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## Implementation of Procurement of Medicines with E-Purchasing Method in Pharmaceutical Installations of the Puncak Jaya Regency Health Department, Year 2015-2020

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### Abstract

**Background:** Drugs procurement aims to ensure drugs availability in terms of quantity, time, affordable prices and quality standards. Procurement is carried out using the E-Purchasing method. The implementation of E-Purchasing on drug acceptance rates in Health Department of Puncak Jaya Regency is still low. **Objective:** This study aims to assess human resources, budget, regulations, facilities and infrastructure, planning for drugs needs, ordering drugs, contractual agreements, delivery or distribution, and the level of drugs availability after the implementation of drugs procurement using the E-Purchasing method in Health Department of Puncak Jaya Regency. **Methods:** This research was conducted at the Installation of Pharmacy, Department of Health of the Puncak Jaya Regency from October 2020 to January 2021. The method used was a qualitative case study by interviewing seven informants as respondents. The determination of informants was carried out by purposive sampling. Data were analyzed using interactive analysis through data collection, data reduction, data presentation, and drawing the conclusions.

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**Results:** The results of this study indicate that the human resources in terms of numbers are not sufficient, the budget is sufficient but there are still remaining funds, the E-Purchasing procurement regulations have been understood and implemented, the facilities and infrastructure regarding the internet network are not stable. Planning for drugs needs uses the consumption method and does not have an Integrated Drugs Planning Team, drugs orders take a long time to be responded by the providers, drugs distribution takes a long time from the provider and the expired date of the drugs are not according to the contract. Drugs availability is not in accordance with the indicators set by The Dirjen Bina Farmalkes.

**Keywords:** Implementation; drugs; procurement; e-catalog; e-purchasing.

## **1. Introduction**

The availability of drugs is one of the pillars of the health sector reform that has been and is being launched by the Indonesian government since 2010-2014. Since the implementation of regional autonomy, one of the changes that has occurred is decentralization in the organizational structure and regulations for drug management starting from planning, selection, procurement, storage, distribution and drug services directly handed over to district / city governments, including Puncak Jaya Regency. This decentralization is expected to change the bureaucracy of drug management, which has been full of rigidity. Flexible drug management can ensure the availability, equity, quality and affordability of drugs, especially essential drugs at basic health facilities. The availability of drugs greatly determines the effectiveness of treatment at government health facilities [1]. WHO recommends that government efforts to provide drug access must pay attention to four crucial factors, namely: financial support, affordable prices, rational drug selection and use, and a reliable drug procurement system. Based on the circular letter of the Minister of Health of the Republic of Indonesia No. 167 of 2014, government drug procurement must be carried out based on the principles of good and clean government administration, the principles of fairness, transparency, professionalism, and accountability so that an electronic drug catalog (E-Catalog) contains a list of prices, specifications and drug providers [2]. Based on this circular, drug procurement in districts must be based on e-catalogs with the aim of ensuring the availability and distribution of safe, quality and efficacious drugs to meet health service needs [3]. Medicines are an important component whose availability affects the success of implementing health efforts. Since the era of regional autonomy, the obligation to provide and manage public medicines for regencies / municipalities is the responsibility of the regional government. District / city health offices are local government work units in the health sector, which one of the tasks and authorities is to provide and manage public medicines for district / city areas. Drug procurement is one of the elements in the drug management cycle which aims to ensure the availability of drugs of standard quality, in the right amount, and at minimum cost. The availability of drugs in the health sector is something that must be provided in improving the quality of health. The Puncak Jaya Regency Pharmacy Installation has implemented a drug procurement system regulation with E-Purchasing procedures based on E-Catalog in drug procurement. However, after this regulation was implemented, there was a limited supply of drugs at the Puncak Jaya Regency Pharmacy Installation. This causes delays in drug delivery to Puskesmas [4]. E-Purchasing is an electronic-based procurement method (E-Procurement). E-Procurement is the use of information technology systems to automate the drug procurement process. The e-procurement system for drugs based on the e-catalog is a new drug procurement system in Indonesia that aims to increase

