THE EFFECTIVENESS OF ELECTRONIC PURCHASE ON ORDERING NATIONAL HEALTH INSURANCE DRUGS AT THE WEST BANDUNG PHARMACY OF INDONESIA

Kamelia Agustini
Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia
Department of D-3 Farmacy, Akademi Farmasi Bumi Siliwangi, Bandung, Indonesia

Ratih Hurriyati
Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia

Vanessa Gaffar
Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia

Bella Tiana
Department of D-3 Farmacy, Akademi Farmasi Bumi Siliwangi, Bandung, Indonesia

Windi Novianti
Department of Management, Universitas Komputer Indonesia, Bandung, Indonesia

ABSTRACT

This study aimed to determine the flow of use of the electronic drug purchase application, the level of suitability for ordering drugs, the constraints through the electronic drug purchase application, and its effectiveness on national health insurance drugs in Indonesia. We use a quantitative descriptive method to accompany pharmacists with the Guttman scale. The results showed that the flow of the use of electronic purchasing applications at the level of ordering drugs at pharmacies was in accordance with the e-catalog. The service level of 80.11% of the value of incoming goods receipts shows results that meet the criteria. Electronic purchases have been effective because the percentage of service level from the value of incoming goods receipts shows results that meet the criteria for conformity levels according to standards. This study provides input to the pharmacy in the use of electronic purchasing applications for procurement.

Keywords: effectiveness; electronic purchasing; drug ordering.

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INTRODUCTION

Based on the regulations of the Government Goods/Services Procurement Policy Institute (2017:2), electronic purchasing is made so that the process of procuring government goods/services can be done electronically. In electronic purchasing of government goods/services, there are features for making

packages, downloading the order/agreement letter format, then uploading a scanned contract that has been signed, the printing orders for government goods/services. With the electronic purchasing of government goods/services, it is hoped that the procurement process of government goods/services can be more efficient. (User et al., 2015). The function of electronic purchasing is to facilitate the supply of pharmaceutical supplies and their use in the selection and procurement of drugs, medical devices and medical consumables in pharmaceutical service facilities such as hospitals, clinics, and pharmacies in collaboration with national health insurance. Electronic purchasing in pharmaceutical facilities has advantages such as lower purchase prices compared to manual mail orders and limiting price variations on the market. However, several obstacles occurred in the field, including network system errors, delivery lead times, empty goods at distributors, not all goods were available in the e-catalog and electronic purchasing applications. (Retina Saptasari et al, 2020). According to research by Suherman Awal, Tarsyad Nugraha and Darwin Syamsul, entitled Policy Analysis of Electronic purchasing Drug Procurement at Regional General Hospitals in Simeulue Indonesia and disruption of drug delivery, the effect of arrears in drug payments to distributors, problems with drug stock at pharmaceutical wholesaler, and expired drugs that cannot be returned. (Awal et al., 2020).

There were several research explained about purchase Ordering System of National Health Insurance Drugs Nidhi Raj Singh, et al explained about the application of an online sales system for selling drugs in pharmacies. The results of the study show that selling drugs online is quite effective, especially during a pandemic, but online sales have a high security risk, but the researchers did not explicitly explain these safety risks. (Singh et al., 2021)

Ms. Surbhi Gupta Research Scholar, et al explain The benefits of online pharmacies are privacy, good choice, lower prices, home delivery, & convenience especially no doubt E-pharmaceuticals increase Consumer convenience & access to medicines, but it is not clear how much population use E-pharmacy for convenience and discounts. (Gupta, 2020)

Darwin Syamsul1, et al explained that the availability of drugs at the Health Service Pharmacy of Aceh Tegan Indonesia is not yet maximized. The process of ordering drugs by E-purchasing and non-E-purchasing is in accordance with PMK No. 63 of 2014, but the fulfillment time is not in accordance with the 2014 Pharmaceutical Service Standards. (Study, 2021)

Putu Yunia Irmayanti1, et al. The results at the selection stage: 100% compliance of drug items with Fornas; however, drug planning and procurement evaluation is not carried out in stages. (Irmayanti et al., 2020)

Andryani Ningsih et al. explained that the application of e-catalog, both e-purchasing and manual purchasing includes indicators of preparation, implementation, and benefits. Constraints have a significant relationship with procurement efficiency and drug availability. However, the percentage of the relationship is not explicitly explained. (Ningsih et al., 2015)

Herti Mariani, et al., in their work, showed that the Puskesmas did not procure drugs by e-purchasing because pharmacies gave the drugs according to the mapping list of the national health insurance. Because pharmacies have many obstacles in ordering drugs by e-purchase, so the order is done conventionally. (Herti, 2019).

