

Analysis Of Drug Logistic Management Systems And Medical Consumables In Pharmaceutical Installations Department Of Health Southwest Maluku District

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Abstract

Drug management is an arrangement of activities carried out optimally and related to aspects of planning, procurement, storage, availability, distribution and destruction of drugs so that the correct number of types of provision of care and treatment can be achieved. The existence of drug vacancies, distribution, storage and human resources causes problems in drug logistics management. This study aims to determine the logistics management system for drugs and medical consumables at the pharmacy installation at the Southwest Maluku District Health Office. This type of research is qualitative research with an observation approach, document review and in-depth interviews with people who are considered to know about the situation and problems in question. There were 6 informants in this study, namely the Head of the Pharmacy Installation, the Pharmacy Installation Pharmacist, the Head of the Community Health Center and the Drug Warehouse Manager. Data processing is done by using data reduction, presentation and drawing conclusions and the data analysis technique used is content analysis. The results showed that drug planning was carried out at the end of each year with each Community Health Center submitting an annual RKO to the Health Office, drug procurement was carried out based on LPLPO, 10 most drug uses and drug availability, drug receipt and examination were carried out by special officers where drug was received previously, storage Drugs are administered at the District Pharmacy Installation Warehouse with insufficient storage space or warehouse size. Suggestions from the Health Service to increase human resources in the pharmaceutical sector at the health centre for drug logistics management, especially in the drug planning process, drug procurement at the Pharmacy Installation of the Southwest Maluku District Health Office should be carried out by paying attention to the remaining drug stocks with consideration of the waiting time for drug delivery and if the drug is received not in accordance with the order so that there is no vacancy in drug stocks, Coordinating well between the team of reception and examination officers at the Pharmacy Installation of the Southwest Maluku District Health Office and the health centre.

Keywords: Medicine Logistics Management, Pharmaceutical Installation

Introduction

Drugs are various single or mixed ingredients that function to prevent, relieve, or cure disease and are used by humans

for the outside and inside of the body. Drugs require various special treatments in terms of management due to their characteristics, such as not being resistant to heat, light, or sensitive matters that can destabilize the drug. Not only medicine, in ensuring the realization of good health services, medical devices are needed which are often used to examine patients, as a tool to carry out health interventions for patients, especially in diagnosing patient complaints. Therefore, the processing of pharmaceutical supplies and maintenance supplies is always more appreciated (Abdulkadir et al, 2022).

Drug management is the most important series of activities that receive an allocation of government funds amounting to 40-50% of the allocation funds for health development concerning aspects of planning, procurement, storage, availability, and distribution of drugs that are managed optimally to ensure the achievement of the quantity and type of pharmaceutical supplies and medical devices. Hamdani and Fitry, 2022).

The District Health Office is the implementing element of the District Regional Government which is under and responsible to the District Head through the Regional Secretary. The Health Office has the task of carrying out Regional Government affairs and assistance tasks in the health sector (Law No. 23/2014 concerning Regional Government).

The Health Office in this case is responsible for and oversees the Pharmaceutical Installation in the task of managing drugs in the district. In the management of this drug, the human resources that should be available to carry out pharmaceutical work are pharmacists and pharmaceutical technical personnel (Bachelor of Pharmacy, Associate Pharmacy Expert, Pharmacy Analyst, and Pharmacy Middle Personnel/Assistant Pharmacist). The drug management process includes the process of planning, procuring and dispensing drugs carried out at the Health Office and the process of storing, availability and distribution of drugs is carried out at the district pharmacy warehouse (UU RI, 2009).

In 2018 in Indonesia there were 89.69% of district/city pharmaceutical installations that had carried out drug and vaccine management according to standards. This use has met the 2018 Strategic Plan target of 75%. It is known that most provinces have met the 75% target, namely 30 provinces and 18 provinces which have reached the target of 100%. There are 4 provinces which have not reached the 2018 Strategic Plan target, namely Bengkulu Province (70.00%), Maluku (45.45%), West Papua (38.46%) and DKI Jakarta (0.00%). Especially for DKI Jakarta Province, out of 6 district/city pharmacy installations, it does not directly manage medicines and vaccines according to standards, but management and distribution are carried out directly at the sub-district pharmacy installations through APBD funds (Ministry of Health RI, 2019).

Based on the performance report of the Directorate General of Pharmaceuticals and Medical Devices, the level of availability of essential medicines in districts/cities in 2020 was 83.75%. However, in Central Java Province, the percentage of districts/cities with the availability of essential medicines was still below the national target of 71.43%, where only 71.43% of the districts/cities were available from the target of 85% of essential medicines (40 indicator drug items). The existence of the COVID-19 problem in Indonesia can have an impact on the Provincial and District/City Health Offices so that not all provinces and districts/cities carry out monitoring, recording and reporting of related indicators.

drug availability. As well as several indicator drug items still available at the Provincial Health Office, they have not been distributed evenly to all districts/cities (RI Ministry of Health, 2020).

Research conducted at the Southeast Sulawesi Provincial Health Office showed that there were 8 indicators in drug planning and distribution that did not meet standards, namely planning accuracy (6.1%); planning deviation (5.85%); drug availability rate (28 months); percentage of expired drugs (8.33%); the percentage of drug deviations distributed (1.9%); ITOR (1.15 times); average drug blank time (30 days); percentage of dead drug stock (25%). Factors influencing the incident, namely coordination that is not optimal; recording and reporting have not been updated and limitations and or delays in the realization of operational funds (Boku, Satibi and Yasin, 2019).

