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Analysis of the availability of public drugs on rational drug use in the working area of the Health Office of Karo Regency

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Abstract

The purpose of this study was to determine the input, process and output aspects of drug availability in rational drug use in the Karo District Health Office. This research is an analytical survey research using qualitative research methods through document searches and in-depth interviews with informants with the aim of being able to describe the availability of public medicine and its relation to rational drug use. The informants in this study were the drug administrators at the Karo District Health Office, amounting to 3 people and 2 people from the health center (users of goods). The instruments used in this study were interview data (primary) and data from reports or documents (secondary) which could be used as supporting research data. The results showed that the source of the budget came from APBN, DAK and Capitation funds. There was a decrease in the budget originating from the APBN and DAK for drug procurement in 2018. There are 9 human resources in the pharmacy section in drug management. Drug procurement is carried out by E-Purchasing and direct appointment and distribution is carried out every 2 months. The availability of drugs at the Puskesmas has been well fulfilled, with data on antibiotic prescription for Acute Respiratory Infections (ARI) 72.04%, antibiotics for diarrhea 65.77% and the number of drug items per prescription is 3.93.

Keywords: Drugs Availability, Rational Drug Use, Health Office

Introduction

In health care, drugs play a very important role in achieving patient health, but rational drug use is still the biggest problem in achieving effective and efficient therapy. Rational use of drugs includes the right in terms of indication, the right patient, the right dose, the right drug and the right way and duration of use. However, in reports received by the World Health Organization (WHO) there is still irrational drug use where more than 50% of all drug use is inappropriate in its prescribing, preparation, or sale, while the other 50% is not used properly. by the patient. In addition, about a third of the world's population does not have access to essential medicines. This occurs due to polypharmacy, use of non-essential drugs, inappropriate use of antimicrobials, excessive use of injections, writing recipes that are not in accordance with clinical guidelines (WHO, 2002).

Several studies in Indonesia also still show the irrational use of drugs, such as what happened at a pharmacy in South Jakarta in 2005, showing that the types and amounts of drugs obtained by children under 12 years of age are given polypharmacy (more than 4 drugs) (Sari, 2011). In addition, as many as 253 prescriptions (52.7%) from a total of 488 prescriptions with 45

prescriptions (9.3%) of which there are more than 8 types of drugs per prescription, and 12% of them trigger unwanted drug interactions (Ernie & Hafiz, 2007).

Irrational use of drugs can result in unexpected things, namely decreased quality of therapy which can increase morale and mortality, wasted resources can reduce drug availability and increase medical costs, risk of unwanted effects trigger unwanted reactions and bacterial resistance, and psychosocial impacts that result in patient dependence on unnecessary drugs (Raharni et al, 2018).

One form of guarantee for the availability of drugs and medical supplies is drug planning that refers to the National Formulary (FORNAS) and the National List of Essential Medicines (NLEM) which are established by the government in collaboration with professional organizations and other related parties. The development and application of therapy guidelines that refer to Fornas and NLEM are the basis for rational drug use. The implementation of Fornas and NLEM basically aims to improve the safety, accuracy, and rationality of the use and management of drugs that are cost effective, so that they are more equitable and improve the quality of health services to the community (Nasution, 2015).

The World Health Organization (WHO) held a conference in Nairobi in 1985 on rational drug use. WHO states that rational drug use is that patients receive appropriate treatment according to clinical indications with doses and timeframes that meet the requirements and at affordable prices. In other words, the elements of rational drug use are the right patient, the right indication, the right drug, the right information, and the right monitoring (Sutopo, 2002).

Karo District with an area of 2,127,000 km2 is the fifteenth largest district in the province of North Sumatra with a population of approximately 389,591 people and has 19 (nineteen) Puskesmas spread across its working areas. Of course this is a big challenge for health workers to ensure the availability of drugs in order to realize rational drug use. At the time of the initial survey, information was obtained that there were complaints from the public regarding health services in Karo District during the JKN era. Many patients complain about not getting enough access to drugs, especially for chronic diseases such as diabetes mellitus, hypertension, heart disease, asthma and others. This problem is of course related to the availability of drugs in health service facilities which can result in irrational drug use.

