Evaluation of Drug Management at the Pharmacy Installation of "X" Regency Health Office Indonesian in 2021

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A B S T R A C T

Improving public health status can be influenced by the drug management process, one of the components of which is the availability of good drugs. This study aimed to find out the overall process description of drug management, which includes the planning, procurement, storage, and distribution stages, as well as to know the evaluation of drug management related to compliance with the indicators of the Ministry of Health of the Republic of Indonesia & JICA 2010. This study used a type of research descriptive data collection with retrospective and concurrent. Data analysis was carried out by explaining the drug management process at the "X" Regency Health Office, measuring the value of each drug management indicator, and then making a problem-solving based on the Hanlon method. The results of the evaluation of drug management at the Pharmacy Installation of the "X" Regency Health Office were the suitability of the available drug items with the Fornas of 54%; percentage of fund allocation procurement drugs by 93%; percentage suitability of drug planning and procurement by 73%; the percentage of drug planning accuracy is 84%; percentage and value of expired drugs by 8% worth Rp. 39,888,756; The accuracy of drug distribution is 94%; drug availability 12-18 months of 94%; and the percentage of drug blanks is 2%. Some indicators are not up to standard, so improvements are made using the Hanlon method.

1. Introduction

Drugs are substances or a combination of substances used to influence or investigate a physiological system or state pathology for the purpose of establishing a diagnosis, prevention, cure, rehabilitation, health promotion, and contraception, including biological products. Medicine is an irreplaceable component of health services. In various health service efforts, medicine is an important element because treatment and prevention of disease cannot be separated from therapeutic measures using drugs or pharmacotherapy. The role of drugs in health services is very important, so drugs need to be managed properly, effectively, and efficiently. According to the Ministry of Health of the Republic of Indonesia No. 74 of 2016 states that drug management includes the stages of planning, procurement, receipt, storage, distribution, destruction and withdrawal, control and administration. Drug management is carried out to meet the needs of health services for people who need them in basic health services.[1-3]

The performance of drug managers must be good and in accordance with the established standard operating procedures because it is very influential in ensuring the availability of drugs in quantity and quality. If the availability of drugs is not fulfilled, there will be a shortage of drugs which will result in sub-optimal health services. Limited human resources (HR) is an obstacle in drug management because the calculation of drug needs, recording and reporting of drug logistics is done manually and the use of data for

drug planning, selection of drug types and calculation of drug needs are not fully in accordance with the guidelines. Drug planning is not carried out optimally, causing expired drugs and empty drug stocks so that they are not as expected, so it is necessary to monitor and evaluate drug availability. If drug management is not well executed, then the availability of medicine in the health care unit will not fulfilled as expected, such as drug shortages drug stock shortages, or excess drug stock available leads to delays in drug service to patients and the occurrence of accumulation of drugs that can cause expired medicine.[4-6]

The problem is often seen In Pharmaceutical Installations, as in the aspects of drug planning and procurement, there is a discrepancy between annual drug planning and purchasing, fluctuations in the use of drugs, and government policies that make changes, this results in a large number of costs being absorbed for drug procurement. In addition, inefficient drug management causes the level of drug availability to decrease, drug vacancies occur, many drugs to accumulate due to inappropriate drug planning, and many drugs expire, so this will have an impact on inefficiency in the use of drug budgets/costs.[7-9] This study aimed to find out the description of drug management at the "X" Regency Health Office in 2021 and compliance with the indicators of the Ministry of Health of the Republic of Indonesia & JICA 2010 and make improvements using the Hanlon method.

2. Methods

This research is a type of descriptive research with an observational plan that was carried out at the Pharmacy Installation of the "X" Regency Health Office by means of data collection, retrospective and concurrent. Data retrospective is secondary data obtained by searching documents in 2021 related to drug needs plan (RKO) data, usage reports and drug request sheets (LPLPO) record data, Fornas drug lists, drug planning data, drug procurement budget reports, drug procurement planning and realization data, storage data in the form of stock cards, lists of expired drugs and list of drug vacancies in 2021. Data

