THE ANALYSIS OF DIABETES DRUG PLAN BY USING ALWAYS BATTER CONTROL IN PHARMACEUTICAL INSTALLATION OF ISLAM JEMURSARI HOSPITAL SURABAYA

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ABSTRACT

Background: Drug plan is an important process in logistic management of hospitals. Incorrectmedicare prescription drug plan may waste the procurement, stagnant, and stockout. This research aims at finding out the perspective of diabetes drug plan at Pharmaceutical Installation of Islam, Jemursari Hospital Surabaya by using always batter control as a method.

Materials and Methods: This research is an observational descriptive study with cross-sectional framework. The information source in this research is the head of pharmaceutical Installation, the head of medical logistic unit, and the supply of diabetes drug plan in 2018. The primary data were collected by interviewing them and check-list observation, while the secondary data were collected from the pharmaceutical installation, financial section, and medical logistic section at Islamic Hospital of Jemursari Surabaya.

Result: Based on the always batter control, the results of this study show that out of 4 medicines for diabetes were included into A group (11.75%), 6 medicines for diabetes were included into B group (15.65%), and 24 medicines for diabetes were in group C (70.59%).

Conclusion: The method of always batter control can help hospitals in terms of medicine plan for diabetes by considering the pattern of medicine consumption and the use and function of medicine as well as the procurement for required drugs.

Keywords: Always Batter Control, Medicare Drug Plan, Pharmaceutical Installation

1.0 Introduction

Hospital pharmacy is one of hospital's activities that support qualified healthcare service. This is stated in the Health Ministry Law Number 72 Year 2016 about the Pharmaceutical Service Standard at Hospitals. Pharmaceutical service is an indicator used as a main guide for pharmaceutical staffs in conducting the pharmaceutical service. Pharmaceutical services are direct and responsible service towards patients in providing pharmacy supply to reach the target of improving patients' lives (Depkes, 2016).

Diabetes is a metabolic illness with hyperglycaemic because of insulin secretion disorder, insulin activity, or both by using long medical treatment (WHO, 1999). To ensur the supply of drug at pharmateucial installation, it is needed to plan drugs efficiently and effectively (Fairuz& Yustiawan, 2017). Drug plan for diabetes drugs is to select the types, amount and procurement periodto obtain correct type, amount, and time in preventing out-of-stock medication (Quick at al, 2012). The success of need plan can be achieved by involving the team and combination of need decision method (Atmaja, 2012).

Islamic Hospital of Jemursari Surabaya is a type B public hospital under Islamic Hospitals of Surabaya Foundation that has operated since 25 Mei 2002. Pharmaceutical Installation at Islamic Hospital of Jemursari Surabaya conduct a pharmaceutical service and management of pharmaceutical stock. Pharmaceutical services can be conducted by five pharmaceutical depos, and the management of pharmaceutical supplies is conducted by medical logistic section (Rakhmawati, 2016).

Based on the previous research, incorrect planning for drug supplies at hospitals may cause stockout andstagnantamounted to 54% and 39% respectively (Mellen& Pudjirahardjo, 2013). The issue being discussed in this research is the high rate of stagnant and stockout for diabetes drugsamounted to 35.29% and 11.03% at Pharmaceutical Installation, Islamic Hospital of Jemursari, Surabaya.

The objective of this study is to discover the depiction of drug plan based on always batter controlat Pharmaceutical Installation, Islamic Hospital of Jemursari, Surabaya year 2018. This research is expected to give some recommendations for required diabetes drugs supplies and avoid stagnant and stockout drugs. The limitation of this study is that there are 34 types of diabetes drugs at Islamic Hospital of Jemursari, Surabaya being examined in this study.

2.0 Materials and Methods

This study is an observational descriptive study that uses cross-sectional framework. The information source is the head of Pharmaceutical Installation, head of medical logistic unit, and data of diabetes drugs supplies in 2018. This study was conducted in the medical logistic section at Islamic Hospital of Jemursari, Surabaya from March to June 2018. The primary data were obtained by using interviews with interview guide to the Head of Pharmaceutical Installation, Head of Instrument and Sterilization Unit as the unit head who controls the medical logistic management as well as observes the drug plan agenda in medical logistic at Islamic Hospital of Jemursari, Surabaya.

