

Design of a Tracer and Standard Operating Procedure (SOP) for Its Use in Medical Record File Storage

Febriyanti Sahwan¹, Selvi Mayang Sari^{2*}, Rika Setyowati³

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

ARTICLE INFORMATION

Received: 5 August 2025

Revised : 9 September 2025

Accepted: 14 October 2025

DOI:

KEYWORDS

Keywords: Medical Record Storage, Medical Records, SOP, Tracer.

CORRESPONDING AUTHOR

Name : Selvi Mayang Sari

Address : Jl. Drs. H. La Ode Manalfa. Rt.01
Rw.03, Kel. Baadia, Kec. Murhum,
Kota Baubau, Sultra, 93726

Email : selvimayang@gmail.com

A B S T R A C T

Tracer is a tool used in medical record storage to indicate that a medical record file has been removed from the storage rack, making it easier to track borrowed files and reducing the risk of misfiling. Based on observations conducted at the Waborobo Community Health Center UPTD Puskesmas Waborobo, it was found that the medical records unit did not have a tracer or a Standard Operating Procedure (SOP) for its use. This study aimed to design a tracer and its SOP for the storage of medical record files at UPTD Puskesmas Waborobo. This study employed a qualitative research method, with data collected through observations and interviews with medical records officers. The results showed that the storage system used was the family folder system, and the borrowing process for medical record files was still carried out manually without using a tracer. The researcher designed three alternative Tracers using simple materials, and the third design was selected. It consisted of a pink buffalo paper measuring 25 cm × 10 cm, equipped with a request slip pocket and laminated to improve its durability. The researcher also developed an SOP for tracer use as a guideline for medical records officers in borrowing and returning medical record files. Test and evaluation results showed that the tracer helped officers identify the location of borrowed files and accelerated the return process, although file retrieval took slightly longer because officers had to complete the request slip and tracer information beforehand. Therefore, the implementation of the tracer and its SOP can improve the organization and control of medical record file storage at UPTD Puskesmas Waborobo.

INTRODUCTION

A community health center (Puskesmas) is a primary healthcare facility that provides comprehensive and integrated health services to the community within its working area (Permenkes RI No.19, 2024). In the provision of these services, medical records are an important component because they contain patient identification, examination results, treatment, procedures, and various services provided to patients (Permenkes RI No 24, 2022). Medical record management needs to be carried out properly, including file storage and control, so that records can be retrieved easily and accurately when needed for healthcare services (Farhansyah, 2022).

The use of a tracer can help officers determine the location of borrowed medical record files because a tracer serves as a temporary replacement for documents removed from the filing room and as a tracking card, thereby helping minimize the risk of misfiling Wiansah et al., (2022). In its design, a tracer needs to be adapted to the needs and storage conditions, including its shape, size, material, color, completeness of information, and the place for storing the borrowing slip so that it is easy for officers to use Wahyuni et al., (2022). The use of a tracer also needs to be supported by clear work procedures so that its implementation can be carried out systematically, particularly in the process of borrowing and returning medical record files Adiningsih et al., (2021). The study by Maharani & Sakti, (2023) showed that testing a tracer design accompanied by an SOP for its use could assist officers in returning medical record documents and reduce misfiling incidents after tracer implementation. Thus, the use of a tracer designed according to operational needs and supported by work procedures can be an effort to help control the location of medical record files in the storage room.

The use of a tracer can help officers determine the location of borrowed medical record files because a tracer functions as a marker for the location of files removed from the storage rack, thereby helping reduce the risk of misfiling Wiansah et al., (2022). In its design, a tracer needs to be adapted to the needs and storage conditions in terms of shape, size, material, color, and the information included so that it is easy for officers to use Wahyuni et al., (2022). Budiatty & Latambu, (2022) explained that a tracer is used as a tracking card or temporary replacement for medical record files removed from the storage rack, allowing the location of the files to be identified and their return to the original location to

be carried out appropriately. Therefore, a tracer designed according to operational needs and accompanied by clear procedures can help officers control the location and organization of medical record files in the storage room.