MATERIALS AND METHODS

The type of research used in this research is qualitative with an observation approach, document review and in-depth interviews with people who are considered to know about the intended situation and problems. The research location was carried out at the Pharmacy Installation of the Southwest Maluku District Health Office, Maluku Province. The research was conducted in September-October 2022. There were 6 informants in this study, namely; Head of Pharmacy Installation, Pharmacy Installation Pharmacist, Head of Community Health Center and Drug Warehouse Manager. Using in-depth interview techniques (In-depth Interview), field observations and document review. Data analysis used content analysis, using data reduction, presentation and conclusion.

RESULTS

This research is a qualitative research that aims to determine the logistics management system for drugs and medical consumables in the pharmacy installation of the Southwest Maluku District Health Office. The research was conducted from September to October 2022. The characteristics of the informants involved in the research on the Logistics Management of Drugs and Medical Consumables in the Pharmacy Installation of the Southwest Maluku District Health Office.

Table 1. Characteristics of Informants Based on Gender, Age, Last Education and Position

No.	Informant code	Sex	Age (year)	Education	Position
1	AJ	Female	39	Doctor profession	Head of health center
2	DC	Female	26	Apoteker	Staff of IFK health dept
3	YL	Male	56	S1 public health	Head of Farmasi divison
4	VT	Female	26	S1 public health	IFK for Good Management
5	HA	Female	43	S1 public health	Head of worker dev
6	RL	Female	27	Apoteker	Drug responsible

Source: Primary Data 2022

1. Planning

a. Medication Planning Process

From the results of interviews with informants regarding the process of drug planning, the following information was obtained:

"If you are at the Health Service if you want to plan, you can make a Medicine Needs Plan (RKO), you can request this RKO from each Puskesmas, which has a working area, namely there are 32 Puskesmas. So there, we asked for RKO, so we will arrange each RKO to be sent to you, from there we will summarize and then we will arrange what the RKO will be like in the future." (DC)

"The mechanism is that we usually at the end of each year based on the Puskesmas submit the Annual RKO (Drug Needs Plan) to the Health Office for drug planning for the following year." (YL)

"Those who are beta know that usually once a year through an e catalog." (HA)

"The drug planning process is usually carried out from each health center by sending the RKO to the health office for drug planning in the following year." (RL)

Based on the results of interviews with informants regarding the process of drug planning at the Southwest Maluku Health Office Pharmacy Installation, it is known that at the end of each year each Community Health Center submits an Annual RKO (Drug Needs Plan) via e-catalog to the Health Office for drug planning for the following year.

b. Method of drug planning

From the results of interviews with informants regarding drug planning methods, the following information was obtained:

"If we are at the Health Service, we use two methods that we know, namely the consumptive method and the epidemiological method, the consumptive method means that we use it based on our individual use of the most drugs. So, later on, these items will be included for future planning with the epidemiological method. that is, the existing pattern of disease." (DC)

"We for the needs of planning the procurement of drugs we use a pattern of approach with a consumptive method based on LPLPO and epidemiological data or the 10 most common diseases in the Puskesmas." (YL)

"What I know for drug planning is that the method is based on the most drug use and also based on epidemiological cases, namely the most disease cases we serve at the Puskesmas." (A.J.)

Based on the results of interviews with informants regarding drug planning methods at the Southwest Maluku Health Office Pharmacy Installation, it is known that the method used is a consumptive and epidemiological combination method based on the highest drug use and epidemiology (patterns of existing diseases)

c. Drug Use Compilation

From the results of interviews with informants regarding the compilation of drug use, the following information was obtained:

"The selection was made based on the type of drug that was most widely used at the Puskesmas". (VT). "Selection of types of drugs for planning for the following year is based on data on the 10 most common diseases in the previous year and data on the use of the 10 most drugs in the previous year." (RL) . "Based on the 10 diseases with the most examples for 2023, it means the data for 2022 we use the 10 most diseases and the most drug use." (A.J.)

Based on the results of interviews with informants regarding the compilation of drug use at the Pharmacy Installation of the Southwest Maluku Health Office, it is known that the selection of drug types is carried out based on the type of drug that is most widely used at the Puskesmas, for planning for the following year based on data on the 10 most common diseases in the previous year and data on the use of the 10 most drugs previous year.

d. Calculation of drug needs

From the results of interviews with informants regarding the calculation of drug needs, the following information was obtained:

"In accordance with the planning needs of drug needs from each health center, because each health center has a different need for medicine." (VT)

"Katong summarizes all the RKO's from each Puskesmas, so if you want to estimate future needs, it means you can see from the summary we made of each RKO at the Puskesmas." (DC)

"With the data of the 10 most diseases and the most use of drugs". (A.J.)

Based on the results of interviews with informants regarding the calculation of drug needs at the Pharmacy Installation of the Southwest Maluku Health Service it is known that in order to be able to find out the estimated needs, it can be seen in the RKO recap of each Community Health Center how to calculate drug needs, namely the number of drugs

for the coming period is estimated to be the same as the use in the previous period and by looking at the data on the 10 most common diseases and the most used drugs.