Secondary data were obtained from pharmaceutical installation, financial section, and medical logistic section at Islamic Hospital of Jemursari, Surabaya.These data were collected, analysed, and classified based on the method of always batter controlto improve the efficiency of financial expense. This was done by classifying drugs or pharmaceutical supplies especially based on their function in society's health by (Suciati & Adisusmito, 2006). Data analysis was done based on the following steps.

a. Calculation of Value in Use
   1. Calculating the total use of drugs
   2. The data for drug use are classified based on the use. Then, they should be arranged based on the highest portion to the lowest portion of use.
   3. Group A used 70% drugs, group B used 20% drugs, and group C used 10% drugs out of the total drug supplies
b. Calculation of Invesment Value
   1. Calculating the nilai investasi for each drug type
   2. Classify them based on the investment value and arrange them from the highest to the lowest
   3. Group A obtained 70% investment value, group B obtained 20% investment value, and group C obtained 10% investment value out of the total value.

3.0 Result and Discussion

The results of this study on the issue of diabetes drug supplies at Islamic Hospital of Jemursari, Surabaya are as following:

3.1 Formularyor Drug and Therapy Standardization

In planning diabetes drugs, there is a selection process for drug types and calculation of drug amount as well as consideration of drug budgeting that will be accomplished based on the need of Pharmaceutical Installation and hospital's formulary.

Before the procurement, the planners will do re-screening and consult to the related parties including managerial section, pharmacists, doctors, and pharmacy and therapy committee. formulary or standardization is a list of absolute drugs used by the hospitals and rationally chosen with correct and proper description. thus, the information about drugs can be completely provided for medicare at the hospitals.

Prescription written by doctors should be suitable to the hospital's standardization. if pharmacy and therapy committeeare not determined in terms of prescription monitoring and evaluation, there will be extraprescription out of the hospital's standardization which can disadvantage the hospital.

Some factors that cause doctors write unsuitable prescription to the hospital's standardization are as following:
a. The complete drug supplies have not been accessible
b. Less socialization about the importance of prescripting writing based on the stipulated standardization

c. Some approach factors by drug distributors
d. Some drugs required by doctors are not available at the hospital's standardization

Based on the interview results, prescription writing by doctors was already suitable to the stipulated standardization. This could happen because the Head of pharmaceutical installation and pharmacy and therapy committeeworked hard to monitor and evaluate the prescription writing by the doctors.

3.2 *Visit Rate*

The changing disease according to the weather determines the number of visitors. Moreover, since the Islamic Hospital of Jemursari, Surabaya joined The Indonesian National Health Insurance, it had caused the increase of outpatient visits from 2017 to 2018 with the peek visits amounted to more than 20%. This may make the hospital consistently keep the service especially the increasing pharmaceutical service.

In planning drugs, patients' visits are considered because it can influence the drug supplies specifically for degenerative drugs that should exist with rather long use. If the drug use is not based on the visits, quickdrug supply cannot be avoided, and this will increase the budgeting allocated by the hospital.

3.2 Budgeting

The limit of budgeting allocated by Islamic Hospital of Jemursari Surabaya for prescription in 2018 was 11,175,000,000every quarter. This big amount of budget will cause some disadvantageous and stagnant or stockout drug supplies if there is a mistake for the allocation.Table 1 showsbudgetuse at Islamic Hospital of Jemursari Surabaya in the last six months in 2018.

Table 1. Drug Supply Budgeting in January – June 2018.

Quearter	Budget	Use	Percentage (%)
Quarter– 1	Rp.11,175,000,000	Rp.11,943,404,131	106.88
Quarter–2	Rp.11,175,000,000	Rp.9,667,921,521	86.52

Based on table 1, the budget use in the first quarter was so high because of the increasing visits. Meanwhile, the budget use in the second quarter tended to decrease because of national holiday in the Ramadhan month.

3.3 Need Decisionaccording to Always Batter Control Analysis

Data used in always batter control analysis for diabetes drugs were drug data from January-December 2018 obtained from prescription service at Pharmaceutical Installation. From the always batter control analysis, diabetes drugs out of 34 drug types at Pharmaceutical Installation results in as following

a. Value in Use

Out of 34 diabetes drug types at Pharmaceutical Installation, Islamic Hospital of Jemursari Surabaya, they were grouped based on the use portion that includes 70%, 20%, and 10%. Table 2 shows the use of diabetes drugs based on the value in use of the drugs with always batter control method.