Based on a preliminary study conducted in the filing room of UPTD Puskesmas Waborobo, medical record storage activities had not used a tracer as a marker for borrowed files, and no SOP governing its use was available. This condition made it difficult for officers to determine the location of files that had been removed from the storage rack. Observations also identified incidents of misfiling and lost files, resulting in longer file retrieval times and potentially affecting patient services. This situation indicates the need for a marker and procedures that can help officers control the movement of medical record files more systematically. Therefore, this study was conducted to design a tracer and an SOP for its use in medical record file storage at UPTD Puskesmas Waborobo as an effort to improve storage organization, facilitate file tracking, and reduce the risk of misfiling.

METHODOLOGY

This study is a qualitative descriptive research project conducted in the filing room of the Waborobo Community Health Center (UPTD Puskesmas Waborobo) from March to April 2026. The research subjects were medical record staff at the center, while the objects of study included the medical record filing system, the design of a tracer, the Standard Operating Procedure (SOP) for tracer usage, and the results of the trial and evaluation. Data were collected through observation of the existing filing system, interviews with medical record staff, and the trial and evaluation of the designed tracer. Subsequently, the data were analyzed descriptively by outlining the current filing system, the tracer design and its usage SOP, and the trial results to assess the tracer's utility in supporting the control and storage of medical records at the Waborobo Community Health Center.

RESULTS & DISCUSSION

Current Medical Record Storage System

Based on observations and interviews, it was found that the Waborobo Community Health Center (UPTD Puskesmas Waborobo) employs a "family folder" system for storing medical record files. During the retrieval process, staff first search for the patient's medical record number via the BPJS system. If the number is not found, they use Excel to search for data based on the patient's or head of household's name. Once the medical record number is obtained, the file is retrieved directly from the storage shelf. The file-borrowing process is still handled manually without the use of tracers; furthermore, there is no record or confirmation regarding which staff member retrieved the file or the intended clinic department. Additionally, the center lacks Standard Operating Procedures (SOPs) for tracer usage, making it difficult for staff to track the location of borrowed files a situation that increases the risk of misfiling or losing medical records.

Tracer Design

Based on observations and interviews regarding the medical record filing system at UPTD Puskesmas Waborobo, the researcher designed a tracer to mark medical record files removed from storage shelves. During the design process, three tracer options were developed, taking into account factors such as materials, size, shape, color, and the designated section for the file request slip.



Figure 1 Alternative Tracer Design I



Figure 2 Alternative Tracer Design II



Figure 3 Alternative Tracer Design III

Based on the results above, Figure 1 shows Alternative I, which was designed using used instant-noodle cardboard or other used cardboard that remained sufficiently thick and in suitable condition. The tracer was designed at approximately 20 cm × 15 cm and equipped with an 8 cm × 6 cm pocket for placing the request slip. The advantages of this design include readily available materials, relatively low production costs, the reuse of usable materials, and a simple manufacturing process. However, cardboard can be easily damaged when exposed to water, is less durable with continuous use, and may look untidy if it is not provided with a protective layer.

Based on the results above, Figure 2 shows Alternative II, which was made using a used plastic folder cut to approximately 25 cm × 10 cm in green. A pocket measuring 10 cm × 8 cm was made on the right side of the tracer to hold the borrowing slip. Plastic was selected because it is more durable, resistant to water damage, lightweight, practical, neat in appearance, and easy to clean. However, this design also has disadvantages because the cutting process must be performed carefully to produce a neat result, while the slippery surface of the plastic may create difficulties during production.

Based on the results above, Figure 3 shows Alternative III, which used pink buffalo paper measuring approximately 25 cm × 10 cm. The tracer was then laminated to make it stronger and suitable for longer use. A 10 cm × 7 cm pocket was provided on the right side of the tracer to store the medical record file request slip. The advantages of this design are its neater appearance and better durability due to lamination. Its disadvantage is that the production cost is higher than that of designs without lamination.

