# Journal La Medineshico

### JOURNAL LA MEDIHEALTICO

VOL. 01, ISSUE 03 (027-033), 2020 DOI: 10.37899/journallamedihealtico.v1i3.129

## Analysis of Drug Logistic Management in the Pharmaceutical Installation of the Health Office of North Sumatera Province

Meilan Sri Yanti Harahap<sup>1</sup>, Megawati<sup>2</sup>, Asriwati<sup>3</sup>

<sup>1</sup>Master Student of KMPK, Faculty of Public Health, Helvetia Institute of Health, Medan, Indonesia, <sup>2</sup>KMPK Masters Lecturer, Faculty of Public Health, Helvetia Health Institute Medan, Indonesia, <sup>3</sup>Chairperson of the KMPK Masters Study Program, Faculty of Public Health, Helvetia Institute of Health Medan, Indonesia.

Abstract

Corresponding Author: Meilan Sri Yanti Harahap

Article Info

Article history: Received 20 August 2020 Received in revised form 31 August 2020 Accepted 1 September 2020

Keywords:
Drug Logistics
Pharmacy Installation
Health Service

The purpose of this study was to analyze the logistics management of drugs in the pharmaceutical installation at the health office of the province of North Sumatra. This research method is qualitative. The informants in this study are all drug managers at the Provincial Health Office consisting of Key Informants 1 Head of the Pharmaceutical Section, 1 Health Service User Property Manager, 4 pharmaceutical installation staff and Supporting Informants of the Regency/city Health Office as goods users. The instruments used in this research are primary data from interviews and secondary data from reports that can be used as sources or references to support research data. Results. The results showed that the source of the budget came from the Regional Revenue And Expenditure Budget (APBD) and APBN (State Revenue and Expenditure Budget) funds. The number of human resources in the pharmacy section in drug management in the pharmaceutical installation of the Sumatra Provincial Health Office is 18 people. The distribution method is carried out in 2 ways, namely the Regency / City Health Service which picks up directly from the North Sumatra Provincial Health Office or the North Sumatra Provincial Health Office who sends it to the Regency/City Health Office. All drug needs at the Regency/city Health Office are fully met and the supply is sufficient. Drug logistics management at the Pharmacy Installation of the North Sumatra Provincial Health Office has been running well, this is a sign of the availability of good and sufficient drugs.

#### Introduction

All pharmacy practitioners are obliged to ensure that the services provided to each patient / consumer are of high quality. This is what motivates The International Pharmaceutical Federation (FIP) and the World Health Organization (WHO) to determine the minimum standards that must be achieved by each country in carrying out pharmaceutical services. Pharmacy organizations in each country must be able to ensure that the education and qualifications applicable in their country are designed so that pharmacists can carry out their roles in pharmacies and hospitals properly. One of the important factors in order for pharmaceutical services to run well is the availability of drugs. (WHO, 1996).

Shortages of essential drugs have been reported in high, middle and low income countries. Inadequate availability of drugs can pose a risk to patient health because it can lead to untreated disease and also the possibility of medication errors resulting from efforts to replace drugs that are not available (WHO, 2016).

Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 54 of 2018 concerning the Formulation and Application of the National Formulary in the Implementation of the Health Insurance Program, it is explained that the National Formulary is a list of selected drugs that are needed and used as a reference for writing prescriptions in the implementation of health services in administering health insurance programs and is a reference and guidelines used by the Health Office in meeting drug needs.

The Provincial Health Office is one of the facilities that can be used to report the results of monitoring of the achievement of health development results, including the performance of the implementation of minimum services that have been carried out by districts / cities and provinces (Jaswin et al., 2018). The implementation of health efforts is directed at achieving the goal of health development, namely realizing the highest degree of public health through increasing accessibility, affordability, quality of health services so as to be able to anticipate changes, developments, problems and challenges in health development (Andersen et al., 2011; Abdulraheem et al., 2012).

The percentage of achieving the availability of drugs and vaccines in North Sumatra Province in 2015 was 79.38%, 2016 was 81.57%, and 2017 was 89.30%. The target of drug and vaccine availability in North Sumatra Province is also increasing, where in 2018 it is 86% and in 2019 it is 90% (Ministry of Health, 2017). This data shows that the percentage of achievement of drug availability is getting higher and higher so that health services for the community are getting better.

The method that has been used in drug planning is the consumption method and is also based on the 10 largest diseases found in Puskesmas which are conveyed by the Regency/city Health Office through the Drug Needs Plan (RKO) to the Province. Health center drug needs are conveyed through Usage Reports and Drug Request Forms (LPLPO) to the Pharmacy Installation of the Regency/city Health Office (Ministry of Health, 2004). The purpose of this study was to analyze the logistics management of drugs in the pharmaceutical installation at the health office of the province of North Sumatra.