transparency, effectiveness and efficiency of the drug procurement process. Approaching the four years of drug E-purchasing in Indonesia, various studies have been conducted to determine its implementation [4]. E-purchasing of drugs is a procedure for purchasing drugs after the drug E-Catalog system is built [2]. Drug e-catalog is an electronic information system that contains lists, types, technical specifications, and prices of drugs from various drug providers. Provider products and price information displayed through an electronic catalog can be accessed by buyers via the web. In the purchasing process, decisions are made easier. As a new drug procurement system, there are obstacles in the implementation of drug E-purchasing. Obstacles in the application of E-Purchasing drugs based on E-Catalog include (1) Drugs not in the E-Catalog, (2) Orders are not responded to by the provider's pharmaceutical installation, while the need is urgent and cannot be postponed, (3) approved the order, but it was only available a few months later or the delivery time was too long, (4) Refusal of the order by the provider pharmacy because stocks were not available, (5) the provider pharmacy installation was subject to administrative sanctions in the form of temporary suspension of activities, (6) Operational constraints of E- Purchasing, (7) private health facilities cannot procure E-Purchasing, (8) Delayed payments, (9) Distributors do not fulfill the agreement on delivery time, product expiration date and return of goods, (10) Distributors ask for shipping costs, (11) ) There are no pharmaceutical personnel in ordering drugs by the Health Office or Puskesmas [5]. The supply constraints of the provider pharmaceutical installation have resulted in the realization of E-purchasing of drugs not as planned. The most frequent impact on service facilities due to obstacles in the implementation of E-Purchasing of drugs is the absence of drugs for services, and the potential for in-efficiency of drug supply budgets due to inadequate E-Purchasing of drug procurement [4]. The problem of drug management in the Puncak Jaya Regency Pharmacy Installation is currently quite complex. Since the issuance of Minister of Health Regulation no.63 of 2014 concerning the E-Catalog drug procurement system, since 2015, drug procurement in Puncak Jaya Regency has become two procurement systems, namely offline procurement (tender) and online procurement system (E-Catalog). Especially for online procurement, it requires a computerized system and of course good internet support, while the internet network in Puncak Jaya Regency is not supported. This is one of the main obstacles. Another obstacle is the limited number of drug procurement officers who understand how to purchase drugs by E-Catalog. The following is a general description of the realization of drug procurement by E-Catalog from 2015-2020 at the Pharmacy Installation of Puncak Jaya Regency. In 2015 the Puncak Jaya Regency Pharmacy Installation began to purchase drugs by e-catalog but experienced problems with drug distribution from providers. The problem of distribution / delivery of drugs from providers was due to the delay in inputting drug orders by drug procurement officers at the Puncak Jaya Regency Pharmacy Installation, which at that time was constrained by inadequate internet facilities. In 2016 the procurement of drugs by e-catalog at the Puncak Jaya Regency Pharmacy Installation was not carried out because the only drug procurement officer who knew how to order using the E-Catalog system was on leave so that the realization of the E-Catalog drug procurement was nil. Procurement of drugs by E-Catalog in 2017 experienced problems in terms of delivery or distribution of drugs from providers, this is because starting in 2017 the prices listed in e-catalog drug procurement only reached the capital of Papua Province, Jayapura City. The distribution of drugs from the capital city of Papua Province to Puncak Jaya Regency is the responsibility of the local Regency, while the Puncak Jaya Regional Government has not prepared a budget for it. So that new drugs can be sent and arrive at Pucak Jaya the following year, namely in the middle of May 2018. So there is a delay in distribution of about seven months (it should have been in November 2017). In 2018, the E-Catalog

drug procurement system underwent a change where drugs that were not on the E-Catalog list could not be immediately transferred to the offline procurement system. This becomes a problem when there are orders that have been approved by the provider and the contract has been made, but in reality there are several drugs in the contract that the provider cannot fulfill on the grounds that the price in the contract is not suitable due to the increasing dollar value and difficulty in obtaining materials. standard medicine. There are also drug orders that are ready to be contracted but canceled unilaterally by the distributor appointed by the provider. The constraints in 2019 were the same as in 2018 and finally the realization of drug procurement only reached 50 (fifty) percent. The problem with the realization of procurement that does not reach 100% causes the level of drug availability to be disrupted and there is a drug stock out. The impact that occurs if there is an empty medicine will affect health services and rational treatment cannot be achieved [6].

**2. Materials and Methods**

This study uses a qualitative method which aims to obtain more in-depth information about the drug procurement process at the Puncak Jaya District Health Office, by making direct observations, interviews, and document review. This research was conducted in October 2020 to January 2021 at the Pharmacy Installation of the Puncak Jaya Regency Health Office. The informants in this study were determined using the purposive sampling method, which is a sampling technique with special consideration so that the data from the results of the research carried out becomes more representative. The selection of informants is based on the researcher's "assessment" of who deserves to meet the requirements to be sampled. Therefore, certain background knowledge about the informant is in order to really be able to get informants who are in accordance with the requirements or objectives of researchers to obtain accurate data.

**3. Result and Discussion**

**3.1. The Characteristics of Informants**

The following are the characteristics of these informants that can be found in Table 1:

**Table 1:** The characteristics of informants based on position, sex, age, and education

Position	Initial	Sex	Age	Education	Type of informan	Code
Head of Health Department	ET	M	52	S1 Politics, Master of Science	Supporting Informant	Inf 01
Head of Pharmacy Installation	DW	L	42	Pharmacist	Supporting Informant	Inf 02
Pharmacy Staff / Procurement Officer	H	L	34	Bachelor of Public Health	Key Informant	Inf 03
Provider Staff (KFTD)	T	L	32	S1 Accounting	Supporting Informant	Inf 04
Ilu Health Center Pharmacy Staff	N	P	29	Nurse	Supporting Informant	Inf 05
Mulia Health Center Pharmacy Staff	UA	P	26	Pharmacist	Supporting Informant	Inf 06
The inspection committee and the consignee	PT	L	39	Vocational School	HighSupporting Informant	Inf 07

*Source: Primary Data, 2020*

There are 7 (seven) informants in this study who can represent and provide appropriate and adequate information.

### **3.2. Drug Procurement Process at the Puncak Jaya District Health Office**

In drug procurement, there are several things that need to be considered, including the process of drug procurement which consists of human resources, budget, facilities and infrastructure, regulations or procedures, planning for drug needs, contractual agreements, drug ordering and drug delivery or distribution.

