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Management Evaluation of Expired and Slow-Moving Medications at Hospital X in Batam City

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A B S T R A C T

Efficient drug management necessitates a well-structured supply chain to ensure the smooth functioning of health services. The objective of this study is to ascertain the strategies employed for the disposal of expired medications and the handling of slow-moving pharmaceuticals at Hospital X in Batam City. This research is characterized as descriptive-observational, employing a retrospective methodology. Data analysis involves doing qualitative analysis to assess the degree of rationality, followed by quantitative analysis using a formula. The findings of this study indicate that the highest proportion of expired pharmaceuticals occurred in September 2021, accounting for 25.011%. Additionally, the Regional Public Service Agency (RPSA) allocated 17.020% of the budget expenditures, while the Regional Budget (RB) allocated 28.904%. The pharmaceuticals that have the highest expiration rate are injectable preparations, with a proportion of 63.340%. Among these, 41.299% are funded by RPSA, and 74.075% are funded by RB. The highest proportion of expired pharmaceuticals, categorized by therapeutic class, is 16.500% in the antibiotic group. In addition, RPSA allocates 6.729% of the budget funds and RB allocates 37.123% of the budget for this purpose. The highest proportion of expired pharmaceuticals, categorized by therapeutic class, is 16.500% in the antibiotic group. In addition, RPSA allocates 6.729% of its budget funds and RB allocates 37.123% of its budget towards these expired drugs. In the first quarter, there were 57 slow-moving medications, accounting for 84.594% of the budget money from RPSA and 15.406% from RB. The findings of this study indicate that the management of expired pharmaceuticals does not meet the research criterion of less than 1%; however, the management of slow-moving drugs aligns with the research criterion of less than 1%.

1. Introduction

Effective management is necessary to ensure optimal outcomes in every phase of the interconnected medication management cycle. Efficient drug management necessitates a well-structured supply system that effectively supports health services and has the ability to generate revenue for the hospital. Ensuring the accessibility of medications is crucial and should be upheld, particularly considering that drug expenses in developing nations such as Indonesia might account for around 40% to 50% of the total hospital expenditures. Properly and efficiently managing these substantial expenses is crucial, as the money allocated for acquiring drugs in hospitals may not always be sufficient to satisfy the requirements. The study revealed that 85.71% of pharmaceuticals suffered damage and expiration, resulting in a total loss of IDR 15,789,173 in pharmaceutical supplies from January to March 2021. According to several studies, Bethesda Institution had instances of expired medication inventory, leading to financial losses incurred by the institution. The average rate of disposal for expired and damaged medications was 3.042%. However, during the January-June period in 2019, the rate of disposal for medicines nearing expiry or failing to meet WHO requirements was 3.419%, which is higher than the desired rate of below 1%.[1-3]

The planning and procurement procedures in drug management significantly impact the availability of medications and the financial elements of the hospital. Ensuring an adequate supply of medicine, both in terms of variety and quantity, is a crucial factor for hospitals to deliver optimal service. In addition, because of the significant expenses associated with medication management, particularly during the planning and procurement phases, it is imperative to conduct an evaluation at this time. The 2018 Inventory Products Report by the Batam Business Board revealed that the total value of products in a deteriorated and damaged state amounted to IDR 590,166,828. These goods, namely expired pharmaceuticals, were found at the Goods User Authorization Accounting Unit (GUAAU) of Hospital X, Batam.[4-6]

2. Methods

This study is observational and descriptive research conducted retrospectively using data from the drug report form at Hospital X in Batam City. The data collection period spans from January to December 2021. Individuals who satisfy the specified inclusion and exclusion criteria comprise the sample used in this study. The criteria for inclusion in this study are: Expired medications and medications with minimal turnover are now in stock at the hospital. The criteria for exclusion in this study are as follows: The data pertains to outdated drugs, slow-moving medicines sourced from outside Hospital X in Batam City, as well as incomplete medicines and pharmaceuticals issued by the Ministry of Health. The research analysis included qualitative analysis to examine the proportion of rationality, specifically evaluating the expired and slow-moving medication categories. Subsequently, we subjected the data to quantitative analysis using a formula.

3. Results and Discussion

The highest proportion of expired pharmaceuticals in September 2021 reached 25.011%. The proportion of expired pharmaceuticals in September 2021 consisted of 17.020% from Regional Public Service Agency (RPSA) budget money and 28.904% from Regional Budget (RB) funds. The huge quantity of expired medicines in September 2021 was attributed to the planning procedure at the hospital, which had numerous expired pharmaceuticals. In 2021, the proportion of expired pharmaceuticals specifically in the category of injectable preparations was 63.340%. RPSA funded these drugs with a budget amounting to 41.299%, while RB funded them with a budget corresponding to 74.075%.[7-9]

The surge in the number of expired pharmaceuticals in injectable preparations can be attributed to the escalating COVID-19 pandemic in 2021. Consequently, drugs intended for inpatients, such as injection preparations, are going unused. The highest proportion of expired pharmaceuticals belongs to the antibiotic treatment class of 2021, with a percentage of 16,500%. RPSA funded these drugs with a budget of 6,729% and RB funded them with a budget of 37,123%. The acquisition of pharmaceuticals in substantial quantities through the utilization of RB funds may have led to the significant accumulation of expired antibiotics. Hospitals receive two budget funds: RPSA budget funds and RB funds. The hospital derives the RPSA budget from its own money. As drugs approach their expiration date during routine procurement, the hospital may return them. The RB budget does not allow for refunds on procurement. Therefore, if a large quantity of medicine is procured using RB money and is not utilized due to the COVID-19 epidemic, it results in the expiration of the drug. In the first quarter, there were 57 medications that had the slowest rate of progress. These medicines accounted for 0.372% of the total. The budget funds from RPSA contributed 84.594% of the total funds, while the funds from RB contributed 15.406%. The high volume of sluggish pharmaceuticals in the initial quarter can be attributed to the COVID-19 pandemic. The treatment approach shifted towards prioritizing the COVID-19 illness, resulting in a deceleration in the distribution of frequently utilized medications. [10-12]

4. Conclusion

In September 2021, the highest proportion of expired drugs was 25.011%. The budget funds from

RPSA accounted for 17.020%, while the budget funds from RB accounted for 28.904%. These figures do not align with the research indicators, which specify a threshold of less than 1%. The most expired pharmaceuticals based on the kind of preparation are injectable preparations with a proportion of 63.340%, budget funds from RPSA totaling 41.299%, and budget funds from RB equaling 74.075%; therefore, it does not fit the research indicators, namely <1%. The pharmaceuticals that have expired the most, categorized by therapeutic class, account for 16.500% in the antibiotic class. Furthermore, these expired drugs receive an allocation of 6.729% of the budget money from RPSA and 37.123% of the RB, which does not align with the research indicators, specifically being less than 1%. In the first quarter, there were 57 slow-moving medications, accounting for 84.594% of the budget money from RPSA and 15.406% from RB. This indicates that it aligns with the research indicator of less than 1%.

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