THE ANALYSIS OF PLANNING OF MEDICINE NEEDS FOR BASIC HEALTH SERVICES OF PUBLIC HEALTH CENTERS AT NDUGA HEALTH OFFICE

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ABSTRACT

The fulfillment of public medicine needs for basic health services is very essential. However, the availability of the medicines is often not managed properly so there is frequently medicine accumulation and uneven medicine distribution. This study aimed at analyzing the planning process for public medicine needs at the Public Health Center in the work area of Nduga Health Office which included aspects of the stages of selection, compilation of medicine use, calculation, and projection of medicine needs.

This is a descriptive qualitative research with a case study approach through in-depth interviews, document review and observation. The subjects of this study were 9 informants, selected by purposive sampling. Data were analyzed through stages of reduction, presentation and conclusion drawing. Validity testing was carried out using triangulation of data sources.

The results showed that, in the medicine selection stage, most Public Health Centers (Indonesian: Pusat Kesehatan Masyarakat/Puskesmas) did not select medicines. In the
compilation of medicine use stage, it is known that the average health center records outgoing medicines, but rarely does monthly records in the Medicine Use Report and Request (Indonesian: LaporanPemakaian dan PermintaanObat/LPLPO). The report is not even reported to the Regency Health Office/pharmacy warehouse. Furthermore, in the medicine need calculation stage, it is known that the average Public Health Center performs calculation by only calculating the final stock of medicines. Calculation by other methods has not been carried out. Importantly, in the projection of medicine need stage; it is known that the average Public Health Center projects medicines through the highest disease rates in each region. However, the data presentation for the projection of medicine need is not available. Epidemiological understanding of the method of projection of medicine need is not yet known. Therefore, planning of medicine needs is considered inadequate due to the staff’s understanding, competence of officers, accessibility, means of communication, and clear rules. Accordingly, improvement is needed at each stage by taking into account human resources, regulations, facilities and infrastructure.

**KEYWORDS:** planning of medicine needs, medicine selection, compilation of medicine use, medicine need calculation, projection of medicine needs

**INTRODUCTION**

Public Health Center (Indonesian: Pusat Kesehatan Masyarakat/Puskesmas) is a micro setting in health services, which is basically the same as other settings or areas such as hospitals, schools, markets, islands or regencies/cities (Palutturi, Chu, Moon, & Nam, 2015; Palutturi, Rutherford, Davey, & Chu, 2015; Palutturi, Sahiddin, Ishak, & Hamzah, 2018; Rusydi, Palutturi, Noor, & Pasinringi, 2020a, 2020b; Rusydia, Palutturi, Noor, & A. Pasinringi, 2020; Salmah, 2020). Medicine as a basic need in health services is an important element in the implementation of health services in every health facility (Kalsum, 2019). This is part of logistics management (Lewier et al., 2020) and for the fulfillment of health services broadly (Amir & Palutturi, 2018; Amiruddin & Palutturi, 2019; Hafsa, Maidin, & Palutturi, 2019; Rahmawati, Moedjiono, & Palutturi, 2019; Said & Palutturi, 2018; Tahir, Amiruddin, Palutturi, Rivai, & Saleh, 2020). The availability of medicine in health facilities depends on the level of community needs determined in the medicine planning and procurement process (Boku, Satibi, & Yasin, 2019).

Medicines management at Nduga Health Office, Papua, has special issues in its administration. The scope of the work area of Nduga Health Office Regency has 8 Public Health Centers which technically have an active role in the analysis of community needs for medicine. Based on the results of preliminary studies, it was known that the calculation of the analysis of medicine needs at the regency level used the consumption method analysis. However, the reference of needs analysis with the consumption method was not carried out by all Public Health Centers. It was also known that only 1 in 8 Public Health Centers in the work area of Nduga Health Office actively conducted needs analysis using the consumption method, while 7 other Public Health Centers did not have reports and records of the use of medicine. Another issue in the implementation of medicines management in the work area of Nduga Health Office was that there were still expired medicine stocks in medicine storage rooms in several Public Health Centers, for example 210 bottles of Ambroxol at Keneyam Health Center and 23 boxes of Simvastatin at Puskesmas Yigidari were found expired. Both
cases illustrate a medicine planning model that was still not in accordance with the guidelines for the procurement of medicines and medical supplies issued by the Ministry of Health. Furthermore, another issue was the availability of data in the identification of public needs for medicines which is a fundamental problem at Nduga Health Offices since complete, accurate and reliable data affects the determination/selection of types of medicine needs. Moreover, medicine planning at the Public Health Center level was still not optimal. It was evidenced from the results of the initial survey of this study that there was a gap between the demand for medicines by the Public Health Center during the current year and the proposed requests for medicines previously submitted. Thus, due to this gap, the Health Office often experienced certain medicine stockout and/or accumulation due to inadequate planning of medicine needs at the Public Health Center level.

