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Implementation of Drug Logistics Management at Berohol Village Health Center Tebing Tinggi City

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ABSTRACT

Drug logistics management is a critical component of healthcare services, intended to ensure the continuous availability of medicines in appropriate quantities, with the right quality, and at the right time. Proper drug availability is essential to the success of treatment processes and patient satisfaction. This study aims to analyze the implementation of drug logistics management at the Village Berohol Health Center in Tebing Tinggi City, which serves as a primary healthcare provider for the surrounding community. The research employs a qualitative approach using a case study design. Data were collected through semi-structured interviews with key personnel, direct observations of logistics processes, and review of documentation related to medicine management. The data were then analyzed using thematic coding to extract key themes and patterns. The results indicate that while the logistics system at the health center functions effectively in ensuring medicine availability, there are notable challenges including limited human resources, insufficient medicine storage facilities, and occasional fluctuations in the availability of specific types of medicines. These challenges can affect the consistency and efficiency of medicine distribution. Nevertheless, observations and documentation confirm that the health center is able to meet most of its medicine supply needs. The study concludes that although the overall implementation of drug logistics management at the Kelurahan Berohol Health Center is effective, improvements are still necessary, particularly in enhancing human resource capacity and upgrading storage infrastructure to support more efficient and reliable drug logistics operations.

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INTRODUCTION

The equitable and sustainable availability of medicines is one of the indicators of the success of the health service system in various countries (Scott, 2024). Globally, challenges in drug logistics management such as limited resources, distribution inefficiencies, and unintegrated procurement systems remain major obstacles in ensuring access to medicines for the public. The mismatch between actual needs and the availability of medicines has a direct impact on health services, especially in resource-constrained areas (Fikri & Verina, 2020). Therefore,

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strengthening the drug logistics management system is an important concern in improving primary health services (Saputra, 2025).

At the national level, Indonesia faces various problems in the management of drug logistics in first-level health facilities such as health centers. The drug needs planning process still relies on historical data on the previous year's use, which often does not reflect real conditions on the ground (Suprayitno et al., 2024). Procurement of drugs through a manual system using Usage Reports and Drug Request Sheets (LPLPO) is also a major obstacle, because it causes delays in distribution and often leads to inconsistencies between the requested drugs and those received (Salmah, 2022). In addition, the implementation of storage methods such as FIFO (First In First Out) and FEFO (*First Expired First Out*) is still not consistently applied, thereby increasing the risk of damage or expiration of the drug (Taridala et al., 2025).

Previous research has shown that there are various obstacles in the implementation of drug logistics management. Research by (Jumriah et al., 2023) at the Muara Jawa Health Center found that errors in planning drug needs caused stock imbalances, both shortages and excesses, which had an impact on the disruption of health services. Other research by (Ginting et al., 2024) at the Lubuk Pakam Health Center shows that the delay in distribution from suppliers causes the drug to be received in a condition close to the expiration date, as well as the lack of transportation facilities hindering distribution to service subunits such as Poskesdes. Meanwhile, (Taha et al., 2021) In his research at the Pharmaceutical Installation of the Manado City Health Office, it was highlighted that the limitation of human resources in the field of drug logistics also affects the effectiveness of drug management in health facilities. These three studies show that the obstacles in drug logistics management are complex and interrelated, ranging from planning, distribution, to human resources.

Locally, the Berohol Village Health Center in Tebing Tinggi City also faces similar problems in the drug logistics management system. The problems found include a mismatch between the quantity and type of drugs needed and those available, delays in the procurement process, and lack of evaluation and monitoring of existing stocks. Even the distribution system to smaller service units still faces obstacles, both in terms of logistics and coordination between related parties. This shows the importance of evaluating the current system to improve drug availability and service efficiency.

Based on this background, this study was conducted to examine in depth the implementation of the drug logistics management system at the Berohol Village Health Center, Tebing Tinggi City. The purpose of this study is to explore how the system is implemented, analyze its impact on the availability of drugs, and identify the constraints and factors that affect its effectiveness. It is hoped that the results of this research can contribute to the development of pharmaceutical logistics management science, become policy input for local governments, and assist Puskesmas in designing a more efficient and responsive system to the needs of the community.

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METHODS

This research is a qualitative research with a case study approach carried out at the Berohol Village Health Center, Tebing Tinggi City. The qualitative approach was chosen to gain a deep understanding of the phenomenon of drug logistics management implementation, especially in terms of planning, procurement, storage, distribution, and monitoring drug availability (Jailani & Saksitha, 2024). This research is descriptive, which systematically describes the facts and characteristics of the drug logistics management system applied at the research site (Wardani, 2020). The research subjects consisted of 2 Puskesmas Officers, and patients as additional respondents to assess the availability of drugs from the user's point of view.

RESULTS AND DISCUSSION

Results

Characteristics of Informants

The informants who met the research criteria were two people with the following characteristics:

Table 1. Characteristics of Research Subjects

Characteristic	Informant 1	Informant 2
Age	33 Years	37 Years
Gender	Woman	Woman
Final Education	S1	S1
Position	Pharmacy Officer	Pharmacy Officer
Long Time Working	2 Years	5 Years

The Process of Preparing Drug Needs Planning

The preparation of drug needs at the Health Center refers to the format of the Health Office, considering the e-catalog and stock at IFK. In addition, this process is also based on data on the previous year's drug use, disease trends, and the number of people in the work area to ensure the availability of drugs as needed.

Data That Forms the Basis for Planning

In the planning process, the data used includes various sources to ensure the accuracy of needs. Informant 1 emphasized the importance of the availability of data from the e-catalog and drug stock available at IFK. Meanwhile, Informant 2 mentioned that the LPLPO report (Drug Use Report and Request Sheet) from the previous year was the main reference, in addition to data on disease trends and the population served by the Health Center.