concurrent is data primer obtained during the interview. The data obtained from the 2021 documents were compared with the results of the interviews, after which they were analyzed based on indicator standards according to the Ministry of Health of the Republic of Indonesia & JICA (2010) and then improvements were made using the Hanlon method. Management improvement begins with identifying drug management problems and solutions which consist of selection, planning, procurement, storage, distribution, and use. Then, a score (weight) is given to a series of criteria A, B, C, and D (PEARL). After a series of criteria have been successfully filled, the value is calculated as basic priority rating (BPR) and overall priority rating (OPR) with the following formula: BPR (basic priority rating) = (A + B) C/3 OPR (overall priority rating) = [(A + B) C/3] x D. Score with grades overall priority rating (OPR) highest is the first priority to deal with problems. The assessment is carried out for A (problem magnitude), B (problem severity), and C (ease of problem). Giving points from a value of 0-10 is carried out by in-depth interviews with the head of the Head of the Pharmacy Installation at the Health Service to determine a value of 0-10 after an analysis of selection, procurement, distribution, and use is carried out. A score of 0-10 was determined by the researcher based on the results of interviews and in-depth discussions with the Head of the Health Service Pharmacy Installation and obtaining approval for the number to be given for each problem that occurred.

3. Results and Discussion
Compatibility of available drug items with the national formulary (FORNAS).

This indicator aims to determine the level of drug use according to the National Formulary in the Pharmacy Installation of the "X" Regency Health Office. Medicines available at the Pharmacy Installation are compared with the National Formulary. The evaluation value with the suitability indicator of the available drug items with Fornas shows a result of 54%, while according to the indicator, the Ministry of Health of the Republic of

Indonesia & JICA (2010) states that the ideal number of these indicators is 100%. The results of this calculation can be concluded that drug planning on indicators of conformity of drug items with Fornas is not in accordance with the standard. Based on the results of the interviews, the cause of the low conformity of the drug items with the Fornas was that in the planning, several types of drugs needed were not included in the National Formulary but were needed and often prescribed by doctors. The COVID-19 pandemic situation has also affected the suitability of available drug items with Fornas. Many drugs were not listed in the Fornas, but procurement was still being carried out because the drugs were important. This caused the percentage of drug conformity with the Fornas not to be appropriate in the Pharmacy Installation of the "X" Regency Health Office.[10]

Percentage of drug procurement fund allocation

The percentage of allocation of procurement funds in the Health Pharmacy Installation of "X" Regency is used to measure the extent of the allocation of funds available for the drug procurement process in the Pharmacy Installation. The percentage value of fund allocation shows that the available budget for drug procurement is 93% of the total budget for Pharmacy Installations. Percentage value shows that the percentage requirement for the allocation of procurement funds has not met the existing standards, according to the Ministry of Health of the Republic of Indonesia & JICA (2010), by 10%. Based on the results of interviews conducted at "X" Regency Health Office Pharmacy Installation, the discrepancy in the allocation of funds obtained is due to the fact that the budget used is adjusted to the budget obtained from the Government. In addition, during the pandemic, several budget cuts were made, which also had an impact on the allocation of funds. The discrepancy in the budget is also due to the fact that the price used in the preparation of the drug needs plan (RKO) is a temporary estimated price because there is no definite price for each drug item. For example, in the realization of the budget, there is a change in the price of drug items where the Pharmacy Installation must recalculate the need to adjust it to the budget received. Furthermore, commitment making officials (PPK) will purchase drugs.[11]

Percentage of compliant planning with drug procurement

Indicators of compatibility between planning and drug procurement aim to determine the accuracy of drug planning and procurement in the Pharmacy Installation of the "X" Regency Health Office. The percentage value of conformity of planning funds with procurement shows a result of 73%. The total procurement funds in question are real funds for the procurement of medicines. Percentage value This shows that the need for a percentage of accuracy planning and procurement does not meet existing standards, according to the Ministry of Health of the Republic of Indonesia & JICA (2010), by 100%. Inaccuracies in planning and procurement that occur are caused by several things, including limited budgets available, patterns of prescription writing, availability of program drugs from the province, ineffective communication between doctors and drug administrators at the Health Center, as well as changes in disease patterns and refocusing budget due to the COVID-19 pandemic.[12]

Percentage of accuracy in medication planning

Accuracy of planning to determine the accuracy of drug planning estimates in the Pharmacy Installation of the "X". Regency Health Office. Based on the calculation results, the percentage value for the accuracy of drug planning at the "X" Regency Health Office Pharmacy Installation in 2021 is 84%. According to the Ministry of Health of the Republic of Indonesia & JICA (2010), The ideal number for this indicator is 100%. The calculation results show that drug planning on the planning accuracy indicator does not meet the standard. The inaccuracies of drug planning at the Pharmacy Installation of the "X" Regency Health Office are caused by the planning that is carried out also taking into account the existing

needs in society according to the pattern of disease, pattern prescription drugs, and consumption patterns. After that, the Pharmacy Installation will recap by looking at the stock in the Pharmacy Installation, the average use of drugs per month, and expiration times. In this case, the obstacle is that several Health Centers do not have pharmacists as drug management staff, so they are less effective in drug planning.[13]

