

Factors Contributing to the Duplication of Patient Medical Record Numbers

Anita Bunga Basongan ^{1*} Ahmad Amiruddin J ² Selvi Mayang Sari ³

^{1,2,3} Politeknik Baubau, Indonesia

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CORRESPONDING AUTHOR

Name : Ahmad Amiruddin J

Address: BTN Topaz 2 Blok C6 Kel. Sulaa Kec. Betoambari

E-mail : ahmadamiruddinpolitekbaubau@gmail.com

ABSTRACT

Duplication of medical record numbers is one of the challenges in medical record management that can affect the continuity of patient information, slow down service delivery, and increase the risk of errors in healthcare services. Based on an initial survey at Faga Husada General Hospital in Baubau City, it was found that 36 medical records were duplicated out of a total of 3,744 medical records over the course of one year. This study aims to identify strategies for resolving duplicate patient medical record numbers at Faga Husada General Hospital based on the aspects of man, machine, materials, method, and money. The study design is qualitative with a descriptive approach. The study was conducted at Faga Husada General Hospital in Baubau City from February to April 2026. There were three informants: the head of medical records, a registration clerk, and a filing clerk. Data collection techniques included observation, in-depth interviews, and documentation. Data analysis involved data reduction, data presentation, and drawing conclusions. The results of the study indicate that strategies to resolve duplicate medical record numbers in the human aspect involve improving staff accuracy, verifying patient identity, confirming patient visit history, and conducting periodic evaluations of staff. In the machine aspect, the use of the Hospital Information System (SIMRS) aids in the patient identification process; however, there is no specific feature available to detect duplicate data, so verification is still performed manually. In terms of materials, the issue was addressed by consolidating duplicate medical records and organizing medical records more systematically. In terms of methods, the hospital implements a procedure to double-check patient data before assigning a medical record number, although there is currently no specific SOP regarding the handling of duplicate medical record numbers. In terms of funding, the hospital has allocated a budget to support medical record management and system development, but implementation has not yet been optimal.

INTRODUCTION

Medical records are an essential component of healthcare services because they contain information regarding patient identity, examinations, treatment, procedures, and healthcare services received by patients. Proper medical record management requires accurate patient identification and the appropriate assignment of medical record numbers to ensure that patients' health information can be stored continuously. One of the problems still encountered in medical record management is the duplication of medical record numbers, which occurs when a patient has more than one medical record number or medical record file. Such duplication can affect the accuracy of patient information management and increase the risk of errors in healthcare services (Valentina, 2020; Sahin et al., 2025).

The problem of duplicate medical record numbers can be influenced by various factors related to human resources, information systems, documents, work procedures, and financial support. Inaccurate patient identification by staff, patients failing to bring their medical identification cards, inadequate staff qualifications, and suboptimal medical record management procedures may increase the likelihood of duplication (Valentina, 2020; Nurfaida, 2021; Amiruddin & Budiatty, 2024). The use of hospital information systems can facilitate the patient registration and numbering processes; however, if the system does not have adequate capabilities to detect duplicate patient data, staff are still required to conduct manual verification. This condition indicates that preventing duplication does not depend solely on technology but also requires staff accuracy, well-organized documents, clear work procedures, and adequate facilities and resources (Kaasa Fariha Istiani, 2020; M. Dwi Hidayatulloh et al., 2022; Saryadi et al., 2023).

Previous studies have shown that duplicate medical record numbers remain a problem in various healthcare facilities. Valentina, (2020) found that duplication may be associated with patients failing to bring their Medical Treatment Identification Cards (KIB), staff qualifications, the

availability of tracers, expedition books, standard operating procedures, and the numbering system used. The study by Kaasa Fariha Istiani, (2020) also examined the factors contributing to and efforts to resolve problems related to medical record number duplication, while Yunia Nurhidayah, (2018) emphasized the importance of identifying the causes of duplication and efforts to resolve such problems in medical record management. Another study concerning medical record number assignment procedures indicated that an appropriate numbering system is necessary to support administrative order and the continuity of patient information (Susilowati, 2022).