E. Constraints in the Drug Planning Process

From the results of interviews with informants regarding the obstacles in the drug planning process, the following information was obtained:

"The problem is that sometimes we have made a plan based on the number of sample visits this year, but sometimes the number of patients the following year exceeds what we planned, because usually the Tiakur Health Center serves a lot of patients from sub-districts, so the number of patients does not match what we have made. planning". (A.J.)

"So far the obstacles we have faced are only negligence from each Puskesmas, for example they were late in sending or neglected to forget to send it to us, so we are also pressed for time and find it difficult to summarize." (DC)

"Perhaps the problem is the lack of pharmacists at the Puskesmas, which causes planning at the Puskesmas to be late, so the planning is less than optimal." (HA). "Usually, when it comes to drug planning, the problem is that sometimes the reporting from the Puskesmas is delayed, which affects the planning process." (RL)

Based on the results of interviews with informants regarding the obstacles in the drug planning process at the Southwest Maluku Health Office Pharmacy Installation, it is known that the constraints are caused by a lack of pharmacy staff at the Puskesmas so that it can affect the preparation of RKO, planning the number of visits is not appropriate because it exceeds the number of visits in the previous year, there is a delay in the delivery of RKO which affects the planning process so that the drug plans that have been prepared are not in accordance with patient needs.

2. Procurement

a. Drug Procurement Process

From the results of interviews with informants regarding the drug procurement process, the following information was obtained:

"The drug procurement process is based on LPLPO, the 10 most used drugs, and the availability of medicinal drugs". (RL)

"What I know is that while we are working at the Health Service there are several methods, for example through E-Purchasing or E-Catalog, then there is PL (Direct Appointment) or the tender method, which is the method we are using." (DC)

"We use 2 methods for this procurement process, namely the first is drug procurement by the Health Service based on LPLPO (Drug Request and Use Sheet) at the Puskesmas and the second is that the Puskesmas usually do shopping or procure drugs directly using JKN operational funds." (YL)

Based on the results of interviews with informants regarding the drug procurement process at the Southwest Maluku Health Office Pharmacy Installation, it is known that drug procurement is based on LPLPO, the 10 most used drugs, and the availability of medicinal drugs. Procurement of drugs is also usually through E-Purchasing or E-Catalog, direct appointment or tender methods.

b. Drug Procurement System

From the results of interviews with informants regarding the drug procurement system, the following information was obtained:

"For those of us who have JKN, it means direct shopping." (A.J.)

"We use a system of procurement methods through e-catalogs and other methods in accordance with laws and regulations and tender methods." (YL)

"E-Purchasing or catalog system and direct appointment". (VT)

"Drug procurement system using e-catalog and direct procurement". (RL)

Based on the results of interviews with informants regarding the drug procurement system at the Southwest Maluku Health Office Pharmacy Installation, it is known that the system used is through E-Purchasing or E-Catalog, direct procurement, other methods in accordance with laws and regulations.

c. Determination of Time for Procurement of Drugs

From the results of interviews with informants regarding the timing of drug procurement, the following information was obtained:

"Not shopping once, usually when we disburse JKN funds, for example, every 3 months, then we buy medicine. So we are quarterly." (A.J.)

"We have this procurement process, 1 drug procurement in one year, so it is spent one at a time. Because we use the required DAK funds, we input contract data into the ONSPAN system in July of the current year, so it cannot be spent in stages, it must be done directly as a whole." (YL)

"As far as I know, 1 year 1 time for the drug procurement as a whole". (VT)

"Procurement from the puskesmas depends on the request submitted, sometimes once a month or once in 3 months depending on the puskesmas." (RL)

"As far as I know while working at the Health Service, it's usually per year, spending at the same time per year." (DC)

Based on the results of interviews with informants regarding the timing of drug procurement at the Pharmacy Installation of the Southwest Maluku Health Service it is known that drug procurement is carried out once in 1 year as well as spending once using DAK funds which are required for us to input contract data into the ONSPAN system in July of the current year so it cannot be spent in stages, must be directly in its entirety. Whereas procurement from the puskesmas depends on the request submitted, sometimes usually once a month or once every 3 months depending on the puskesmas.

3. Reception

a. Drug Acceptance Process

From the results of interviews with informants regarding the process of receiving drugs, the following information was obtained:

"The drugs we receive are usually all at once, we receive them as a whole at the District Pharmacy Installation." (YL)

"From the distribution pharmaceutical installation to the Puskesmas, after that the Puskesmas receives it, then it is checked first according to the drug item that is given, then it is stored in the medicine warehouse". (RL)

"If the receipt itself comes from the medicine, it is usually delivered by the expedition, then when it arrives, the clerk will check it first, we will check it, then we will receive it and we will store it." (DC)

"Usually when the goods are ordered, most of the companies use courier services and usually we receive the goods directly at the pharmaceutical installation, through the delivery service as well as attaching invoices to match the names of the goods with those in the contract." (VT)

Based on the results of interviews with informants regarding the process of receiving drugs, it is known that drugs are received at the Southwest Maluku Health Office Pharmacy Installation, namely sometimes drugs are received at the Puskesmas and taken to the Pharmacy Installation at the Health Service, sometimes drugs are also sent via expedition services which previously went through an inspection process first to adjust the names of the items of goods with those in the contract are then stored in the drug warehouse.

