Deficiencies in Man, Money, Method, Material, and Machine Contribute to the Non-Implementation of Medical Record Retention and Destruction

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ABSTRACT
Medical record retention and destruction are essential components of health information management to ensure data security, maintain service efficiency, and comply with regulatory standards. Failure to implement these processes properly can lead to the accumulation of inactive records, increased risk of data breaches, and inefficiencies in storage management within healthcare facilities. This study aimed to identify the factors contributing to the non-implementation of medical record retention and destruction using the five management elements (man, money, method, material, and machine). This study employed a qualitative research design. The research subjects consisted of one head of medical records, one registration officer, and one filing officer. Data were collected through observation, interviews, and documentation. The findings revealed that from the man factor, the causes included insufficient knowledge regarding medical record destruction, educational backgrounds of staff (two high school graduates and one vocational nursing graduate), and lack of participation in relevant training. From the method factor, there was no standard operating procedure (SOP) for medical record destruction. From the money factor, no budget had been allocated for the implementation of medical record destruction. From the machine factor, there was no equipment available to carry out the destruction process. From the material factor, there was a lack of storage racks for medical record files. In conclusion, the non-implementation of medical record retention and destruction is influenced by deficiencies across all five management elements (man, money, method, material, and machine).
Keywords: medical record destruction; community health care; man; money; method; material; machine

INTRODUCTION
Community health centers are healthcare facilities that provide both public health efforts and individual primary care services, with a stronger emphasis on promotive and preventive approaches within their working areas [1]. A community health center functions as a functional technical unit that serves as a center for community health development as well as a primary-level healthcare service provider, delivering comprehensive, integrated, and continuous services to populations residing within a defined geographic area [2].

Retention refers to the activity of transferring inactive medical record documents from active filing racks to inactive storage racks. Destruction is an effort undertaken by healthcare facilities to reduce the accumulation of inactive medical record files in storage areas. According to the Regulation of the Minister of Health No. 269 of 2008, non-hospital healthcare facilities, including outpatient units of community health centers, are required to retain patient medical records for at least two years from the date of the patient's last visit [3]. After this retention period, medical records may be destroyed. Destruction is defined as the physical elimination of records that have no further functional value or utility [4]. Proper implementation of retention and destruction activities can also reduce the workload of staff in retrieving patient medical records when needed.

Grujugan Community Health Center is located on Jalan Raya Jember No. 29, Dadapan Village, Grujugan District, approximately 7 km from the capital of Bondowoso Regency. In delivering community and individual health services, the Grujugan Community Health Center provides various services, including outpatient care, 24-hour emergency services, inpatient care, maternity services, and laboratory services. Based on a preliminary study conducted in March 2021, the Grujugan Community Health Center had never implemented medical record destruction since its establishment. According to administrative records, the health center was established on August 1, 1989, and approximately 16 destruction cycles should have been carried out over a 32-year period.

During the preliminary study, the researchers identified samples of inactive records stored in a single box. The total number of inactive medical record files presented above represents a sample obtained from one box containing mixed records from 2012 to 2017, amounting to 1,164 inactive files. These records were not organized by year or by the patient's last visit date, resulting in an accumulation of inactive files (Table 1).

Table 1. Number of inactive medical record files for the period 2012–2017

Year	Number of files
2012	164
2013	288
2014	237
2015	233
2016	124
2017	118

Staff in the outpatient unit of the Grujugan Community Health Center reported the absence of dedicated storage racks for inactive medical record files, leading to the storage of records in boxes. The workload of filing staff, along with limited rack capacity and storage space, necessitates that storage systems align with available capacity [5]. The absence of retention and destruction practices has led to an accumulation of medical records, reduced storage space, and limited staff mobility during record retrieval, highlighting the need for implementing retention and destruction processes.