This issue has become increasingly important alongside the use of information systems in healthcare service management. Information systems can improve the speed and convenience of patient data management; however, data quality remains influenced by the data entry process, patient identification, and the system's ability to recognize existing data. Sahin et al., (2025) showed that medical record duplication is a problem that may be associated with medical errors and management costs, making prevention and resolution an important part of health information management. This condition demonstrates the need to identify the factors contributing to duplication more comprehensively, not only from the staff perspective but also from the aspects of machine, materials, method, and money.

Based on these conditions, research on the factors contributing to duplicate patient medical record numbers is important to identify the factors that remain obstacles in the processes of patient identification, medical record number assignment, document management, information system utilization, implementation of procedures, and financial support. This study employs the Man, Machine, Materials, Method, and Money framework to describe the conditions based on interviews with registration staff, filing staff, and the head of the medical records unit. The purpose of this study is to identify the factors contributing to duplicate patient medical record numbers based on the aspects of Man, Machine, Materials, Method, and Money.

METHODOLOGY

This study employed a qualitative descriptive method aimed at obtaining an overview of the factors contributing to the duplication of patient medical record numbers based on the aspects of Man, Machine, Materials, Method, and Money. The study was conducted at Faga Husada General Hospital, Baubau City, on April 30, 2026. The data used in this study consisted of primary and secondary data. Primary data were obtained directly through interviews with staff involved in medical record management, while secondary data were obtained from documents and information related to the implementation of medical record management at the hospital.

The informants in this study consisted of three individuals: a registration officer as the first informant, a filing officer as the second informant, and the head of the medical records unit as the source triangulation informant. The informants were selected based on the consideration that they had knowledge of and direct involvement in the processes of patient registration, medical record number assignment, storage, and patient medical record management. Data were collected through interviews and documentation. The interviews were conducted directly using an interview guide developed based on the aspects of Man, Machine, Materials, Method, and Money, while documentation was used to complement the information obtained from the interviews.

The main instrument in this study was the researcher, with an interview guide serving as a supporting instrument. The data obtained from the interviews were then analyzed descriptively by grouping the information according to the five aspects of the study: Man (human resources), Machine (facilities and technology), Materials (documents and equipment), Method (work methods or procedures), and Money (financing). Data validity was ensured through source triangulation by comparing information obtained from the registration officer and filing officer with information provided by the head of the medical records unit as the source triangulation informant. The results of the analysis were subsequently presented in descriptive form to illustrate the factors contributing to the duplication of patient medical record numbers at Faga Husada General Hospital.

RESULTS & DISCUSSION

Based on the results of the study conducted at Faga Husada General Hospital, Baubau City, it was found that duplication of medical record numbers may still occur even though the hospital has implemented a Hospital Management Information System (SIMRS) and a unit numbering system. Interviews with the registration officer, filing officer, and head of the medical records unit indicated that efforts to prevent and resolve duplication included checking patient identities, verifying data

through the BPJS virtual claim system and SIMRS, rechecking medical record numbers, evaluating staff performance, and correcting duplicated medical record files. This condition indicates that the problem of duplicate medical record numbers is not only related to human error but is also associated with the use of technology, document management, work procedures, and the availability of hospital resources. Proper medical record management is an important component in supporting the orderly and continuous delivery of healthcare services (Basu et al., 2026; Undang-Undang Republik Indonesia, 2023).

Man Factor

The results of the study indicate that human resources play an important role in preventing the duplication of medical record numbers. Registration officers carry out several identification steps before assigning or using a medical record number, including checking patient data through the BPJS virtual claim system, confirming information with the patient or family, and matching patient identification through the SIMRS. Officers also perform a double check of the medical record number before it is used. This condition demonstrates that staff accuracy and focus are important components of the patient identification process (Niska Salsiani Sinta et al., 2023).

These findings are consistent with the study by Valentina, (2020) which showed that staff accuracy during the identification process is one of the factors associated with the occurrence of duplicate medical record numbers. Nurfaida, (2021) also explained that staff-related factors are among the aspects that need to be considered in preventing medical record number duplication. The findings of Iriandhany, (2021) further indicate that factors arising from staff work processes may be associated with the occurrence of duplicate medical record numbers.