b. Drug Examination Process

From the results of interviews with informants regarding the drug inspection process, the following information was obtained:

"Drug examination at the Puskesmas is carried out by the Health Office and BPOM". (RL)

"To examine drugs before they are used or distributed to the Puskesmas, the initial stage must be checked by the goods inspection committee, then from the District Inspectorate and from the BPKP before the drugs are distributed for use in the Puskesmas." (YL)

"So when you check, there is usually a third party, there are also expeditions, so there you first adjust the physical form according to the contract, then according to the invoice, then you also check the expiry date, how about the Batch Number, then check the physical condition of the goods. the quality is still good, so we really make sure that the drug is indeed worth receiving." (DC)

Based on the results of interviews with informants regarding the drug inspection process, it is known that drug inspection at the Southwest Maluku Health Office Pharmacy Installation is carried out by the goods inspection committee before the drugs are distributed for use at the Puskesmas before entering the quarantine process first to check the suitability of the goods, expire date and batch number for see if the drug is in good condition or not.

c. Special Officer in Drug Receipt and Examination

From the results of interviews with informants regarding special officers in receiving and examining drugs, the following information was obtained:

"There, the person in charge of the room and drug warehouse". (A.J.). "Yes there is a special committee". (VT)

"From the goods inspection committee there is a combination of several fields from the administration section, the general section, and the district inspectorate section and from the BPKP section." (YL). "Usually there is a committee to inspect goods provided by the Health Service." (DC)

Based on the results of interviews with informants regarding drug reception and examination officers, it is known that in the Southwest Maluku Health Office Pharmacy Installation through there are special officers in drug reception and examination, namely a combination of several fields from the administration section, general section, and district inspectorate section and from the BPKP section, Pharmacy section officers assigned to pharmacy warehouses who already understand drugs.

D. Obstacles in the Drug Acceptance Process

From the results of interviews with informants regarding the obstacles in receiving drugs, the following information was obtained:

"Medicines received are sometimes close to expiration, drugs received are sometimes not in accordance with the requests in the LPLPO". (A.J.)

"So far the obstacles during the beta work at the Health Service in the pharmaceutical installation are the obstacles to beta receiving, namely there are goods that sometimes the ExpayerDate of the goods arrives close, then a lot of goods come in and the staff may not be too many so the officers are overwhelmed so there are goods for example not enough or there are but the physical condition is not good, it might be damaged on the way during distribution." (DC)

"For the acceptance process, sometimes we face a problem, namely sometimes there are problems with sea transportation because based on unfriendly natural conditions, the transportation will not arrive on time, so we sometimes don't receive the medicine at the same time, but there is a slight difference from timetable. So we adjust it to natural conditions, because our area is a marine area, on average, users of transportation services for our work use a lot of sea transportation. (YL) "Apart from the weather, one of the things is that the goods don't arrive in stages so if we want distribution to the Puskesmas, it will be hampered." (VT)

Based on the results of interviews with informants regarding the obstacles experienced in the process of receiving drugs, it is known that the obstacles to receiving drugs at the Pharmacy Installation of the Southwest Maluku Health Office are that the drugs received are sometimes close to their expiration date, the drugs received are sometimes not in accordance with requests, the drugs that do not arrive in full or gradually and the medicine received is sometimes not on time because it uses sea transportation which depends on the weather.

4. Storage

a. Medicine Storage Place

From the results of interviews with informants regarding drug storage places, the following information was obtained: "In the warehouse that has been prepared, both from the pharmaceutical installation and the Puskesmas, they already have warehouses for storing drugs." (RL)

"The drugs we receive are usually all at once, we receive them as a whole at the district pharmacy installation." (YL). "If the medicine has been entered, it will be checked in the bag and stored in the pharmaceutical installation warehouse". (DC). "In the pharmaceutical installation, if the goods are complete, then they will be distributed to the puskesmas, if not, it means that the goods are separated first." (VT)

Based on the results of interviews with informants regarding drug storage areas, it is known that drug storage areas in the Pharmacy Installation of the Southwest Maluku Health Service, namely drugs that have been received and have been examined are stored in the District Pharmacy Installation building and the Puskesmas medicine warehouse.

b. Drug Storage Process

From the results of interviews with informants regarding the drug storage process, the following information was obtained: "Usually at the puskesmas it depends on what is in the warehouse, usually it is found that there is storage in alphabetical order, pattern of disease." (RL). "As for the storage mechanism, apart from using the alphabet, we also depend on the company, for example company A has its own shelves but in alphabetical order." (VT)

"For self-storage, we usually separate the drugs from the BMHP in different places to make it easier for us to take them, then we also use them in alphabetical order and in the form of the preparation so that it is easier for us when we want to distribute them to the Puskesmas and the bags usually make it easier for us to collect them. There are also for some reason the bags must be separated based on the contract to make it easier for the pockets as well. (DC)." "The arrangement is based on the Alphabet, then using the FEFO and FIFO systems as well as for Narcotics there is a special cupboard." (A.J.)