Obstacles in Drug Procurement

The obstacles in the procurement of drugs are quite diverse, both from a technical and administrative perspective. Informant 1 revealed that one of the main problems was the incompatibility between the drugs submitted and those sent by the Health Office. In addition, delays in the reporting process can also affect the smooth procurement process. Informant 2 added that the limited budget is one of the major obstacles, where the Puskesmas must adjust the demand for drugs to the available funds.

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Drug Acceptance Process

When receiving medication from the Health Office, there are several documents that accompany the process. According to Informant 1, the documents that must be present include SBBK (Proof of Goods Out), Handover Minutes, and RADO forms. The RADO form is very important because it reflects the need and availability of drugs at the Health Center so that there is no excess or stockpiling occurs.

Drug Storage

Received medicines are stored in special storage rooms that have applied FIFO (*First In First Out*) and FEFO (*First Expired First Out*) methods. The two informants emphasized that this method is important to prevent the accumulation of drugs that are close to the expiration date. Medications that come in early or that have a closer expiration date will be used first.

Distribution of Drugs to Auxiliary Health Centers / Poskesdes

The distribution of drugs to the Auxiliary Health Center and Poskesdes is carried out based on the needs of each service area. Informant 1 explained that pharmaceutical technical personnel will compile requests based on patient data and the type of services provided, such as services for children, toddlers, and the elderly.

Rational Treatment Standards

The two informants explained that the application of rational medical standards is one of the focuses in pharmaceutical services at the Health Center. Informant 1 gave an example that not all patients were immediately given antibiotics; The administration of the drug must be based on clear medical indications. Patients are also given education on the importance of using appropriate drugs and not forcing them to get certain drugs. Informant 2 added that the use of generic drugs is preferred because it is more economical and has an effectiveness equivalent to branded drugs.

Handling Expired and Damaged Drugs

The handling of expired and damaged drugs still faces a number of challenges, especially in the administrative aspect. Informant 1 mentioned that drugs that are close to expiration will be specially labeled and separated from the main stock. The drugs are packed on a quarterly basis (TW) and reported periodically to the Health Office. If there is a damaged drug, the Puskesmas can return it to the Office. Informant 2 added that the destruction process was carried out collectively by the Agency, while the Puskesmas was only in charge of making reports and documenting data on damaged or expired drugs.

Discussion

Implementation of Drug Logistics Management System

This study shows that the drug logistics management system at the Berohol Village Health Center, Tebing Tinggi City has included several important stages, namely drug needs planning, procurement, receipt, storage, distribution, and reporting recording. However, the implementation of these stages has not run optimally due to various obstacles found in the field. For example, in terms of planning, it is often not based on accurate patient visit data, resulting in an excess or understock of certain medications. These results are in line with research by (Suryagama et al., 2019), which states that inaccurate planning is a common problem in the management of drug logistics at the Puskesmas level.

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Drug Availability and Distribution

The availability of drugs at the Berohol Village Health Center is also the main problem, especially in ensuring the availability of essential drugs according to the needs of patients. From the results of interviews with medical personnel and patients, it was found that some drugs are not always available when needed. This happens because the distribution from the district pharmacy warehouse is not always on time and there is a discrepancy between the demand and the goods delivered. This condition is reinforced by research (Choerina, 2024), which suggests that the mismatch between demand and delivery from distributors is a major obstacle in ensuring the availability of medicines in primary health facilities.

Role and Competence of Human Resources

The human resources who handle drug logistics at the Berohol Village Health Center consist of pharmacists/drug managers, warehouse officers, and several medical personnel who are indirectly involved. However, not all officers have a pharmaceutical background or specialized training in logistics management. This hinders the effectiveness of drug management, especially in terms of reporting, storage to standards, and stock control. These findings are consistent with the results of a study by (Arisandi, 2021), which emphasizes the importance of increasing human resource capacity through regular logistics management training so that drug management is more efficient and on target.

Condition of Drug Storage Facilities

Based on the results of observations, the drug storage facilities at the Puskesmas still have several shortcomings. Storage space is narrow, has no temperature regulator (*thermohygrometer*), and has not implemented the FIFO system (*First In First Out*) or FEFO (*First Expired First Out*) disciplined. Some medications are also stored off-the-shelf or not properly labeled, which can increase the risk of drug damage. This research is in line with the findings by (Andries et al., 2024), which underscores that drug storage facilities that do not meet standards can cause drugs to spoil before their expiration date, reduce effectiveness, and lead to budget waste.

Document and Information System Management

Documentation of drug management at the Berohol Village Health Center is still carried out manually through stock books, LPLPO reports (Usage Reports and Drug Request Sheets), and other manual recording forms. Although recording is done regularly, there are often delays in filling and reporting. The non-use of digital logistics information systems causes the recording process to be slow and prone to errors. Research by (Hand ayani *et al.*, 2024) It shows that the application of computer-based logistics information systems can improve the efficiency, reporting accuracy, and supervision of drug stocks.

CONCLUSION

Research on the Implementation of Drug Logistics Management at the Berohol Village Health Center, Tebing Tinggi City shows that the logistics management system has been implemented from planning to distribution, but still faces obstacles such as limited human resources, distribution delays, and storage facilities that are not optimal. Manual documentation management also reduces reporting efficiency, and the availability of drugs

that have not always been fulfilled has an impact on patient services. Therefore, it is recommended to improve human resource training, implement a digital-based logistics information system, improve storage facilities, and strengthen coordination with the Health Office so that drug management is more effective and health services are more optimal.

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