Analysis of Medicine Logistics Management at Tanah Jawa Community Health Center, Simalungun Regency

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Drug logistics management is a series of activities aimed at ensuring the availability of medicines in the right type, quantity, quality, time, and cost. Based on a preliminary survey conducted at Tanah Jawa Public Health Center, Simalungun Regency, several problems were identified in drug requirement planning, procurement, and recording systems. This study aimed to analyze the implementation of drug logistics management at Tanah Jawa Public Health Center, Simalungun Regency.This study employed a descriptive method with a qualitative approach. Data were collected through interviews, observations, and documentation involving five informants who were directly involved in drug management.The results showed that drug requirement planning had been carried out based on the Drug Usage and Request Report (LPLPO), disease patterns, and consumption patterns; however, it had not fully matched actual service needs. Drug procurement and distribution were still constrained by delays and limited stock availability. Drug storage had implemented the FIFO and FEFO principles, but record-keeping was still partly conducted manually. The destruction and recall of medicines had been carried out in accordance with regulations, although not on a routine basis.In conclusion, drug logistics management at Tanah Jawa Public Health Center has not been implemented optimally. Improvements in planning, integrated recording systems, and coordination with the Health Office are needed to support drug availability and improve the quality of pharmaceutical services.
Keywords: Drug logistics management, drug planning, public health center.

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1. Introduction

Health is a fundamental aspect of human life that cannot be separated from individual and community well-being. Everyone needs optimal health conditions to carry out daily activities productively and sustainably. A good level of public health is one of the indicators of a country's development success (1). Therefore, improving public health requires serious attention and must be implemented in a planned and sustainable manner.

Medicines are essential human needs that play an important role in disease prevention and treatment (2). According to the regulations of the Ministry of Health of the Republic of Indonesia, medicines are defined as substances or combinations of substances, including biological products, used to influence or investigate physiological systems or pathological conditions in humans for diagnostic, preventive, curative, rehabilitative, and health-promoting purposes, as well as contraception. Therefore, adequate availability and proper management of medicines are essential factors in supporting the successful delivery of healthcare services.

Community Health Centers, commonly known as Puskesmas, are primary healthcare facilities responsible for prioritizing promotive and preventive programs and providing Community Health Efforts (Upaya Kesehatan Masyarakat or UKM) and Individual Health Efforts (Upaya Kesehatan Perorangan or UKP) to improve public health. As primary healthcare facilities at the sub-district level, Puskesmas are responsible

for planning and procuring the medicines required to provide quality healthcare services. Puskesmas are also required to prepare medicine requirement plans, which are subsequently submitted to the District or Municipal Health Office.

Based on the provisions of Minister of Health Regulation No. 5 of 2023, the success or failure of medicine management is largely determined by the quality of the planning process. For example, planning medicine procurement beyond actual requirements may result in budget wastage and increased procurement and storage costs. Furthermore, excess stock may remain undistributed, leading to medicine damage or expiration during storage, particularly in healthcare facilities such as Puskesmas (3).

Medicine management at Puskesmas is carried out by the pharmaceutical service unit, which is responsible for providing comprehensive pharmaceutical services, including both managerial activities and clinical pharmacy services. This is in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 26 of 2020 concerning Amendments to Minister of Health Regulation Number 74 of 2016 on Pharmaceutical Service Standards at Community Health Centers. This regulation emphasizes that pharmaceutical services at Puskesmas must ensure the availability of pharmaceutical preparations and the rational, safe, and quality use of medicines.

The significant role of pharmaceutical services in supporting healthcare quality requires pharmaceutical personnel, particularly pharmacists, to develop their service paradigm from a product-oriented approach toward a patient-oriented approach. This paradigm shift presents both challenges and opportunities for pharmaceutical personnel to improve their competencies in managerial and clinical pharmacy aspects. From a managerial perspective, pharmaceutical personnel are expected to manage medicine logistics optimally by utilizing health information systems to improve workforce efficiency, time management, and data accuracy.

According to Minister of Health Regulation No. 21 of 2020 concerning medicine logistics management at Puskesmas, an effective medicine procurement and supply system consists of several stages. These include medicine selection based on the healthcare center's needs, considering consumption patterns, disease patterns, the most frequently used medicines, patient visit patterns, and the Drug Usage and Request Report (Laporan Pemakaian dan Lembar Permintaan Obat or LPLPO). The next stage involves compiling medicine consumption data based on stock cards, daily medicine usage records, LPLPO documents, prescription records, and medicine reports. Medicine requirements are then calculated using several methods, including the consumption method, morbidity method, or service-level projection method. The selection of an appropriate method should be adjusted to the specific needs of each Puskesmas.