This study aimed to determine the flow of use of the electronic drug purchase application, the level of suitability for ordering drugs, the constraints through the electronic drug purchase application and its effectiveness on national health insurance drugs in Indonesia. Therefore, our research highlighted e-purchasing in this industry as our novelty.

1. This research has used the e-purchase application system in the procurement of national health insurance medicines at pharmacies.
2. The flow of use of the e-purchase application system is in accordance with the standard.
3. The e-purchase application is effective because the percentage of service level from the value of incoming goods receipts shows results that meet the criteria for conformity levels according to standards.

The methods that support this research are we use a quantitative descriptive method to accompany pharmacists with the Guttman scale. The results showed that the flow of the use of electronic purchasing applications at the level of

ordering drugs at pharmacies was in accordance with the e-catalog. The service level of 80.11% of the value of incoming goods receipts shows results that meet the criteria. Electronic purchases have been effective because the percentage of service level from the value of incoming goods receipts shows results that meet the criteria for conformity levels according to standards. This study provides input to the pharmacy in the use of electronic purchasing applications for procurement.

Products that have appeared in the Electronic Catalog of Government goods/services can be purchased using electronic purchasing. The Electronic Catalog of Government goods/services displays information on product providers, product specifications, prices, and pictures of Government goods/services (User et al., 2015). One of the pharmacies in West Bandung, Indonesia has just started using a drug procurement system with electronic purchasing via e-catalog in 2021 after previously using a manual procurement system with the direct procurement method. For almost 4 months running, there are several obstacles that hinder in achieving the ideal results expected from the use of electronic purchasing in drug procurement. In the study of Suherman Awal et al in a research article entitled Analysis of Electronic purchasing Drug Procurement Policy at the Simeulue Indonesia General Hospital, it was found that there were obstacles that were influenced by geographical factors causing network disruption and drug delivery disorders, drug stock problems at pharmaceutical wholesaler, expired drugs that cannot be returned and the effect of payment of drug arrears to distributors. (Early et al., 2020). The results of Chaang-Luan Ho's research entitled Are blogs still effective to maintain customer relationships? An empirical study on the travel industry shows the results that the dominant role in influencing online satisfaction and trust is the quality of information by playing a mediating role of e-satisfaction, including e-trust and e-loyalty identified, through the online RQ development process: information quality ¡e - trust ¡e-satisfaction ¡e-loyalty¡ as well as intention to buy travel products. (Yep, & Ng, 2018). Based on the research results of Volodymyr Rodchenko et al in the Journal Of Eastern European And Central Asian Research entitled The Effectiveness Of Human Capital In The Context Of The Digital Transformation Of The Economy: The Case Of Ukraine which has a method using a survey of 500 business representatives in Ukraine and the rules Fibonacci, taking into account the degree of digital business transformation, the qualitative level of efficiency of human capital, using the principal component method, the factor system of the effectiveness of human resources for the intensification of digitization has empirically proven qualitative parameters of human effectiveness for business digitization in Ukraine. An empirical model to assess the degree of Quantitative human capital effectiveness in the context of digital business transformation has been developed using integral assessment. (Rodchenko et al., 2021). This study uses e-catalog as the basis for the drug procurement system using electronic purchasing.

LITERATURE REVIEW

Definition of National Health Insurance

The Social Security Administering Body, hereinafter abbreviated as national health insurance, is a legal entity formed to administer social security programs (Kepres, 2011). National Health insurance consists of National Health and National Health Employment. National Health Insurance is a legal entity formed to administer the health insurance program. Health insurance is a guarantee in the form of health protection so that participants receive health care benefits and protection in meeting basic health needs that are given to everyone who has paid dues or whose contributions are paid by the government (Widiastuti, 2017).

Definition E-Catalog

E-catalog is an electronic information system containing a list, brand, type, technical specification, price and quantity of availability of certain goods/services from various providers.

Procurement of drugs by the Work Units in the health sector, both Central and Regional, can be carried out as follows:

1. Procurement of drugs available in the Electronic Catalogs (e-Catalogue) list of the National Procurement Portal using the electronic purchase method (electronic purchasing).