#### **3.2.1. Human Resources**

Since the implementation of regional autonomy, the number of districts / cities has increased rapidly. The increase in this number is not always accompanied by the availability of drug administrators with a pharmaceutical education background and who have attended drug management training. The training aims to improve the quality of drug management personnel in terms of planning, procurement, receipt of preparations, recording and reporting, delivery or distribution of drugs. With the increase in the quality of drug and medical supplies managing personnel, it is hoped that the availability, equity, affordability of drugs and medical supplies, as well as quality pharmaceutical services are expected. Based on field observations made, in terms of quality, it is known that the Pharmacy Installation is still lacking because there is only one pharmacist, two pharmacy technical personnel, where only one person is a state civil servant and four people are not pharmacists educational background. This is not in accordance with the Government Regulation of the Republic of Indonesia Number 51 of 2009 concerning pharmacy, which states that the pharmaceutical staff consists of pharmacy scholars, pharmacy intermediates, pharmaceutical analysts, and pharmacy intermediate staff / pharmacist assistant. In terms of training obtained by personnel in the Pharmacy Installation, only two people who attend training annually are a pharmacist and one who is not a pharmacist education background. Based on interviews conducted at PHC Mulia and Ilu, it was stated that pharmaceutical personnel at PHC Mulia has received training on drug management, however PHC Ilu did not receive training yet. Based on field observations, in terms of quantity, it was found that the process of distributing drugs to PHC was carried out by staff who did not have a pharmacist educational background or pharmaceutical technical personnel but were carried out by staff with a vocational high school background. This contradicts the Government Regulation of the Republic of Indonesia Number 51 of 2009 concerning pharmacy that every distribution process must have a pharmacist in charge and assisted by a pharmacist companion or pharmaceutical technical personnel. The problem in pharmacy installations is that drug procurement officers are also staff who help work in the Pharmacy Installation, this can create workloads that affect drug management at the Pharmacy Installation and future drug procurement. Since the procurement of drugs by E-Catalog, drug procurement officers have not received training from relevant agencies on the procedures for ordering and purchasing drugs through E-Purchasing, procurement officers only get information through colleagues from fellow Regency Pharmacy installations from other regions. Based on the explanation above, it can be concluded that the human resources in charge of drug procurement using the E-Purchasing method are still lacking in terms of quantity. In terms of quality, the procurement officers do not

have a pharmacist or pharmacy educational background and only two people attend education and training and drug procurement officers who do not receive training.

### **3.2.2. Funds**

The budget is an important process in supporting the implementation of the drug procurement process at the Pharmacy Installation of the Puncak Jaya Regency Health Service, both procurement by E-Purchasing or by auction and other purchasing methods. The guidelines for drug management made by the Ministry of Health (2010) state that what needs to be provided in drug management is the budget. Based on the results of in-depth interviews with informants, the head of the pharmacy section of the Puncak Jaya Regency Health Office and pharmaceutical staff / procurement officials, it is known that there is sufficient availability to support the drug procurement process using the e-purchasing procedure. Funds for drug procurement come from the Regional Budget or what is commonly known as the Special Allocation Fund. The use of the available budget has not been effective, it can be seen from the remaining funds. Based on the explanation from the interviewed informants, it can be concluded that the budget for the e-purchasing method of drug procurement has a sufficient amount of funds to carry out the purchase of drugs and BMHP, but the ineffective use of the budget causes the remaining funds.

### **3.2.3. Regulations**

The regulations used as guidelines for drug procurement are in the form of Minister of Health Regulation No. 63/2014 on drug procurement based on e-catalogs using the e-purchasing method and Presidential Regulation No. 04 of 2015 as well as technical guidelines for the Pharmacy Installation in 2020. Drug procurement procedures in the Pharmacy Installation of the Puncak Jaya Regency Health Office, namely procedures for drug planning, drug procurement and goods receipt. The procedure is published in the form of a standard operational procedure book issued by the Puncak Jaya District Health Office. Since the issuance of the e-purchasing drug procurement rules in 2013, this rule has not been disseminated and provided guidance from the Government Goods / Services Procurement Policy Agency for health facilities in the Pharmacy Installation of the Puncak Jaya Regency Health Department as users of the e-catalog application. This is based on interviews conducted with two informants, that the procedures and technical guidelines are easy to understand. Based on the results of the interview, it can be concluded that the rules for e-purchasing drug procurement refer to procedures and technical instructions in pharmaceutical installations, Minister of Health Regulation No. 58 regarding e-catalog, also in the Presidential Regulation of the Republic of Indonesia No. 4 of 2015 concerning the procurement of government goods and services.

### **3.2.4. Facilities and Infrastructure**

The existence of complete facilities is one of the factors that must be fulfilled by agencies that serve health service activities, because with the complete facilities used in providing a service, it can be ascertained that services will be provided optimally. The obstacles encountered include an unstable internet network. For sending pharmaceutical reports, staff have to go to the office or look for wifi, especially drug procurement

which must use the Electronic Procurement Service application. Facilities and infrastructure data were obtained through in-depth interviews, observations, and document review. There are several facilities, namely printers, laptops, various kinds of desks. The results of the document review are the same as the results of observations made in the field. However, it is not equipped with infrastructure in the form of a procurement official's room and an internet network. Based on the explanations from several informants, it can be concluded that the Pharmacy Installation of the Puncak Jaya Regency Health Office does not have sufficient facilities and infrastructure to support the process of drug procurement activities by E-Purchasing in the form of a good internet network.

### **3.2.5. Drug Needs Planning**

Minister of Health Regulation No. 58/2014 regulates the planning of needs which aims to determine the amount and period of drug procurement in accordance with the results of the selection activities to ensure the fulfillment of criteria for the right type, on time, right amount and efficiency. Planning is carried out to avoid drug void by using a method that can be accounted for and the basics of planning that have been determined, including consumption methods, epidemiology and a combination of consumption and epidemiological methods and according to the available budget. The planning process for drug needs carried out by the Pharmacy Installation of the Puncak Jaya Regency Health Service is related to the procurement of drugs using the E-Purchasing method which is carried out with a consumption pattern. Drug procurement planning data were obtained through in-depth interviews and document review. The planning process for drug procurement at the Pharmacy Installation of the Puncak Jaya Regency Health Service has several stages, the following are the stages:

- a. The first part of drug planning uses drug data contained in the National Formulary which is downloaded in the E-Monev application of the drug catalog. Then calculate the use of drugs in the last 1 (one) year. Puskesmas are supposed to enter year-end stock opname data, the remaining stock of drugs is in the form of Public Health Center Drug Usage Report and Request Sheet so that drug planning can be carried out for the following year, however, only three of the eight Puskesmas entered year-end data. This is what causes the Pharmacy Installation to only use the remaining stock of opname in the Pharmacy Installation without involving the existing Puskesmas. It is different with planning without forming an Integrated Drug Planning Team for the District.
- b. See the document for the average use of a year and the realization of the current year's revenue and the stock of drugs taken every year. Separating drugs that are in the e-catalog list and those that are not listed in the E-Catalog. Drugs that are not included in the e-catalog are purchased outside the e-catalog. This is based on interviews with two informants, both of whom stated that the buying process was divided into two. Place orders that are made starting in April. This is based on the results of interviews with two informants, both of whom stated that the order was made with the consent of several parties.

The planning process carried out by the Pharmacy Installation did not involve the Puskesmas. This is because for 2015-2019 only one Puskemas entered data on the remaining stock of year-end drug opname from the eight existing Puskesmas. In 2020, only three Puskesmas entered data on the remaining stock of opname from the eight existing Puskesmas, and there was no Integrated Drug Planning Team for the District scale. Based on

information obtained from several informants, it was concluded that the planning process did not involve the Puskesmas, there was no integrated drug planning team, and the planning of needs used the consumption method through the drug format contained in the national formulary, then submitted to the head of the Health Office to determine the type of procurement.

### **3.2.6. Drug Ordering**

The drug procurement process involves the government from central to regional with the private sector. The private sector that has the most influence in the success of this process is the distributor or drug provider. The distributor's ability in the drug procurement process is the spearhead of the implementation of the entire drug procurement process. Cooperation with the distributor starts from submitting orders for drugs prepared by the Pharmaceutical Wholesaler as the distributor. After placing an order, there will be a contractual agreement with the distributor. Ordering drugs using the E-Purchasing procedure is the main procedure established but there are several circumstances that cause procurement officers to make purchases outside of the E-Catalog, namely: 1) Drug items are not available in the E-Purchasing application; 2) Refusal from E-Purchasing drug providers; 3) Long time response from provider; and 4) There is no response from the provider. This is based on interviews conducted with informants, that drug purchases can be made outside of the e-catalog if the officer finds several obstacles. The problem that occurs is if a drug that is in the process of being contracted from a provider through a distributor is not fulfilled, then the drug cannot be fulfilled anymore. Based on the information obtained from the informant, it is known that there are two order methods, namely ordering using E-Purchasing procedures and non-E-Purchasing procedures. The order process using the E-Purchasing procedure is the main method used to purchase drugs at the Pharmacy Installation of the Puncak Jaya Regency Health Service.

### **3.2.7. Contract Agreement Process**

Based on the document review, it is known that the contract agreement is made after the data to be purchased is complete, the Commitment Officer (buyer) downloads the procurement contract format and contracts with the distributor appointed by the provider. Contracts for drug procurement at the Pharmacy Installation of the Puncak Jaya Regency Health Service are often referred to as contracts agreement letters. There is no problem in the contract agreement process between the Puncak Jaya Regency Health Office and the time given from the Health Office to the distributor for 150 (one hundred and fifty) days to fulfill the packages given.

### **3.2.8. Drug Delivery / Distribution**

After ordering the drug and contracting the drug, the distributor (provider) will send the drug to the buyer in accordance with the predetermined agreement. Data for drug delivery or distribution were obtained through in-depth interviews and document review. Based on the results of the document review carried out, it is known that the process of receiving drugs from distributors to the Pharmacy Installation of the Puncak Jaya Regency Health Office has followed the established procedure. When the medicine arrives, the drug will be received by the recipient of the work (the Inspection Committee and Goods Receipt) to check the quantity, physical goods, and batch number according to the previous e-purchasing purchase agreement. It is known that after the medicine



arrives, the inspection team and the recipient of the goods will again check the incoming medicine in terms of quantity, physical goods, period, and batch number so that the drugs sent can be seen whether they are suitable. The explanation above is also supported by the results of in-depth interviews with goods inspection and receipt officers who state that they often receive unreasonable amounts of drugs and delivery times are often late from distributors. There were even certain medicinal items in the contract that were not fulfilled at all, but the distributor did not provide a certificate regarding this matter. The suitability of the types of drugs purchased with the E-Purchasing procedure at the Health Office Pharmacy Installation was appropriate, because based on in-depth interviews, there were no errors in the types of drugs sent from the distributor. The suitability of drug delivery time based on drug E-purchasing is also seen from in-depth interviews and review of documents related to delivery time received by examiners and goods receipt. Based on the in-depth interviews conducted, it was found that the delivery time of the drug from the distributor was not a problem. However, the actual delivery of drugs from the distributor that was received by the inspection team and the receipt of the goods did not reach 100%.