Based on the preliminary survey conducted at Tanah Jawa Community Health Center, Simalungun Regency, medicine logistics management has been implemented through several stages, including planning, procurement, storage, and distribution. However, several problems remain in its implementation. One of the main challenges is the discrepancy between planned medicine requirements and the actual needs of healthcare services, resulting in the suboptimal availability of certain medicines. In addition, delays in the medicine procurement process have contributed to stock shortages and the unavailability of specific medicines.

Several types of medicines frequently experience stock shortages or insufficient quantities, including N-acetylcysteine, amoxicillin, gentamicin skin ointment, and hydrocortisone skin ointment. These conditions disrupt the continuity of healthcare services, particularly in the management of infectious diseases, respiratory disorders, and skin diseases. Another consequence of limited medicine availability is that patients cannot obtain the medicines they need directly from the health center, forcing some of them to purchase medicines independently from other sources.

Such conditions may impose additional financial burdens on patients, reduce treatment adherence, and potentially delay the recovery process. Ultimately, these problems may negatively affect the quality and effectiveness of healthcare services at Tanah Jawa Community Health Center. Furthermore, the proposed Drug Requirement Plan (Rencana Kebutuhan Obat or RKO) submitted by the health center is not always fully realized because the types of medicines supplied are often incomplete and the quantities do not correspond to the initial requests. The recording and reporting systems for medicine inventory have also not been fully integrated. Some recording activities are still conducted manually, creating the potential for stock recording errors, delayed information, and inadequate inventory control. These conditions may negatively affect the quality of pharmaceutical services and patient satisfaction.

Previous studies have shown that problems in medicine logistics management remain common in community health centers. Baybo et al. (2022) concluded that medicine planning and inventory control had not been fully implemented in accordance with established standards (4). Furthermore, Wahyono and Hapsari (2025) found that the suboptimal utilization of pharmaceutical management information systems was one of the factors hindering the effectiveness of medicine management (5). Meanwhile, Safitri and Mardahlia (2024) reported that limitations in human resources and supporting facilities also influenced medicine availability at community health centers (6).

Based on these findings, medicine logistics management plays a crucial role in ensuring medicine availability and maintaining the quality of pharmaceutical services at community health centers. Proper medicine logistics management also represents a form of responsibility and trust in providing healthcare services to the community. This principle is consistent with the teachings of Allah SWT in the Qur'an:

"*And say, 'Do [as you will], for Allah will see your deeds, and [so will] His Messenger and the believers...*'" (QS. At-Taubah: 105).

This verse emphasizes that every task must be carried out sincerely, professionally, diligently, and with a strong sense of responsibility. Every activity should not merely be performed to fulfill formal obligations but should also be regarded as an act of worship and devotion to Allah SWT. This principle encourages Muslims to uphold the values of trustworthiness (amanah), integrity, and quality in every professional field, including healthcare services.

When applied to medicine logistics management at Tanah Jawa Community Health Center, this verse provides a moral and spiritual foundation for ensuring that medicine management is carried out optimally, transparently, and in accordance with applicable regulations. Guaranteed medicine availability, orderly management, and quality pharmaceutical services are part of both professional responsibility and religious commitment. Every process, from planning and procurement to storage and distribution, must be conducted carefully because it involves not only administrative accountability but also accountability before Allah SWT.

Therefore, research on the Analysis of Medicine Logistics Management at Tanah Jawa Community Health Center, Simalungun Regency, is important to assess the extent to which its implementation complies with applicable standards and to identify opportunities to improve the effectiveness and efficiency of pharmaceutical services. Through proper management based on the values of trustworthiness and professionalism, healthcare services are expected to become more optimal and provide greater benefits to the community. Based on the foregoing discussion, an in-depth analysis of medicine logistics management at Tanah Jawa Community Health Center is necessary. This analysis is expected to provide a comprehensive overview of the implementation of medicine logistics management, its level of compliance with established standards, and the factors influencing the success of medicine management.

2. Literature Review And Problem Statement

Medicine Logistics Management

Medicine logistics management is an essential component of healthcare services that ensures the availability, quality, safety, and continuity of medicine supplies at healthcare facilities. It encompasses a series of activities, including planning, procurement, receipt, storage, distribution, and inventory control. Effective medicine logistics management requires accurate planning based on consumption patterns, disease prevalence, and actual healthcare needs to prevent overstocking, shortages, and medicine expiration. Therefore, the implementation of an effective logistics management system is necessary to support the quality and efficiency of pharmaceutical services at community health centers.