2. If the required drug is not contained in the Electronic Catalog (E-Catalogue) of drugs, the procurement process can follow other

methods as regulated in Presidential Regulation Number 54 of 2010 concerning Government Procurement of Goods/Services as amended lastly by Presidential Regulation Number 70 of 2010 2012. (Minister of Health regulations of Indonesia No. 63, 2014).

The purpose of using e-catalog in the electronic purchasing process is:

a. There is no need for tenders/auctions to obtain goods/services.

b. Efficient Save resources (human, time, and cost).

c. Transparent Prices of goods/services and technical specifications are transparent (can be accessed by anyone).

d. Can choose products according to needs (quality, brand, function and services provided).

e. More Accountable More guarantee peace in the procurement.

f. Support the implementation of Government policies/programs.

Electronic purchasing Method

Electronic procurement or e-Procurement is the procurement of goods/services using information technology and electronic transactions per statutory provisions. Electronic procurement of goods/services is carried out by means of e-tendering or electronic purchasing. As one of the methods of procuring goods and services electronically, electronic purchasing is a step forward in Indonesia. Advances in information and communication technology make the process of procuring goods and services inseparable from technology. Electronic purchasing is a procedure for purchasing goods/services through an electronic catalog system. Electronic catalog or electronic catalog is an electronic information system containing lists, types, technical specifications and prices of certain goods from various providers of government goods/services. Usually drug orders through electronic purchasing applications must comply with e-catalogs. The e-catalog of government goods/or services displays information on product providers, product specifications, prices, and pictures of government goods/services (User et al., 2015). Putu Yunia Irmayanti et al's research in the PJAEE journal entitled Exploring Of Medicine Electronic purchasing Procurement at Pharmacy In 2019 said that drug management through electronic purchasing consisted of planning, procurement, distribution, and use stages. The results of the observations found that there was no gradual evaluation of drug planning and procurement. The study aimed to determine the procurement of electronic purchasing drugs in a pharmacy in 2019 and compare them with standard values. (Irmayanti et al., 2020).

Order Flow through the Electronic purchasing application:

1. The Procurement Officer makes a drug purchase package in the Electronic purchasing application based on the Drug Procurement List as contained in Form 2 (Attachment 1) given by the PPK. A provider groups drug purchase packages.

2. The Procurement Officer then sends a request for purchasing drugs to the drug provider/Pharmaceutical Industry, which is included in the procurement package group according to number 1.

3. Drug provider/Pharmaceutical Industry that has received a request for drug purchase through Electronic purchasing from the Procurement Officer gives approval to the drug purchase request and appoints a distributor/pharmaceutical wholesaler. If approved, the drug provider/Pharmaceutical Industry submits a purchase request to the distributor for follow-up. If refused, the drug provider/Pharmaceutical Industry must convey the reasons for refusal.

4. The Procurement Officer then forwards drug providers/Pharmaceutical Industry approval to the procurement officer for follow-up. Suppose the drug purchase request is rejected by the drug provider/pharmaceutical industry. In that case, the procurement service unit shall use other procurement methods in accordance with Presidential Regulation Number 54 of 2010 concerning Government Procurement of Goods/Services as last amended by Presidential Regulation Number 70 of 2012.

5. Procurement officer then agrees/contract of sale and purchase of approved drugs with the distributor/Pharmaceutical wholesaler appointed by the drug provider/pharmaceutical industry.

6. The distributor/Pharmaceutical wholesaler then carries out the supply of drugs in

accordance with the contents of the sale and purchase agreement/contract.

7. The PPK then sends the drug purchase agreement and completes the payment history by uploading it to the electronic purchasing application (Permenkes RI No. 63, 2014).

Effectiveness Concept

The word effective comes from English, namely effective, which means successful or something that is done successfully. Popular scientific dictionaries define effectiveness as the proper use, use or support of goals. Effectiveness is the main element to achieving the goals or targets that have been determined in each organization, activity or program. Called effective if the goal or target is achieved as determined. Efforts to evaluate the course of an organization can be done through the concept of effectiveness. This concept is one of the factors to determine whether it is necessary to make significant changes to the form and management of the organization or not. In this case, effectiveness is the achievement of organizational goals through the efficient use of available resources in terms of inputs, processes, and outputs. In this case, what is meant by resources includes the availability of personnel, facilities and infrastructure as well as the methods and models used. An activity is said to be efficient if it is carried out correctly and in accordance with procedures, while it is said to be effective if the activity is carried out correctly and provides useful results. (Iga Rosalina, 2012). Effectiveness is always related to the relationship between the expected results and the results actually achieved.