#### **Methods**

This research is a qualitative research, which is a descriptive type of research to see or describe the implementation of drug logistics management in the Pharmacy Installation of the North Sumatra Provincial Health Office.

According to Sugiyono (2015) qualitative research methods are research methods based on the philosophy of postpositivism and are used to examine the conditions of natural objects. The research was conducted at the pharmacy installation at the provincial health office, with the consideration that drug logistics management in the pharmacy installation was assumed to have not been implemented properly and had not met the drug needs properly.

This research was conducted starting from a preliminary survey starting from October to November 2019. The informants in this study were all drug managers in the working area of the Provincial Health Office, namely elements from the Health Office. Informants from the Health Office consisted of key informants, 1 Head of the Pharmaceutical Section, 1 user property manager, 4 pharmaceutical installation staff. Supporting informants, 2 people from the regency/city health office as users of goods. Data collection methods and primary data

obtained by observation, interviews. Secondary data were obtained from the Provincial Pharmacy Installation section in the form of: (1) The organizational structure and workforce of the Pharmacy Installation. (2) Drug recommendations per year in the Pharmacy Installation, (3) N Reports of drug acceptance and release.

#### **Results and Discussion**

Table 1. Informant Characteristics

No.	Position	<b>Latest Education</b>	Sex
Informant			
Key Informant			
1	Head of the Pharmaceutical	Masters (S2)	Female
	Section		
2	User goods manager	Bachelor of	Male
		Economics	
3	Pharmacy Installation Staff	D3 Pharmacy	Female
4	Pharmacy Installation Staff	School of	Female
		Pharmacy	
5	Pharmacy Installation Staff	D3 Pharmacy	Male
6	Pharmacy Installation Staff	D3 Pharmacy	Female
Supporting Informant			
7	Tebing Tinggi City Health	Pharmacist	Female
	Office (Goods Users)		
8	Asahan District Health	D3 Pharmacy	Female
	Office (Goods Users)		

Input is a component that provides input for the functioning of a system such as health services on several aspects that are categorized as input in the analysis of drug logistics management, namely human resources and budget sources. Drug planning activities carried out at the Pharmacy Installation of the Regency/city and Provincial Health Offices begin with the selection of the type of drug and the calculation of the estimated amount of drug need. In this case, the drug planning was carried out by Ka. Pharmaceutical Section, Ka. Pharmacy Installations and pharmacy representatives and staff in Pharmacy Installations. Ideally, in drug planning at the Health Office there should be an integrated planning team.

#### **Human Resources**

The Pharmacy Installation must have a pharmacist and pharmaceutical technical personnel according to the workload and other supporting officers in order to achieve the goals and objectives of the Pharmacy Installation. The availability of the number of pharmacists and pharmaceutical technical personnel at the hospital is fulfilled in accordance with the hospital classification and licensing requirements stipulated by the Minister. There must be written job descriptions of each staff of the Pharmacy Installation and should be reviewed at least every three years according to the policies and procedures of the Pharmacy Installation. Decree of the Minister of Health of the Republic of Indonesia Number 128/Menkes/SK/II/2004 concerning Basic Policy of the Public Health Center.

Based on the work carried out, the qualifications for Pharmacy Installation HR are classified as follows for pharmaceutical work consisting of: Pharmacists, Pharmaceutical Technical Personnel. Supporting jobs consist of computer operators / technicians who understand pharmacy, administrative staff and staff / assistant implementers. In order to produce good and

safe service quality, in determining the need for personnel, the competence must be considered according to the type of service, task, function, authority and responsibility.

There are 18 human resources in the pharmacy section in drug management in the pharmaceutical installation of the Sumatra Provincial Health Office, with details of 2 people managing vaccines, 3 people in the drug warehouse and BMHP and the rest are in charge of the administration section of the Pharmaceutical Section. This amount is very insufficient, especially human resources to manage drugs and BMHP. This has been tried to be overcome by recruiting as many as 8 freelancers in the administration, cleaning service, drivers and porters.

The number of pharmacists in the Pharmacy Section is very low, so the available pharmacists have to carry out several roles and responsibilities simultaneously. This greatly disturbs the performance of pharmacists in managing drugs and BMHP, so it is necessary to increase the number of pharmacists. An adequate number of pharmacists can improve the quality of drug management services because pharmacists can run with focus and more optimally (Group & Burns, 2005).

To get quality drug management personnel, training is needed as an activity in HR development. With the increase in the quality of drug management personnel, it is hoped that the availability of drugs of good quality, evenly distributed, types and quantities according to needs in order to realize rational drug use for the community can be achieved (Meyer et al., 2017).

Staff at the pharmacy have received training in drug management. With the training provided, it can be seen that the ability of drug management personnel has increased which results in optimal drug management in the pharmacy installation at the regency/city health office.

