

ANALYSIS OF FACTORS INFLUENCING THE ACCURRENCE OF DRUG STAGNANT AND STOCKOUTS AT THE MAUK COMMUNITY HEALTH CENTER, TANGERANG REGENCY

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Abstract

Drug logistics is a process intended to achieve a specific goal that is carried out effectively and efficiently in the management of drugs to achieve predetermined objectives. The purpose of this study was to analyze drug management at the Mauk Community Health Center based on the guidelines of Ministry of Health Regulation No. 74 of 2016 and to analyze the factors that influence drug stagnation and stockouts at the Mauk Community Health Center. This study was a non-experimental, descriptive study using a cross-sectional observational method. The results of this study show that drug management at the Mauk Community Health Center UPTD is in accordance with the requirements of the 2016 Minister of Health Regulation No. 74 concerning pharmaceutical service standards at community health centers. However, there are still several obstacles in its implementation. One of the main obstacles is the length of time required for the procurement of drugs and disposable medical supplies. The conclusion of this study shows that stagnation and stockouts at the Mauk Community Health Center UPTD are caused by poor implementation of drug requests, as evidenced by only 22% of drug requests matching drug receipts and 78% of drug receipts not matching drug requests, as well as drug shortages or limitations from the Health Office, resulting in a mismatch between drug requests and drug receipts.

Keywords: Factor, Stagnant, Stockout

INTRODUCTION

Along with rapid advances in technology, science and technology have also developed significantly. This has increased public awareness of the importance of understanding health. Community Health Centers (Puskesmas), as healthcare institutions, strive to provide the best, highest-quality, and most reliable services to the community. Although they provide healthcare services, the quality of patient care will not be optimal if medical devices, medicines, and medical supplies at the Puskesmas are not fully and adequately available (Baybo et al., 2022). According to Rosmania & Supriyanto (2015), medication management is a crucial element in pharmaceutical services. Medications are a vital element in every healthcare facility, so proper, good, and correct governance is required for effective, efficient, and sustainable implementation. In this context, medication management at Puskesmas plays a crucial role in supporting the realization of optimal quality healthcare services. Medication inventory management is one of the activities in pharmaceutical services that encompasses a series of stages, including planning, submission, receipt, storage, distribution, supervision, recording, reporting, and monitoring and evaluation. The goal of this process is to ensure the availability and easy access to medications efficiently, effectively, and rationally. In addition, this management also plays a role in improving the capabilities of pharmaceutical personnel, developing management information systems, and ensuring the quality of services through quality control (Indonesian Minister of Health Regulation, 2016). Medicines are a vital component that plays a crucial role in various health programs, from health improvement and disease prevention to diagnosis and therapy and rehabilitation. Therefore, their availability and accessibility must be guaranteed at all times to ensure the smooth running of all healthcare services. Unfortunately, the problem of drug overstocking and understocking remains a recurring challenge faced by nearly all districts/cities. Excessive (stagnant) drug supplies risk wasting funds, increasing the likelihood of expiration, and increasing the potential for damage before use. On the other hand, stockouts can disrupt healthcare services, lead to patient dissatisfaction due to suboptimal service, and hinder the healing process. This ultimately can be detrimental to community health centers (Puskesmas) in terms of operations and public trust

(Suryagama et al., 2019). Stagnant inventory and stockout issues are often caused by suboptimal implementation of the First Expired First Out (FEFO) and First In First Out (FIFO) principles in drug storage. The FEFO principle emphasizes that drugs or pharmaceutical goods approaching their expiration date should be prioritized for use to prevent losses due to expiration. Meanwhile, the FIFO principle stipulates that goods received first should be used first, as they generally have an earlier production date and a closer expiration date.

The implementation of these two principles is crucial for effective drug management, particularly in managing the flow of incoming and outgoing goods. By implementing FEFO and FIFO, pharmacists can minimize the risk of expired or damaged drugs, which could potentially waste budget funds. Furthermore, this system also helps prevent stockpiling and stockouts in pharmaceutical warehouses (Laidahane, 2018). The researcher aimed to analyze the factors influencing drug stagnation and stockouts at the Mauk Community Health Center Technical Implementation Unit (UPTD), based on the aforementioned issues.