METHODOLOGY

The method used in this study is a descriptive method using the Guttman Scale and interview instruments aimed at accompanying pharmacists. The research instrument used is an electronic purchasing application system consisting of: E-catalog, making usernames, ordering drugs. This research instrument uses the Guttman Scale which will later be used as the basis for data collection so that the authors obtain firm, valid and reliable data information. The research was conducted by collecting data obtained through interviews with accompanying pharmacists and data processed through the Microsoft Excel application to determine the percentage of conformity of ordering goods. The samples used are medicines that can be ordered in the e-purchasing application that meet the inclusion and exclusion criteria according to those listed in the e-catalog.

Calculation of the percentage of conformity of drug orders based on Permenkes No. 72 of 2016 is by calculating the percentage as follows: (Thanthirige et al., 2016)

$$Y = \frac{x}{\sum x} x100\%$$

Information:

Y: Percentage level of conformity (%)

x: Variable value according to

Σx: Total number of suitability variables

Limitation of suitability level:

Value 80%: the service level is appropriate.

Value 79%: the service level is not appropriate.

DISCUSSION

Ordering national health insurance drugs at one of the pharmacies of West Bandung, Indonesia, is done through an electronic purchasing application, where orders are made if the number of national health insurance drugs available at the pharmacy is close to safety stock. This is done to prevent national health insurance drug vacancies before supplies run out so that drug availability is always maintained at pharmacies. (Irmayanti et al., 2020)

Medication Ordering Flow Through the Electronic purchasing Application

For the flow of drug orders through the electronic purchasing application, namely:

1. Make a defect book by estimating drug availability with Lead Time from each pharmaceutical wholesaler

2. View drug availability via e-catalog

3. Make a drug recap and then group it according to the provider.

4. Choose a distributor with sufficient availability with the required quantity.

5. Next, the medicine is ordered through the electronic purchasing application by filling out the form that has been provided according to the needs of the pharmacy.

6. Checking whether the request is approved or not by the distributor.

7. If the request is rejected, other procurement methods are made, such as, making a manual order directly addressed to the distributor.

8. If the distributor accepts the request, a purchase agreement is made by completing the payment history on electronic purchasing.

9. After that, the distributor will prepare the drug according to the order.

The flow of ordering drugs through the electronic purchasing application is in accordance with the Regulation of the Minister of Health of the Republic of Indonesia No. 63, 2014, but this ordering flow is slightly different from the results of previous research, Putu Yunia Irmayanti et al. in the PJAEE journal, said that drug management through electronic purchasing consists of planning, procurement, distribution, and stages of use. The results of the observations found that there was no gradual evaluation of drug planning and procurement. (Irmayanti et al., 2020)

Procurement is an activity to fulfill planned and approved demand through purchasing. To ensure the quality of pharmaceutical services, the procurement of pharmaceutical preparations, medical devices and consumable media materials must be carried out through official channels in accordance with the provisions and legislation. Purchasing is an important way to achieve the right balance between quality and price (Permenkes RI No 5, 2019). Procurement of BPJS drugs is carried out at one of the pharmacies of West Bandung Indonesia using an electronic purchasing application where electronic procurement or electronic procurement is the procurement of goods/services carried out using information technology and electronic transactions in accordance with statutory provisions. Electronic procurement of goods/services is carried out by means of electronic tendering or electronic purchasing. As one of the methods of procuring goods and services electronically, electronic purchasing is a step forward in Indonesia. Advances in information and communication technology make the process of procuring goods and services inseparable from technology. Electronic purchasing is a procedure for purchasing goods/services through an electronic catalog system. An electronic catalog or electronic catalog is an electronic information system that contains lists, types, technical specifications, and prices of certain goods from various providers of government goods/services (Winda, 2018).