#### **Source of Budget**

The results of interviews conducted by researchers indicated that the source of the budget obtained by the provincial health office in the process of drug management in pharmaceutical installations came from Regional Revenue And Expenditure Budget (APBD) and APBN (State Revenue and Expenditure Budget) funds.

The budget cannot be discussed in depth because the research results are limited to the source of funds. Problems related to budgeting are only in outline and not discussed in depth (Sintomer et al., 2008). It is known that the budget for drug management is part of the budget submitted by the pharmaceutical installation to the finance department. Once approved, the pharmaceutical installation can ask for its needs from the procurement department, then the procurement department will coordinate with the finance department using Regional Revenue And Expenditure Budget (APBD) funds to be able to realize requests from the pharmaceutical installation.

#### **Process in Drug Needs Planning**

Planning for drug needs is the main activity before carrying out all drug management processes. Drug planning activities carried out at the Pharmacy Installation of the Provincial Health Office are carried out by selecting the type of drug, determining the type of drug, and calculating the estimated drug needs.

#### **Selection of Drug Types**

Selection of drugs is based on the needs of each Regency/city Health Office. All requests from the Regency/city Health Office will then be recapitulated as the basis for drug procurement and BMHP (Medical Consumables). Regency/city Health Offices select drugs based on the

National Formulary and on the National List of Essential Medicines (NLEM) which are still valid with benchmark prices for Basic Health Service Medicines (PKD) and Health Program Medicines. Selection of the types of drugs is made so that the available drugs are really needed in accordance with the pattern of disease in health services. Ideally, choosing a drug is done after knowing the description of the disease pattern in each work area, the characteristics of the patients served and the health workers who serve because the types of drugs can always change within a certain period of time.

Based on the results of interviews at the regency/city health offices, information was obtained that, the selection of the types of drugs carried out at the Regency/city Health Office Pharmacy Installation was the selection of types of drugs according to the needs planned 1 year earlier to meet the needs of the next 1 year.

#### **Calculation of Drug Needs Estimates**

Calculates the monthly average usage. To find out the monthly average usage we can use the following formula. Calculating drug deficiency Drug deficiency is the amount of drug required at the time of drug deficiency. Calculate the actual drug need per year = the actual annual usage rate + the drug deficiency rate. Calculating waiting time = average usage per month x time taken from the time the drug requirement plan is submitted until the drug is received. The value of safety stock can be obtained based on experience from monitoring logistics dynamics. (1) Calculating the real (real) drug need per year. This is the amount of medicine that is actually needed for 1 year. (2) Calculating the waiting time (LeadTime). The total waiting time is the amount of medicine needed from the time the plan is submitted until the medicine is received. (3) Determining safety stock, is the amount of medicine needed to avoid drug vacancies.

Based on the results of interviews and observations in terms of the estimated calculation of drug needs in the pharmacy installation of the regency/city health office, it is known that they did not calculate the expected drug needs. The planning activities for calculating the estimated drug needs carried out at the health office originate from the previous year's use.

#### **Drug Procurement**

Drug procurement in provincial pharmaceutical installations is based on regency/city needs by considering remaining stocks in pharmaceutical installations and Regional Revenue And Expenditure Budget (APBD) and APBN (State Revenue and Expenditure Budget) budgets. The constraints experienced during the drug procurement process are that several distributors after we ordered based on the e-catalog but were rejected so that the drug was available if the medicine was important then it would ask the center for supply. The objective of the procurement of these drugs is the availability of drugs in sufficient types and quantities, the quality of the drugs is guaranteed, and the drugs can be obtained when needed.

#### **Drug Storage**

The drug storage process is a step that must be carried out after the procurement process. According to Permenkes RI No. 73 of 2016, states that drugs must be stored in the original container from the factory and in case of an exception or emergency where the contents are transferred to another container, contamination must be prevented and clear information must be written on the new container.

The container contains at least the name of the drug, batch number and expiration date. In storage there must also be made card stock. All drugs must be stored in suitable conditions so that their safety and stability are possible. The drug storage area is not used for storage of other items that cause contamination. In the case that the drug storage system is implemented by

taking into account the dosage form, arranged alphabetically as well as drug dispensing using the FEFO (First Expired First Out) and FIFO (First In First Out) systems.

The results of the interviews showed that drug storage and BMHP were generally good because they had followed all the procedures set out, but there were still several obstacles that had to be addressed immediately regarding storage facilities. The storage warehouse requires more space or even a new warehouse, this is because the condition of the warehouse is currently very inadequate to accommodate the needs of all drugs and BMHP in North Sumatra. The freight elevator being used is also being damaged so that it requires more time and effort in managing the medicine because the warehouse is a two-story building.

#### **Drug Distribution**

Drug distribution is a series of activities in the context of releasing drugs and sending quality drugs from pharmaceutical installations in order to fulfill orders or requests for health service units with the aim of evenly and regularly distributing drugs and can be obtained when needed, quality assurance, validity of drugs. and the accuracy, rationality and efficiency of the use of these drugs is in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 58 of 2014 concerning Pharmaceutical Services in Hospitals. 2014.

Based on the results of interviews at the pharmacy installation, it shows that the distribution at the Health Office of North Sumatra Province is based on a request from the Regency/city Health Office by considering the amount of stock available. The distribution method is carried out in 2 ways, namely the Regency/city Health Office which picks up directly to the North Sumatra Provincial Health Office or the North Sumatra Provincial Health Office who sends it to the Regency/city Health Office.

#### **Output in Drug Availability at Regency/city Health Offices**

The output of this study is to determine the availability of drugs in the health department. The drug management process must be carried out in accordance with applicable regulations. If one of the drug management processes does not go well, it will result in the existence of drugs that are not available with the type and amount of drugs, and are obtained for a long time.

Based on the results of interviews with users of goods (Regency/City Health Office) it can be concluded that it is good. This is based on the fact that all drug needs at the Regency/city Health Office are fully met and the supply is sufficient during 2018. Although there is still a mismatch between demand and revenue, this is not too significant.

#### **Conclusion**

The available human resources for drug management at the North Sumatra Provincial Health Office have attended training so that they are able to carry out their duties properly, but the numbers are not sufficient, especially the number of pharmacists. Drug procurement is carried out based on the needs of the District/City Health Office using APBN (State Revenue and Expenditure Budget), Regional Revenue And Expenditure Budget (APBD) and Global Fund (GF) funds. Drug storage is carried out in 4 warehouses (Gudang Jl. HM. Yamin I, Gudang Jl. HM. Yamin II, Gudang Jl. Sena and Gudang Jl. Thamrin), all of which are different locations so that they are less efficient in costs, time and human resources, especially during storage and drug distribution. Drug distribution to regency/city health offices is conducted 2 times a year, namely in July and November using APBN (State Revenue and Expenditure Budget) funds. Availability of drugs at the Health Office of North Sumatra Province is good because it can meet the needs of drugs and BMHP District/City Health Office.

#### **Thank-You Note**

The author's thanks to the Head of the North Sumatra Provincial Health Office and the Head of the Pharmacy Section and the Pharmacy Installation staff who have provided space and guidance to complete this research.

#### References

- Abdulraheem, B. I., Olapipo, A. R., & Amodu, M. O. (2012). Primary health care services in Nigeria: Critical issues and strategies for enhancing the use by the rural communities. *Journal of public health and epidemiology*, 4(1), 5-13.
- Andersen, R. M., Rice, T. H., & Kominski, G. F. (2011). *Changing the US health care system: Key issues in health services policy and management.* John Wiley & Sons.
- Departemen Kesehatan. RI. (2004). *Indonesian Health Profile The Year 2004*. Profil Kesehatan Indonesia Tahun 2004.
- Group, T. L., & Burns, A. (2005). Medication therapy management services: a critical review. *Journal of the American Pharmacists Association*, 45(5), 580-587.
- Jaswin, E., Basri, H., & Fahlevi, H. (2018). Implementasi Penganggaran Berbasis Kinerja Dalam Pencapaian Standar Pelayanan Minimal (SPM) Penyelenggara Pelayanan Kesehatan Pada Dinas Kesehatan Kabupaten Bener Meriah. *Jurnal Perspektif Ekonomi Darussalam*, 4(2), 284-299.
- Kemenkes. (2017). Laporan Kinerja 2017. Kementerian Kesehatan Republik Indonesia. Available from: <a href="https://www.kemkes.go.id/resources/download/LAKIP%202018/LKj%20Unit%20Utama/8.%20Farmalkes.pdf">https://www.kemkes.go.id/resources/download/LAKIP%202018/LKj%20Unit%20Utama/8.%20Farmalkes.pdf</a>
- Meyer, J. C., Schellack, N., Stokes, J., Lancaster, R., Zeeman, H., Defty, D., & Steel, G. (2017). Ongoing initiatives to improve the quality and efficiency of medicine use within the public healthcare system in South Africa; a preliminary study. *Frontiers in pharmacology*, 8, 751.
- Sintomer, Y., Herzberg, C., & Röcke, A. (2008). Participatory budgeting in Europe: potentials and challenges. *International Journal of Urban and Regional Research*, 32(1), 164-178.
- Sugiyono, P. (2015). Metode penelitian kombinasi (mixed methods). Bandung: Alfabeta.
- WHO. (1996). Good Pharmacy Practice in Community and Hospital. WHO.
- World Health Organization. (2016). Medicines shortages: global approaches to addressing shortages of essential medicines in health systems. WHO Drug Information, 30(2), 180-185.