, it can be seen that compared to the proportion of completeness before accreditation, none of the three types of forms met the standard completeness requirement of 100% for medical records (100%) even after the accreditation process. Meanwhile, only the Entry and Exit Summary form experienced an increase in completeness percentage following accreditation.

3.2 Comparison of Completeness of Medical Record Files Based on Entry and Exit Summary Forms, Clinical Notes, and Informed Consent Before and After Accreditation

Upon obtaining the proportion of completeness for the three types of forms both before and after accreditation, the subsequent step involved conducting a Paired T-Test to evaluate whether there exists a significant difference in the proportion results. To perform this test, one of the prerequisites includes assessing the data for normality. This process is carried out to ascertain whether the data adhere to a normal distribution pattern. Given that the sample size in this research is less than 50, the Shapiro-Wilk test was deemed suitable to test for normality.

Table 2. Data Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Before	,333	3	.	,862	3	,272
After	,220	3	.	,987	3	,779

Source: Data processed by the author, 2023

The normality test of the medical record completeness variable was conducted both before and after accreditation using the Shapiro–Wilk test as shown in Table 4. Based on the obtained results from this test, it was found that the obtained p-values for both phenomena were greater than 0.05. This indicated that both data variables exhibited normal distribution.

Given that the data follows a normal distribution, it was appropriate to proceed with a comparison test using the Paired T-Test. For this calculation, the average values of the proportion of completeness for the forms before and after accreditation were used.

Table 3. Comparison of Medical Record Completeness Before and After STARKES Accreditation

Form Name	Before	After	<i>P</i> <i>Value</i>
	n (%)	n (%)	
Entry and Exit Summary	2,449 (99,27)	2,566 (98,73)	0,180
Clinical Notes	2,317 (95,78)	2,435 (94,20)	
<i>Informed Consent</i>	1,023 (99,90)	890 (96,01)	

Source: Data processed by the author, 2023

Based on the information presented in Table 5, it can be seen that the results of the statistical test conducted using the paired sample T-Test on the completeness of medical record documents before and after STARKES accreditation for the three types of forms, namely Entry and Exit Summary, Clinical Notes, and Informed Consent. From the test, the obtained p-value was greater than the significance level of 0.05, specifically 0.180. This indicated that there was no significant difference in the completeness of inpatient medical records before and after STARKES accreditation.

3.3 Causes of Incomplete Medical Records

After conducting in-depth interviews, several factors contributing to incomplete medical records in hospitals were identified and classified based on the 4M framework, which includes Man, Materials, Machine, and Method:

Man. The lack of discipline among doctors and nurses in filling out patient medical record documents, particularly with regards to authentication such as providing signatures and names of doctors, remains a prominent issue in hospitals. Additionally, there are instances where medical personnel fail to return medical record documents within the designated time limit of 1x24 hours, causing delays in the record-keeping process. In this regard, the following statements were uttered by two of the informants who participated in this research:

"Usually, if there is a resume with incomplete signatures or diagnoses, we return it to be filled out by the respective specialist doctor." (Informant 2)

"The information provided by the attending physician (DPJP) is frequently incomplete, and there are instances where certain clinical notes lack necessary signatures, the DPJP's name, or stamps, which may result from oversights by nursing staff." (Informant 1)

Materials. Based on the observation results, it has been identified that Care Giving Professionals (PPAs) are required to fill out various types of forms, such as consent or refusal for surgical procedures, medication records, as well as Entry and Exit notes for inpatients, among others. The abundance of these forms often contributes to the incompleteness of inpatient medical records due to the high workload faced by medical staff and PPAs, which often results in insufficient time to fill out the medical record documents for each patient. During the interview, the following information was obtained from the informants in this regard:

"Here, besides handling regular duties, specifically when there are many patients, doctors are always in a rush to get things done. Consequently, they may prioritize filling out only the most essential and necessary information." (Informant 1)

"The same goes for nurses. Our nurses usually face challenges in completing records promptly, particularly for patients who have been discharged. Newer nurses, in particular, may require additional time and experience to ensure the completion of all necessary documentation" (Informant 1)

Furthermore, informant 2 pointed out that:

"Sometimes, there are patients who require a lot of documents to be filled out due to their extensive treatment processes." (Informant 2)