### **3.2.9. Drug Availability**

The output of drug procurement by E-Purchasing can be seen from the availability of drugs in the Pharmacy Installation, in this case the researchers saw the availability of drugs at the Pharmacy Installation of the Puncak Jaya Regency Health Service. Based on the stock-taking report at the Pharmacy Installation of the Puncak Jaya Regency Health Service, it is known that the results obtained for the percentage of indicator drugs with a safe level during 2015, 2017, 2018, 2019 and 2020 obtained unfavorable results, but for 2016 there were good results. This illustrates that the number of indicator drugs available each year can affect the level of drug use. The higher the percentage of indicator drugs with a safe level obtained each year, the safer the availability of drugs in that year, which means that the number of drugs available in that year can meet the need for drugs in that year. In 2015, there was also a percentage of indicator drugs with an unsafe level indicated by a percentage value of less than 100%. This situation only occurred in the indicator drug Amoxicillin with a value of -3%, Dexamethasone tablets with a value of -45%, Diazepam, ORS, Methylergometrine Maleate Injection, and Oxytocin with a value of 0%, Phytomenadione Injection with a value of 49%, Paracetamol tab with a value of 74%. This shows that the availability of drugs cannot be fulfilled, in other words the number of drugs available at the District Pharmacy Installation is smaller than the number of uses. In 2016, there was also a percentage of indicator drugs with unsafe levels, indicated by a percentage value of less than 100%. This situation only occurred for blood-added tablets, indicating that availability could be fulfilled, in other words the amount of drug availability in the Regency Pharmacy Installation was greater than the total usage. In 2017, there was also a percentage of indicator drugs with an unsafe level indicated by a percentage value of less than 100%. This situation only occurred in Albendazole indicator drugs with a value of 9%, Injection Epinephrine with a value of 0%, Methylmergometrin Maleate Injection with a value of 82%, Paracetamol tab with value -91%. This shows that the availability of drugs from the two indicators is not only partially fulfilled and the two indicators cannot be fulfilled, in other words the amount of drug availability in the District Pharmacy Installation is smaller than the number of uses. In 2018, there was also a percentage of indicator drugs with unsafe levels indicated by a percentage value of less than 100%. This situation only occurred in the indicator drug Amoxicillin 500 mg with a value of -70%, Kaptopril with a value of 0, Furosemide with a value of 0, Diazepam Injection with a value 0,

Amoxicillin syrup with a value of - 100%, Captopril with a value of -100%, and magnesium sulfate 20% with a value of 14% which indicates that the drug availability of the three indicators is not met and the four indicators are only one third that can be fulfilled, in other words the amount availability of drugs in District Pharmacy Installation is smaller than the number of uses. In 2019, there was also a percentage of indicator drugs with unsafe levels indicated by a percentage value of less than 100%. This situation only occurred in Albendazole indicator drugs with a value of 71%, dexamethasone tablets with a value of -100%, Diazepam with a value of 0, Epinephrine injection with a value -38%, Injection Phytomenadione with a value of -40%, Furosemide tab with a value of -100%, Captopril with a value of 80%, Methylmergometrine Maleate for Injection and Magnesium Sulfate with a value of 0%, Oxytocin Injection -100%, Paracetamol tab with a value of -14% . This shows that the availability of drugs cannot be fulfilled, in other words the amount of drug availability in District Pharmacy Installation is smaller than the number of uses. In 2020, there was also a percentage of indicator drugs with unsafe levels indicated by a percentage value less than 100%. This situation only occurred in the indicator drug Amoxicillin Syrup with a value of 5%, Epinephrine Injection with a value of 33%, Phytomenadione Injection, Furosemide Tab and ORS with a value -100%, Glibenclamide with a value of 24%, Paracetamol tab with a value of -70%, and blood-added tablets with a value of -42%. This shows that the availability of drugs cannot be fulfilled, in other words the amount of drug availability in District Pharmacy Installation is smaller than the number of uses. Factors that affect the availability of drugs in the Pharmacy Installation are the delay in delivery of drugs from providers to distributors and waiting for orders with long expiration dates (at least two years). In addition, there are also obstacles related to long waiting times for drugs from distributors due to drug vacancies at providers and contract mismatches on e-purchasing. Another obstacle is the national drug vacuum. This is based on the results of interviews with four informants, stating that drug vacancies were influenced by the delay in ordering drugs.

#### **4. Discussion**

##### ***4.1. Human Resources***

Human resources are one of the components that determine the success or failure of the District / City Health Office Pharmacy Installation. The quality of workforce in institutions can be seen from several aspects, namely availability and adequacy, as well as the characteristics (level of education and training) possessed by human resources. The number of pharmaceutical personnel in the Pharmacy Installation of the Puncak Jaya Regency Health Service consists of 7 people, namely one pharmacist, one procurement officer, one administrative officer, one expenditure officer and three admissions and distribution officers. Human resources in the field of health or HRH are all people whose main activities are aimed at improving health. HRH in the field of pharmacy is divided into two classifications for pharmaceutical work, namely pharmacists and pharmaceutical technical personnel. In terms of quality, human resources in the Pharmacy Installation of the Puncak Jaya Regency Health Service are in accordance with Government Regulation 51 of 2019 concerning pharmaceutical work, which is headed by a pharmacist and assisted by pharmaceutical technical personnel. However, if it is viewed from the aspect of quantity, the resources that are owned do not meet the quantity because the process of distributing drugs to the Puskesmas is carried out by staff who do not have a pharmacist educational background or pharmaceutical technical personnel but are carried out by staff with a vocational high school background. This

contradicts the Government Regulation of the Republic of Indonesia Number 51 of 2019 concerning pharmacy, that each distribution process must have a pharmacist in charge and assisted by a pharmacist companion or pharmaceutical technical personnel. There is one person who serves as a procurement official as well as a pharmaceutical staff. This can add to the workload which will affect drug management in the Pharmacy Installation as well as future drug procurement. Additional tasks that will further interfere with the performance of officers, this is also found in Fathurrahmi's research (2019) at the Pharmacy Installation of Dr. Wahidin Sudirohusodo Makassar, who stated that problems with human resources contained in IF RSWS could hamper the effectiveness and efficiency of drug supply management activities because it caused officers to overtime work time [7]. This resulted in some work that should have been done immediately to be delayed. Another study conducted by Luqman (2016) at the Tangsel City Hospital stated that in terms of quantity, the number of resources owned by the hospital is still insufficient in relation to the e-purchasing process of purchasing drugs [8]. Drug procurement officers by e-purchasing have additional duties apart from their main task in drug procurement. Limited resources and resources that already have other main duties and functions make the drug procurement team based on E-Catalog by e-purchasing ineffective in carrying out the procurement process. Improving and developing the quality of human resources for health owned by health agencies will be able to support the achievement of an effective and efficient health service in the JKN era [9].