Medical Record Request Slip	
No RM	:
Nama Pasien	:
Tgl. Pinjam	:
Tgl. Kembali	:
Nama Peminjaman	:
Ruang Peminjam	:

Figure 4 Medical Record Request Slip

Based on the results above, Figure 4 shows the request slip designed to record information related to borrowed medical record files. The information on the slip includes the medical record number, patient name, borrowing date, return date, borrower's name, and borrowing room. The slip was made at a size of 8 cm × 5 cm using thick white HVS paper. The request slip was then placed in the pocket provided on the tracer so that borrowing information could be stored together with the file marker and help control medical record files.

Of the three tracer alternatives designed, the medical records officers at UPTD Puskesmas Waborobo selected Alternative III as the design most suitable for the medical record storage needs. The selected tracer was made from pink buffalo paper measuring 25 cm × 10 cm, laminated, and equipped with a 10 cm × 7 cm pocket for storing the request slip. The selection was based on the suitability of the design to the conditions and storage system implemented at UPTD Puskesmas Waborobo.

Design Of The SOP For Tracer Use

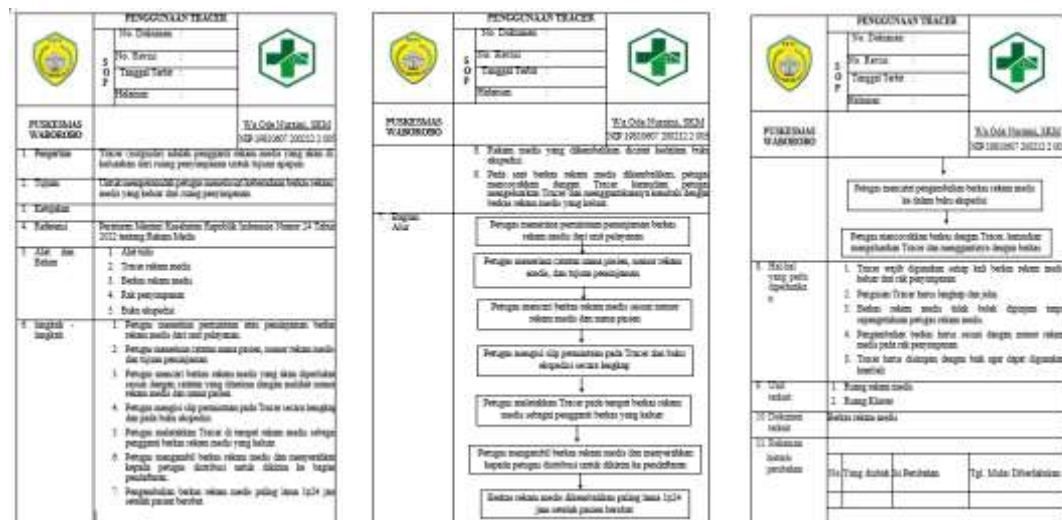


Figure 5 SOP For Tracer Use

Figure 5 presents the designed SOP for tracer use, which was developed as a reference for officers in controlling medical record files removed from the storage room. In the SOP, the tracer or outguide is described as a replacement for medical record files removed from the storage room for various purposes, making the location of the files easier for officers to track. The SOP uses Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2022 concerning Medical Records as one of its references. It also lists the equipment and materials required, namely writing instruments, a medical record tracer, medical record files, a storage rack, and an expedition/loan logbook. In the designed SOP, the tracer-use process begins when an officer receives a request to borrow a file from a service unit. The officer receives information including the patient's name, medical record number, and borrowing purpose, then searches for the file on the storage rack. After the file is found, the officer completes the request slip and records the borrowing in the expedition logbook, then places the tracer in the location where the file was removed. After the file has been used, it is returned and the return is recorded in the expedition logbook. The officer then matches the returned file with the tracer, removes the tracer, and returns the file to the storage rack according to its medical record number. The SOP also specifies that files must be returned to their designated storage location according to the medical record number and that tracers must be stored properly so they can be reused for subsequent borrowing processes.

Tracer Output



Gambar 6 Tracer Output

Figure 6 shows the final output of the tracer design, which is used as a temporary marker for medical record files being removed from the storage rack in the filing room of UPTD Puskesmas Waborobo. The selected tracer was made from pink buffalo paper measuring 25 cm × 10 cm and laminated to improve durability so that it can be reused. A 10 cm × 7 cm pocket is provided on the side of the tracer to store the medical record request slip. The slip contains several items of information, namely the medical record number, patient name, borrowing date, return date, borrower's name, and borrowing room. Including this information is intended to make it easier for officers to identify the data of borrowed files without having to conduct another search. The tracer design was developed based on the needs of officers and the medical record storage conditions at UPTD Puskesmas Waborobo. Thus, the tracer functions as a temporary replacement for a removed file and as a marker at the file's storage location. Placing the tracer on the rack enables officers to identify the location of borrowed files, allowing file control and return to be conducted more systematically.

Tracer Use Trial and Exaluation

Table 1 Tracer Use Trial

No	Komponen	Jumlah berkas	Waktu	Presentase waktu (tiap 1 berkas)
1	Pengambilan berkas rekam medis dengan menggunakan Tracer	15	9 menit	35 detik
2	Pengambilan berkas rekam medis dengan tidak menggunakan Tracer	15	6 menit	25 detik
3	Pengembalian berkas rekam medis dengan menggunakan Tracer	15	4 menit	15 detik
4	Pengembalian berkas rekam medis dengan tidak menggunakan Tracer	15	8 menit	28 detik

Based on Table 1, the trial involving 15 medical record files showed differences in the time required for file retrieval and return, both with and without the use of a tracer. Retrieval using a tracer required 9 minutes, with an average of approximately 35 seconds per file, whereas retrieval without a tracer required only 6 minutes, or approximately 25 seconds per file. Retrieval using a tracer took longer because officers had to complete the request slip and enter information on the tracer before removing the file from the rack. Meanwhile, during the return process, using a tracer required 4 minutes, or approximately 15 seconds per file, whereas returning files without a tracer required 8 minutes, or approximately 28 seconds per file. These trial results indicate that the use of a tracer adds time during file retrieval but can accelerate the return process because officers can more easily identify the location where each file should be returned.

Based on the evaluation interview conducted after the tracer and SOP trial, medical records officers stated that the tracer was easy to use and helped them identify the location of borrowed medical record files and facilitated their return to the storage rack. The tracer was also considered helpful in speeding up file retrieval, while the information provided on the tracer was complete and easy to understand. The designed SOP was also considered easy for officers to understand and implement. No lost medical record files were found during the trial, indicating that tracer use may help reduce the risk

of misfiling. However, an obstacle remained during file retrieval because officers needed additional time to enter data on the tracer. Officers suggested using labels or identification cards containing the officer's name and destination clinic so that the tracer could be completed more quickly. Overall, the evaluation results indicate that the designed tracer and SOP meet the needs of officers and can support the control and storage of medical record files at UPTD Puskesmas Waborobo.

DISCUSSION

The medical record file storage system at UPTD Puskesmas Waborobo uses the family folder system, while the borrowing process is still conducted manually without a tracer. Files removed from the rack are not provided with a marker, making it difficult for officers to determine the location of borrowed files and potentially increasing the risk of misfiling. These findings are consistent with Novianti & Amallia, (2023), who explained that medical record files removed from the filing room should be replaced with a tracer so that their location and use can be identified by officers. A tracer functions as a tracking card for files removed from the filing room and can help minimize misfiling. This condition is also consistent with Maharani & Sakti, (2023), whose study showed that tracer implementation can support medical record file control and that testing tracer use in their study reduced misfiling incidents. Based on these findings, tracer use in the storage system at UPTD Puskesmas Waborobo is necessary as a marker for the location of borrowed files so that officers can more easily control their whereabouts.

The tracer design stage showed that, of the three tracer design alternatives developed, medical records officers at UPTD Puskesmas Waborobo selected Alternative III as the most suitable design. The tracer was made from pink buffalo paper measuring 25 cm × 10 cm, laminated, and equipped with a pocket for the request slip. The selection considered the needs of officers and the medical record storage conditions at UPTD Puskesmas Waborobo. These results are consistent with Rusmiati *et al.*, (2022), who stated that tracer design should consider several aspects, including shape, size, material, and the completeness of the borrowing slip. In that study, the tracer was used as a marker for the location of files removed from the storage room and was equipped with a pocket for storing the borrowing slip. In addition, Asih *et al.*, (2025) explained that a tracer serves as a temporary replacement for medical record documents removed from the filing room, allowing the location of borrowed files to be identified. Based on these findings, Alternative III was considered suitable for implementation at UPTD Puskesmas Waborobo because lamination makes the tracer more durable for repeated use, while the slip pocket helps officers store borrowing information and control the location of medical record files.

The development of an SOP for tracer use serves as a guideline for officers so that implementation can be carried out systematically and consistently. The SOP contains the steps for tracer use: receiving a file borrowing request from a service unit, receiving information such as the patient's name, medical record number, and borrowing purpose, searching for the file on the storage rack, completing the request slip and expedition logbook, and placing the tracer in the location from which the file was removed. During the return process, the file must be returned no later than 1 × 24 hours after the patient receives healthcare services, then recorded in the expedition logbook and matched with the tracer before the marker is removed and the file is returned to its storage location. An SOP is necessary because tracer use must be accompanied by clear procedures so that each stage of borrowing and returning can be conducted according to established requirements. This is consistent with Budiatty & Latambu, (2022), who stated that the absence of an SOP related to medical record management can be one of the problems in file retrieval activities. Arifin *et al.*, (2022) also showed that the use of a tracer accompanied by an SOP can assist officers in returning medical record documents. Therefore, the SOP designed in this study complements tracer use by providing guidance on the borrowing and return procedures for medical record files at UPTD Puskesmas Waborobo.

The trial results showed differences in the time required for medical record file retrieval and return before and after tracer use. Of the 15 files tested, retrieval using a tracer required 9 minutes, or approximately 35 seconds per file, whereas retrieval without a tracer required only 6 minutes, or approximately 25 seconds per file. This difference occurred because tracer use required an additional step in which officers had to complete the request slip and the information contained on the tracer. Meanwhile, the return process using a tracer required 4 minutes, or approximately 15 seconds per file, whereas the process without a tracer required 8 minutes, or approximately 28 seconds per file. Thus, the marker on the rack helped officers identify the location of files to be returned. Evaluation interviews showed that officers considered the tracer easy to use, helpful for tracking the location of borrowed files, useful in facilitating returns, and capable of reducing the risk of misfiling. Officers also considered the

information on the tracer complete and easy to understand, while the SOP was considered understandable and applicable to storage activities. However, completing the tracer during retrieval was still considered to require additional time, leading officers to suggest the use of labels or identification cards containing the officer's name and destination clinic to speed up completion. These findings are consistent with Sari & Muzuh, (2023), who stated that tracer use can help officers identify the location of files and facilitate their return to the storage location, and with Maharani & Sakti, (2023), who showed that tracer use together with an SOP can facilitate the return of medical record documents. Thus, the trial and evaluation results demonstrate that the designed tracer provides benefits, particularly in controlling the location of files and facilitating their return, although adjustments to the completion process are still needed to make its use more practical and efficient.

CONCLUSION

This study successfully produced a tracer design and an SOP for its use to support medical record file storage at UPTD Puskesmas Waborobo. Of the three designs developed, Alternative III was selected because it was considered the most suitable for the needs of officers and the storage room conditions; it uses laminated buffalo paper and is equipped with a pocket for the request slip. The trial results showed that tracer use increased file retrieval time but accelerated the return process, helped officers identify the location of files, and reduced the risk of misfiling. Based on the evaluation, officers also stated that the tracer and SOP were easy to understand and use in file storage activities. This study has limitations because the trial involved a limited number of files and was conducted over a short period, so it cannot yet describe long-term tracer use or implementation with a larger number of files. In addition, the tracer completion process requires additional time, indicating that further adjustments are needed to make its use easier and more efficient.

REFERENCES

- Adiningsih, L. Y., Wijaya, K. A., & Paramita, I. A. P. F. (2021). *Perancangan Tracer untuk Mengendalikan Missfile Berkas Rekam Medis pada Bagian Filing di Puskesmas I Denpasar Selatan*. 11–17. <https://doi.org/10.33560/jmiki.v9i1.307>
- Arifin, I., Heltiani, N., Anggita, F., Putri, F. A., & Prasetya, A. E. (2022). *PENTINGNYA TRACER REKAM MEDIS SEBAGAI SARANA PELACAK REKAM MEDIS YANG KELUAR DARI RAK FILING DI PUSKESMAS JALAN GEDANG KOTA BENGKULU*. 1(3), 121–128. <https://doi.org/10.58222/pakdemas.v1i3.56>
- Asih, H. A., Nurbaiti, Firmansyah, Y. W., & Mahfuzah, S. (2025). *Perancangan Tracer Dalam Mengendalikan Missfile Pada Bagian Filling Di UPTD Puskesmas Jelapat Kec. Mekarsari Kab. Barito Kuala*. 2(12), 5695–5702. <https://doi.org/10.59837/jpmba.v2i12.2055>
- Budiaty, W. O. S., & Latambu, S. (2022). *Perancangan Tracer / Out Guide Berkas Rekam Medis di Puskesmas Design of Tracer / Out Guide for Medical Record Files at Health Center*. 1(1), 16–26. <https://doi.org/10.57151/jsika.v1i1.28>
- Farhansyah, F. (2022). *ANALISIS SISTEM PENYIMPANAN DOKUMEN REKAM MEDIS PASIEN RAWAT JALAN*. April.
- Maharani, A. P., & Sakti, D. A. K. (2023). *REDESAIN TRACER (OUTGUIDE) PADA PENYIMPANAN DOKUMEN REKAM MEDIS DI KLINIK RAWAT INAP MITRA HUSADA MAGETAN Adisya*. 02, 77–83. <https://doi.org/10.62951/jurmiki.v2i2.39>
- Novianti, N., & Amallia, S. (2023). *TINJAUAN TERJADINYA MISSFILE BERKAS REKAM MEDIS RAWAT JALAN PADA RUANG PENYIMPANAN DI RUMAH SAKIT ISLAM SITI KHADIJAH PALEMBANG PERIODE TRIWULAN II TAHUN 2023*. XIII(2), 93–99. <https://doi.org/10.52395/jkjims.v13i2.380>
- Permenkes RI No.19 Tahun 2024 tentang Pusat Kesehatan Masyarakat. *Edu Research Indonesian Institute For Corporate Learning And Studies (IICLS)*, 5(1), 70–80.
- Permenkes RI No 24. (2022). Permenkes RI No 24 Tahun 2022 Tentang Rekam Medis. *Peraturan Menteri Kesehatan Republik Indonesia Nomor 24 Tahun 2022*, 151(2), 10–17.
- Rusmiati, F., Astika, F., & Fajri, S. (2022). *Perancangan Dan Prosedur Penggunaan Petunjuk Keluar (Outguide) Untuk Penyimpanan Rekam Medis Di Rumah Sakit Umum Daerah Petala Bumi Provinsi Riau Tahun 2021 Fadillah*. 02, 84–97. <https://doi.org/10.25311/jrm.Vol2.Iss1.429>
- Sari, S. M., & Muzuh, M. E. (2023). *Desain Tracer dan Efisiensi Waktu Penyediaan Berkas Rekam Medis Menggunakan Tracer*. 6(6), 961–967. <https://doi.org/10.47650/jpp.v6i6.1149>

- Wahyuni, Pratama, B. A., & Widyaningrum, A. (2022). *Rancangan Desain Formulir Tracer Rekam Medis di Puskesmas Cawas 1 Tahun 2022*. 20(1), 115–122. <https://doi.org/10.26576/profesi.v20i1.142>
- Wiansah, R. A., Rani, D. M., & Widyaningrum, B. N. (2022). Analisis Penggunaan Tracer di Klinik Pratama PMI Kabupaten Pati. *Jurnal Rekam Medis & Manajemen Infomasi Kesehatan*, 2(2), 40–47. <https://doi.org/10.53416/jurmik.v2i2.108>