The outpatient staff also stated that retention and destruction activities had never been carried out since the establishment of the community health center in 1989. Barriers to implementation include limited human resources with insufficient understanding of retention and destruction processes, as staff do not have a Diploma III background in Medical Records. Educational background is an essential criterion for medical record professionals. The knowledge and educational level of staff significantly influence the implementation of medical record destruction. A medical record professional is defined as an individual who has completed formal education in Medical Records and Health Information, with a minimum qualification of a Diploma III [6]. Additionally, staff reported never having received training related to retention and destruction of medical records. Training is essential to enhance knowledge and improve staff competency, as emphasized in Law Number 13 of 2003 on Manpower, which states that job training is intended to develop competence, productivity, and welfare. Other contributing factors include the absence of standard operating procedures governing these processes, the lack of an inactive records inventory list, and the absence of separation between active and inactive records.

Based on the preliminary study, the factors contributing to the non-implementation of retention and destruction of medical records at the Grujugan Community Health Center are presumed to be associated with the 5M management aspects: man, method, money, material, and machine. The failure to implement these processes has resulted in record accumulation, limited storage space, and reduced efficiency of filing staff. The lack of storage racks and dedicated space for inactive records further exacerbates the issue. Consistent with findings by Maliang et al.

(2019), the addition of storage space and racks is necessary to prevent difficulties arising from limited space. Adequate and proportional storage facilities significantly support medical record management and staff performance [7].

Based on the background, this study aims to analyze the factors contributing to the non-implementation of retention and destruction of inactive medical record files at the Grujugan Community Health Center.

METHODS

This study was conducted from July to September 2021 at the Grujugan Community Health Center. It employed a qualitative research design. The object of the study was inactive medical record files in the filing unit, while the research subjects consisted of one head of medical records, one registration officer, and one filing officer, with the head of the community health center serving as a supporting informant. Participants were selected purposively based on their roles and involvement in medical record management processes. The variables examined in this study included the five management elements: man, method, money, material, and machine.

Data were collected through interviews, observations, and documentation. Interviews were conducted over a one-month period. Observations focused on the equipment used for retention and destruction processes as well as the condition of inactive medical records. Documentation included standard operating procedures and tools related to the retention and destruction of medical records. Data analysis was carried out by identifying the factors contributing to the non-implementation of medical record retention and destruction using the 5M framework. Data validity was ensured through source triangulation and technique triangulation.

RESULTS

Identification of the man factor

The factors contributing to the non-implementation of medical record retention and destruction include the man factor, which comprises the education, knowledge, and training of medical record staff. Educational background is a crucial factor in carrying out such activities, particularly retention and destruction of inactive medical records, which require relevant qualifications. The following statements were obtained from the three informants:

"*SMA*" (Head of Medical Records)

"*SMA*" (Filing Officer)

"*SMK Keperawatan*" (Registration Officer)

Note: *SMA* = High School; *SMK Keperawatan* = Vocational High School in Nursing

These statements indicate that two staff members were high school graduates and one was a vocational nursing graduate. This condition hinders the implementation of retention and destruction of medical record files. Therefore, the educational qualifications of outpatient unit staff who are not graduates of medical record programs are highly relevant to these activities. This does not comply with the qualification standards stipulated in the Indonesian Ministry of Health Regulation Number 55 of 2013 concerning the organization of medical record professions, which requires a minimum qualification of a Diploma III in Medical Records and Health Information [6]. These qualifications represent core and supporting competencies necessary for medical record professionals in healthcare facilities. Thus, it can be concluded that higher educational attainment is associated with a higher level of knowledge.

The knowledge of outpatient staff at the Grujugan Community Health Center was found to be insufficient, particularly regarding the implementation process of retention and destruction of inactive medical records. However, staff demonstrated a basic understanding of the definitions of retention and destruction, as reflected in the following statements:

Statements of retention are:

"The process of transferring medical record documents from active to inactive, where records are sorted to determine their usefulness." (Head of Medical Records)

"Separating active and inactive medical records." (Filing Officer)

"Transferring inactive medical record files from active storage racks to inactive ones." (Registration Officer)

Statements of destruction are:

"An effort to reduce the accumulation of medical record files and destroy records that are no longer useful." (Head of Medical Records)