Medicine Availability and Pharmaceutical Services at Community Health Centers

Medicine availability is one of the main indicators of the quality of pharmaceutical services at community health centers (Puskesmas). Adequate medicine supplies enable healthcare personnel to provide appropriate treatment according to patients' medical conditions. However, discrepancies between planned and actual medicine requirements, delays in procurement, inadequate storage facilities, and weaknesses in inventory recording may lead to medicine shortages. These problems can affect treatment continuity, increase patients' financial burdens, and reduce satisfaction with healthcare services. Consequently, systematic and integrated medicine management is required to maintain the availability and distribution of medicines according to healthcare needs.

Problem Statement

Based on the preliminary survey at Tanah Jawa Community Health Center, Simalungun Regency, several problems were identified in medicine logistics management, including discrepancies between planned medicine requirements and actual supplies, delays in procurement, shortages of essential medicines such as N-acetylcysteine, amoxicillin, gentamicin skin ointment, and hydrocortisone skin ointment, as well as suboptimal integration of medicine inventory recording and reporting systems. Some recording activities are still conducted manually, potentially resulting in inaccurate stock data and delays in information. These conditions indicate the need for a comprehensive evaluation of medicine logistics management to determine whether its implementation complies with applicable standards. Therefore, this study aims to analyze medicine logistics management at Tanah Jawa Community Health Center, Simalungun Regency, focusing on the implementation of planning, procurement, storage, and distribution processes, as well as the factors that influence their effectiveness.

3. Method

This study employed a descriptive qualitative research design using a case study approach. According to Sugiyono (2022), descriptive qualitative research is based on post-positivist philosophy and is conducted to examine objects under natural conditions, with the researcher serving as the primary research instrument. This approach was selected to obtain an in-depth understanding of medicine logistics management at Tanah Jawa Community Health Center, Simalungun Regency, including the processes of planning, procurement, storage, distribution, and inventory control. The study was conducted at Tanah Jawa Community Health Center, Simalungun Regency, North Sumatra, Indonesia, from November 2025 to January 2026.

The research informants were selected using purposive sampling based on their positions, work experience, and direct involvement in medicine logistics management. A total of five informants participated in this study, consisting of four personnel from Tanah Jawa Community Health Center and one personnel from the Simalungun Regency Health Office. The informants ranged in age from 36 to 44 years and included

pharmacists, pharmacy assistants, administrative personnel, and the Head of the Regional Pharmaceutical Installation Unit. Their work experience ranged from 5 to 12 years. Data collection instruments included notebooks, a mobile phone, a camera, observation sheets, and structured interview guidelines. The primary data collection techniques consisted of in-depth interviews, direct observation, and documentation. Interviews were conducted to obtain detailed information from the informants, while observations focused on medicine planning, procurement, storage, distribution, inventory control, and pharmaceutical facilities. Documentation involved reviewing medicine stock cards, medicine usage reports, medicine requirement planning documents, standard operating procedures (SOPs), and other relevant administrative records.

Data validity was established through credibility testing using source triangulation and methodological triangulation. Source triangulation was performed by comparing information obtained from different informants involved in medicine logistics management at the community health center and the Simalungun Regency Health Office. Methodological triangulation was conducted by comparing findings from interviews, direct observations, and document reviews to ensure consistency and accuracy. The information obtained through interviews was also verified against relevant documentation and actual conditions in the field. This process was intended to strengthen the credibility of the research findings and minimize potential discrepancies between reported information and actual practices.

Data analysis employed thematic analysis by organizing the findings from interviews, observations, and documentation into themes corresponding to the stages of medicine logistics management, namely planning, procurement, storage, distribution, and inventory control. Interview recordings were transcribed verbatim, and relevant information was classified according to the research objectives. The analysis consisted of three main stages: data reduction, data display, and conclusion drawing and verification. Data reduction involved selecting and summarizing relevant information, while data display presented the findings in descriptive narratives, tables, and matrices. Finally, conclusions were drawn by interpreting the findings in relation to the research objectives and relevant theories. Verification was conducted continuously through re-examination of the collected data and triangulation to ensure that the findings accurately represented medicine logistics management at Tanah Jawa Community Health Center, Simalungun Regency. Reference numbering was continued from the previous section, with the next available citation number being (7).