METHOD

Tool

This study used an interview form containing a combination of open-ended and closed-ended questions. The form included numbers, a list of questions, and answer options related to medication management at the Mauk Community Health Center Pharmacy Unit, as stipulated in Regulation of the Minister of Health of the Republic of Indonesia Number 74 of 2016.

Material

The data used in this study includes information regarding drug management, including aspects of planning, submission, receipt, storage, distribution, and supervision at the Mauk Community Health Center Pharmacy Installation.

Method

1. Research Permit

Before beginning data collection, researchers needed to obtain permission from the Mauk Community Health Center. This permission was submitted by submitting an observation request letter from Muhammadiyah University AR Fachrudin Tangerang, signed by the Head of the Pharmacy Undergraduate Study Program, regarding the research to be conducted at the Mauk Community Health Center.

2. Data retrieval

Data were collected through direct observation at the Mauk Community Health Center (UPT) to obtain a realistic picture of the situation. In addition, structured interviews were conducted with pharmacy staff to obtain more in-depth and comprehensive information.

3. Data processing

Data processing is carried out using the Frequency Percentage formula.

$$\text{Stagnant \%} : \frac{\text{Jumlah obat yang mengalami stagnant}}{\text{Total jumlah sampel obat}} \times 100$$

$$\text{Stockout \%} : \frac{\text{Jumlah obat yang mengalami stockout}}{\text{Total jumlah sampel obat}} \times 100$$

4. Primary Data

Primary data is data obtained directly from the primary source or research object. In this study, primary data was collected through interviews.

5. Secondary Data

Secondary data serves as supporting information for primary data and is sourced from other sources or documents. In this study, secondary data was obtained from archives or documents directly related to logistics management and the control of stagnant drugs and stockouts.

6. Data Collection Techniques

The results of the interviews conducted at the Mauk Community Health Center in this study will be processed descriptively to describe the drug management process based on the Minister of Health Regulation Number 74 of 2016 which includes planning, requests, receipt, storage, distribution, and control.

RESULTS AND DISCUSSION (TNR, 11 BOLD)

1. Drug Management at Mauk Community Health Center

Medication management at the Mauk Community Health Center is carried out by pharmacists and assisted by pharmacist assistants. Managing medication needs at the community health center is a crucial element in providing quality healthcare. As a first-level healthcare facility, the community health center plays a strategic role in ensuring public access to basic healthcare services, including the availability of appropriate types, quantities, and quality medications. Medication needs management encompasses the processes of planning, requisitioning, receiving, storing, distributing, and controlling.

2. Drug Planning at Mauk Community Health Center

Drug management at the Mauk Community Health Center begins with drug procurement activities, which include planning drug needs to meet the health care needs of the Mauk Community Health Center. This planning is carried out through the preparation of a Drug Needs Plan (RKO) annually, usually at the end of the year, to determine drug needs for the following year. The drug needs planning method takes into account drug consumption or usage patterns from the previous year. Calculations of consumption patterns require careful consideration of data collection, data processing, data analysis, drug needs calculations, and adjustments to budget allocations (Hartono, 2007).

Based on the interview results, the needs planning also includes the selection process for pharmaceutical preparations and disposable medical materials required by the Community Health Center. This selection process is carried out based on the National Essential Medicines List (DOEN) and the national formulary in accordance with applicable laws and regulations. In addition, to determine the number of drugs needed for one year, calculations are made based on drug usage data from the previous year at the Community Health Center (Rosmania & Supriyanto, 2015). In general, the implementation of drug and disposable medical material needs planning at the Community Health Center is in accordance with the provisions of Minister of Health Regulation Number 74 of 2016.

3. Drug Request at Mauk Health Center

Community health centers submit requests for drugs and disposable medical devices by preparing a Drug Usage Report and Drug Request Sheet (LPLPO). This report is prepared monthly by pharmacists based on usage data from the previous period. It is then approved by the Head of the Community Health Center and submitted to the Tangerang Regency pharmacy warehouse.

Based on the interview results, it was discovered that officers recapitulate drug usage over the past month, both from service polyclinics, auxiliary health centers, and other related units, and conduct stock counts from the previous month to determine needs for the following month. The request is then verified by the Tangerang Regency Pharmacy Warehouse by considering the optimum stock and remaining available stock. Next, the health center will receive notification regarding the drug collection schedule from the Tangerang Regency Pharmacy Warehouse. Additional drug requests can be directly communicated to the pharmacy warehouse, provided that they do not exceed the annual requirement amount approved by the Health Office. In general, the implementation of drug and consumable medical supplies procurement at the health center is in accordance with the provisions of Minister of Health Regulation Number 74 of 2016.

4. Receipt of Medicines at Mauk Health Center

Receipt of drugs at the Mauk Community Health Center is carried out by inspection officers and goods recipients (pharmacists). Officers from the drug warehouse unit check the quantity, batch number, type, specifications of the ordered goods, expiration date, and compliance with the drug invoice. Therefore, it can be said that the implementation of drug and consumable medical supplies receipt at the Community Health Center has met the requirements of the provisions of Minister of Health Regulation Number 74 of 2016.

Based on interviews, the drug compliance rate in 2024 was only 22%. Meanwhile, 22% of drugs received were inappropriate because the quantity exceeded the request, and 56% were inappropriate because the quantity was less than the request. Interviews and observations indicate that the drug receipt process at community health centers (Puskesmas) is not running smoothly, as indicated by the high level of mismatch between requests and receipts. This indicates a gap between the number of drugs requested and received by the Puskesmas. Details of the calculations are shown in Table 1.

5. Drug Storage at Mauk Community Health Center

Based on the results of interviews and observations, it is known that the drug storage system in the Pharmacy Installation of the Mauk Health Center UPTD is classified based on the characteristics of each type of pharmaceutical supplies, namely medicines, consumables, liquids, chemicals and toxic (B3), and laboratory

pharmaceutical supplies. The arrangement of drugs in the storage cabinet is arranged pharmacologically and for drug stocks arranged alphabetically. For LASA (Look Alike Sound Alike) drug supplies are placed on the same shelf as other medicines, but are labeled with a special marker that distinguishes them from other drugs on the storage shelf.

Based on the research results, drug storage activities at the Pharmacy Installation of the Mauk Health Center UPTD have been carried out quite well and are in accordance with the guidelines of the Minister of Health Regulation No. 74 of 2016. This is known based on the results of observations in the drug storage warehouse, where drugs have been neatly arranged in storage cabinets according to their respective characteristics. In addition, the Pharmacy Installation of the Mauk Health Center UPTD has implemented the FIFO (First In First Out) and FEFO (First Expired First Out) methods, as well as organizing pharmaceutical supplies pharmacologically and alphabetically, thus facilitating the process of finding the necessary supplies. Recording using stock cards placed on each drug shelf is very helpful in supporting the effective implementation of the FIFO (First In First Out) and FEFO (First Expired First Out) methods. Drugs are arranged according to the order of receipt and/or expiration date, so that drugs that arrive first or have a closer expiration date will be placed in the front or top position to be distributed first. Temperature and humidity monitoring is carried out routinely every day, so that temperature and humidity recording data are accurate.

6. Drug Distribution at Mauk Community Health Center

Berdasarkan hasil wawancara dan observasi yang telah dilakukan, proses pendistribusian obat dari Instalasi Farmasi ke unit atau instalasi lain diawali dengan pengajuan Laporan Pemakaian dan Lembar Permintaan Obat (LPLPO) oleh penanggung jawab obat di masing-masing unit kepada Gudang Obat ketika stok obat sudah hampir habis. Selanjutnya, pendistribusian obat dilaksanakan pada hari yang sama, di mana penanggung jawab obat dari tiap unit mengambil obat yang telah disiapkan oleh petugas gudang. Dokumen Laporan Pemakaian dan Lembar Permintaan Obat (LPLPO) memuat informasi mengenai nama obat, sisa stok di unit, rata-rata pemakaian, jumlah permintaan, serta stok optimum. Metode yang digunakan dalam pendistribusian obat Instalasi Farmasi UPTD Puskesmas Mauk adalah metode sentralisasi yaitu semua pendistribusian obat ke unit pelayanan atau instalasi terpusat pada gudang Obat. Sedangkan proses distribusi menggunakan sistem persediaan di ruang (floor stock) yaitu beberapa ruang pelayanan memiliki tempat untuk penyimpanan obat sendiri berisi obat emergency yang dapat digunakan dalam penanganan pasien gawat darurat. Monitoring terhadap sistem tersebut yakni dengan dilakukannya kunjungan setiap 1 minggu sekali secara periodik oleh petugas farmasi. Selain itu sistem resep perorangan juga digunakan untuk menangani pasien rawat jalan sesuai dengan resep yang ditulis oleh dokter. Resep perorangan dapat ditebus di Apotek milik UPTD Puskesmas dan merupakan salah satu fasilitas pelayanan UPTD Puskesmas. Berdasarkan hasil observasi ditemukan adanya ketidaksesuaian antara jumlah permintaan obat yang tercantum dalam Laporan Pemakaian dan Lembar Permintaan Obat (LPLPO) dan jumlah obat yang diberikan oleh Instalasi Farmasi. Ketidaksesuaian tersebut disebabkan oleh tidak tersedianya obat yang diminta atau karena petugas gudang menilai bahwa jumlah permintaan obat terlalu besar. Jika terjadi kekosongan stok, Instalasi Farmasi akan melakukan koordinasi dengan dokter untuk memastikan apakah obat yang diminta dapat digantikan dengan obat lain yang memiliki efek terapi sejenis. Apabila tidak memungkinkan untuk diganti, maka Instalasi Farmasi akan segera melakukan proses pengadaan obat. Pengadaan obat disarankan tetap dipesan pada distributor melalui dana BLUD, kecuali distributor tidak dapat melayani pembelian secara mendadak maka akan dilakukan pembelian obat di apotek luar, namun sebelumnya harus melakukan konfirmasi terlebih dahulu kepada bagian Keuangan.

7. Pengendalian Obat di Puskesmas Mauk

Berdasarkan hasil wawancara dan observasi didapatkan bahwa kegiatan pencatatan dan pelaporan di Instalasi Farmasi

The Mauk Community Health Center's pharmacy unit (UPTD) still uses a manual system. Recording of drug stock at the UPTD's pharmacy unit is done using stock cards placed on each drug storage rack. The cards are filled out each time a drug is received or dispensed, containing information such as the drug name, batch number, expiration date, quantity, and the date and quantity of the incoming and outgoing drugs.

8. Stagnant and Stockout Analysis

Data from 2024 on drug management at the Mauk Community Health Center Technical Implementation Unit (UPTD) shows that the process is not yet running optimally. This is evidenced by the high stagnant rate (hoarded drugs) of 22% and the high stockout rate (out of stock) of 56%. According to Mellen & Pudjirahardjo (2013), both of these problems can be caused by excessive and inadequate drug planning and procurement.

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Jaka Supriyanta et al

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Based on the results of interviews and observations as well as data processing, it was found that the high number of stagnant and stockout incidents at the Mauk Health Center UPTD was caused by poor procurement implementation and the lack of or limited availability of drugs from the Health Service, resulting in a mismatch between drug requests and drug receipts.

Table 1. Percentage Results of Drug Demand and Receipt Matching in 2024

Calculation conformity	Number of drug samples suitable for acceptance in 2024 (from 50 types of drugs used in community health centers)	Presentation
Acceptance on demand	11	22%
Receipt not as requested (received more than requested)	11	22%
Receipt not as requested (received less than requested)	28	56%

CONCLUSION

Research shows that based on the results of the analysis of factors that influence the occurrence of stagnant and stockout of drugs at the Mauk Community Health Center UPTD, several main findings can be concluded as follows:

1. Based on the evaluation conducted, all stages of drug management at the Mauk Community Health Center UPTD, starting from planning, submission, receipt, storage, distribution, to control have met the standards stipulated in the Minister of Health Regulation Number 74 of 2016 concerning Pharmaceutical Service Standards at Community Health Centers.
2. The occurrence of stagnant and stockout at the UPTD Mauk Health Center was caused by the implementation of drug requests that were still not good, as evidenced by only 22% of drug requests that matched drug receipts and 78% of drug receipts that did not match drug requests caused by the long time needed in the process of procuring drugs and consumable medical materials and also caused by the empty or limited number of drugs from the Health Service, resulting in a mismatch between drug requests and drug receipts.

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