Methods

The type of research used is analytical survey research using qualitative research methods through document searches and in-depth interviews with informants which aim to describe the availability of public drugs in the Pharmacy Installation and its relation to rational drug use in the working area of the Karo District Health Office. In 2018. The informants in this study were all drug managers in the work area of the Karo District Health Office, while the key informants were 1 Head of the Pharmaceutical Section and 2 staff of pharmaceutical installations and Supporting Informants, as many as 2 people from the Puskesmas as users of goods

Results and Discussion

Informant Characteristics

The main source of data in this study were the results of interviews from 3 informants involved in drug logistics management at the Karo District Health Office and 2 people from the Puskesmas as users of goods as can be seen in Table 4.2 below:

Table 1. Informant Characteristics

No	Position	Education	Age (Year)	Years of Service	Sex
1	Head of the Pharmaceutical Section	Pharmacist	40	13	Male
2	Pharmacy Installation Staff	S1 Pharmacy	34	9	Female
3	Pharmacy Installation Staff	D3 Pharmacy	35	9	Male
4	Pharmacy staff at Tiga Tiganderket Health Center	D3 Pharmacy	27	1	Female
5	Puskesmas Payung pharmacy staff	S1 Pharmacy	25	1	Female

Based on the level of education, there is 1 pharmacist as the Head of the Pharmacy Section of the Karo District Health Office, 2 people who are undergraduate in pharmacy, and 2 people are D3 Pharmacy. The two health centers that were sampled in this study did not yet have a pharmacist as the person in charge of pharmaceutical services at the health center.

Input

Input is a component that provides input for the functioning of a system such as health services on several aspects that are categorized as input in the analysis of drug logistics management, namely: human resources and budget sources.

Human Resources

Based on the results of research at the Karo District Health Office with in-depth interviews with the Head of the Pharmacy Section, the following results were obtained regarding the human resources of the pharmaceutical installation.

> *"6 civil servants and 3 non civil servants, only I am a pharmacist, while there are 3 TTK people, all of whom are civil servants. This number is still lacking. Still not optimal. (Informant 1)*

Based on the duties and authority of human resources for drug requests to the Pharmacy Installation of the Karo District Health Office, each human resource has their respective duties and authorities and in carrying out their duties there are often obstacles in their implementation. This is supported by the informant's statement as follows.

> *"Actually there is not, but sometimes there are several jobs that must be done at the same time so that it is overwhelming to do it." (Informant 2).*

> *"Sometimes there is some work that needs to be done quickly and the staff is limited." (Informant 3)*

Based on the informant's statement above, it can be concluded that the number of available human resources is still insufficient to manage drugs.

Human Resources Training

The results of the interview related to human resource training in drug management at the health office were as follows:

"Have attended a drug management training". (Informant 2).

"I had training in the management of drugs and medical consumables". (Informant 3).

Based on the above quotation, information can be obtained that the drug manager at the Karo District Health Office has received training in drug management. The types of training attended by the two informants were quite diverse, but in general they were related to the management of drugs and medical consumables (BMHP). The trainings attended by the two pharmacy installation staff are very important so that they can carry out the drug logistics management process at the Karo District Health Office properly.

Budget sources

The results of the research on the source of the budget at the Karo District Health Office for the drug management process in the pharmaceutical installation were stated by the head of the pharmacy section and the head of the pharmaceutical installation. The following is a quote from the informant:

"The source of funds comes from the Special Allocation Fund (DAK) for the sub-sector of pharmaceutical services and capitation funds. (Informant 1)

Based on the informant's statement above, information was obtained that the budget sources at the Karo District Health Office for the drug management process came from DAK, capitation and APBN funds as can be seen in table 2. below:

Table 2. Drug Procurement Budget at the Karo District Pharmacy Installation

Source of Budget	**Year**		
	2017	**2018**	
APBD (Rp)	0	0	
DAK (Rp)	5.548.711.178	3.246.970.566	
APBN (Rp)	700.000.000	650.000.000	
Kapitasi JKN	50.000.000	76.000.000	
Total (Rp)	**6.298.711.178**	**3.972.970.566**	

The table above shows that there was a decrease in the budget for drug procurement at the Pharmacy Installation of the Karo District Health Office in 2018, the decrease occurred around 25% from 2017. The increase in budget only came from the capitation of the National Health Insurance (JKN), for other budget sources all decreased. .

Process

Drug Planning

The drug planning activities carried out at the Karo District Health Office Pharmacy Installation started from determining the type and amount of drugs needed, as follows:

"Planning drugs every year as accurately as possible, meaning by paying attention to the

combination of methods of consumption and methods of morbidity. If before the drug period runs out, then take the stock buffer medicine to the province. " (Informant 1)

Drug Procurement

The results of the interview from the Head of the Pharmaceutical Section regarding drug procurement obtained information that the drug procurement system is through an e-catalog. This is a quote from the answer from the Head of the Pharmaceutical Section:

"Procurement is done by means of E-Catalog and direct appointment". (Informant 1)

The conclusion that can be drawn from the informant's statement above is that the procurement of drugs carried out at the health office uses an e-catalog and direct appointment.