Referring to a study conducted by Permatasari, Pulungan, and Setiawati (2020), accumulation of unused medicines in medicine storage room and the number of expired medicines were caused by the absence of a periodic record, and the projection of the correct medicine planning that is not implemented. The implementation of needs analysis method in the medicine planning process is a series reflecting real needs. Moreover, another affecting factor was geographical factor of the region, in which there was often a delay in medicine distribution to the Public Health Center as the Technical Implementation Unit (UPTD). The problem of accessibility in medicine distribution has an impact on medicine stockout in the Public Health Center. Geographical factors in each area of the Public Health Center of Nduga Regency also made it difficult to access data on demand for medicines that obstacles that also frequently occurred was certain types of medicine stockout needed by the community. A study by Nopiyansyah, Purba, and Hidayat (2020) affirmed that identification of medicine needs can be influenced by the distance/geographical conditions of an area.

More importantly, a study by Ismedsyah and Rahayu (2019) demonstrated that medicine accumulation and stockout was the result of poor medicine planning. Poor medicine management planning is influenced by the availability of data on medicine needs, human resources, and supporting factors that can influence it, such as lack of technical guidance and performance evaluation, availability of clear guidelines and rules regarding types of medicines and workload factors (Indri, 2019).

The importance of the analysis of medicine planning is in line with a notion stated by Permatasari et al. (2020) who revealed various identification findings on constraints in the medicine planning process that tended to be detrimental to medicines procurement, as well as the results of the analysis of planning process that would reduce problems such as medicine accumulation or stockout and maintain the quality of medicines from expiration. According to Sulistyorini (2016), the analysis of planning of medicine needs starts from medicine selection, compilation of medicine use, medicine need calculation, projection of medicine need, adjustment of medicine procurement planning, and evaluation of planning. These components of the analysis were used to identify obstacles in the medicine planning process to make improvements in reducing losses in public medicine procurement.
This study aimed at analyzing the planning process for public medicine needs at the Public Health Center in the work area of Nduga Health Office, which included aspects of the stages of selection, compilation of medicine use, calculation, and projection of medicine needs.

MATERIALS AND METHOD

Research Type and Design
This is a descriptive qualitative research that would like to gather information about the planning process for public medicine needs for basic health services in the Public Health Center in the work area of Nduga Health Office.

Research Location and Time
This study was conducted in 8 Public Health Centers in the work area of Nduga Health Office, including: Keneyam, Mbua, Yigi, Mugi, Map Duma, Geselema, Wosak, and Gearek Health Centers. Data collection was carried out for one month from 25 August to 25 September 2020.

Informants
Informants are people who are considered as sources of information. In this study, the informant was the person in charge of the pharmacy unit in 8 Public Health Centers in the work area of Nduga Health Office, Papua including: Keneyam, Mbua, Yigi, Mugi, Map Duma, Geselema, Wosak, and Gearek Health Centers. In addition, the key informant was the head of the section on pharmacy at Nduga Health Office who knew a series of conditions from the research location. Informants were selected using purposive sampling method.

Data Collection Method
Data collection in this study was conducted as an attempt to obtain data or information about the planning process for public medicine needs at all Public Health Centers in the work area of Nduga Health Office. It was carried out by collecting secondary data and in-depth interviews with informants.