#### **4.2. Funds**

The budget is one of the most important inputs in supporting the implementation of the drug procurement process. Availability Budget plays a major role in determining drug planning. A good budget planning will simplify the drug procurement planning process. According to Irmawati (2014), one of the processes in drug planning is the adjustment between budget and procurement which is considered priority [10]. Based on in-depth interviews, it is known that the budget provided for general procurement, both e-purchasing and non-e-purchasing, is sufficient to carry out procurement activities. Budget-related constraints are the inadequate use of funds. Utilization The use of funds for purchases cannot be used maximally to procure all the drugs that have been planned. This is in line with the results of research conducted by Octadevi (2016) at the Sukoharjo District Hospital, the use of funds is not optimal because not all planned drugs can be procured [11]. In contrast to the research conducted by Luqman (2016) at the Tangsel City Hospital, the Regional General Hospital of South Tangerang City already has sufficient budget to procure drugs by E-purchasing, and has utilized the funds maximally to procure drugs by E-purchasing [8]. Based on the explanation above, it is known that the Health Office Pharmacy Installation has a sufficient budget to procure drugs but the utilization of funds has not been maximized for e-purchasing drug procurement because there are several planned drug items that cannot be purchased.

#### **4.3. Regulations**

The National Health System states that the subsystem of drugs and health supplies is an arrangement that collects various efforts to plan, fulfill needs and utilize and control drugs and medical supplies in an integrated and mutually supportive manner to achieve the highest public health status. The main objective in implementing the subsystem of drugs and health supplies is the availability of adequate, equitable and even distribution of

drugs and medical supplies in an effort to ensure the implementation of national development in the health sector in order to improve the public health status as high as possible. The working procedure for drug procurement is made in general, namely for all purchasing procedures for both e-purchasing and non-e-purchasing because technically there are technical instructions for purchasing drugs. This is in line with research conducted by Saputra and his colleagues (2019) at the Grhasia Mental Hospital, Yogyakarta Special Region, which states that the drug procurement process at the Grhasia Mental Hospital is carried out entirely by e-purchasing through e-catalogs except for drugs that are not available in E-Catalog [12]. Based on the explanation above, it is known that the procurement officers who procure drugs by e-purchasing have understood the technical instructions provided.

#### ***4.4. Facilities and Infrastructure***

The existence of complete facilities is one of the factors that must be fulfilled by agencies serving health service activities because with the complete facilities used in providing a service, it can be ascertained that services will be provided optimally. According to the Minister of Health Regulation No. 72 of 2016, that the implementation of Pharmaceutical Services in Hospitals must be supported by facilities and equipment that meet the provisions and legislation in force [5]. With the criteria of facilities, namely room facilities must be adequate in terms of quality and quantity in order to support the function and process of pharmaceutical services, ensure a safe work environment for officers and facilitate the hospital communication system, both main facilities and supporting facilities in service activities at pharmaceutical installations [7]. Based on MHR No. 63/2014, it is explained that E-Purchasing purchases are made using internet network access. Internet access is a link in purchasing E-purchasing, according to an evaluation conducted by the Directorate of Public Medicines and Health Supplies in 2014 and 2015, it is known that internet network access is still an obstacle in some areas [5]. Complete facilities and infrastructure will help the smooth process of activities in Pharmacy, namely in the form of drug procurement by E-Purchasing. Based on observations and in-depth interviews as well as document review conducted at the Pharmacy Installation of the Puncak Jaya Regency Health Office, it was found that procurement activities did not have a special room for procurement. Existing equipment in this room such as desks, chairs, bookcases / shelves, laptops, office stationery. Based on the explanation above, it is known that the Puncak Jaya Regency Health Office Pharmacy Installation has facilities and infrastructure that support the e-purchasing drug procurement process, but has an unstable internet network.

#### ***4.5. Drug Needs Planning***

Planning activities in the warehouse of the Pharmacy Installation of the Puncak Jaya Regency Health Office refer to the established procedures. Planning activities and determining drug needs in pharmaceutical installations use the consumption method. This method is used because it is easier to apply [14]. Planning for drugs and medical supplies is a very decisive start in drug planning. The purpose of planning drugs and medical supplies is to determine the right type and amount of drugs and medical supplies, in accordance with the needs of basic health services, including prescribed health program drugs. In this regard, coordination and integration are required in planning the need for drugs and medical supplies so that the formation of an integrated drug planning team is a necessity in order to increase the efficiency and effectiveness of the use of funds through