4. Results and Discussion

Results

General Description of the Research Location

Tanah Jawa Community Health Center is located at Jalan Sisingamangaraja No. 165, Pematang Tanah Jawa Village, Simalungun Regency, North Sumatra, Indonesia. Established in 1968, the health center occupies a land area of 988.2 m², with a building area of approximately 980 m² consisting of three buildings. Its working area covers approximately 39,087 hectares. Administratively, Tanah Jawa District consists of 11 villages and one urban village; however, the service area of Tanah Jawa Community Health Center does not cover the entire district because there are two community health centers operating within the district.

The working area of Tanah Jawa Community Health Center is bordered by Hatonduhan District to the east, Siantar District to the west, Jorlang Hataran District to the south, and Jawa Maraja Bah Jambi District to the north. Its administrative service area consists of 12 villages and urban villages, comprising 61 hamlets. One village, Mekar Mulia, is located approximately 1.5 hours away, while the other areas can generally be reached by two-wheeled and four-wheeled vehicles. The average travel time from the villages to the health center is approximately 30–60 minutes. Based on its operational capacity, Tanah Jawa Community Health

Center is classified as a non-inpatient community health center located in an urban area. Its healthcare services include essential and developmental public health programs.

Characteristics of Research Informants

The research informants consisted of five female personnel directly involved in medicine logistics management, including four personnel from Tanah Jawa Community Health Center and one representative from the Simalungun Regency Health Office. Informants were selected using purposive sampling based on their positions, educational backgrounds, work experience, and involvement in medicine management. Their ages ranged from 36 to 44 years, while their work experience ranged from 5 to 12 years.

No.	Informant	Age	Education	Position	Work Experience	Code
1	K	40	Nursing	Administration Staff	6 years	IK-1
2	DE	37	Pharmacist	Head of Pharmacy Unit	5 years	IU-1
3	ERS	44	Bachelor's Degree in Pharmacy	Pharmacy Assistant	6 years	IP-1
4	DA	38	Bachelor's Degree in Pharmacy	Pharmacy Assistant	12 years	IP-2
5	MS	36	Pharmacist	Head of Regional Pharmaceutical Installation, Simalungun Regency Health Office	10 years	IT-1

Note: IK = Key Informant; IU = Main Informant; IP = Supporting Informant; IT = Triangulation Informant.

These informants represented different managerial and operational responsibilities in medicine logistics management, enabling the researchers to obtain information from both the community health center and the district health office.

Analysis of Medicine Logistics Management

The findings were organized according to the main stages of medicine logistics management, namely medicine planning, procurement, receipt, storage, distribution, and destruction. Data were obtained through in-depth interviews, direct observations, and document reviews.

Medicine Planning

Medicine planning at Tanah Jawa Community Health Center begins with the preparation of the Drug Requirement Plan (Rencana Kebutuhan Obat or RKO), which serves as the basis for estimating annual medicine requirements. The planning process uses the consumption method by reviewing previous medicine usage records, stock cards, and the Drug Usage and Request Report (Laporan Pemakaian dan Lembar Permintaan Obat or LPLPO). The RKO is prepared annually, while routine medicine requests through the LPLPO are generally submitted every two months. Medicine planning is supported by three personnel, consisting of one pharmacist responsible for the pharmacy unit and two pharmacy assistants.

One administrative informant explained:

"There are three personnel responsible for medicine management here: one person in charge of the pharmacy unit and two pharmacy assistants. We collect the data and calculate the required quantities of medicines. However, there are still problems with medicine planning in the RKO because the quantities received do not always match the planned amounts, resulting in frequent stock shortages." (K, Administration Staff)

Another informant stated:

"To plan medicine requirements, we first calculate the quantities needed to determine which medicines must be ordered. We submit the LPLPO to request medicines from the Health Office, usually once every two months. The main problem is that the medicines delivered do not always match our requests." (DE, Head of Pharmacy Unit)

A pharmacy assistant also explained:

"The first steps in medicine planning are selecting the medicines and calculating their requirements. We then collect data from the LPLPO. Sometimes the quantities requested do not match the quantities delivered because the Health Office may not have sufficient stock. As a result, we often experience medicine shortages." (DA, Pharmacy Assistant)

Based on the interviews, medicine planning has been implemented using the consumption method and supported by annual RKO preparation and periodic LPLPO submissions. However, the main problem is the discrepancy between the quantities requested and those supplied by the District Health Office. According to the triangulation informant, the RKO is collected from the community health centers and used to plan medicine requirements, while shortages may be addressed through the National Health Insurance (JKN) funding allocation.