"The destruction of medical record archives that have no functional value." (Filing Officer)

"Records that are destroyed no longer have any use." (Registration Officer)

Interview results also revealed that staff knowledge regarding the retention period for destruction was inadequate. All three informants stated that records should be stored for five years. In contrast, the Regulation of the Minister of Health No. 269 of 2008 specifies a minimum retention period of two years from the patient's last visit [3]. The following statements illustrate this misunderstanding:

"5 years." (Head of Medical Records)

"5 years from the patient's last visit." (Filing Officer)

"5 years from the patient's last visit." (Registration Officer)

These findings indicate that while staff have a sufficient understanding of definitions, their knowledge of retention periods is lacking. This is consistent with Marsum et al. (2018), who reported that insufficient knowledge regarding retention schedules and document storage periods can hinder the implementation of retention and destruction activities [8]. Therefore, inadequate knowledge regarding retention periods is one of the contributing factors. Furthermore, retention and destruction activities have not been implemented due to limited educational background and insufficient staff knowledge. In addition, staff have never participated in relevant training, which limits their capacity development. The following statements support this finding:

"There has never been any training, as we have only received p-care training so far." (Filing Officer)

"We have never received training on medical record destruction." (Registration Officer)

These statements indicate that staff have not participated in training related to retention and destruction, but only in p-care training. One of the supporting competencies required of medical record professionals is the ability to apply orientation and training for staff involved in health data systems.

Identification of the method factor

Every healthcare service requires structured work procedures to regulate its activities. This necessitates the presence of standard operating procedures as guidelines for implementing retention and destruction of medical records. However, the Grujugan Community Health Center does not yet have such procedures in place. The following statements were obtained:

"There are none; we only have standard operating procedures for registration, disability patient registration, patient services, and p-care." (Head of Medical Records)

"There are no standard operating procedures for destruction." (Filing Officer)

"There are none." (Registration Officer)

These findings indicate that although some procedures exist, there are no standard operating procedures specifically addressing retention and destruction. This condition suggests that the health center is not adequately prepared to implement these activities.

Identification of the money factor

Each service unit requires a budget to effectively implement its activities. This also applies to the outpatient unit of the Grujugan Community Health Center. Budgeting represents an estimate of performance to be achieved within a certain period. Interview results showed that there is no specific budget allocated for facilities and infrastructure required for retention and destruction activities. The following statements support this finding:

"There is no budget yet, so we cannot purchase the necessary equipment such as storage racks for inactive records and destruction tools." (Head of Medical Records)

"There are no facilities and infrastructure for retention and destruction." (Filing Officer)

"There is still none." (Registration Officer)

These responses indicate the absence of financial support for essential resources, such as storage racks and destruction equipment in the Grujugan Community Health Center.

Identification of the material factor

Medical record files constitute the primary material in retention and destruction activities. The material factor includes inactive medical records and storage racks. At the Grujugan Community Health Center, inactive records have accumulated significantly due to the absence of retention and destruction practices since its establishment in 1989, despite the expectation of approximately 16 destruction cycles over 32 years. This is supported by the following statements:

"A lot, because retention and destruction have not been carried out." (Head of Medical Records)

"A lot, because since the beginning, destruction has never been conducted." (Filing Officer)

"Very many, because there has never been any destruction activity." (Registration Officer)

This condition does not comply with the Regulation of the Minister of Health Number 269 of 2008, which requires retention for at least two years before destruction [3]. Another contributing factor is the absence of dedicated storage racks for inactive records. Some inactive records are mixed with active records or stored in boxes, as reflected in the following statements:

"There are no specific racks for inactive records; some are still in active racks, and others are stored in boxes." (Head of Medical Records)

"Active and inactive racks are still combined, so they need to be separated." (Filing Officer)

"The storage racks are still combined; therefore, separate racks are needed." (Registration Officer)

Additionally, limited storage space exacerbates the issue:

"The space is insufficient because the room is too small." (Head of Medical Records)

"It is insufficient due to the accumulation of inactive records and limited space." (Filing Officer)

"It is not enough because the room is small and records are piling up." (Registration Officer)

The absence of a dedicated storage room results in both active and inactive records being stored together, leading to overcrowding and inefficiency. Therefore, inadequate storage facilities and space are key factors contributing to the problem.

Identification of the machine factor

The machine factor in this study refers to the facilities and equipment required for retention and destruction activities, such as scanners or microfilm, record inventory forms, and destruction tools. Based on interviews and observations, the Grujugan Community Health Center does not possess these necessary tools. The following statements were obtained:

"There are none, because the health center does not provide such equipment." (Head of Medical Records)

"There are none, as they are not provided." (Filing Officer)

These findings indicate that the health center lacks essential equipment for both retention and destruction processes. This condition does not comply with the Regulation of the Minister of Health Number 269 of 2008, which states that healthcare facilities are required to provide adequate resources for medical record management [3].

DISCUSSION

The implementation of medical record retention and destruction at the Grujugan Community Health Center is hindered by several factors, one of the most prominent being the educational background of staff, which does not meet the minimum requirement of a Diploma III in Medical Records. A higher level of education among employees is generally associated with improved competence and the ability to achieve optimal performance, as organizations rely on qualified human resources to accomplish their objectives effectively. In this context, the educational qualifications of the staff are not aligned with the professional standards required in the field of medical records, which consequently affects the implementation of retention and destruction activities that have not yet been carried out properly at the Grujugan Community Health Center. This condition is not in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 55 of 2013 concerning the organization of medical record professions, which stipulates that medical record personnel must have at least a Diploma III qualification as an Associate Expert in Medical Records and Health Information [6]. Furthermore, according to Law Number 20 of 2003 on the National Education System in Indonesia, education is defined as a conscious and planned effort to create a learning environment and learning process that enables individuals to actively develop their potential, including spiritual strength, self-control, personality, intelligence, noble character, and necessary skills for themselves, society, and the nation.

Based on these findings, the researchers recommend that staff propose the addition of human resources with a Diploma III background in Medical Records to the local Health Office. This recommendation is supported by previous studies. Putriyani (2017) emphasized that staff are a critical factor influencing the successful implementation of activities, particularly retention and destruction of medical records, which require appropriate educational backgrounds [9]. Similarly, Rohman et al. (2022) stated that medical record personnel should possess at least a Diploma III qualification to ensure professionalism in medical record services [10]. In addition, Hilmansyah (2021) highlighted the importance of

standardizing staff educational levels based on regulatory ratios, indicating the necessity of recruiting personnel with appropriate qualifications in the medical record field [11].

In terms of knowledge, outpatient staff at the Grujugan Community Health Center demonstrated an adequate understanding of the definitions of medical record retention and destruction. However, their understanding of the appropriate retention period remains insufficient. All three informants stated that the retention period before destruction is five years, which is inconsistent with existing regulations. This indicates that insufficient knowledge among staff is one of the contributing factors to the non-implementation of retention and destruction of inactive medical records. The lack of knowledge is closely related to the absence of relevant training. Staff reported that they had only participated in training related to p-care and had never received training specifically on retention and destruction of medical records. As reflected in the following statements:

"There has never been any training, as we have only participated in p-care training." (Filing Officer)

"We have never received training on medical record destruction." (Registration Officer)

These statements indicate that the lack of training opportunities has limited staff knowledge and skills. Therefore, training is identified as another key factor contributing to the problem. The researchers recommend that staff participate in training programs related to retention and destruction of medical records to enhance their knowledge and technical competencies. This recommendation is consistent with Sulistian (2022), who stated that training is essential for enabling medical record staff to carry out retention and destruction activities effectively [12]. Furthermore, Hilmansyah (2021) emphasized that training support can motivate medical record personnel to improve their knowledge and skills through participation in such programs [11]. These studies highlight the critical role of training in ensuring the successful implementation of retention and destruction processes.

Standard operating procedures in this study refer to the established work guidelines or procedures within the medical record unit of the outpatient department at the Grujugan Community Health Center, which are intended to regulate the processes of retention and destruction. Standard operating procedures provide clear and systematic steps based on agreed standards to ensure that healthcare services are delivered consistently and in accordance with professional guidelines [16]. However, the Grujugan Community Health Center does not yet have standard operating procedures specifically addressing retention and destruction of medical records. This condition can be improved by developing and disseminating such procedures to relevant staff. Sulistian (2022) suggested that an effective solution is to develop specific standard operating procedures for retention and destruction activities and to disseminate them to all responsible personnel [12]. Similarly, Budiarti and Masturoh (2022) recommended the development and socialization of standard operating procedures related to record reduction and destruction to ensure that all staff are aware of and adhere to these guidelines [13]. These studies underline the importance of having clearly defined and well-communicated procedures as a foundation for implementing retention and destruction activities.

In terms of material factors, inactive medical record files at the Grujugan Community Health Center have accumulated significantly. This condition is primarily due to the absence of retention and destruction activities since the establishment of the health center in 1989, despite the expectation that approximately 16 destruction cycles should have been conducted over a 32-year period. This situation is inconsistent with the Regulation of the Minister of Health No. 269 of 2008, which requires non-hospital healthcare facilities, including outpatient units, to retain medical records for at least two years from the patient's last visit, after which they may be destroyed [3]. The accumulation of inactive records not only burdens storage capacity but also affects the efficiency of medical record management.

Therefore, the researchers recommend that the contributing factors—particularly those related to human resources, knowledge, training, and procedural guidelines—be addressed comprehensively before implementing retention and destruction activities. By resolving these underlying issues, the implementation of retention and destruction of medical records can be carried out more effectively and in accordance with applicable standards.

This study has several limitations that should be taken into consideration by future researchers. First, the study employed a qualitative design with a very limited number of informants [18], consisting of only three main participants and one supporting informant. Although this approach allows for in-depth exploration of the problem, the findings may not fully represent the broader conditions of medical record management in other community health centers or healthcare settings. Therefore, the generalizability of the results is inherently limited. Second, the data were primarily collected through interviews, observations, and documentation within a relatively short period of time. This may have restricted the ability to capture more dynamic or longitudinal aspects of retention and destruction practices [19]. In addition, the reliance on self-reported information from informants introduces the possibility of response bias, where participants may provide answers that are perceived as acceptable rather than fully reflecting actual practices. Third, this study focused only on the identification of causal factors using the 5M framework (man, method, money, material, and machine) without quantitatively measuring the magnitude or relative contribution of each factor [20]. As a result, the study does not provide a prioritization of which factors have the greatest impact on the non-implementation of retention and destruction activities. Fourth, the study was conducted in a single location, namely the Grujugan Community Health Center, which has specific organizational, managerial, and resource conditions. These contextual characteristics may differ significantly from other healthcare facilities, thereby limiting the transferability of the findings [21]. Lastly, the study did not include an intervention or evaluation phase to assess the effectiveness of proposed solutions, such as the development of standard operating procedures or staff training programs. Future research is therefore recommended to adopt mixed-method or experimental approaches to test and evaluate interventions that could improve the implementation of medical record retention and destruction.

Considering these limitations, future researchers are encouraged to involve a larger and more diverse sample, extend the duration of data collection, incorporate quantitative analysis for prioritization of factors, and evaluate the effectiveness of intervention strategies to obtain more comprehensive and generalizable findings.

CONCLUSION

Based on the findings, the Grujugan Community Health Center faces deficiencies in staff qualifications, knowledge, and training related to medical record retention and destruction. Standard operating procedures and budget support are not available, and inactive records have never been destroyed since 1989 despite regulatory requirements. In addition, essential resources such as storage racks, inventory forms, and destruction equipment are lacking.

Ethical consideration, competing interest and source of funding

-This study received ethical approval from the Health Research Ethics Committee of Politeknik Negeri Jember with reference number 10425/PL17/PG/2021.
-There is no conflict of interest related to this publication.
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