Based on the results of interviews with informants regarding the drug storage process at the Southwest Maluku Health Office Pharmacy Installation, it is known that drug storage at the Puskesmas is based on the Alphabet, Form and type of preparation and uses the FEFO and FIFO systems and for Narcotics and Psychotropics are stored in a

special cupboard, based on the three This method is also for convenience, it can also be stored under a contract with the provider, but with certain considerations.

c. Medication storage facilities

From the results of interviews with informants regarding the facilities for storing drugs, the following information was obtained:

"For a while we feel that this is sufficient, but it is not certain that there will be no additional space. We hope that there will be additional space, but actually it's not enough, but because the volume we're dealing with right now is indeed quite adequate, we also have enough warehouses to accommodate it, but we hope that if we can, in the future we might have additional facilities for storage." (YL)

DISCUSSION

1. Planning

Needs planning is an activity to determine the amount and period of procurement of Pharmaceutical Supplies, Medical Devices, and Medical Consumables in accordance with the results of selection activities to ensure the fulfillment of the criteria for the right type, right amount, timely and efficiently. Planning is carried out to avoid medicine shortages by using accountable methods and predetermined planning principles including consumption, epidemiology, a combination of consumption and epidemiology methods and adjusted to the available budget (Permenkes, 2016a).

a. Medication Planning Process

Planning (planning), namely as a rationale for the goals and preparation of the steps that will be used to achieve the goal. Planning means preparing for all needs, taking into account carefully what are the obstacles, and formulating forms of implementation of activities that intend to achieve goals. Planning is carried out to avoid drug shortages by using methods that can be accounted for and the basics of planning that have been determined include consumption, epidemiology, a combination of consumption and epidemiological methods and adjusted to the available budget (Satrianegara, 2018).

Permenkes Number 58 of 2014 needs planning is an activity to determine the amount and period of drug procurement in accordance with the results of selection activities to ensure the fulfillment of the criteria for the right type, right amount, timely and efficiently.

The results of in-depth interviews at the Southwest Maluku Health Office Pharmacy Installation found information that at the end of each year each Community Health Center submits an annual RKO to the Health Office for drug planning for the following year.

This research is in line with research conducted by Handayani (2017) in which the results of her research explained the process of planning drug needs by looking at the list of drug needs proposed for each unit, in the process of determining drug needs the consumption method was used and based on disease cases (epidemiology), but using data disease cases sometimes make the patient's drug needs not immediately fulfilled because the number of disease cases cannot be predicted.

b. Medication Planning and Compilation Methods

According to Siregar (2004) that there are three types of planning methods namely consumption, epidemiology, and a combination of both which are adjusted to the local budget. Planning using the consumption method is based on data on drug use in the past, while the epidemiological method is based on data on disease incidence rates and treatment standards for the disease. Data on past drug use for the method of ingestion must be accurate. This consumption method can cause irrational use of drugs that will continue to occur in contrast to the epidemiological method, which assumes that treatment is adjusted to existing diseases or occurs at a certain time.

The compilation of drug use serves to determine the monthly usage of each type of drug in the health service unit/Puskesmas for a year and serves as comparison data for optimum stock. Calculations for drug compilation are carried out based on usage data in a year. From the average usage per year, the planning results for a month are obtained which will be added to the buffer stock for eight months.

These results are in accordance with Permenkes No. 74 of 2016 where it is said that the District/City Pharmacy Installation will compile and analyze the needs of Health Center Pharmacy Supplies in their working area, adjust to the available budget and take into account drug empty time, buffer stock, and avoid excess stock.

Based on the results of in-depth interviews at the Southwest Maluku Health Office Pharmacy Installation, it can be concluded that the compilation of drug use was carried out based on data on the 10 most common diseases in the previous year and data on the use of the 10 most drugs in the previous year.

Similar research, namely research conducted at the Pulau Barrang Lompo Health Center, Sangkarang District, showed that drug compilation at the Health Center was carried out by collecting data from each service unit and then recapitulating it to determine the amount and type of medicine needed. Drugs that are frequently used will be a top priority for the Puskesmas to propose to the District/City Health Office (Renfaan, 2017).

c. Calculation of drug needs

Calculation of drug needs is done to determine the need for drugs to be precise in terms of type, amount, and time. Vacancies or excesses of certain types of drugs can occur if calculations are only based on theory. Therefore, determining drug needs is a tough challenge that is always faced by pharmacists and pharmacy staff who work both at the PKD level and at the Regency/City UPOPPK.

Calculation of drug needs in the Pharmacy Installation of the Southwest Maluku Regency Health Office uses a combination of consumption and epidemiology methods by looking at data on drug use and the most diseases in a year. Then it is used as the basis for determining the planning policy for the following year. Using a combination of consumption and epidemiology methods makes planning tend to fluctuate compared to other methods, so you can use the consumption method with corrections for disease patterns, changes, type/amount of action, changes in patterns, absorption, changes in service policies.

Another research that is in line is carried out at the Porsea Hospital pharmacy installation where based on the results of interviews conducted with informants regarding the calculation of the amount of drug needed, namely using a combination method based on analysis of data on drug consumption and epidemiology of the previous year. In calculating the estimated drug needs, it does not match the steps in the consumption method because lead time and buffer stock data are not used in this calculation.

d. Constraints in the Drug Planning Process

Obstacles in drug planning can cause discrepancies between drug calculations and actual drug use. Based on the results of in-depth interviews with informants, it was found that the obstacles to drug planning at the Pharmacy Installation of the Southwest Maluku Regency Health Office were the lack of pharmacy staff at the Puskesmas and the delay in submitting the RKO. The lack of pharmacy staff at the Puskesmas can affect the preparation of the RKO, there is a delay in the delivery of the RKO which affects the planning process so that the drug plans that have been prepared are not in accordance with patient needs.

In carrying out drug planning, program holders are assisted by staff. And when viewed from their educational background there are still those with Diploma and non-health backgrounds. It is feared that the drug planning proposal will be imperfect because human resources with a non-health background are not expertise in formulating needs in the health sector (Rusman, 2020).

This research is in line with research at the Cipayung Health Center which shows that human resources in pharmaceutical installations are insufficient, the place for storing logistics for drugs is not sufficient and the availability

of drugs sometimes experiences vacancies due to unavailable stock and long waiting times for orders (Hilmawati, et al. , 2020).

2. Procurement

Procurement is an activity intended to realize needs planning. Effective procurement must guarantee availability, quantity and the right time at an affordable price and according to quality standards (Permenkes, 2016a). The following is information regarding the drug procurement process, the drug procurement system, the timely arrival of the drugs at the Southwest Maluku Health Office Pharmacy Installation.

a. Drug Procurement Process and System

Government procurement of goods/services is an activity to obtain goods/services by Ministries/Institutions/Regional Work Units/Institutions whose process starts from planning needs until completion of all activities to obtain goods/services. The purpose of drug procurement is to ensure the availability of drugs with the type, quantity and specifications according to needs, guarantee the quality of drugs and drugs can be obtained when needed (Handayani, 2017).

Procurement can affect the entire process of the flow of goods because it is an important part of the process, therefore procurement must be considered as a strategic function in logistics management, where in the implementation of this procurement must be available in sufficient quantities of drugs, at the right time and must be replaced by means continuous and regular. Procurement of drugs at the Health Office is carried out to obtain the type and quantity of drugs with high quality, ensuring the availability of drugs quickly and on time (Mukhlis, 2016).

The drug procurement method is an alternative chosen to realize the planned drug needs. Based on the results of in-depth interviews with informants at the Southwest Maluku Health Office Pharmacy Installation, it is known that the methods used in drug procurement are placing orders by e-purchasing via e-catalog and direct procurement, direct appointment and or tender methods. Purchasing goods by e-purchasing, namely purchasing electronically, is a procedure for purchasing goods/services through an electronic catalog system (Perpres, 2018).

Based on the results of research at the Pharmacy Installation of the Southwest Maluku District Health Office, the drug procurement process and system was carried out based on LPLPO, the highest drug use and availability of drug credentials by ordering online, namely e-purchasing in electronic catalogs (e-catalogue), direct procurement, direct appointment and or tender method. E-purchasing is the main procurement method, but if the drug is not available in the e-catalog, then a second alternative is carried out, namely by procurement or direct appointment.

The drug procurement system at the Southwest Maluku Health Service Pharmacy Installation is in accordance with the Government Procurement of Goods/Services as stipulated in RI Presidential Regulation No. 16 of 2018 which states that the method of selecting goods/services providers is carried out by e-purchasing for goods/services that are already listed in the electronic catalog. The other methods of procuring goods are direct procurement, direct appointment, fast tenders and tenders (Perpres, 2018).

Provisions regarding drug procurement are also contained in Law no. 36 of 2009 concerning Health that in ensuring the availability of medicines in emergencies, the government carries out special policies for the procurement and use of drugs and medicinal substances. The government compiles a list and types of drugs that essentially must be available for the benefit of the community.

Similar research was carried out at the Kefamenanu General Hospital, North Central Timor Regency, namely the method of drug procurement was carried out by e-purchasing and manually. the hospital has also provided an emergency budget which is carried out by purchasing directly from the hospital to anticipate empty drugs at the pharmaceutical installation. The drug procurement process at Kefamenanu Hospital is carried out by the Commitment Making Officer and the Goods and Services Procurement Committee which is determined by the Director's Decree (Nesi and Kristin, 2018).

b. Determination of Time for Drug Procurement

Procurement of drugs is carried out every year, but if the arrival time of drugs is relatively long, it can result in empty drug stocks. Drug procurement at the Southwest Maluku District Health Office Pharmacy Installation is conducted annually through an e-catalog. Drug procurement is adjusted to the Special Allocation Fund (DAK) which is given annually.

The method used to avoid empty drug stocks due to the late arrival of drugs is to make direct purchases in limited quantities. Direct purchases are made only for drugs that have very little stock so that stock outs do not occur while waiting for drugs that are on their way.

3. Reception

Acceptance is an activity to ensure the suitability of the type, specification, quantity, quality, delivery time and price stated in the contract or order letter with the physical conditions received. All documents related to the receipt of goods must be stored properly.

a. Drug Acceptance and Examination Process

Receipt and examination of drugs is carried out so that the quality of the drugs received is always maintained and remains safe for distribution to each health center. Receipt of drugs at the Pharmacy Installation of the Southwest Maluku Regency Health Office starts with the drugs that arrive after placing an order in advance to match the names of the goods with those contracted and then storing them in the drug warehouse.

After an examination of the drugs received and the examination gave the result that the drugs were in accordance with the receipt, the dosage was appropriate, the expiration date was not less than one year, the batch and register numbers were clear. Furthermore, the drug will be handed over to the Health Service to be used as appropriate. Inspection of the drugs received is carried out so that the quality of the drugs is maintained before being put into the pharmaceutical warehouse so that they are safe for distribution to health centers and used by the public. Because even though proper storage is carried out in accordance with the needs of the drug, if the delivery process of the drug has experienced a record, it will still affect the efficacy of the drug.

Based on the results of interviews with informants at the Pharmacy Installation of the Health Office of Southwest Maluku Regency, it can be concluded that the process of receiving and inspecting drugs is carried out by the goods inspection committee before the drugs are distributed for use at the Puskesmas before entering the quarantine process first to check the suitability of the goods, expired date, batch number to ensure that the drug remains in good condition.

Receiving drugs at the Pharmacy Installation of the Health Office of Southwest Maluku Regency is carried out by certain officers, namely officers in the warehouse and drug inspection carried out by officers. The medicine receiving officer is in charge of checking the medicine received before the drug is quarantined and the drug inspection officer is in charge of checking the suitability of the medicine ordered with the drug received along with the suitability of the drug with the receipt.

Research conducted at the Hajj Hospital in Surabaya showed that the receipt of drug logistics at the Hajj Hospital in Surabaya was carried out by inspectors and consignees. The officer from the drug warehouse unit checks the quantity, type, and specifications of the goods ordered, the expiration date and in accordance with the drug invoice. The receiving committee and goods examiner have checked the drugs received properly. This is expected to maintain the quality and quantity of drugs that enter the hospital's drug warehouse. Checking is also to avoid receiving damaged or expired drugs so that they are in accordance with the request and can be used immediately for the service process (Mellen and Pudjirahardjo, 2013).

b. Special Officer in Drug Reception and Examination

Based on the results of interviews with informants at the Pharmacy Installation of the Health Office of Southwest Maluku Regency, it can be concluded that the process of receiving and examining drugs is carried out by special

officers starting from incoming drugs to be quarantined to check the suitability of drugs with orders. Then the drug will be checked for suitability of the goods with the order, expiration date, and batch number to see whether the drug is in good condition or not. An examination of the physical quality and quality of the drug is carried out, after everything is appropriate and complete, it will be submitted to the Pharmacy Installation of the West Maluku District Health Office Power to be used as it should. Drug inspection is carried out to avoid damage and drug discrepancies with orders.

Another similar study was conducted at Syekh Yusuf Gowa Hospital where based on the results of in-depth interviews, informants revealed that receipt of preparations coming from distributors was received by a Goods Acceptance Committee which was formed specifically to receive and check incoming pharmaceutical preparations and Medical Consumable Materials. The purpose of receiving goods is to ensure that pharmaceutical preparations and Medical Consumables are received from distributors by checking the quantity of goods, the type of goods and the quality of the incoming preparations. In addition, the informant also said that the Special Committee routinely checked the expiration date of the preparations received (Satrianegara et al., 2018).

c. Obstacles in Acceptance of Drugs

Constraints in drug acceptance resulted in drugs received not in accordance with the amount needed, which affected drug supplies. Medicines that do not arrive in whole or in stages result in having to re-order and wait to return for an uncertain period of time because they sometimes arrive.

4. Storage

Storage is an activity of storing and maintaining by placing medicines and health supplies received in a place that is considered safe from theft and physical disturbances that can damage the quality of medicines and health supplies. The purpose of storing medicines and medical supplies is to maintain the quality of medicines, avoid abuse and misuse, maintain continuity of supply, facilitate search and control (Ministry of Health RI and JICA, 2010).

a. Medicine Storage Place

To get convenience in storing, compiling, searching and controlling drugs, it is necessary to arrange the layout of the warehouse properly. Apart from having to pay attention to cleanliness and protecting the warehouse from leaks and rodents, spatial arrangements must also pay attention to ergonomics (Ministry of Health RI and JICA, 2010).

Based on the results of interviews with informants, it is known that the drug storage area in the Pharmacy Installation of the Southwest Maluku District Health Office has several drug storage areas. One of the storages, namely a special cupboard, is used to store narcotics and psychotropics, while the other storage is used to store other drugs.

In general, even though pharmaceutical installations are drug storage areas at the Health Service, the service facilities are often minimal and apprehensive, for example warehouses that do not meet storage requirements. As a result, pharmaceutical installations work slowly in anticipating urgent needs and are difficult to develop. This is because warehouse capacity is closely related to storage activities, so all drug management activities will be in vain if the drug storage process is not carried out properly.

For this reason, the procurement process should consider the warehouse capacity owned by the pharmaceutical installation, so that changes in drug quality do not occur, and inaccurate storage processes can be avoided. The condition of the pharmaceutical warehouse, which is currently in transition, is also a consideration in the drug storage process, because there are drugs that are not stored in the proper place, due to limited storage space (Pebrianti, 2019).

The results of observations at the Pharmacy Installation of the Southwest Maluku Regency Health Office found that the size of the drug warehouse was not sufficient. In addition, the observation results also show that shelves/cabinets/pallets are available but there are also limited special cabinets for certain medicines.

Based on the results of research conducted at the Pharmacy Installation of the Southwest Maluku District Health Office, it can be concluded that the results of in-depth interviews are in line with the observations. Where it is known

that the storage space is not sufficient, the drugs stored are separated based on their respective types and the storage of drugs is in accordance with established standards.