Machine. The development of the *Electronic Medical Record* (EMR) system is currently running properly, but it is not yet fully comprehensive. As a result, certain medical record forms still require manual filling, which increases the likelihood of encountering incomplete medical records. This finding was evidenced by informant 1 as follows:

"The introduction of the EMR system has brought advancements in medical record-keeping by transitioning to electronic formats. However, during this transitional phase,

some medical record documents continue to rely on manual input, which can lead to inconsistencies and gaps in the information recorded" (Informant 1)

Method. The current implementation of a weak sanction system in the management of medical record completeness has resulted in a lack of motivation to address indiscipline in filling out medical records. This inference is supported by the statements made by the informants, which are as follows:

"For now regarding sanctions, it is still a bit difficult" (Informant 1)

"I have never heard of sanctions" (Informant 2)

"As for doctors, I do not think there is one" (Informant 3)

4 Discussion

The incompleteness of medical record filling can lead to the information contained within it becoming unsynchronized, and this makes it difficult to identify the past health information of patients [7]. Additionally, incomplete medical record documents can give rise to problems in both medical and legal aspects. This is because these records are essential documents that provide detailed information and evidence regarding the services or treatments provided and received by the patient during their hospitalization.

According to the Standard Accreditation of Hospitals 2022 (STARKES), there are four assessment criteria for each assessment element (EP), namely fully met, partially met, not met, and not applicable. The assessment elements of document completeness, tracer results, field visits, simulations for personnel, interviews, and clarifications are considered fully met if they achieve a score of $\geq 80\%$, partially met if they score 20% to $< 80\%$, not met if the score is $\leq 20\%$, and not applicable [8]. Based on their types, all three forms (Entry and Exit Summary, Clinical Notes, and Informed Consent), both before and after accreditation, can be considered fully met.

The Entry and Exit Summary form, located at the beginning of the medical record, contains essential information, including patient identification, final diagnosis, as well as Entry and Exit dates for inpatients. On the other hand, Clinical Notes are legal and confidential documents where patient data is recorded, including the necessary information for diagnosis, treatment, and nursing care plans if needed [9]. The Informed Consent form is a statement by the patient, indicating their agreement with the proposed medical procedures [10]. A research conducted at Sultan Thaha Saifuddin Regional General Hospital in Tebo Regency, Jambi Province, showed a statistically significant difference in medical record completeness before and after STARKES accreditation, particularly in the ARK standard (Access to Hospital and Continuity of Services), using the Entry and Exit Summary form as the tested sample [11].

The incompleteness of medical records can be influenced by several factors, including the lack of discipline among Care Giving Professionals (PPAs) in completing medical

records and delays in returning the documents within the designated time. The designated time constraints to complete these medical records are often due to the busy schedules of doctors and nurses who are focused on providing patient care. Additionally, the absence of sanctions or rewards for personnel can also contribute to this issue [4] [12] [13]. Rewards, in this context, refer to forms of recognition for performance that meets expectations, such as honors, promotions, praise, or acknowledgment, while punishment represents a form of sanction for underperforming, and this can take the form of reprimands, warnings, counseling, or suspension [14].

The implementation of an effective system of sanctions or punishments should aim to prevent the recurrence of violations committed by employees [7]. These sanctions or punishments given to employees who make mistakes will serve as motivation to discontinue any indiscipline or deviant behavior. On the other hand, providing rewards in the form of prizes or praise will build motivation for individuals to work diligently and perform at their best in carrying out designated responsibilities [7]. The application of this reward and punishment system will undoubtedly influence the works of PPAs and can significantly impact their performance.

5 Conclusion

In conclusion, the completeness of all three forms, namely Entry and Exit Summary, Clinical Notes, and Informed Consent, did not meet the standard of 100% medical record completeness, and there was no significant difference observed between before and after STARKES accreditation. This finding highlighted the need for continuous efforts in monitoring and evaluating medical records completeness, involving all relevant parties to increase awareness and work together towards achieving the target. To address the issue of incomplete medical records, hospital management can implement a reward and punishment system for professional care providers. This system can serve as a motivational tool to encourage the diligent completion of these records. Furthermore, conducting regular socialization sessions on related policies and presenting the results of monitoring and evaluation is essential. This will help improve the understanding and compliance of all personnel involved in medical record keeping. By raising awareness and providing regular updates, hospitals can strive to enhance the coverage and accuracy of medical record completeness.

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