Percentage and value of expired drugs

This indicator is used to determine the magnitude of the loss at the Pharmacy Installation due to the large number of expired drugs. The percentage value in calculating the percentage indicator and the value of expired drugs at the Pharmacy Installation of the "X" Regency Health Office in 2021 is 8%. The results of the calculation obtained 32 expired drug items from the 374 total types of drugs available so that the percentage of the evaluation value of drug storage on the expired drug percentage indicator was 8%. According to the Ministry of Health of the Republic of Indonesia & JICA (2010), the ideal value for expired drugs is 0%. This shows inappropriate planning and lack of observation in the storage and distribution of drugs that are lacking so that results exceed standard limits. There are several factors that cause expired drugs. The first factor is that several drugs received at the Pharmacy Installation are approaching their period expiration. Some medicines are subject to an agreement when the medicine has expired; it can be exchanged, but some medicines cannot be changed and returned. This causes accumulation, which causes the drug to expire. One example is folic acid 1 mg, cotrimoxazole DOEN I, MDT PB adult, anti-tuberculosis drugs, and several other drugs. The second factor was due to the fact that there were several non-prescribed drugs and the Health Center did not run several programs during the COVID-19 pandemic, which resulted in several programs not working and program drugs having expired, as an example of the malaria program, there was Artesunate injection 60 mg and several other program drugs.[14]

Accuracy of drug distribution

This indicator is used to evaluate the conformity between the drug distribution plan from the Pharmacy Installation of the Regency Health Office "X" and the actual distribution carried out entirely by the Pharmacy Installation of the Regency Health Office "X". The percentage value for calculating the indicator for the accuracy of drug distribution at the Pharmacy Installation of the "X" Regency Health Office in 2021 is 83%, with the standard value from the Ministry of Health of the Republic of Indonesia & JICA (2010) being 100%. The discrepancy in drug distribution has resulted in some Health Centers not being served as requested. The reason for not being able to serve the request is because it considers the amount of drug stock available, the number of COVID-19 patients who have occurred in health facilities, and the degree of severity of a disease in an area.[15]

Drug availability level

This indicator is used to find out whether the adequacy drugs in the Pharmacy Installation of the "X" Regency Health Office are sustainable for community services. The percentage value in calculating the drug availability indicator at the Pharmacy Installation of the "X" Regency Health Office in 2021 shows the results of the 12-18-month drug availability level of 94%, which means it is still in the safe category. Based on the standard Ministry of Health RI & JICA (2010), if the calculated value of drug availability is <12 months, then the availability value is included in the less category, and if the drug availability value is > 18 months, it is included in the excess category (overstock). Based on interviews, the factors that influence the results of the level of availability of drugs, namely the number of drugs in a year, the average use of drugs per month, and drug waiting time. From these factors, it can be seen that the stock of drugs in a year is in the safe category. However, if there is a shortage of some medicines or if the medicines needed by the Health Centers are not available at the Pharmacy Installation to cover the shortage of medicines, the Health Center will procure them using capitation

funds but based on the approval of the head of the Pharmacy Installation and the Head of Service. Medication planning is usually done for 18 months, and the procurement time until the drugs arrive at the Pharmacy Installation of the "X" Regency Health Office is approximately 6 months. The process of receiving and inspecting incoming goods is carried out by the goods receiving committee, whose job is to match the names and quantities of drugs, no batch, expiration time, manufacturer, and distribution permit number. After being appropriate, a minute of examination of the drug is made and submitted to the Pharmaceutical Agency along with the documents.[14,15]

Drug empty percentage

The purpose of this indicator is to assess the level of drugs that are experiencing empty stock. The percentage value in calculating the percentage indicator for drug emptiness in the Pharmacy Installation of the "X" Regency Health Office in 2021 is 2%, so it can be concluded that the percentage indicator for drug emptiness does not meet the standards according to the Ministry of Health RI & JICA (2010) of 0%. The percentage of drug shortages occurred due to changes in disease patterns during the COVID-19 pandemic, which caused drug planning to focus on COVID-19 therapy so that several drug stocks were empty. Based on the results of the interviews conducted, there were several factors that influenced the percentage of drug vacancies, namely fewer drugs than planned, changes in disease patterns, and inaccuracies in drug planning. Some of the drugs that are experiencing a vacancy are Amlodipine, Griseofulvin, and several other drugs. agreement head of the Pharmaceutical Installation Signed by the Head of Service using the capitation fund in the Puskesmas.[16]

Framework for proposed improvements with the Hanlon method

Based on observations and in-depth interviews conducted by researchers with several informants on the drug management process at the Pharmacy Installation of the "X" Regency Health Office, several urgent drug management problems were found to support services in the community. Therefore, the researchers proposed several efforts to improve management in the Pharmacy Installation of the "X" Regency Health Office. The proposed framework for efforts to improve drug management was prepared based on the identification of problems and improvements that can be made by the Health Service management to overcome these problems. This can be seen in Table 1. In order to get good results, there needs to be priority problems, so the Hanlon method is weighted (Table I).

From the Hanlon method, priority scales are obtained that can be implemented to overcome problems at each stage of drug management in the Pharmacy Installation of the Regency Health Office "X" as follows: Indicators of conformity of drug items available with Fornas, need to be socialized and evaluated between Pharmacy Installations, doctors and drug administrators at the Health Center. Indicators Conformity of planning funds with drug procurement funds, selecting, selecting, and setting priorities for the drugs needed, and implementing procurement using ABC VEN to optimize drug procurement. The indicator for the accuracy of drug planning is by adding Human Resources, and in planning, it is necessary to select the top 10 diseases. Indicators of the percentage and value of expired drugs, carrying out stock taking every six months, implementing a FIFO storage and distribution system (first in first out) and FEFO (first expired first out). Indicators of the accuracy of drug distribution, making SOPs related to drug delivery to each health center, and calculating drug delivery time. Medication empty percentage indicator, carry out routine coordination with suppliers/ distributors and provide a grace period, and indicators of the percentage of drug procurement funds allocation need to rearrange the budget that has been provided to adjust the budget obtained with medicinal needs.[17]

Table 1. Drug management problems and improvements at the Pharmacy Installation of "X" Regency Health Office with the Hanlon method.

Indicator	Problem	Repair
Percentage of conformity of the number of drug items available with Fornas	Prescriptions made by doctors at the Health Center sometimes use drugs that are not included in the Fornas	Desocialization and joint evaluation between the Health Service Pharmacy Installation, doctors, and drug administrators at the Health Center.
Percentage of drug procurement fund allocation	Changes in budget allocations as a result of the COVID-19 pandemic	Need to rearrange the budget that has been prepared to adjust the budget obtained with drug needs and implement procurement using ABC VEN to optimize drug procurement.
Compatibility of planning funds with procurement data	The large demand for medicines is not supported by the budget because there is a large budget scaled down by the government due to the allocation of funds for the handling of COVID-19	Conduct selection, selection, and setting priorities for the drugs needed.
Percentage of drug planning accuracy	HR shortages and disease prevalence patterns are always changing	Adding SDMK and Using the top 10 diseases in the planning process
Percentage and value of expired drugs	Medicines received have a period expired short of one	Conduct stock-taking every six months, implement FEFO and FIFO storage and distribution systems
Drug distribution accuracy	Distribution delays	Make SOPs related to drug delivery to each health center and calculate the time for drug delivery.
Drug empty percentage	There is often a delay in the arrival of the drug, which triggers a drug vacancy	Coordinate regularly with suppliers/distributors and provide a grace period.

4. Conclusion

Description of drug management in the Pharmacy Installation of the "X" Regency Health Office, at stage planning the need to use the system bottom-up planning, procurement using the method purchasing based one-catalog and the tender method, storage with the FIFO system (first in first out) and FEFO (first expired first out) and distribution is carried out using a system that is distributed directly to the Health Center s and taken directly from the Health Center to the Pharmacy Installation. The percentage value of each indicator is the suitability of the available drug items with Fornas by 54%; the percentage of fund allocation procurement drugs by 93%; percentage suitability of drug planning and procurement by 73%; the percentage of drug planning accuracy is 84%; the percentage of expired drugs is 8%; The accuracy of drug distribution is 94%; drug availability rate 12-18 months 94%; and The percentage of drug vacancies is 2% which, based on the Ministry of Health of the Republic of Indonesia & JICA 2010 Ministry of Health, does not meet the standards. The improvement strategy using the Hanlon method needs to be socialized and evaluated between the Pharmacy Installation, doctors, and drug managers at the Health Center, selecting and setting priorities for the medicines needed and implementing procurement using ABC VEN to optimize drug procurement, increasing HRK and in planning it is necessary to select the top 10 diseases, carry out stock hospitalization once every six months, implement FEFO and FIFO storage and distribution systems, make SOPs related to drug delivery to each Health Centers and take into account drug delivery times, carry out routine coordination with supplier/ distributor and provide a grace period and need to rearrange the budget that has been provided to adjust budget obtained with medicinal needs.

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