Table 2. Classification of diabetes drugs based on the value in use in 2018

Group	Drug Type Quantity	Percentage (%)	Quantity in Use	Percentage (%)
A	4	11.75	366,789	57.55
B	6	15.65	211,088	33.28
C	24	70.59	58,444	9.17
Total	34	100	637.325	100

Based on table 2, it can be concluded that the use of diabetes drugs in group A was 57.55%. This finding is not in line with the Pareto theory which explains that the use drugs in group A was supposed to be 70%. Meanwhile, the use of diabetes drugs in group B was 33.28% which exceeds the standard of Pareto theory amounted to 20%. Diabetes drugs in group C was 9.17% which was less than 10% as Pareto theory determined.

b. Investment Value

Table 3 shows the classification of drug investment value by using always batter controlmethod.

Table 3. The use of diabetes drugs based on the investment value in 2018

Group	Drug type	Drug Use	InvestmentValue (Rp)	Percentage (%)
A	4	366,789	2,293,933,280	67.13
B	6	211,088	699,447,410	20.47
C	24	58,444	423,757,57	12.40
Jumlah	34	637,325	3,417,138,047	100

Table 3 shows that group A drugs consist of four types with the quantity of diabetes drugs amounted to 366,789, and it had used the investment value amounted to Rp. 2,293,933,280. This group needs to be monitored intensively and regularly to avoid the loss or damage that may cause some disadvantages. In group B, there were 6 types with the quantity amounted to 211,088. This used the budget as amounted to Rp. 699,447,410. On the other hand, group C consists of 24 types with the number of drug use amounted to 58,444 and uses the budget as amounted to Rp. 423,757,357.

3.4 Drug Use in the Previous Period

Panning is an important process that must be done in planning drug supply plan by considering the previous use of the drugs to calculate the quantity and determine drug types that will be supplied after it. The planning of diabetes drugs at Islamic Hospital of Jemursari Surabaya was done one month prior to the drug supplies.

3.5 Lead Time

The calculation on waiting time is significant in planning the drugs because it helps to calculate how much time is spent for drug request and sent to the hospital. The average waiting time at Islamic Hospital of Jemursari Surabaya runs for 1-2 days. Also, the deadline of payment really influences the waiting time of drugs since it will cause the request system being locked by the pharmaceutical staffs at Islamic Hospital of Jemursari Surabaya.

3.6 Buffer Stock

Buffer stock was used to prevent the stockout because of the increasing use of drugs in unpredictable schedule. The amount of buffer stock at Islamic Hospital of Jemursari Surabaya was amounted to 50% out of the average value. It was considered based on approximately 14 work days.

3.7 Final Stock and Warehouse Capacity

To discover the final stock of drugs in the warehouse, hospitalization stock in each period should be conducted so that the objective of inventory control has successfully been made. The amount of final stock in the warehouse was used as the basic of procurement. The level of drug flow, types, and quantity can be seen from the final stock, so decision for drug supplies will be easier.

To calculate the final stock at Islamic Hospital of Jemursari Surabaya, hospitalization stock was done although there were some drugs that did not match to the digital stock data and physical stock data and caused some disadvantages. Drugs nearly to the expired date were also monitored so that they could not be returned to drug distributors because of over return time. Drug procurement that does not consider the warehouse capacity will cause insufficient storage so that the drugs may be less qualified. The decreasing quality of drugs influences log therapy effects on patients and even negatively result in the side effects of the drugs.

4.0 Conclusion And Recommendation

Some important aspects in planning process at Islamic Hospital of Jemursari Surabaya include the previous drug use, final stock, formulary, therapy standards, warehouse storage, buffer stock, visit quantity, and consideration on the disease pattern.

The use of ABC analysis can help Islamic Hospital of Jemursari Surabaya in planning diabetes drugs by considering the procurement efficiency in terms of the use aspect and

investment value of the stock. Moreover, it is very important to have therapy standard that becomes the guide for doctors in prescription writing.

Acknowledgement

Declaration

Author declared that there was no conflict of interest in this article.

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