Data Analysis Technique
Data analysis was done by organizing data into categories, describing data into units, performing synthesis, and analyzing data which mainly focused on the process in the field along with data collection. The steps in data analysis were carried out interactively by performing data reduction, data presentation and drawing conclusions and verification.

RESULTS AND DISCUSSION

a. Medicine Selection Stage
Improving the quality of pharmaceutical availability in the regions is determined by effective planning of medicine needs. Medicine planning has several stages. One of the important stages in the medicine planning process is the medicine selection stage. According to the Guidelines for the Management of Public Medicines and Health Supplies 2002, the following points are explained: medicines are selected based on scientific, medical and statistical
selection that give a far better therapeutic effect than the risk of side effects that will be caused; the type of medicine is selected to a minimum by avoiding duplication and similarity of types; new medicines must have evidence of specification for better therapeutic effects; the use of combination medicines shall be avoided unless the combination has a better effect than the single medicine; if there are many types of medicines, the medicine is selected based on the drug of choice from diseases with high prevalence.

A statement regarding the medicine selection stage in Nduga Regency, especially at the Yigi Health Center, was conveyed by the informant as follows:

“….We choose medicine by looking at the number of cases, such as seeing the top ten diseases each month. We then look at which medicines are frequently used. Next, we record and ask for the medicine to the pharmacy warehouse.”

(Informant 8, Person in charge of pharmacy at Yigi Health Center)

The interview excerpt above shows that most medicine selections were made by looking at the number of disease cases only. Based on document review, it can be concluded that most of the morbidity cases included ARI, diarrhea, clinical malaria, worm infection, joint pain, dental caries, pneumonia, febrile illness, scabies, skin disease/allergies. The disease with the highest prevalence is the basis for medicine selection at the Public Health Center level. For IPA, for example, medicines such as Amox, PCT, GG, and CTM were selected. Cotri, sink, and ORS were selected for diarrhea, while Amox, PCT, Primaquin, and DHP were selected for clinical malaria.

Additionally, the interview excerpt also shows the differences between each Public Health Center in the work area of Nduga Health Office. It was caused by the absence of working standards in the medicine selection stage. Consequently, there was no appropriate or scientific method for selecting medicine needs in every health center. In fact, there was no determination of the selection at the Public Health Center level; therefore, in terms of medicine supply, without any specific method of needs analysis, problems such as medicine accumulation and duplication in the medicine storage room were likely to occur.

Avoiding duplication or medicine combination is an effort that is certainly made to increase the effectiveness of medicine supply/use. In this case, the need for basic medicines at the Public Health Center level is indeed very high. However, it does not mean that the supply, administration and use of medicines are excessive. There is an influence on the type of disease in each area of the Public Health Center so that there is rarely even no medicine duplication or combination. However, medicine combination was also determined by the knowledge level of professionals of whether or not a certain dose of medicine combination was necessary.

The description of the influence of professionals in medicine determination at the medicine selection stage was confirmed by the following informant:
“This is our problem. There might be a wrong combination of medicines because we do not have a doctor who usually prescribes it. I make prescribe medicines based on my knowledge and experience.”

(Informant 4, Person in charge of pharmacy at Mbua Health Center)

The medicine selection stage produced several output benefits in identifying needs and uses by the community. This basic thing was of course a reference set in regulations in each region in health supplies.

b.Compilation of Medicine Use Stage

Besides the medicine selection stage, in the planning of medicine needs, the fulfillment of medicines in regencies was carried out based on needs analysis at the Public Health Center level. The analysis at this level was that the Public Health Center conducted compilation of medicine use. In this stage, the Public Health Center continuously records incoming and outgoing medicines which are delivered periodically to meet medicine needs at the regency level.

The following is the statement of the informant regarding the compilation of medicine use in the work area of Nduga Health Office:

“We record manually by filling in LPLPO (Medicine Use Report and Request) format, but we do not routinely give the report to IFK (Pharmacy Installation)”

(Informant 2, Person in charge of pharmacy at Gearek Health Center)

Different statement was confirmed by another informant:

“At our health center, there is an LPLPO that we took from the medicine warehouse. However, we do not have a pharmacy person in charge, so we have difficulty filling in the LPLPO. Thus, I only record stockout and expired medicines manually.”