The constraints related to the Man aspect at Faga Husada General Hospital become apparent when a large number of patients arrive simultaneously while the number of administrative staff is limited. Based on the interview results, the simultaneous arrival of emergency department patients, outpatient clinic patients, and maternity patients may increase the risk of errors during the data entry process. In addition, there are still some patient records from the previous system that are not fully consistent, requiring staff to conduct more thorough checks.

M. Dwi Hidayatulloh et al., (2022) also demonstrated the importance of the human factor in medical record number duplication. Therefore, improving staff accuracy, distributing workloads, strengthening supervision, and conducting staff evaluations are important components of strategies for addressing duplicate medical record numbers.

Machine Factor

The results of the study indicate that the Hospital Management Information System (SIMRS) provides considerable assistance in the patient identification and medical record number assignment processes. According to the informants, medical record numbers for emergency department and outpatient clinic patients are generated automatically through the system, meaning that staff no longer assign numbers manually as they did before the implementation of SIMRS. This condition can reduce the possibility of errors caused by manually recording medical record numbers.

Kaasa Fariha Istiani, (2020) showed that an inadequately optimized system can be one of the factors associated with duplication in medical record numbering. Saryadi et al., (2023) also demonstrated that system-related factors and service processes need to be considered in efforts to reduce the occurrence of duplicate medical record numbers.

Although SIMRS has facilitated the numbering process, the results of the study show that the system used at Faga Husada General Hospital does not yet have a specific feature that can automatically detect duplicate patient data. Staff still conduct manual checks using patient identification, SIMRS, virtual claim, and medical record files. Consequently, the effectiveness of duplication prevention still depends heavily on staff accuracy.

This issue is consistent with Sahin et al., (2025) who showed that duplication of medical record data is a problem that may arise in the management of patient information systems. The use of technology in healthcare services ultimately needs to be supported by information systems capable of maintaining the quality and accuracy of patient data. Sebire et al., (2025) also emphasized the importance of system development and information management in supporting hospital operations amid developments in healthcare systems.

Based on these findings, the strategy for addressing the Machine aspect at Faga Husada General Hospital has been implemented through the utilization of SIMRS, but it is not yet optimal.

The system has assisted in automatically generating medical record numbers; however, it is not yet capable of detecting all potential duplicate patient data. The development of a duplicate detection feature and regular system maintenance are therefore necessary steps.

Materials Factor

The results of the study indicate that documents and medical record files continue to play an important role in both the prevention and resolution of duplication. Staff verify patient identities using the available documents and examine medical record files when suspected duplication is identified. Medical record files confirmed to have duplicate numbers are then collected in a designated area for correction.

When two files with the same medical record number are identified, staff first examine the data in both files to determine the correct patient identity. The medical record number and the duplicated file are then corrected accordingly. In certain circumstances, staff use a new medical record cover to correct the affected file.

Valentina, (2020) showed that problems in document management may be associated with the occurrence of duplicate medical record numbers. Nurwidad et al., (2025) also demonstrated the importance of proper management and storage of medical record files in supporting healthcare services. Febriarini et al., (2022) explained that medical record management is closely related to hospital service processes; therefore, medical record documents need to be properly organized to ensure that patient information is available when needed.

Document management must also support the continuity of patients' health information. Medical records function not only as archives but also as a source of information used in the provision of healthcare services. Therefore, disorganized document management can hinder the patient identification process and increase the risk of errors in medical record management.

Based on the study findings, the Materials aspect at Faga Husada General Hospital is supported by the management and provision of a designated area for duplicated medical record files. However, there are no specific standards for documents or forms specifically designed to prevent patient identification errors. Therefore, more standardized document management is needed to ensure that patient identification can be carried out more accurately.

Method Factor

The results of the study indicate that Faga Husada General Hospital has implemented a unit numbering system, or Unit Numbering System (UNS), in which each patient is assigned a single medical record number throughout the provision of healthcare services at the hospital. This system facilitates the identification process because medical record numbers are assigned through the SIMRS. Staff also verify patient identities and visit histories before determining the appropriate use of a medical record number.

However, the study found that the hospital does not yet have a specific Standard Operating Procedure (SOP) that provides detailed regulations concerning the prevention and management of duplicate medical record numbers. Duplication prevention has been incorporated into the SOP for patient admission, whereas when duplication is identified, its resolution is based on staff practices and experience. This condition may result in differences in the way duplication cases are handled.

Yunia Nurhidayah, (2018) discussed the factors contributing to and efforts to resolve problems related to duplicate medical record numbers, including the importance of corrective measures in the service process. Susilowati, (2022) also demonstrated the importance of medical record number assignment procedures in supporting the accuracy of patient numbering. Saryadi et al., (2023) showed that patient admission and numbering processes are aspects that need to be considered in efforts to prevent duplication.

Evaluation of the duplication problem at Faga Husada General Hospital has been conducted by the hospital; however, this evaluation has not yet been followed by the development or revision of a specific SOP concerning duplicate medical record numbers. Therefore, the hospital needs to establish a specific procedure regulating the stages of identification, reporting, correction, file merging, and documentation of duplication cases so that all staff have the same guidelines for handling such cases.

Money Factor

The results of the study indicate that Faga Husada General Hospital has budgetary support for medical record management and the use of SIMRS. The informants stated that financial support remains available and that the procurement of facilities also receives support from the hospital. This condition indicates that financial resources are available to support medical record management.

Financial support is necessary to facilitate the development of information systems, maintenance of SIMRS, provision of medical record facilities, and improvement of staff competencies. M. Dwi Hidayatulloh et al., (2022) showed that various supporting factors in medical record management need to be considered to reduce problems related to duplication. Tumiwa & Musak, (2024) also demonstrated that the quality of healthcare services is influenced by various supporting factors.

In the context of Faga Husada General Hospital, financial support can be directed toward improving the quality of facilities and technology used in medical record management. This is important because the development of information systems requires sustainable resource support. With appropriate financial support, the hospital can improve the capabilities of its systems and human resources to reduce the risk of medical record numbering errors.

The results of the study show that budgetary support is available; however, there has been no apparent development of a specific feature in SIMRS to detect duplicate patient data. In addition, the limited number of administrative staff remains a challenge when the number of patients increases simultaneously. Therefore, budgetary support should be directed not only toward maintaining the existing system but also toward technological development, staff capacity building, and strengthening the monitoring system.

CONCLUSION

Based on the results of the study on the factors contributing to the duplication of patient medical record numbers at Faga Husada General Hospital, it can be concluded that duplicate medical record numbers are influenced by five aspects, namely Man, Machine, Materials, Method, and Money. In the Man aspect, duplication may still occur because staff accuracy in identifying patients is not yet fully optimal, particularly when a large number of patients arrive simultaneously and the number of administrative staff is limited. In the Machine aspect, SIMRS has assisted the numbering process automatically for emergency department and outpatient services; however, it does not yet have a specific feature for detecting duplicate patient data, so verification is still conducted manually. In the Materials aspect, duplicated medical record files have been separated and corrected, but there are no specific standards for documents or forms to prevent patient identification errors. In the Method aspect, the hospital has implemented a Unit Numbering System (UNS), but does not yet have a specific SOP concerning the prevention and management of duplicate medical record numbers. Meanwhile, in the Money aspect, the hospital has provided budgetary support for medical record management, but further optimization of funding is still needed for system development and human resource improvement. Therefore, addressing duplicate medical record numbers requires integrated improvements through increased staff accuracy, SIMRS development, improved document management, the establishment of specific SOPs, and optimization of financial support.

The limitation of this study lies in the data collection process, which was conducted through interviews with informants involved in medical record management. Consequently, the findings primarily reflect the experiences and conditions identified at the time of the study. This study also did not conduct quantitative measurements of the number or percentage of duplicate medical record number occurrences based on each of the Man, Machine, Materials, Method, and Money factors. In addition, the study did not directly test the development of a SIMRS feature capable of detecting duplicate patient data. Therefore, the findings primarily emphasize an overview of the contributing factors and strategies for addressing medical record number duplication based on interview results and the conditions of medical record management at the hospital.

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