coordination, integration and synchronization between agencies related to drug planning in each district/city. Planning for pharmaceutical needs is a process of activity in selecting the type, quantity and price of pharmaceutical supplies in accordance with the needs and budget, to avoid drug void by using a responsible method and the basics of predetermined planning, including consumption, epidemiology, combination of consumption and epidemiology method according to the available budget [15]. Sutriatmoko and his colleagues (2015) in their research on the Analysis of the Application of Drug E-Procurement with E-Catalog Based E-purchasing Procedures at the District / City Health Office in Central Java shows the results of research, data management and control variables, quality of results and production, and the relationship with partners, both partially and simultaneously, have an effect on the performance of drug procurement using the e-purchasing procedure based on the e-catalog with a significance value of 0.000. The performance of e-procurement of drugs with e-purchasing procedures based on e-catalogs has an effect on the efficiency of drug procurement with a significance value of 0.001 [16]. This is in line with Presidential Regulation No. 4 of 2015, in order to improve performance and efficiency in the drug procurement process, both for the JKN program and other health programs, the procurement of drugs and medical devices. Central Work Units and Regional Work Units (SKPD) are required to use e-catalogue, done electronically (e-procurement) with the E-purchasing procedure. E-procurement is carried out using the Electronic Procurement System organized by the Electronic Procurement Service. Based on the explanation above, it is known that Puncak Jaya Regency has not formed an integrated drug planning team every year. The Pharmacy Installation of the Puncak Jaya Regency Health Service has planned the need for medicine using the consumption method. This is inversely proportional to the research conducted by Sunar Nugroho Adiatmiko (2012) at the Pangkal Pinang City Health Office, saying that the planning for drug needs is carried out by the Pangkal Pinang City Health Office every year with a drug needs planning team formed [17]. Based on in-depth interviews conducted and the results of a document review of the work procedure for drug need planning at the Pharmacy Installation of the Puncak Jaya Regency Health Office, it is known that Regency Pharmacy Instalation of Puncak Jaya Regency uses the consumption method in determining the drug need plan in the Pharmacy. In order to obtain data on drug needs that are close to accuracy, it is necessary to analyze trends in drug use 1 (one) year earlier or more. In addition, data is also required such as a list of drugs, initial stock, receipts, expenditures, remaining stock, lost / damaged drugs, expired drugs, drug vacancies, average use, waiting time, and development of visiting patterns. This data is only obtained from the Pharmacy Installation and is required to perform calculations using the consumption method. This is in accordance with the research conducted by Hardiyanti (2018), at Andi Makkasau City Hospital Pare-pare said that in determining the need for medicine at the Pharmacy Installation of the Andi Makkasau Hospital, Parepare City, the methods used were consumption methods and epidemiological methods. The consumption method is based on the use of drug needs, while the epidemiological method is based on the disease pattern. However, in the Pharmacy Installation of Andi Makkasau Hospital, Parepare City, the method most often used is the consumption method [18].

#### **4.6. Drug Orders**

Ordering drugs through the E-Purchasing system has been carried out by the Pharmacy Installation of the Puncak Jaya Regency Health Service, the obstacle in the procurement of drugs in the installation is the geographical condition of the Pharmacy Installation area located in the mountains which is also one of the

causes of delays in the arrival of goods. Medicines ordered sometimes do not arrive on time, this is because the raw materials for the drugs are difficult, the waiting time is long, the expiration date of the drug is close. This is in accordance with research conducted by Satrianegara, F. M (2018), saying that the things that need to be considered when ordering drugs are quantity, expiration date, quality, quality, drugs that are urgently needed, packaging, prices according to the e-catalog and fund [19]. The process of ordering drugs carried out by the Puncak Jaya Regency Pharmacy Installation is carried out using the E-Purchasing method but if you face some problems, purchases will be made outside of E-Purchasing. Purchases outside of E-Purchasing can be made by auction method or direct appointment. The use of methods outside of E-Purchasing is carried out because there are problems such as empty drugs in the E-Catalog so that E-Purchasing purchases cannot be made. This is in line with research conducted by Saputra, WA and his colleagues (2019) at the Grhasia Mental Hospital, Yogyakarta Special Region, which states that the drug procurement process at the Grhasia Mental Hospital is carried out entirely by e-purchasing through E-Catalog except for drugs that are not available in the E-Catalog [12].

#### ***4.7. E-Purchasing Contract Agreement***

Contract Agreement in E-Catalog procurement by E-Purchasing is a written agreement between the buyer and the seller, in this case between the Commitment Maker Officer and the goods / service provider or self-managed operator. A contract agreement is made to make an agreement between the two parties so that the two parties must comply with the agreement that has been made together [13]. Regulation of the Government Goods / Services Procurement Policy Agency Number 18 of 2018 concerning Service for Contract Settlement of Government Goods / Services Procurement Contracts states that the ability of distributors in the procurement process is the spearhead of the implementation of the entire drug procurement process. Cooperation with the distributor starts from submitting orders for drugs prepared by Pharmaceutical Wholesalers. After placing an order, there will be a contractual agreement with the distributor. This is in line with the research conducted by Awal, S and his colleagues (2020), the contract agreement in E-Purchasing is part of the drug procurement process, so that the procurement official makes a drug purchase package (it is registered and the provider has appointed a distributor), then the official The Commitment Maker will enter into a contract agreement with the distributor and the distributor will sign the contract after the package is received [20]. The distributor's ability in the procurement process is the spearhead of the implementation of the entire drug procurement process. Cooperation with the distributor starts from submitting orders for drugs prepared by Pharmaceutical Wholesalers. After placing an order, there will be a contractual agreement with the distributor. Contracts for the procurement of goods / services in agency regulation No. 18 of 2018, hereinafter referred to as contracts, are written agreements between the Commitment Making Official and the Provider or Self-Management Implementer. Drug procurement contract, hereinafter referred to as contract, is a written agreement between the Commitment Maker and the goods / services provider. Based on document review, it is known that the contract agreement is made after the data to be purchased is complete, then a contract is made with the distributor / work operator appointed by the provider. The existing agreement adds provisions that must be fulfilled by both parties [21]. The contract agreement process carried out by the Commitment Making Officer at the Pharmacy Installation of the Puncak Jaya Regency Health Service starts with the E-Purchasing process carried out previously, after which the Commitment Maker (buyer) downloads the procurement contract format and contracts

with the distributor appointed by the provider. This is in accordance with research of Awal S and his colleagues (2020), in the contract agreement that was agreed between the Commitment Maker RSUD Simeulue and the Distributor during the procurement or ordering of drugs there was a contract violation, because the goods sent did not match the orders in a contract signed by both parties [20]. In this case the contract format is appropriate, but the quantity is not in accordance with the contract, because not all of the buffer stock at the provider is available, and the expiration date of drugs are not in accordance with the contract agreement. Based on the explanation above, it is known that the contract agreement process carried out at the Pharmacy Installation of the Puncak Jaya Regency Health Service is in accordance with the technical guidelines and refers to the Republic of Indonesia Minister of Health Regulation No. 58 of 2014 concerning drug procurement based on E-Catalog.