Drug Storage

The results of research on drug storage, obtained information from the staff of the pharmaceutical installation of the Health Office that there were a number of obstacles found in drug storage. The following is a quote from the informant:

"I am responsible for making reports on the availability of drugs and vaccines, reports on rational drug use and several other reports as well as several other jobs, the principles of FEFO and FIFO storage, I am assigned to record and type SBBK and sometimes also lift drugs, all drugs have a pallet. welding / shelf in storage in addition to the existing advice and infrastructure. " (informant 2)

"I am the committee for receiving goods at the District Health Office. Karo and is also involved in the preparation of drug needs plans, FIFO and FEFO drug storage principles, shelves and other supporting facilities and infrastructure in order to ensure the quality of drug preparations. " (Informant 3)

From the above statement it can be concluded that the medicine storage is good enough and there are no problems related to the facilities and infrastructure. Furthermore, the researcher also tries to find information related to the constraints during the storage process, the following are the results of the interview:

"I am not strong, physically I am not strong enough to lift heavy boxes". (Informant 2).

"Nothing" (informant 3)

Drug distribution

The results of the informant interview from the Head of the Pharmaceutical Section regarding the distribution of drugs to the Puskesmas were carried out in accordance with the demand for these needs. The following is a quote from the informant's answer:

"Taking into account the number requested by the Puskesmas then it is adjusted to the remaining stock in the Puskesmas and the availability of drugs in the Pharmacy Installation." (Informant 1)

Drug distribution to puskesmas is carried out directly by the pharmacy installation staff according to the following interview results:

"Every now and then I participate in distributing drugs to the puskesmas while at the time of distribution." (Informant 2)

"I am assigned regularly as a drug delivery team to the puskesmas, now I have a pallet. (Informant 3)

From the above statements, it can be concluded that the distribution of medicines to districts / cities is carried out routinely by the Karo District Health Office.

Output

Availability of Drugs Needed by the Regency / City Health Office

The results of interviews and observations by researchers with the Puskesmas obtained information that the availability of drugs at the Pharmacy Installation of the Karo Regency Health Office was appropriate. The statement quoted from the Puskesmas is as follows:

"Yes, it has been fulfilled, but also never because of the void in drugs in the pharmaceutical installation". (Informant 4)

"Yes, always fulfilled, if something is not fulfilled it can still be followed up next week or sent from the pharmacy to the puskesmas. There are some that are suitable, some are not because after being analyzed, some are not in accordance with the availability of drugs based on reports from districts / cities and the remaining stocks in the province. "(Informant 2)

The results of the interview indicated that the availability of public medicines at the Puskesmas was very good, where in general all the drug needs of patients at the Puskesmas had been fulfilled.

Rational drug use (Outcome)

One of the important factors for rational drug use is that patients get the drugs they need in treatment, therefore the availability of drugs at the Puskesmas must be fulfilled in order to serve the community optimally. Following are the results of interviews with Puskesmas staff:

"yes". (Informant 4)

"If it is said that all medicines are fulfilled, not yet, there are still medicinal items that are sometimes lacking even though this rarely happens." (Informant 5)

In addition to interview data related to the availability of public drugs, prescribing patterns can also be an indicator of Rational Drug Use (POR). The prescription pattern at Puskesmas in the Karo District Health Office can be seen in Table 3. Below:

Table 3. Data for Prescribing Puskesma (Community Health Center)s Prescription in Karo Regency

No.	Name of Community Health Center	Use of Antibiotics in ARI (%)	Use of antibiotics in diarrhea (%)	Average number of items / recipes
1	Mardinding	92	60,33	5
2	Lau Baleng	72	78,33	3,57
3	Tigabinanga	66,67	100	3,77
4	Juhar	65	60	4,5
5	Munte	15,05	16,87	4,16

6	Kuta Buluh	82,67	86	3,67
7	Payung	44,67	2,77	3,83
8	Tiganderket	34,63	14,73	3,97
9	Simpang Empat	85,33	67,19	3,17
10	Naman Teran	62,67	72	2,49
11	Merdeka	92,67	89	4,07
12	Kabanjahe	93,59	89,4	3,73
13	Berastagi	74,24	65,42	4,14
14	Korpri	80,33	81,67	4
15	Tigapanah	90	97,33	4
16	Singa	85	69,57	5,43
17	Dolat Rayat	57,67	76,67	4,67
18	Merek	90,27	51,51	2,67
19	Barus Jahe	84	71	4
	Average	**72,04**	**65,77**	**3,93**

Based on the table above, it can be seen that during 2018 as many as 72.04% of patients with non-Pneumonia ARI received antibiotic therapy, 65.77% of patients with non-specific diarrhea received antibiotic therapy and on average there were 3.93 drug items in each. prescriptions obtained by patients who receive health services at the Puskesmas in the Karo District Health Office.