This research is in line with research conducted by Palupiningtyas (2014) where drug storage in the pharmacy warehouse at the Mulya Tangerang General Hospital is carried out by compiling drug stocks by storing drugs on shelves, refrigerators and special cabinets. The facilities and infrastructure are inadequate in the storage area. The area of the pharmaceutical warehouse is inadequate and there are lots of piles of goods on the floor. This is because the number of cupboards and storage shelves available is still very minimal to be sufficient for separating or grouping drugs. The procedures provided by Mulya Hospital were not in accordance with pharmaceutical standards because the drug preparation process and layout settings could not work properly. Thus hampering the drug preparation system and drug layout in the warehouse.

b. Drug Storage Process

The preparation of drug stocks is in accordance with pharmaceutical management in District/City Pharmacy Installations by the Indonesian Ministry of Health in collaboration with NICA that drugs are arranged according to dosage form and alphabetically. To facilitate stock control, the following steps are taken:

1. Arrange drugs in large packages on pallets in a neat and orderly manner. Small packaged drugs and small amounts are stored on shelves and separated between internal drugs and drugs for external use by paying attention to the uniformity of the batch number.
2. Use a special cupboard to store narcotics and psychotropic substances.
3. Store drugs whose stability can be affected by temperature, air, light and bacterial contamination in a suitable place. Pay attention to drugs that need special storage.
4. List the name of each drug on the shelf neatly.
5. If there are quite a lot of medicines, then let the medicines remain in their respective boxes.

So, in the process of storing drugs, it is carried out in alphabetical order and based on the type of drug. Drug stocks are stored in shelves, refrigerators and special cabinets. The systems used for drug storage are (First In First Out) FIFO and (First Expire First Out) FEFO. In knowing the amount of drug stock, a record of drug stock is carried out on the stock card to find out the incoming and outgoing drugs. The facilities and infrastructure in the storage area are inadequate, because the area of the warehouse is narrow, the lack of shelves for storage, storage cabinets and there are still some who do not use pallets.

Drug stock storage at the Pharmacy Installation of the Southwest Maluku District Health Office based on the results of in-depth interviews and direct observation was carried out by separating drugs based on each type. In addition, the preparation of drug stocks is also carried out based on the alphabet, form and type of preparation and based on the First In First Out (FIFO) principle where drugs received earlier are placed on the front of the preparation so that they are used first. Using the FIFO principle but still paying attention to drug expiration dates, which are also prepared on the basis of First Expired First Out (FEFO). So, in addition to paying attention to the drugs that come first, the preparation of drug stocks also pays attention to drugs that have an earlier expiration date to be placed on the front.

This research is in line with research conducted at the Southeast Sulawesi Provincial Health Office where drug storage was carried out by observing the batch number and expiration date on the drug on the shelf or pallet and SBBK as well as the date of entry and exit of the drug on the stock card. The results showed that the drug storage system already uses the FIFO/FEFO system. This shows that the drug storage system is effective and efficient (Boku, Satibi and Yasin, 2019; Ernyasih, et al, 2022)).

C. Facilities in Drug Storage

Inadequate facilities lead to irregular arrangement of drugs in storage and non-compliance with drug storage rules, which can cause drugs to be damaged or expired in storage. Therefore, storage activities play an important role in the management of public drugs. This activity can run well if it is supported by adequate storage facilities.

Based on the results of interviews with informants, it was found that the drug storage facilities at the Pharmacy Installation of the Health Office of Southwest Maluku Regency had insufficient storage space because there were quite a lot of medicines but limited space for medicines/shelves/pallets.

This research is in line with research conducted by Palupiningtyas (2014) regarding drug storage in the pharmacy warehouse at the Mulya Tangerang General Hospital, inadequate facilities and infrastructure in the storage warehouse. The area of the pharmaceutical warehouse is inadequate and there are lots of piles of goods on the floor. This is because the number of cupboards and storage shelves available is still very minimal to be sufficient for separating or grouping drugs. The procedures provided by Mulya Hospital were not in accordance with pharmaceutical standards because the drug preparation process and layout settings could not work properly. Thus hampering the drug preparation system and drug layout in the warehouse.

CONCLUSION

1. Drug planning is carried out at the end of each year with each Community Health Center submitting an annual RKO to the Health Office. The method used in selecting the types of drugs for planning for the following year is based on the most used drugs and epidemiology. The drug planning process that has been prepared is not in accordance with patient needs because delays in the preparation and delivery of RKO are caused by a lack of pharmacists at the Puskesmas.
2. Procurement of drugs is carried out based on LPLPO, the 10 most used drugs and the availability of medicinal drugs by using an ordering system via e-catalog, direct appointment and/or tender methods if the required drugs are not available in the e-catalog. Medicines are procured once a year, while procurement from the Puskesmas, depending on demand, is usually once a month or once every 3 months.
3. Receipt and inspection of drugs is carried out by a special officer where previous drug receipts go through inspection first to check the suitability of the goods, expired date, and batch number to see whether the drugs are in good or damaged condition. In receiving medicine, the medicine received is sometimes close to its expiration date, the medicine is not in accordance with the request, the medicine comes in stages and not on time.
4. Drug storage is carried out in the district pharmaceutical installation warehouse with insufficient storage space or warehouse size because there are quite a lot of drugs but space is limited. The arrangement of drug storage is based on the alphabet with the FIFO and FEFO principles and for narcotics and psychotropics is stored in a special cupboard.

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