The triangulation informant stated:

"We collect the RKO from the community health centers to estimate their medicine requirements. Every month, they submit an LPLPO to the Health Office, and we distribute medicines based on the available stock. If there are shortages, some medicines can be purchased using JKN funds." (MS, Head of Regional Pharmaceutical Installation)

The observation results confirmed that medicine selection at Tanah Jawa Community Health Center refers to the health center formulary, which is aligned with the National Formulary. The selection process includes submitting proposed medicines, compiling the proposals, discussing the required medicines, preparing the medicine list, and establishing the health center formulary. Medicine consumption data are collected using stock cards and LPLPO documents, while the RKO serves as the annual planning document.

Medicine Procurement

Medicine procurement is conducted after the planning process and is obtained primarily through two institutional funding sources: the Simalungun Regency Health Office and the National Health Insurance (JKN) program. Procurement through the Health Office is carried out using the LPLPO, while JKN-funded procurement is conducted through the electronic catalogue (e-catalogue) using the electronic purchasing system (e-purchasing). Medicine requests through the LPLPO are generally submitted every two months.

The head of the pharmacy unit explained:

"Medicine procurement at Tanah Jawa Community Health Center begins with the preparation of the RKO using the consumption method. There are two types of RKO, one submitted to the District Health Office and another allocated for JKN-funded medicines. This is intended to prevent duplication. For procurement through the Health Office, we submit the LPLPO containing previous medicine consumption, remaining stock, and the quantities required for the next two months. Meanwhile, JKN-funded medicines are proposed to the JKN treasurer, who purchases them through the e-catalogue using e-purchasing. The pharmaceutical distributors then deliver the medicines directly to the health center." (DA, Pharmacy Assistant)

Another informant stated:

"Some medicines are available in sufficient quantities, while others are not. When stocks are insufficient, we discuss the problem in meetings and identify which medicines have not been fulfilled. The remaining

requirements are then addressed through independent procurement by the health center. Approximately 75% of the requested medicines are fulfilled. Annual medicine planning is conducted at the end of the year for the following year, while routine requests are submitted every two months." (K, Pharmacy Assistant)

These findings indicate that medicine procurement has been implemented through established procedures and two main funding sources. However, only approximately 75% of the requested medicines are fulfilled, indicating that procurement has not fully met the health center's requirements. To address shortages, the health center conducts evaluations and arranges additional procurement using available independent funding.

The triangulation informant explained the procurement constraints:

"When we identify medicine shortages, we submit requests to the Provincial Health Office or request buffer stock. One of the challenges is the e-catalogue system. Sometimes an item appears in the system, but it is not actually available in stock, even though the procurement process may take up to 90 days. As a result, the procurement may be cancelled. For urgent needs, we coordinate through official request letters. If the medicines are urgently needed, the community health center personnel may come directly to the District Health Office to collect them." (MS, Head of Regional Pharmaceutical Installation)

The findings indicate that limited medicine availability, high demand from community health centers, and delays in the e-catalogue procurement process are the main obstacles to fulfilling medicine requirements. Patients may also purchase unavailable medicines independently from pharmacies outside the health center. The observation results showed that medicine procurement was routinely conducted every two months, with funding obtained from the Regional Revenue and Expenditure Budget (APBD) and JKN. These documents and communication records demonstrate the coordination between the health center and the District Health Office in submitting medicine requests, confirming availability, and arranging medicine collection.

Medicine Receipt

Medicine receipt is carried out by pharmaceutical personnel to ensure that the medicines delivered meet the required specifications in terms of type, quantity, quality, and safety. Based on the interviews, the receiving process involves checking the medicine names, quantities, expiration dates, batch numbers, and physical conditions. These details are compared with the Goods Issue and Delivery Document (Surat Bukti Barang Keluar or SBBK/SPBK). Medicines approaching their expiration dates are not accepted.

The person responsible for the pharmacy unit explained:

"During the medicine receiving process, we first check the expiration dates and compare them with the SBBK document. If the medicines are approaching their expiration dates, we do not accept them." (DA, Head of Pharmacy Unit)

A pharmacy assistant added:

"The medicines are received by the pharmacy personnel after checking the type, quantity, expiration date, and batch number. These details are matched with the SBBK document, and we also inspect the physical condition of the medicines." (K, Pharmacy Assistant)

The interview findings indicate that medicine receipt at Tanah Jawa Community Health Center has been carried out carefully through administrative and physical inspections. The observation results confirmed that pharmaceutical personnel check the types and quantities of medicines against the SBBK document before accepting the supplies. Medicines that do not meet the required conditions are rejected or returned. The SBBK serves as official evidence of medicine delivery and receipt between the District Health Office

and the community health center. It also provides the basis for verifying medicine quantities and updating inventory records.

Medicine Storage

Medicine storage is intended to maintain medicine quality, safety, and availability and to prevent inappropriate use. At Tanah Jawa Community Health Center, storage activities are managed by pharmaceutical personnel, including pharmacists and pharmacy assistants. Based on the interviews, medicines are stored using the FIFO (First In First Out) and FEFO (First Expired First Out) methods. Medicines are classified according to their types and dosage forms, such as tablets, syrups, and injections, and placed on separate shelves to facilitate identification and retrieval.

The person responsible for the pharmacy unit explained:

"The pharmacy staff and pharmacists are responsible for medicine storage in the warehouse. We apply the FIFO and FEFO methods and group medicines according to their types. Tablets are placed together on shelves, syrups are stored separately, and injections are also placed in designated areas. Storage follows the applicable SOP. The storage room is equipped with air conditioning, special cabinets for narcotics and psychotropic medicines, and refrigerators. The warehouse is also secured with locks and CCTV." (DA, Head of Pharmacy Unit)

A pharmacy assistant further explained:

"Expired medicines are monitored through stock cards and the Electronic Medical Record (RME) application, allowing us to monitor the remaining stock and expiration dates regularly. We also apply FIFO and FEFO so that medicines with earlier expiration dates are used first. However, damaged or expired medicines are not destroyed directly at the health center but are returned to the district pharmaceutical warehouse." (K, Pharmacy Assistant)

Based on these findings, medicine storage has generally followed the established procedures. Special storage facilities are provided for narcotics, psychotropic medicines, and medicines requiring specific temperature conditions. Inventory monitoring is also supported by stock cards and the RME application. However, the destruction of damaged and expired medicines is not conducted independently by the health center because these medicines are returned to the district pharmaceutical warehouse.

Medicine Distribution

Medicine distribution at Tanah Jawa Community Health Center is carried out based on prescriptions issued by doctors according to patients' diagnoses and treatment needs. The process involves transferring prescriptions from healthcare service units to the pharmacy unit, where pharmaceutical personnel prepare and dispense the prescribed medicines.

The person responsible for the pharmacy unit explained:

"Medicines are distributed based on prescriptions issued by doctors in the healthcare service rooms. When a prescription is received, we provide the medicines according to the prescribed treatment. One of the challenges in distribution is the availability of supporting facilities and infrastructure." (DE, Head of Pharmacy Unit)

Another informant stated:

"Prescriptions from the healthcare service rooms are based on the patients' diagnoses. After the prescription is issued, it is submitted to the medicine dispensing counter. One of our difficulties is the distribution infrastructure. It would be easier if communication among pharmacy staff were supported by a better network, so we would not have to go back and forth whenever something is missing." (K, Pharmacy Assistant)

The findings indicate that medicine distribution has followed the established prescription-based procedures. However, limitations in communication facilities and supporting infrastructure remain obstacles to coordination among pharmaceutical personnel and healthcare service units.

The observation results showed that prescriptions written by doctors are delivered by nurses to the pharmacy unit. Pharmaceutical personnel then conduct prescription screening, including checking prescription completeness, medicine types, and quantities. Afterward, the medicines are prepared, labeled, and checked again before being handed to patients. Patients also receive information regarding medicine indications, dosage, administration procedures, and storage. These findings demonstrate that medicine distribution has been implemented through prescription screening, medicine preparation, verification, and patient education. Nevertheless, improvements in communication technology and supporting infrastructure are needed to facilitate coordination and improve the efficiency of medicine distribution.

Medicine Destruction

Medicine destruction is an important component of medicine logistics management, particularly for medicines that are damaged, expired, or no longer suitable for use. Based on the interviews, Tanah Jawa Community Health Center does not independently destroy damaged or expired medicines. Instead, these medicines are returned to the Simalungun Regency Health Office for further processing.