There are 9 human resources in the pharmacy section in drug management at the Karo Regency Pharmacy Installation, with details of 1 pharmacist, 3 TTK and the remaining 5 non-pharmaceuticals. This amount is very insufficient, especially the human resources to manage drugs and Medical Consumables (BMHP).

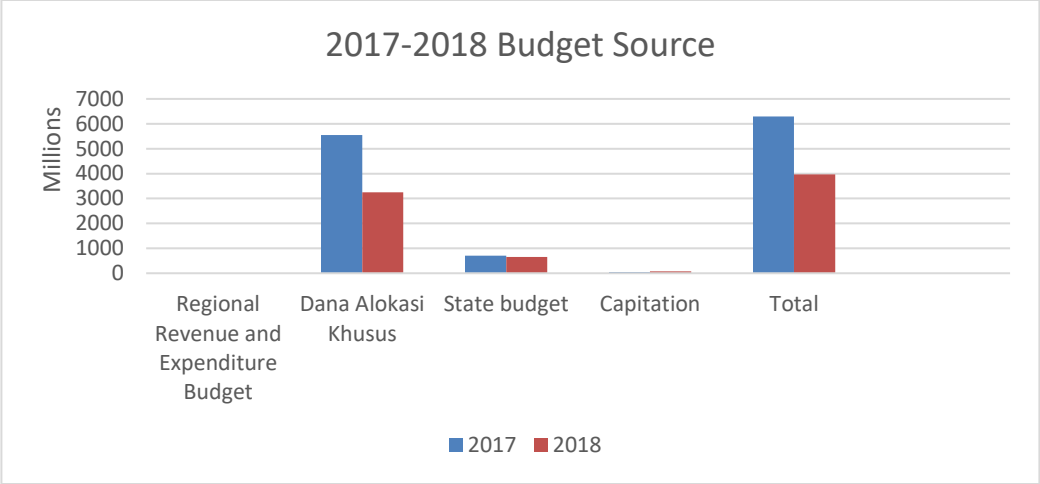
There are only 1 pharmacist in the Pharmacy Section which is very lacking, this is very disturbing the performance of pharmacists in managing drugs and BMHP so it is very necessary to increase the number of pharmacists. An adequate number of pharmacists can improve the quality of drug management services because pharmacists can run with more focus and leverage.

Training as an activity in human resource development needs to be done to get quality drug management personnel. With the increase in the quality of drug management personnel, it is hoped that the availability of drugs of good quality, evenly distributed, types and quantities according to needs in order to realize rational drug use for the community can be achieved (Kardela, 2014).

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

Interviews that have been conducted by researchers show that the source of the budget obtained by the Karo district health office comes from the DAK, APBN (drug program) and capitation funds.

Based on data from the 2017 and 2018 budget sources, it can be seen that there was a significant decrease in the amount of the budget in 2018 as shown in the curve below:



The decline in the 2018 budget of 37% was a potential factor for the decrease in the number of procurement of drugs and BMHP needed at the Karo District Health Office. The largest amount of reduction in the budget came from DAK funds, but to overcome this, anticipation has been tried by increasing the source of funds from the JKN capitation by 52% even though the funds sourced from capitation are not too large. Planning for drug needs is the main activity before carrying out all drug management processes. Drug planning activities carried out at the Pharmacy Installation of the Karo District Health Office are carried out by selecting the type of drug, determining the type of drug, and calculating the estimated drug needs.

Drug procurement in pharmaceutical installations is by means of E-Catalog and Direct Appointment (PL) using the DAK and Capitation budget. The Health Office can also request drugs to the Health Office of the North Sumatra Province. If there is a drug vacuum before the time, a buffer drug request is made to the province. Drug procurement by direct appointment is carried out if the procurement is below Rp. 200,000,000.00 or if the purchase by E-Purchasing fails. Procurement procedure in direct appointment is by means of several interested companies to bid / price for the drugs needed then the Health Office will choose the lowest price.