The flow of ordering drugs through this electronic purchasing application must first have an account called the Commitment Making Officer (PPK). This Commitment Making Officer will receive a drug purchase form from the Procurement Officer (PP) after which the procurement official will send the form to the Pharmaceutical Industry. There are 2 possibilities the order can be processed or the order can be rejected. If the Pharmaceutical Industry receives the order, the next step is to determine the distributor. After determining the distributor stage, part of the pharmaceutical industry sends a purchase request to the distributor for processing. After that, the distributor will submit an agreement with the official making the commitment. After receiving the approval of the purchase request, a drug sale and purchase contract is made. The official making the commitment will send the drug order contract approval file to the distributor, then the distributor will provide the drug in accordance with the sale and purchase contract. If there is a refusal from the pharmaceutical industry, the procurement officer must accept the reasons for the denial from the pharmaceutical industry. After the procurement official receives the reason from the pharmaceutical industry, the procurement official will send the reason to the Procurement Service Unit (ULP).

According to Table 1, the number of items ordered to meet the drug needs of the West Bandung Pharmacy is 171 items with several distributors. The value of the receipt of the items received is 137 items from the items ordered. The total number of items that do not arrive is 34 items. The percentage of service level from the value of receipt of incoming goods is 80.11%, where this value shows results that meet the criteria for conformity level according to the Minister of Health. (Thanthirige et al., 2016)

Table 1: Service Level Percentage

Approved E-pur			Cancelled E-pur			% Service Level		
Item	Qty	Rupiah	Item	Qty	Rupiah	Item	Qty	Rupiah
137	185772	Rp 350.073.369	34	59604	Rp 41.618.848	80,11696	75,70912	89.374.604

For ordering drugs at one of the pharmacies in West Bandung, Indonesia in July, August, and September, there were 137 drug items from several types of drugs registered in the e-catalog, with a quantity (Qty) of 185,772 drugs and a value of Rp. 350,073,369. From the results of the research for 3 months, namely July, August, and September 2021, for the percentage of conformity obtained with an acceptable value above 80% where this value shows results that meet the criteria of conformity according to Permenkes No. 73 in 2016. (Lilis Puspitawati, Hertati, L., Zarkasyi, W., Suharman, H., & Umar, 2022)

Based on Figure 1: Constraints That Occur When Ordering Drugs Through Electronic Purchasing Applications (Awal et al., 2020):

1. The process of approving medication when ordering is no notification, so you have to check it daily.
2. Do not load drug stock records at distributors.
3. Distributors cannot serve some non-DRR (Chronic) items.
4. Lead time for drug delivery is slow because many processes must be approved by national health insurance.

Through observation of drug procurement documents for electronic purchasing, the lead time for all drug items from electronic purchasing procurement was calculated, and it was found that the lead time for several drugs varied widely. As shown in the following picture:

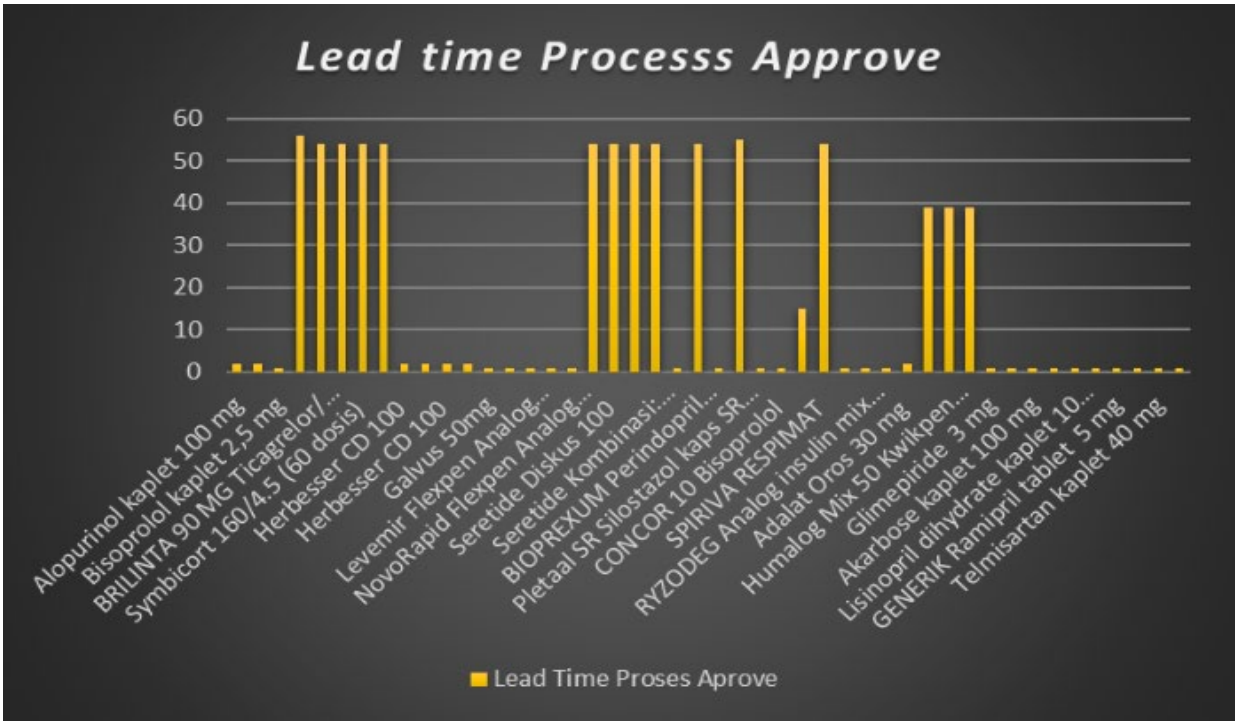

Figure 1: Graph of Lead time Process Approve (Results of the Author, 2022)

Based on the picture above, for some drugs such as Brilinta, Symbicort inh, Seretide Diskus, Bioprexum, Pletaal, Spiriva, and Humalog Mix 50, waiting time can reach 50 days to more than 50

days, which is an obstacle for procurement parties at pharmacies. Because the medicine ordered is a medicine that is often prescribed by the Hospital and must be redeemed at one of the West Bandung Pharmacies. This result is in line with the research of Wijaya Andi Saputra et al who said that lead time and drug vacancies in the e-catalog are external problems from drug procurement using the e-purchasing method at the Grhasia Mental Hospital. (Saputra et al., 2019).

Constraints that occur during ordering drugs through the application are where the delivery of goods is very long (lead time) affects the vacancy of BPJS drugs at the pharmacy. The causes of longer drug lead times compared to direct procurement include the following:

1. The stock of drugs listed in the e-catalogue at several drug providers does not describe the real stock or ready stock owned by the drug supplying factory, so when an order is placed, you have to wait until the stock is available.
2. Some drug providers reasoned that they were queuing for production due to long imports of raw materials.
3. In manual direct procurement, orders are made by the work unit to the distributor directly. Meanwhile, in the electronic purchasing process, orders are made first to the drug supplying factory, then after an agreement has been reached between the work unit and the drug supply factory, the order will be forwarded to the distributor by contacting the distributor. Supply chains require near real time information about stock, consumption, delivery and other variables. Commercial sector supply chains have adopted information and communication technologies to improve the flow of information and decision making across the supply chain. Improving the content, accuracy, up-to-date and frequency of information has great potential to address many of the problems encountered in public sector supply chains. Improved supply chain visibility through better information about inventory, orders, consumption and delivery will also create greater accountability within the system. (Saputra et al., 2019)

The effectiveness of ordering national health insurance drugs through the Electronic Purchasing Application has been effective because the flow of drug orders is appropriate and the percentage level of service level from the value of receipt of incoming goods shows results that meet the criteria for the level of conformity according to the Minister of Health. (Iga Rosalina, 2012).

Indonesia must continue to learn from many countries in formulating an economic digital diplomacy agenda from institutional adaptation to new approaches in foreign policy socialization through new media. (Dewi, 2022; Budiarti et al., 2021)

CONCLUSION AND RECOMMENDATION

The flow of the use of the electronic purchasing application on drug orders at the west Bandung pharmacy Indonesia is in accordance with the e-catalog, Service Level Percentage Level. According to the Minister of Health, the value of receiving items that come shows results that meet the criteria for the level of conformity. Ordering national health insurance drugs through the electronic purchasing application has been effective. However, there are several obstacles in ordering national health insurance drugs, including the waiting time for ordering drugs (lead time) that is not in accordance with estimates, so the time required is longer than ordering with a manual order letter.

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ABOUT THE AUTHORS

Kamelia Agustini email: kameliaagustini@upi.edu

Kamelia Agustini, Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia, Department of D-3 Farmacy, Akademi Farmasi Bumi Siliwangi, Bandung, Indonesia.

Ratih Hurriyati, Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia.

Vanessa Gaffar, Department of Management, Universitas Pendidikan Indonesia, Bandung, Indonesia.

Bella Tiana, Department of D-3 Farmacy, Akademi Farmasi Bumi Siliwangi, Bandung, Indonesia.

Windi Novianti, Department of Management, Universitas Komputer Indonesia, Bandung, Indonesia.