The person responsible for the pharmacy unit explained:

"This health center does not carry out medicine destruction, ma'am. Medicines that have expired or been damaged are returned to the Health Office. Likewise, if we receive damaged medicines, we return them to the Health Office. Expired medicines are also returned to the district Health Office. There is no medicine destruction conducted directly at this health center." (DE, Head of Pharmacy Unit)

The triangulation informant explained the destruction procedure at the District Health Office:

"We use a third party to destroy damaged or expired medicines. The destruction is conducted based on an agreed schedule and the quantity or weight of medicines to be destroyed. When the scheduled time arrives, the medicines are handed over by the community health center personnel to the third party, accompanied by an inspection report containing the names and quantities of the damaged or expired medicines. An official record is then prepared and submitted to the Health Office as written documentation. However, destruction activities also depend on the availability of the budget. We have also conducted medicine recalls when instructed by the National Agency of Drug and Food Control (BPOM), including certain psychiatric medicines and paracetamol products." (MS, Head of Regional Pharmaceutical Installation)

Based on the interviews and observations, Tanah Jawa Community Health Center does not independently conduct medicine destruction. Damaged and expired medicines are returned to the District Health Office, which coordinates the destruction process through a third party. The process is documented through official inspection and destruction reports. However, the implementation of medicine destruction is not conducted regularly because it depends on budget availability. Medicine recalls are also carried out when official instructions are issued by BPOM.

Overall, medicine logistics management at Tanah Jawa Community Health Center has been implemented through six main activities: planning, procurement, receipt, storage, distribution, and destruction. Medicine planning uses the consumption method through the RKO and LPLPO, while procurement is supported by the District Health Office and JKN funding. Medicine receipt involves administrative and physical inspections, and storage applies FIFO and FEFO principles. Distribution is conducted based on medical prescriptions, while damaged and expired medicines are returned to the District Health Office for destruction.

Nevertheless, several operational challenges remain, particularly discrepancies between planned and supplied medicine quantities, procurement delays, and limited communication facilities. The fulfillment of requested medicines is approximately 75%, indicating that medicine availability has not been fully optimized. Furthermore, medicine destruction remains dependent on the District Health Office and available funding. These findings suggest that improvements in planning accuracy, procurement coordination, inventory monitoring, communication infrastructure, and medicine destruction procedures are necessary to strengthen medicine logistics management at Tanah Jawa Community Health Center.

Discussion

Medicine logistics management at Tanah Jawa Community Health Center, Simalungun Regency, encompasses several interconnected activities, including medicine planning, procurement, receipt, storage, distribution, and destruction. Based on the research findings, these activities have generally been implemented, although several operational challenges remain. Medicine planning is carried out by identifying the types of medicines required, collecting data from previous medicine consumption and LPLPO reports, and calculating future needs using the consumption method. The planning process also considers disease patterns and healthcare service demands within the community health center's working area. The preparation of the Medicine Requirement Plan (RKO) and periodic submission of LPLPO reports to the Simalungun District Health Office serve as the primary mechanisms for determining medicine requirements. However, the findings indicate that the quantities of medicines received do not always correspond to the quantities requested, resulting in shortages of certain medicines. This condition suggests that medicine planning needs to be supported by more accurate consumption data, regular evaluations, and improved coordination between the community health center and the District Health Office.

Medicine procurement at Tanah Jawa Community Health Center is primarily conducted through the Simalungun District Health Office and the National Health Insurance (JKN) scheme. Requests through the District Health Office are submitted periodically using LPLPO reports, while procurement through JKN is carried out using the e-catalogue and e-purchasing systems. Although these mechanisms have provided an established procurement framework, the research findings indicate that only approximately 75% of the requested medicines are fulfilled according to the initial requests. In addition, the availability of medicines in the e-catalogue system and procurement delays, which may reach 90 days, affect the timely fulfillment of medicine requirements. These obstacles may lead to stock shortages and require patients to purchase unavailable medicines independently from pharmacies. To address these problems, the community health center conducts internal evaluations, coordinates with the District Health Office, and submits special requests for urgent medicine requirements. This finding demonstrates that procurement effectiveness depends not only on accurate planning but also on stock availability, procurement procedures, and coordination among the institutions involved.

The medicine receipt process is conducted by pharmaceutical personnel through inspections to ensure that medicines delivered by the District Health Office or distributors meet the required specifications. The inspection includes verifying medicine types, quantities, expiration dates, batch numbers, packaging conditions, and physical quality by comparing the received products with the accompanying delivery documents, such as the Surat Bukti Barang Keluar (SBBK) or other relevant records. This procedure is important to ensure that medicines entering the pharmaceutical warehouse meet quality and safety requirements before being stored and distributed. The research findings indicate that pharmaceutical personnel have implemented these inspection procedures, including refusing medicines that are approaching their expiration dates. Nevertheless, discrepancies between requested and received quantities remain a concern because they may affect the accuracy of stock records and subsequent medicine

availability. Therefore, every discrepancy identified during receipt should be documented and immediately coordinated with the District Health Office or relevant distributor to ensure appropriate follow-up.

Medicine distribution at Tanah Jawa Community Health Center is carried out based on prescriptions issued by doctors according to patients' medical conditions and treatment needs. The distribution process involves receiving prescriptions, checking the completeness and appropriateness of the prescribed medicines, preparing the required medicines, labeling them, and providing instructions to patients regarding their use. In general, this process demonstrates that medicine distribution has been integrated into routine healthcare services. However, the research findings identify several obstacles, particularly limited medicine availability, inadequate supporting facilities, and communication constraints among healthcare personnel. These limitations may cause delays in fulfilling prescriptions and affect the smooth delivery of pharmaceutical services. In addition, the availability of sufficient pharmaceutical personnel and an effective information system is important to ensure accurate stock recording and timely distribution. Consequently, improvements in communication facilities, coordination between service units, and routine monitoring of medicine stocks are necessary to support more effective and continuous medicine distribution.

The handling of damaged and expired medicines at Tanah Jawa Community Health Center is conducted by returning these medicines to the Simalungun District Health Office rather than destroying them independently at the community health center. The District Health Office subsequently coordinates the destruction process through a third party, taking into consideration the types and quantities of medicines, the agreed schedule, and the availability of funds. The process is supported by inspection reports and official documentation as evidence of accountability. This arrangement indicates that the community health center has established a procedure for separating and returning medicines that are no longer suitable for use. However, the implementation of medicine destruction remains dependent on coordination with the District Health Office and budget availability. Therefore, regular monitoring, proper documentation, and timely returns of damaged or expired medicines are essential to prevent their accidental use and maintain pharmaceutical safety.

From an Islamic perspective, medicine logistics management is closely related to the values of amanah (trustworthiness), responsibility, professionalism, and itqan (working diligently and accurately). These principles are reflected in QS. At-Taubah verse 105, which emphasizes that every human action is observed by Allah SWT, and QS. An-Nisa verse 58, which commands believers to fulfill entrusted responsibilities appropriately and uphold justice. Furthermore, QS. Al-Qashash verse 26 highlights the importance of competence and trustworthiness through the principles of al-quwwah and al-amanah. These teachings are relevant to pharmaceutical personnel because medicine planning, procurement, receipt, distribution, and destruction require accuracy, honesty, and professional competence. The principle of itqan also encourages personnel to perform their duties carefully and responsibly so that medicine stocks are managed appropriately and patients receive safe and adequate treatment. Thus, effective medicine logistics management is not merely an administrative obligation but also a form of moral and religious responsibility in protecting public health.

Overall, the findings indicate that medicine logistics management at Tanah Jawa Community Health Center has been implemented through established procedures, but its effectiveness still requires improvement. The main problems involve discrepancies between planned and received medicine quantities, procurement delays, limited medicine availability, communication constraints, and dependence on the District Health Office for medicine destruction. These findings highlight the importance of strengthening human resource capacity, improving the accuracy of medicine requirement calculations, and optimizing the use of pharmaceutical information systems for monitoring stock levels and expiration dates. Furthermore, routine evaluations and stronger coordination with the Simalungun District Health Office are necessary to

anticipate shortages and ensure timely medicine fulfillment. By improving these aspects and consistently applying the principles of professionalism and amanah, medicine logistics management can become more effective, efficient, accountable, and responsive to the healthcare needs of the community.

5. Conclusion

Based on the research findings, medicine logistics management at Tanah Jawa Community Health Center, Simalungun Regency, has generally been implemented through several stages, including medicine planning, procurement, storage, distribution, and destruction. Medicine planning has referred to LPLPO reports, disease patterns, and previous consumption data. However, discrepancies between planned requirements and actual service needs remain, resulting in shortages of certain medicines. Medicine procurement has also not been fully optimal due to distribution delays and differences between the types and quantities of medicines requested and those received from the District Health Office. Although medicine storage has followed basic procedures, stock recording and monitoring have not been fully integrated, as some activities are still conducted manually. Furthermore, medicine distribution to healthcare service units has been implemented, but its effectiveness remains affected by limited stock availability and inaccuracies in medicine planning.

Medicine destruction and withdrawal have also been carried out through established procedures, although their implementation still requires improvement in terms of scheduling, monitoring, and coordination to prevent the accumulation of expired medicines. Overall, medicine logistics management at Tanah Jawa Community Health Center has not yet operated optimally due to discrepancies in medicine planning, procurement delays, limitations in stock management systems, and constraints in the availability of supporting resources. Therefore, improvements in planning accuracy, procurement coordination, integrated stock monitoring, and regular evaluation are necessary to ensure medicine availability and support continuous, effective, and high-quality healthcare services.

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