The drug storage process is a step that must be carried out after the procurement process. According to Permenkes RI No. 73 of 2016 concerning standards for pharmaceutical services at Puskesmas, states that drugs must be stored in the original container from the factory and in case of an exception or emergency where the contents are transferred to another container, contamination must be prevented and clear information must be written on the new container. The container contains at least the name of the drug, batch number and expiration date. In storage there must also be made card stock. All drugs must be stored in suitable conditions so that their safety and stability are possible. The drug storage area is not used for storing other items that cause contamination. In the case that the drug storage system is carried out by taking into account the dosage form, arranged alphabetically as well as drug dispensing using the FEFO (First Expired First Out) and FIFO (First In First Out) systems (Asyikin, 2018).

The results of the interview indicated that the storage of drugs at the Karo District Health Office had been implemented properly and in accordance with the established SOP. The problem that occurs related to storage is that the recording of the warehouse room temperature has not been routinely carried out, even though the drug warehouse is in an area with always cool weather, controlling the room temperature must still be carried out to ensure the quality of pharmaceutical

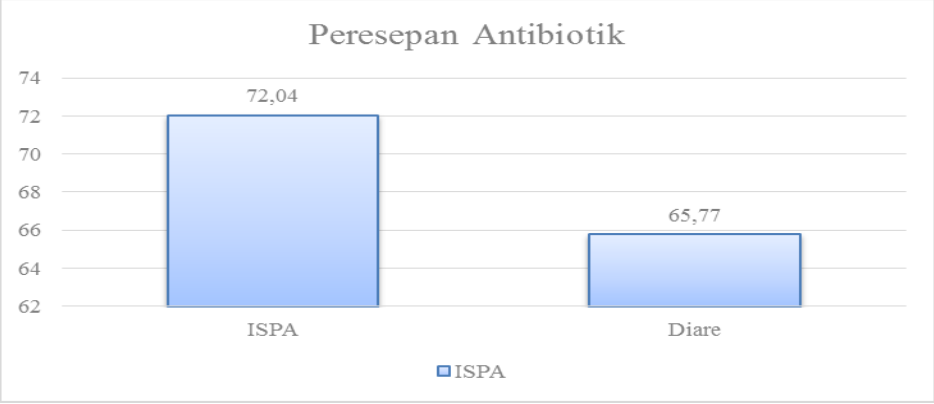
preparations is in good condition. Drug distribution is a series of activities in the context of releasing drugs and sending quality drugs from pharmaceutical installations in order to fulfill orders or requests for health service units with the aim of evenly and regularly distributing drugs and obtaining them when needed, ensuring quality and validity of drugs. and accuracy, rationality and efficiency of drug use (Siregar, 2018).

Based on the results of interviews at the pharmacy installation, it shows that distribution at the Karo District Health Office is based on requests from each Puskesmas in the Karo Regency area. Distribution is carried out regularly every two months by the pharmacy installation staff.

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

Based on the results of interviews with the Puskesmas, it shows that the availability of drugs is generally very good, this is indicated by the fulfillment of all the drug needs needed in each Puskesmas. Even though there is a medicine vacuum this is very rare and can be anticipated by making a direct request to the North Sumatra Provincial Health Office so that a week later it can be fulfilled again

Rational use of drugs is the use of drugs tailored to the clinical needs of the patient, both in sufficient quantity and time, accompanied by the lowest cost. The use of drugs is said to be rational if the patient receives treatment according to his clinical needs, in appropriate doses, in an adequate period of time and at a cost that is affordable to the community. The availability of drugs at the Puskesmas can be categorized as good where most of the patient's drug needs have been met, although a small portion is still not fulfilled but can be overcome by requesting drugs back to the North Sumatra Provincial Health Office so that a week later the patient gets the medicine he needs. Prescription pattern indicators relate to several things, including: the average number of drug items prescribed per patient, the percentage of generic drugs prescribed per patient and the percentage of antibiotics prescribed per patient.



The picture above shows that 72.04% of ARI patients have received antibiotic therapy, this is appropriate because in general ARI is caused by a bacterial infection, although there are non-pneumonia types of ARI that are not caused by bacteria. Treatment of diarrhea 65.77% is done by giving antibiotics, this is also appropriate because not all diarrhea can be given antibiotics, because in addition to being caused by bacteria, diarrhea can also be caused by food poisoning, malnutrition

and other things that are not related to bacteria. The treatment of these two diseases cannot be treated 100% with antibiotics, medical personnel must consider several things such as the duration of the disease and the cause of the disease. Inappropriate use of antibiotics can lead to antibiotic resistance which can harm patients.

Conclusion

Input aspects (human resources, budget and training) on drug availability for rational drug use have been running quite well. Process aspects (planning, procurement, storage and distribution) of drug availability for rational drug use have gone quite well. The output aspect (drug availability) on rational drug use is good, although there are a few obstacles, it can still be resolved.

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