(Informant 5, Person in charge of pharmacy at Mapenduma Health Center)

Based on the informants’ statements regarding compilation of medicine use, most medicines were not routinely recorded. Although the LPLPO format was available, the understanding of the pharmacy manager at the health center about the importance of LPLPO for medicine planning for the following year was still lacking. Another factor was that there were no pharmacists at the Public Health Centers which was an obstacle to the implementation of planning of medicine needs.

Besides the medicine record process in LPLPO monthly and annually which should run continuously, it is important to know the flow of the LPLPO report submission mechanism. Reporting the results from the records based on the community needs is important for medicine planning in the following year. Continuous reporting is reported to the regional pharmacy installation of the Health Office to meet the medicine needs of each region appropriately.
Most of the informants described the mechanisms for medicine report from the health center level to meet medicine needs in regency including: counting all medicines, recording stockout medicines, and then compiling medicine list to request stock of medicines at the regional pharmacy warehouse. The aforementioned mechanisms were conditions known by Public Health Center in reporting medicine stocks. However, the informant also stated that medicine report was not routinely carried out due to constraints on access to the regency/Health Office. Moreover, communication between the Public Health Center and the Health Office could not run properly due to bad signals. Coordination in the submission of reports regarding medicine stocks which should be submitted periodically or when medicine stockouts occurred had not been carried out optimally. The difficulty of access and the distance between each Public Health Center was the reason why the LPLPO was not delivered to the regency. In addition, communication technology is also difficult to use due to insufficient network availability. Therefore, the lack of data on medicine needs means that medicine planning at the regency level cannot run optimally.

c. Medicine Need Calculation Stage

Planning of medicine needs requires calculation. Medicine need calculation was carried out using the consumption method and/or the morbidity method. Calculation needs to be conducted in medicine planning because determining each projection of medicine needs is certainly a scientific approach with medicine calculation that is a method considered important in medicine planning.

The following is the statement of one of the informants regarding a medicine need calculation in the work area of Nduga Health Office:

“we only calculate the medicines we want to order. We never calculate them using the formula in the module.”

(Informant 8, Person in charge of Pharmacy at Yigi Health Center)

The interview excerpt above illustrates that medicine need calculation stage in the work area of Nduga Health Office had not been going well as regulated in the guidelines for medical supplies. Medicine need calculation in every Public Health Center was conducted without using any methods. In other words, they did not consistently use calculation such as consumption or morbidity methods.

Analysis in medicine need calculation in the work area of the Health Office was considered to be inadequate. Some Public Health Centers did not even perform analyzes using certain methods. Analysis was not carried out according to the established guidelines. In fact, all Public Health Centers did not conduct in-depth analysis of the planning of medicine needs. The mechanism of medicine need calculation greatly determines the projected medicine need for the coming year and serves as a guideline for planning of medicine needs based on the reported medicine record/LPLPO. Public Health Center then conducts an analysis based on medicine consumption and morbidity that occurs in its area, as well as planning what types of medicines will be held for the following year.
The understanding of the person in charge of pharmacy regarding medicine planning procedures is still lacking. In addition, training for the person in charge of pharmacy regarding medicine logistics is still not sufficient. Therefore, it can be concluded that the obstacles faced are not only the shortage of pharmacists in each Public Health Center but also the lack of knowledge of the person in charge of pharmacy on medicine logistics.

d. Projection of Medicine Need Stage

Projection of medicine need is a medicine need calculation on an ongoing basis by considering data on medicine use and the amount of remaining stock in the current period from various budget sources. Projection of medicine need is considered as a continuous calculation. Thus, the basis of this projection stage is in the form of data on medicine use and stock in health facilities. The data of projection of medicine need is LPLPO data in each Public Health Center both in the previous year and in the current year which can be processed at the regency/city level to be projected periodically for medicine stocks in the coming years.

Projection of medicine need stage in the work area of Nduga Health Office was conveyed by the following informant:

“We donot know how to calculate the projection of medicine need. We also have never received training on this topic.”