#### ***4.8. Drug Delivery or Distribution Process***

After placing the order and contract agreement, the distributor will send or distribute the drug to the buyer in accordance with the contents of the previously agreed contractual agreement. As for what needs to be considered in the process of sending drugs must be in accordance with the goods that have been ordered through E-Purchasing because the goods sent are directly inspected by the inspection committee and the recipient of the goods. If it is not suitable, it will be returned to the provider [21]. Based on the explanation above, it is known that the implementation of Permenkes No. 63 of 2014 concerning drug procurement based on e-catalogs have been implemented well by IFK Puncak Jaya Regency, but in its application there are obstacles in terms of drug acceptance, namely the number of drugs sent by distributors does not match the number of orders so that it affects the availability of drugs in the Pharmacy Installation Puncak Jaya District Health Office. This is in accordance with the research conducted by Awal S and his colleagues (2020), in the distribution of drugs carried out by the distributor to the Simeulue Regional Hospital, the drugs sent do not match the contents of the contract agreement, namely the expiration date of the drug itself and it cannot be returned [20].

#### ***4.9. Availability of Drugs in Pharmacy Installation***

The level of drug availability is the level of drug supply, both the type and amount of medicine required by the medical service in a certain time period, measured by calculating the monthly average supply and usage. The availability of medicines for the community is one of the government's commitments in implementing public health services. The availability of drugs used for health services at the health center must be at least equal to the amount of medicine that should be available at the Puskesmas. One of the efforts made if there is a drug vacuum in the warehouse is to request a buffer stock to the pharmacy installation in Papua Province. One of the efforts to ensure drug adequacy in districts / cities is to improve the quality of drug management at Regency Pharmacy Installation and improve drug use in Public Health Center. The quality of drug management can be improved through comprehensive interventions starting from planning, procurement, inventory, distribution and recording and reporting of drug use by districts / cities as well as monitoring drug adequacy from time to time [22]. The government's policy to use E-Purchasing in the drug procurement process actually affects the availability of drugs at the Puncak Jaya Regency Pharmacy Installation. Obstacles occur in late drug supply from manufacturers and inflation affects the availability of E-Purchasing drugs, the number of drugs is not fulfilled by

E-Purchasing by distributors, orders are rejected by providers, old orders are responded to by distributors / providers, drug delivery times, fast drug expiration dates , and there has been a national drug vacuum. Research by Alfenia and his colleagues (2016) states that factors from suppliers (specifications, product availability, delivery time), and procurement process factors (E-Catalog, E-Procurement, planning) have a significant effect on drug availability) [23].

## **5. Conclusion**

Based on the research results, it can be concluded that:

- a. Currently, there are 7 (seven) human resources in the pharmacy installation of the Puncak Jaya Regency Health Department. Only two people who manage pharmacy are trained. Drug procurement officers have not been trained;
- b. The budget provided comes from the Regional Revenue Expenditure Budget or the Special Allocation Fund, which is sufficient but not effective, this can be seen because there are remaining funds from the budget that has been provided;
- c. The regulations regarding e-purchasing have been understood by the officer;
- d. Sufficient facilities and infrastructure even with a limited internet network;
- e. The process of planning drug needs: 1) Drug procurement is carried out using the E-Purchasing method based on E-Catalag and non-E-Catalag / tender; 2) No Integrated Drug Planning Team was formed to determine district scale drug demand plans; 3) PHCs are not involved in planning drug needs; 4) The PHCs does not include a stock opname at the end of the year.
- f. Approval of contract execution;
- g. The drug ordering process takes a long time to be responded by the appointed provider and distributor;
- h. The distribution process based on the amount, type and time of delivery is in accordance with the contract made, but there are several obstacles such as: 1) The waiting time from the provider to deliver the drug is very long, 1 (one) to 3 (three) months or even more; 2) Raw materials that are difficult to find by providers; 3) The order is rejected by the provider due to a lack of quota ordered by the customer; 4) Some drug items cannot be fulfilled by the distributor; 5) The expiration date is close.
- i. The availability of drugs in the Pharmacy Installation has not met the indicator of the availability of 20 drug items that have been set by the Directorate General of Pharmaceutical and Medical Devices for 2015-2019.

## **6. Suggestion**

### ***6.1. For the Health Department, should***

- a) Coordinate with local governments to form Integrated Drug Planning Team;
- b) Increase human resources in pharmaceutical installations;
- c) Provide adequate internet facilities at pharmaceutical installations;
- d) Adding drug procurement officers using the e-purchasing method, and



- e) Provide training to drug procurement officers.

### **6.2. Providers or manufacturers, should pay attention to the following matters**

- a) Pay attention to and prepare the required raw materials;
- b) Providers should also not provide a minimum quota for drug delivery orders for pharmaceutical installations.
- c) Pay attention to the expiration date of the drug ordered according to the contract agreement for at least 2 (two) years.
- d) Drug delivery from the provider to the distributor is not more than 1 (one) month after the order is approved via e-purchasing.

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