(Informant 2, Person in charge of pharmacy at Gearek Health Center)

The projection stage in the work area of Nduga Health Office was not going well because there was still a lack of understanding of the pharmacy officers followed by the absence of regulations for medicine planning at the regency level. The interview excerpt was quite different from the projection of medicine need at the Public Health Center level. This is because the Health Office carried out projection of medicine need using the ABC/VEN method. However, it is again emphasized that an essential obstacle was the unavailability of medicinerecord data from each Public Health Center, making it difficult for the Health Office to make projection of medicine need.

e. Adjustment of Medicine Procurement Planning

Planning and budgeting are integral parts of every action plan that will be carried out including logistical needs such as public medicine needs. Public medicine procurement at the regency level for the supply of the work area of the Public Health Center is under the Health Office, where the budget nomenclature is also in the Health Office budget. Every year, the health office collects data that goes into the medicinewarehouse which is then managed with calculation for projections for the coming year. The Health Office also calculates the budget requirements to be provided for each Public Health Center.

Besides the Health Office which has the authority in planning of medicine needs, Public Health Centers a technical team, to find out community needs, forms a medicine priority scale which is the result of medicine projection/calculation. The statement on determining the priority scale for medicine needs was conveyed by the following informant:
“We do not make medicine priority scale. We usually just go to the medicine warehouse, check what medicines are available, and adjust them to our needs.”
(Informant 8, Person in charge of pharmacy at Yigi Health Center)

f. Evaluation of Planning
Planning is a cycle that occurs to fulfill all dynamic needs. Planning of medicine needs also has its own cycle as an attempt to meet community medicine needs. Planning of medicine needs also has a cycle that the planned medicine is effective by estimating the needs based on consumption and morbidity data.

The following is the statement of informant 2 regarding the evaluation of planning:

“We also never made evaluation of medicine planning”
(Informant 2, Person in charge of pharmacy at Gearek Health Center)

Based on the results of interviews with informants regarding the planning of medicine needs in the work area of Nduga Health Office, it can be concluded that the technicality of planning of medicine needs has not been implemented properly, which is confirmed by the answers of informants at 8 Public Health Centers.
Figure 1: The Analysis of Planning of Medicine Needs in the Work Area of Nduga Health Service
CONCLUSION AND RECOMMENDATION

This study obtains the following conclusions. In the medicine selection stage, it is acknowledged that most of the Public Health Centers in the work area of Nduga Health Office do not carry out medicine selection based on certain types or methods. This is due to the absence of specific rules as guidelines and also the person in charge of pharmacy with a pharmacist background. In the compilation of medicine use stage, it is known that the average health center records outgoing medicines, but rarely does monthly records in the Medicine Use Report and Request (Indonesian: LaporanPemakaianan dan PermintaanObat/LPLPO). The report is not even reported to the Regency Health Office/pharmacy warehouse. Furthermore, in the medicine need calculation stage, it is known that the average Public Health Center performs calculation by only calculating the final stock of medicines. Calculation by other methods has not been carried out. The medicine need calculation can be considered not optimal. Importantly, in the projection of medicine need stage, it is known that the average Public Health Center projects medicines through the highest disease rates in each region. However, the data presentation for the projection of medicine need is not available. Epidemiological understanding of the method of projection of medicine need is not yet known. This is caused by the quality and quantity of pharmaceutical personnel that do not meet the competence. Besides, in terms of adjustment of medicine procurement planning, it is known that it is difficult to make adjustment of medicine procurement planning due to the unavailability of precise data from each Public Health Center. This adjustment only sees data from the closest Public Health Center in the regency and looks at the medicine stock in the warehouse which also refers to the previous year's budget. In addition, in the evaluation of planning of medicine needs stage.

It is known that the evaluation of planning of medicine needs at the Public Health Center level is not carried out since the Public Health Center only receives medicines from the warehouse. However, at the Health Office level, the evaluation of planning of medicine needs is done annually with the pharmacy warehouse in Nduga Regency. Planning of medicine needs in the work area of Nduga Health Office can be maximized by clarifying the regulations in planning of medicine needs through guidelines for planning of medicine needs which are then adjusted to local conditions of Nduga Regency.

REFERENCES:


