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EVALUATION OF ACCOUNTING INFORMATION SYSTEMS AND INTERNAL CONTROL OF DRUG INVENTORIES USING THE "PIECES" METHOD (Study at Puskesmas Tembok Dukuh Surabaya City)

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Abstract. This research aims to understand and evaluate the accounting information system and internal control of the medicine inventory of the Community Health Center (Puskesmas) of Tembok Dukuh, Surabaya City, utilizing the PIECES (Performance, Information, Economics, Control, Efficiency and Service) analysis to obtain more accurate results to be a reference in improving existing information systems. This research applies qualitative method with a case study approach. The data collected through in-depth interviews, observation and documentation are processed through triangulation technique. The results exhibit that Puskesmas of Tembok Dukuh has implemented a computerized medicine inventory accounting information system using the SIMBOK, SIMPUS and E-Catalog applications. The medicine inventory is well managed by pharmaceutical officers in accordance with the Puskesmas standard procedure and has been equipped with internal controls. However, the results of PIECES analysis reveal improper information and control aspects. The information generated by the system is not fully detailed and specific, and the control in managing medicine inventory does not feature clear job descriptions.

Keywords: Drug Inventory, Accounting Information System, Internal control, PIECES Method

I. INTRODUCTION

Currently, Indonesia is experiencing a significant increase in technological massiveness, especially related to internet penetration and technology device adoption, where according to a survey by the Central Statistics Agency, there is an increase in internet usage by Indonesians in 2021 by 62.10% to 66.48% in 2022. The high use of the internet indicates a digitalization transformation that has an impact on various sectors such as trade, education, tourism and the health sector. Puskesmas is one of the health sectors that also utilizes information technology in increasing the effectiveness of its operational activities. In accordance with the contents of the Minister of Finance Regulation Number 43 of 2019 Article 50 (4), in addition to the performance report, puskesmas has the obligation to submit other reports through the puskesmas information system. The performance report contains data and information regarding the achievement of the implementation of health services and management of health centers. Meanwhile, the other reports referred to refer to the puskesmas financial report and related cross-sector reports. To meet the existing demands, puskesmas require an accounting information system that is capable of processing data into useful information.

An information system can be said to be good if the system produces useful information that meets three pillars, namely right to the person (relevant), on time and at the right value (accurate) (Purnama, 2016). Accounting information system is a system used to collect, analyze, categorize, manage, and present various information to parties in need to assist in making decisions (Saad et al., 2022). Therefore, a good accounting information system is needed to help the successful management of health centers, especially in providing information on how drug inventory management. A good accounting information system is also useful for the head of the health center to carry out supervision and control activities for the management of health center drug supplies.

According to PSAP (Government Accounting Standards Statement) Number 5, inventories in the context of health centers are goods or equipment intended to support government operational activities as well as goods intended for sale or delivery to the public in the context of government activities (Najiyah et al., 2020). Inventory is a very important asset component in an entity including government agencies because it is closely related to the Regional Budget (APBD) (Suhimarita & Susianto, 2019). The availability of sufficient drugs allows health centers to provide appropriate and adequate treatment to their patients. Conversely, a shortage of drug supplies can pose a risk of not meeting the community's need for health services.

Seeing the importance of drug supplies in health centers, it is one of the reasons why an effective accounting information system is needed along with good internal control. An effective accounting information system will provide accurate and timely information about drug supplies, while good internal controls will ensure that drug supplies are managed efficiently and in accordance with established standards. The existence of good internal control will reduce the risk of fraud in the management of drug supplies. With a good accounting information system, health centers can avoid the risk of stock outs and excess drug supplies that have the potential to disrupt the continuity of health services and affect health center expenditures.

Previous research on accounting information systems and internal control of drug supplies has been conducted by Achmad et al., (2023), Wulandari et al., (2023), and Prayugo & Sulistyawati (2021) with research results showing that the inventory accounting information system has not run optimally because internal control has not been implemented effectively where there are still double jobs. Other research related to the analysis of inventory accounting information systems using the PIECES analysis method has been conducted by Yuliasari et al., (2023), Sabrijal et al., (2023), and Padli & Sugiyono (2021). The results showed that system weaknesses often occur in the aspects of control and efficiency. Information systems that have not been computerized take longer because officers have to record manually and then input into MS. Exel. Meanwhile, control is still weak because there is no data backup in the current system.

The difference between this research and previous research lies in two aspects. The first aspect is the object of research where most previous studies focus more on hospitals or pharmaceutical companies as the object of research. The second difference lies in the analytical tool used, namely the PIECES (Performance, Information, Economics, Control, Efficiency, and Service) analysis method, which is still rarely used to evaluate inventory accounting information systems. PIECES analysis is an analytical method used to identify the weaknesses of a specific system based on six aspects (Evitria et al., 2022). By using PIECES analysis, health centers can conduct a comprehensive system evaluation to identify problems in the system that may not be detected at the beginning of a simple initial evaluation. In addition to being more

comprehensive, the PIECES method not only considers the technical aspects of the system but also takes into account the economic aspects where this analysis evaluates the development costs, operational costs and economic benefits of a system. Puskesmas Tembok Dukuh was chosen as the object of research because it is located in Surabaya City which has the second largest population density after Jakarta City which shows the high need for public health services. In addition, Puskesmas Tembok Dukuh also began to implement the use of technology in its operational activities including in managing drug supplies.

Based on preliminary observations, the problems found by researchers at the Tembok Dukuh Health Center in Surabaya City are not yet optimal implementation of accounting information systems and internal control of drug supplies. This problem can be seen from weaknesses in internal control, where there is no clear separation of duties for parts of drug supply management which causes some employees to carry out double duties. Pharmacy officers jointly handle all drug supply management processes without a specific division of duties, such as pharmacy officer A who handles the receiving and storage of drugs in the warehouse. In addition, several times the puskesmas also received complaints from patients due to a mismatch in the drugs received. This happened when the puskesmas experienced a drug shortage due to late delivery of drugs from suppliers or IFK (City Pharmacy Installation) Surabaya. Meanwhile, the recording of drug supplies at Puskesmas Tembok Dukuh is quite good because it has used technological assistance in the form of SIMBOK and SIMPUS applications, but its utilization is still not optimal because the puskesmas has just implemented the system so that it is still in the process of adjustment. Based on a series of these problems, researchers are interested in conducting an in-depth evaluation of the accounting information system and internal control of drug supplies at the Tembok Dukuh Health Center.

This research uses a qualitative case study approach to achieve the research objectives, namely to deeply understand and evaluate the accounting information system and internal controls that run at the Tembok Dukuh Health Center in Surabaya City using the PIECES analysis method. This objective is in line with the formulation of the problem in this study, namely how the implementation of the accounting information system and internal control of drug supplies at the Tembok Dukuh Health Center in Surabaya City based on the PIECES method. The data collection technique used in this study is data source triangulation by seeking the truth of certain information through several methods and sources of data acquisition including observation, interviews and documentation. Theoretically, the research results provide empirical evidence regarding the importance of evaluation activities in identifying weaknesses in accounting information systems and internal control of drug supplies using the PIECES analysis method. In-depth evaluation will provide a more comprehensive and accurate picture of the advantages and disadvantages of the current system. Practically, the evaluation results provide detailed information for the Tembok Dukuh Health Center of Surabaya City regarding the weaknesses of its drug inventory management system. The evaluation results and recommendations from this research are useful for the health center in making improvements to the existing system so that the system can run more effectively and efficiently. This research also contributes to providing a clearer description of the procedures for the drug inventory accounting information system in the form of a flowchart so that it is easier for readers to understand.

II. LITERATURE REVIEW

A. Information System of Accounting

According to Romney and Steinbart (2018), an accounting information system is a system that designs business procedures and collects, records, stores and processes financial data to produce information needed in making business decisions. Romney added that there are six components in the accounting information system, namely system users, procedures or instructions in running the system, data, software, information technology infrastructure, and internal control. Another opinion related to the understanding of accounting information systems is also conveyed by Turner, Weickgenannt and Copeland (2017) that accounting information systems include a series of processes, procedures, and systems that collect accounting data from business activities, record accounting data into appropriate documents, process data in detail by classifying, summarizing, and combining them and reporting accounting data to internal and external users. From the understanding according to experts, it can be concluded that an accounting information system is an integration between information technology and accounting processes in the form of activities to collect, record, and process transaction data to provide financial information that is easy to understand. In the context of inventory, an accounting information system is created to manage transactions related to inventory mutations in the warehouse (Mulyadi, 2023). With an accounting information system, management can analyze the performance of inventory management performance so that it can make better strategic decisions.

B. Internal Control

Internal Control according to the AICPA (American Institute of Certified Public Accountants) is a process and actions implemented to safeguard the entity's assets and provide reasonable assurance about the achievement of entity objectives such as effectiveness and efficiency of operations, reliability of financial reporting, and compliance with applicable policies. There are five components of internal control according to COSO (Committee of Sponsoring Organization of the Treadway Commission), namely the control environment, risk assessment, control activities, information and communication, and monitoring (Sudiarto et al., 2021). The five components have been used since 1992 and were updated in 2013 to improve compatibility with the current operational and business environment driven by technological changes (Romanti, 2023). The 2013 COSO Internal Control Framework explains more deeply about the five control components that explicitly define 17 principles and 87 focal points. From these changes, it is hoped that the company can have more integrated internal controls so that it can meet the needs of stakeholders, especially in becoming a company that is transparent, accountable and has good governance.

C. The PIECES Method as an Evaluation Tool for Inventory Accounting Information Systems

Evaluation of accounting information systems, especially in inventory management, is very important to determine the extent to which the system can provide optimal benefits to the agency (Yuliasari et al., 2023). The application of the right inventory accounting information system is needed to help management get accurate, complete and timely information. According to Hanif Al Fatta (2007), in identifying problems in a system, it is necessary to analyze performance, information, economy, application security, efficiency and customer service. System analysis based on these six aspects is called PIECES analysis. The PIECES analysis method was first introduced by James Wetherbe which is an information system evaluation model in the form of a framework used to classify problems, opportunities, and directives that

exist in the scope definition section of system analysis and design. Hanif Al Fatta (2007) suggests that there are six aspects used to analyze the system in the PIECES Framework, which are as follows:

1. Performance
   Performance analysis is carried out to determine the performance of a system, whether it is running well or not. In the PIECES method, the performance aspect is very important to determine whether existing procedures can still be improved and to find out how reliable and to what extent the information system operates to achieve the desired goals (Muliansah & Budihartanti, 2020). Some indicators that can be used to measure performance include the amount of work that can be done or the output that can be produced at a certain time (throughput), the speed of a system in processing data / orders (response time), audibility, completeness, consistency, and fault tolerance.
2. Information
   The information aspect determines whether existing procedures can be improved or improved so as to produce better quality and useful information. In finding data, it will definitely produce information that will be displayed, this analysis is used to find out how much and clear information is obtained from one data search (Risqullah et al., 2023). The information generated by the system must be in accordance with the actual situation, complete and timely to be able to support proper decision making. This aspect can be measured through several indicators such as accuracy, information relevance, information presentation and data flexibility.
3. Economics
   The economic aspect assesses whether the benefits (use-value) of the procedures or systems implemented can be increased or the costs of using them can be reduced. In other words, this aspect can be seen from the level of operational efficiency generated by emphasizing the use of existing resources to avoid waste and the extent to which a program or part of a program can be integrated and reused in other applications (reusability).
4. Control and Security
   Control and supervision in a system is carried out to ensure that the system can run properly. Through the control aspect, it can be seen to what extent control measures are taken to improve system performance, prevent or detect errors and ensure the security of data and information in the system. The control and supervision of a system can be seen from the level of security and integrity.
5. Efficiency
   This analysis is carried out to find out whether a system is running efficiently or not, with the minimum possible input that can produce as much output as possible. A system must be able to efficiently answer and help solve a problem. Efficiency can be measured by looking at two indicators, namely usability and maintainability. Usability includes the effort required to understand, operate, prepare input and interpret the output of a system while maintainability leads to efforts to identify and correct errors in the system.
6. Service
   The service aspect analyzes the extent of service improvement provided by the system. The system is said to be bad when it produces outputs that are inaccurate, inconsistent,

and untrustworthy. Services can run well if accompanied by a good and structured system. An increase in better services for management, users and other parts is a symbol of the quality of an information system. Some indicators that can be used to measure service aspects are accuracy, reliability, and simplicity. Accuracy refers to the accuracy of calculation and control while reliability determines how reliable a system is to perform its functions. The simplicity of a system reflects that the system is easy to understand and use to complete a job.

III. RESEARCH METHODOLOGY

A. Type of Research

The type of research used in the preparation of this research is qualitative with a case study approach. According to Creswell (2018) case study qualitative research is a research design found in many fields, especially evaluation, where researchers develop in-depth analysis of certain cases or phenomena, both programs, activities, processes, events and individuals. Cases are limited by time and activity so that researchers collect complete information through various data collection procedures over a continuous period of time (Stake, 1995). The purpose of using case study qualitative research is to present a detailed description of the context, characteristics, and characteristics of the case under study which then from these unique characteristics will be made a general thing (Rusandi & Rusli, 2019).

B. Research Object

The object of the research is related to accounting information system activities and internal control over drug inventories at the Tembok Dukuh Health Center which is located at Jl. Kalibutuh Number 26, Tembok Dukuh, Bubutan District, Surabaya, East Java 60252. Puskesmas Tembok Dukuh was chosen as the research subject because it is located in Surabaya City with the second largest population density after Jakarta City which shows the high need for health services. Tembok Dukuh Health Center has also adopted technology in its operational activities including drug supply management.

C. Data Source and Collection Method

The types of data used in this research are primary data and secondary data with data collection techniques using triangulation of data sources including in-depth interviews with several informants, observation and documentation. The purpose of triangulation is not to seek the truth of some phenomena, but rather to increase the researcher's understanding of the research findings (Sugiyono, 2019). In this study, documentation activities were used to obtain secondary data in the form of standard operating procedures for managing drug supplies in the form of flowcharts and narratives, procurement transaction documents, IKM reports in 2023 and other reports related to drug supplies. Meanwhile, primary data collection was carried out through observations and interviews. Observations were made by researchers by directly observing how the accounting information system and internal control of drug supplies at the Tembok Dukuh Health Center were running. Meanwhile, interviews were conducted by asking structured questions to several informants who were purposively selected based on their involvement in the management of drug supplies. Justification of informants in this study is listed in Table 1 below:

Table 1 List of Informants

Informant	Description
apt. Marceline Vita Gita Pratiwi, S.Farm (Pharmacy Department)	Serves as the main person in charge of managing the drug supply of Tembok Dukuh Health Center.
Galih Mayang Sari, S.Farm (Pharmacy Department)	Assist in the management of drug supplies, especially the entry and exit of drug supplies in the warehouse.
Irma Dwi Syafitri, S.Ak (Health Center Accountant)	Responsible for procurement payments drug inventory and financial report generation.
drg. Tiyas Pranadani (Head of Puskesmas)	Responsible for the supervision and control of drug supplies at the health center.

D. Data Analysis Method

After data collection, researchers will then conduct data analysis to understand the relationships and concepts in the data related to accounting information system activities and internal control of drug supplies that have been collected from various data collection techniques. Activities in qualitative data analysis are carried out interactively and continuously until completion, so that the data obtained reaches a saturation point (Sugiyono, 2019). The stages of data analysis carried out in this study are as follows:

1. Conducting data reduction to select and organize data obtained from observation, documentation and in-depth interviews with several informants in order to see the comparison between data clearly. In this case, researchers made transcripts of the interviews conducted.
2. Presenting data (data display) in the form of a brief description and flowchart or flowchart regarding the procedure for managing the supply of health center drugs. Researchers also analyzed problems with the accounting information system and internal control of drug supplies to identify the strengths and weaknesses of the system based on empirical findings obtained during the research in accordance with the six aspects of the PIECES analysis method.
3. Summarize the findings of the data that has been collected as a basis for formulating research results. Researchers describe the results of the evaluation of the accounting information system and internal control of drug supplies based on data analysis using the PIECES analysis method which is supported by theories obtained from books and journal articles.

E. Data Validity Verification Techniques

A research needs a standard to assess the extent to which the research results can be trusted or true. In the context of qualitative research, this standard is often referred to as data validity (trustworthiness). A finding or data can be said to be valid if there is no difference between the data reported and what actually happens in the field (Sugiyono, 2019). In this study, researchers utilized triangulation of sources and techniques to examine data from observations, in-depth interviews and documentation relevant to the research focus. This approach allows the validity of the data to be tested because the results from various sources can be compared to verify the truth.

IV. RESULT AND DISCUSSION

A. Information System of Accounting in Tembok Dukuh Community Health Center

Puskesmas Tembok Dukuh Surabaya City has a computerized accounting information system for its drug inventory. The system is designed to manage information about health center drug supplies so that it can help maximize the efficiency of inventory management. Through observations made, it is known that drug supplies at the puskesmas are divided into two, namely pharmaceutical preparations and BMHP (Consumable Medical Materials). The management of pharmaceutical supplies and BMHP is carried out in accordance with the Standard Operating Procedure (SOP) established by the puskesmas, which was prepared based on the provisions of the Minister of Health Regulation Number 74 of 2016 and the Technical Guidelines for Pharmaceutical Service Standards at Puskesmas. Based on the SOP document, the management of pharmaceutical supplies and BMHP includes planning, procurement and requesting, receiving, storing, distributing, destroying, controlling, and monitoring and evaluating management.

The first stage is a planning activity that contains a plan for the health center's drug needs for one year. The planning of drug supplies is carried out by pharmaceutical officers once every 1 (one) year. This was conveyed by Ms. Marceline in her interview as follows:

> "...Planning is done once a year usually at the beginning of the year, but planning can be readjusted if during the current period there is a mismatch between planning and actual drug needs."

In the SOP document, planning is prepared referring to the National Essential List (DOEN) and the National Formulary and considering drug usage data, drug demand plans and current disease patterns in coordination with puskesmas health workers. Pharmacy officers will recap the planning in a Work and Budget Plan (RKA) that is adjusted to the available JKN (National Health Insurance) budget.

After planning, the health center can conduct procurement to meet its drug supply needs. Puskesmas can procure drugs through requests to the City Pharmacy Installation (IFK) and purchase independently using the puskesmas budget. The following statement was delivered by Ms. Marceline:

> "Puskesmas can conduct procurement in two ways, namely submitting drug requests to the IFK and making independent purchases directly to the provider. For drugs that are available in the e-catalog and have SSH, we will buy independently, while drugs that are not available in the new e-catalog can be requested to IFK, usually drugs that can be requested are program drugs such as ORS."

The procedure for purchasing drugs from providers is described in the puskesmas SOP presented in Figure 1. The explanation of the flowchart in Figure 1 can be explained that the stages of the procurement procedure are:

a) Pharmacy officers make a purchase plan by comparing the price between the ceiling listed and the estimated price obtained from the provider along with the desired specifications up to the price difference.
b) The purchase plan that has been made is then submitted for approval to the Budget User Authority (KPA). After that, the purchase plan is submitted to the Commitment Making Officer (PPK) and Procurement Officer (PP) for approval.
c) PPK together with PP procure drugs in accordance with the approved purchase plan. If the proposed medicine is included in the e-catalog, the procurement is carried out on the

website https://e-katalog.lkpp.go.id/ with the acquisition price following the price in the e-catalog. The purchasing process is carried out according to the instructions on the website until the e-purchasing printout states that the provider will send the goods.

d) If the proposed drug supplies are not available in the e-catalog, the PP makes a direct purchase to the provider at the acquisition price of the negotiated price agreed by both parties and then makes an order letter to the provider.

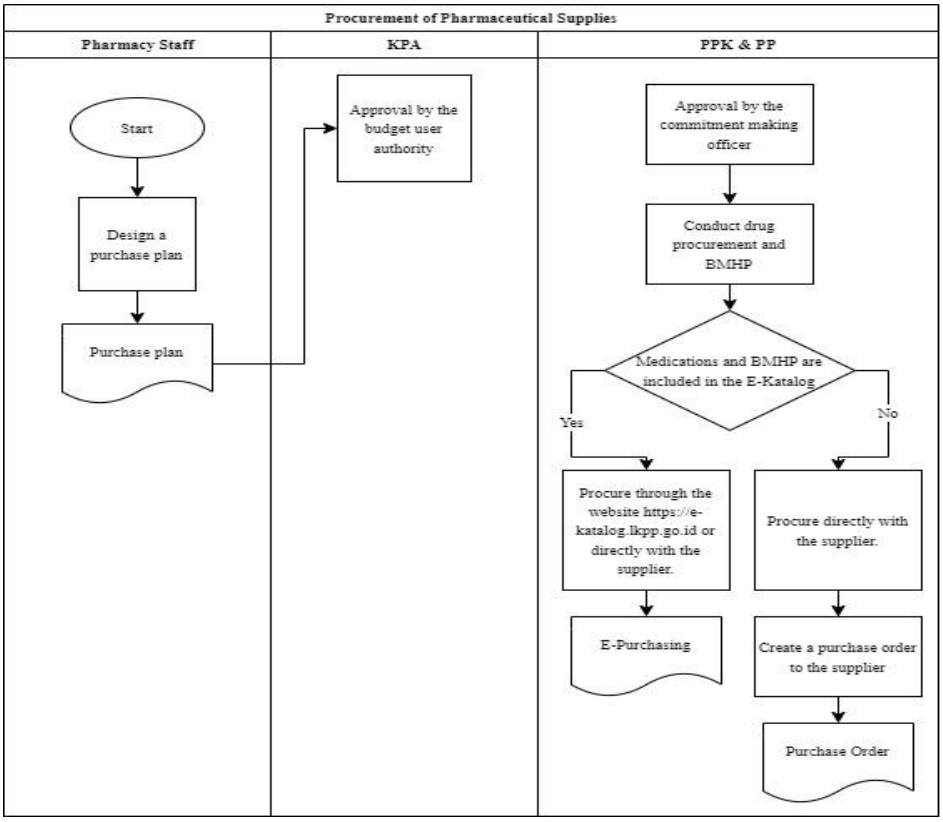

Figure 1 Flowchart of Drug Procurement

Meanwhile, the procedure for requesting drugs to the Surabaya City IFK for non JKN drug items is described in Figure 2.

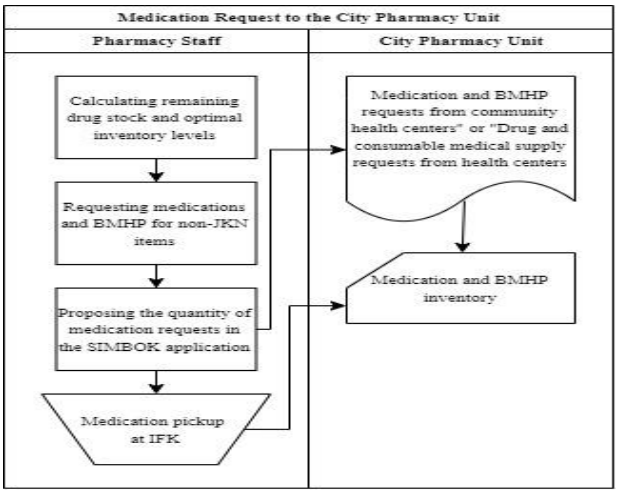

Figure 2 Flowchart of Medication Request to the City Pharmacy Installation (IFK)

Based on the flowchart above, the stages of the drug request procedure at IFK are as follows:

a) Before making a drug request to IFK every month, pharmacy officers must calculate the remaining stock of drugs and determine the optimum stock, which is the stock of drugs submitted to the service poly.
b) Pharmacy officers propose the number of drug requests on the SIMBOK application.
c) After receiving the drug request submission from the Puskesmas, IFK will prepare the drug to be submitted to the Puskesmas.

The next stage is the receipt of drug supplies, both pharmaceutical preparations and BMHP. Pharmacy officers are required to check the drugs received, especially the expiration date of the drugs. The minimum expiration period of drug supplies is adjusted to the management period at the puskesmas plus one month (Permenkes Number 74, 2016). The following procedure for receiving drugs from independent procurement based on the puskesmas SOP is contained in Figure 3.

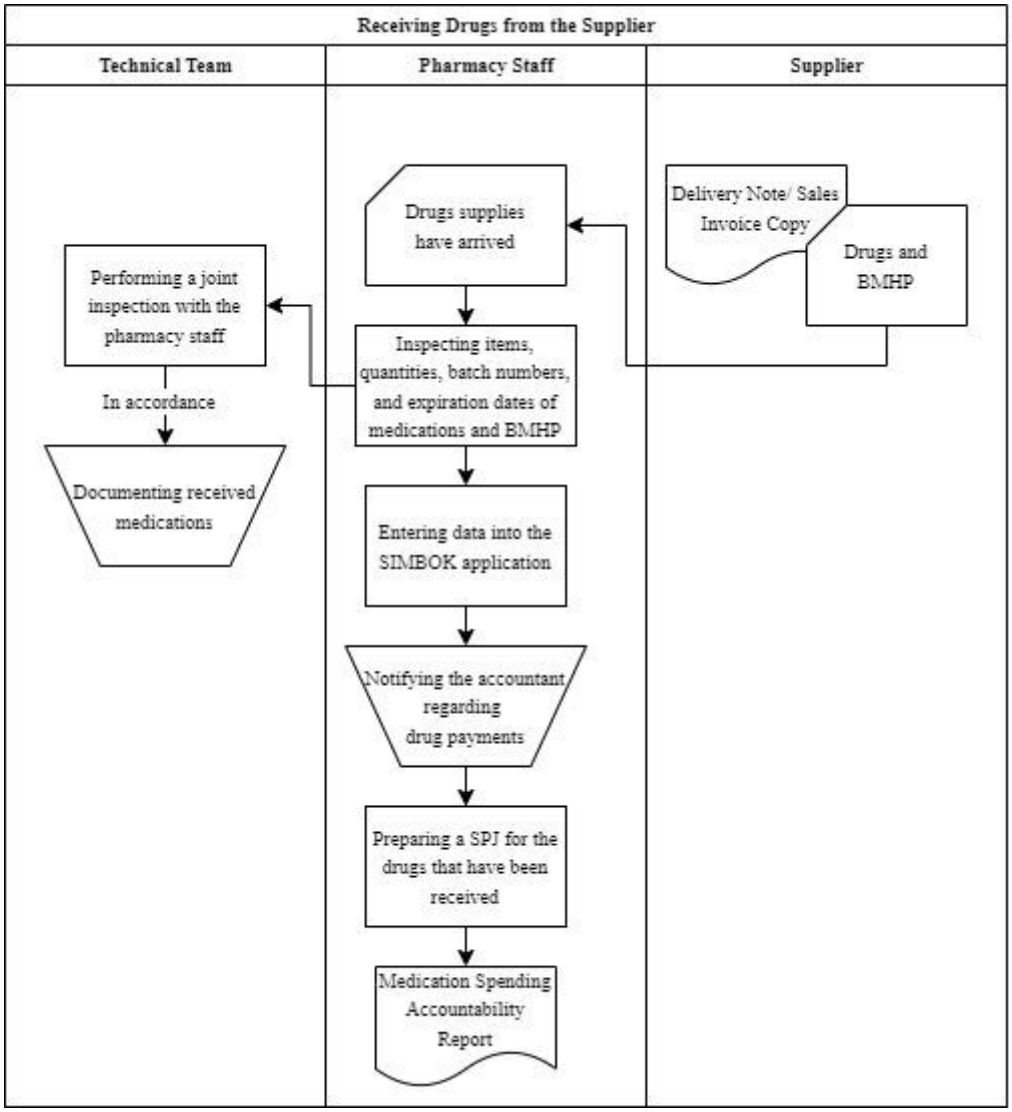

Figure 3 Flowchart of Receiving Medications from the Supplier

Based on the flowchart above, the stages of receiving drugs from providers are as follows:

a) The pharmacy officer together with the technical team checks the incoming drug supplies to ensure that the items, quantities, batch numbers and expiry dates of the drugs are in accordance with the sales invoice/copy of the sales invoice from the provider or e-catalog.
b) The technical team will document the drug supplies that have been received. The pharmacy officer then enters the drug receipt in the SIMBOK application including name, budget source, expiration date, batch number, quantity, unit and item price.
c) The pharmacy officer informs the accountant regarding the payment for the drugs received and then makes a Letter of Accountability (SPJ).

Meanwhile, the procedure for receiving medicine from IFK is as follows:

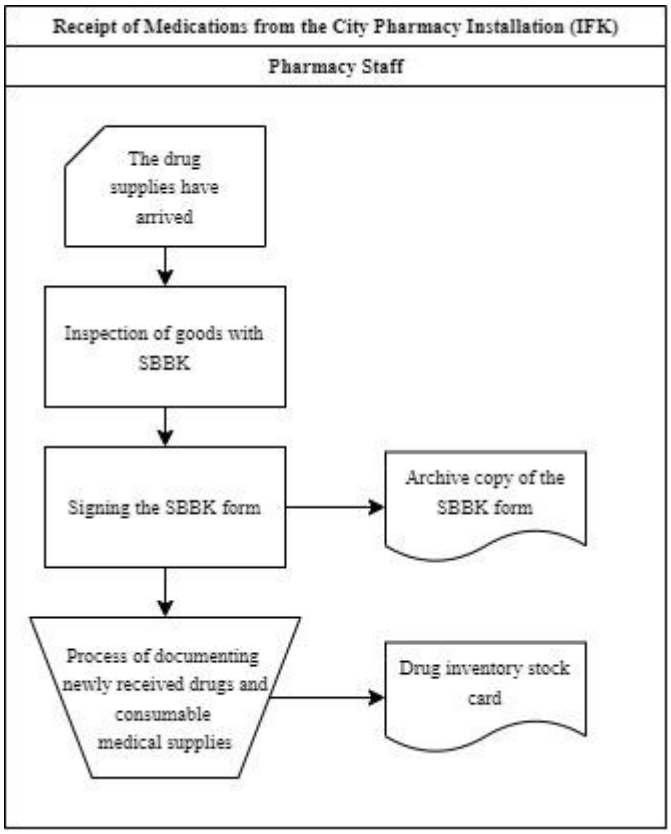

Figure 4 Flowchart of Medication Receipt from the City Pharmacy Installation (IFK)

The flowchart above explains the stages of the procedure for receiving drugs from IFK, namely:
a) The pharmacy officer receives the medicine from the IFK then checks whether the medicine received matches the type, quantity, batch number, and expiration date on the SBBK.
b) When all drug criteria are met, the pharmacy officer then signs the SBBK sheet and receives a copy of the SBBK for filing.
c) The pharmacy clerk records the drug inventory received from IFK on the stock card.

Medicines that have been received from both providers and IFK will then be stored in the main warehouse of the puskesmas. The storage of drug supplies aims to prevent the drug from damage and its quality is guaranteed. The procedure for storing drug supplies based on the puskesmas SOP is as shown in Figure 5 as follows:

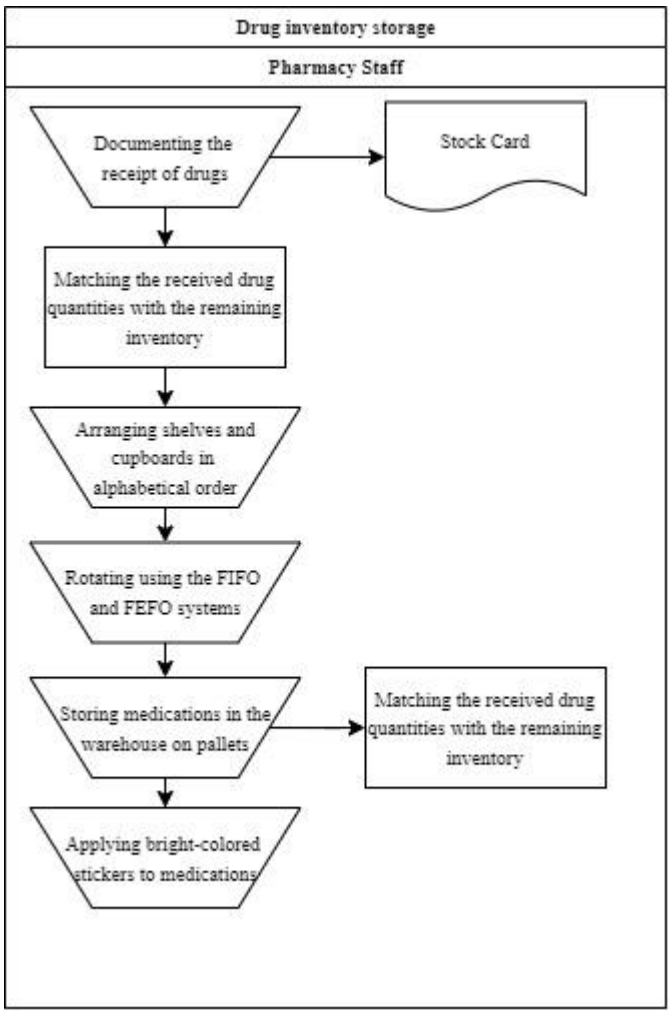

Figure 5 Flowchart of Medication Inventory Storage

The following are the stages of the drug storage procedure based on the flowchart above:

a) Pharmacy staff record drugs in the stock card including quantity, batch number, and expiry date then match the total drugs with the amount of drugs received and the amount of leftover drugs. Medicines are arranged on shelves and cabinets alphabetically taking into account shape, type, light, humidity and storage temperature.
b) Inventories of drugs and BMHP are rotated using the FIFO system, where the first drug received is used first and FEFO, where drugs with shorter expiration dates are used first.
c) Medicines stored in the main warehouse are placed on pallets so that they are not directly stored on the floor. The drugs are then marked with light-colored stickers containing the expiry date such as red for expiry date of less than 6 months, yellow for 6 months - 1 year, green for expiry date of more than 1 year. Drugs that have similar appearance and names are given LASA (Look Alike Sound Alike) stickers, while HIGH ALERT stickers are for high-risk drugs. Psychotropic and narcotic drugs are stored in a special cabinet with a limited access lock.

In the distribution of drugs, pharmaceutical officers distribute pharmaceutical preparations to patients while BMHP to the service poles in need. The procedure for distributing pharmaceutical preparations to patients according to the puskesmas SOP is described in Figure 6:

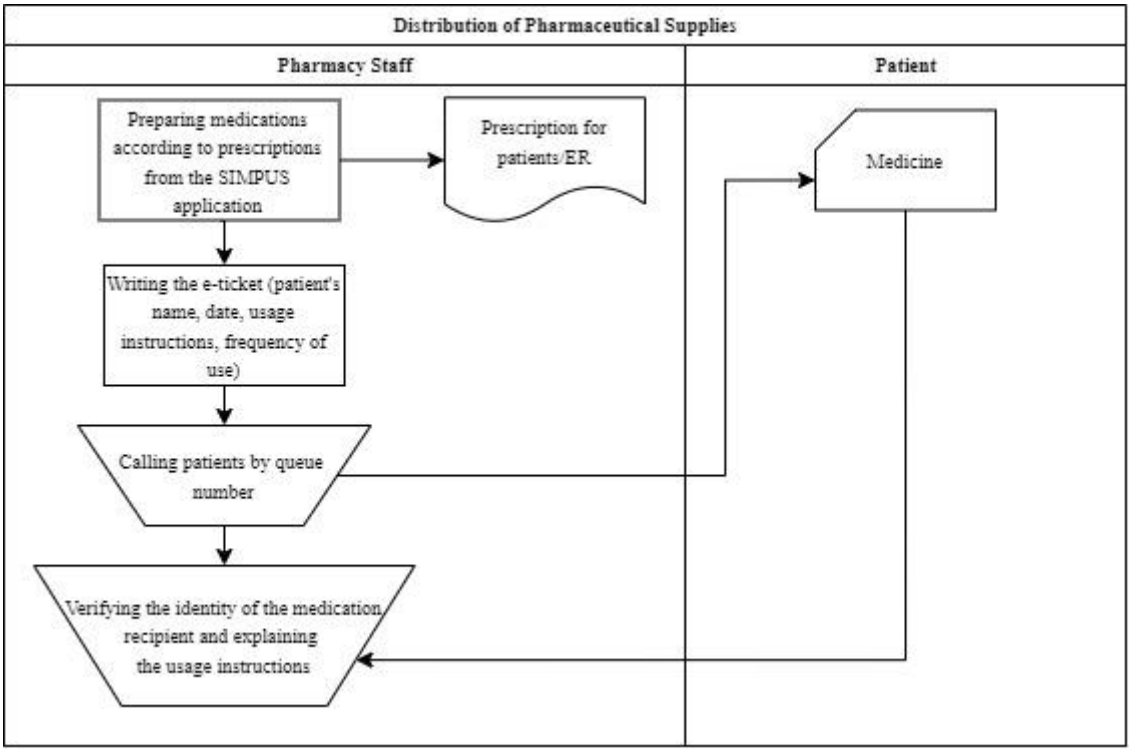

Figure 6 Flowchart of Distribution of Pharmaceutical Supplies

Based on the flowchart above, the stages of distribution of pharmaceutical preparations can be explained, namely:

a) Pharmacy staff receive prescriptions through the SIMPUS application for outpatients and emergency room patients and then prepare the medicine. After that, the pharmacy officer will write an e-ticket containing the patient's name, date, method of use and frequency of use.
b) When the medicine has been prepared, the pharmacy staff calls the patient according to the queue number and confirms the correct identity of the recipient before the medicine is handed over.
c) The pharmacy officer explains the medication including dosage, usage, side effects and storage.

Meanwhile, the procedure for distributing BMHP to poly services is shown in Figure 7.

Based on the flowchart below, it can be explained that:

a) Each person in charge of the service poly submits drug needs by filling out a request book for pharmaceutical preparations and BMHP.
b) Once a request for medicine is received, the pharmacy officer will prepare the medicine as required. The pharmacy officer then records the dispensing of the medicine on the stock card and then hands over the medicine to the person in charge of each service poly.
c) The pharmacy officer and the person in charge of the service clinic sign the receipt then the pharmacy officer will input the drug dispensing data in the SIMBOK application.

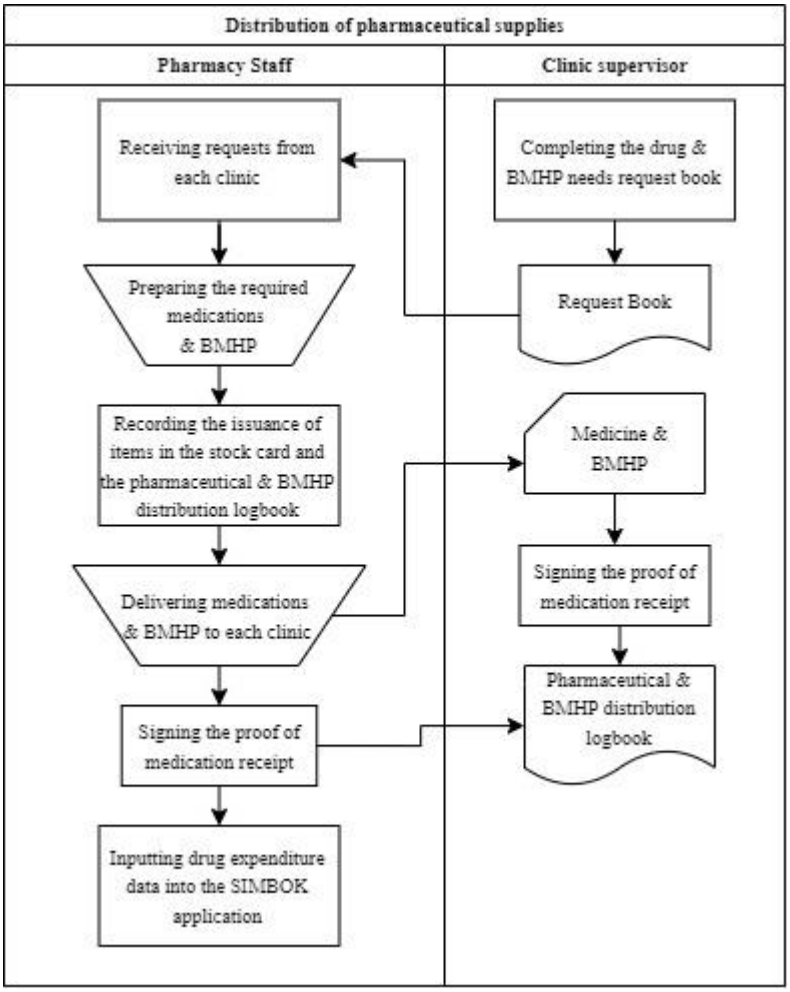

Figure 7 Flowchart of BMHP Distribution

Specifically for the procedure for destroying drug supplies, there is a separate SOP from the SOP for managing pharmaceutical supplies and BMHP for puskesmas. Based on this SOP, the destruction of expired or damaged drugs is carried out by checking the drugs at the end of each month and then separating the expired or damaged drugs from other drug storage. Drugs that are indicated to be expired or damaged will be recorded and reported to the head of the puskesmas before being submitted for return through the SIMBOK application. The drug supplies will be returned to the Surabaya City IFK according to the specified schedule. This is supported by the following statement from an interview with Mrs. Marceline:

> "For expired or damaged drugs, we will return them to the IFK. Previously, pharmacy officers have routinely checked the expiration time of drugs at the end of each month. Expired drugs will be stored by themselves and recorded on the stock card to be issued. Before sending the medicine back to the IFK, we will enter the expenditure in SIMBOK and make a return report."

Control measures for drug supplies are carried out by the Tembok Dukuh Health Center to avoid fraud or misappropriation. Some of the control efforts carried out are routinely conducting stock-taking at the end of each month, submitting reports on the receipt, use, and final stock of drug supplies to the head of the puskesmas and limiting access to both the warehouse and the system used. Internal control is strengthened by the implementation of regular internal audits to ensure that the management of drug supplies runs according to the SOP. In addition to being contained in the puskesmas SOP, internal control measures were

also explained by Mrs. Tiyas as the Head of the Tembok Dukuh Puskesmas in the following interview:

> "...Internal control over drug supplies at the Tembok Dukuh Health Center has been carried out in several ways such as limiting access to warehouses and systems for drugs, internal audits, and the obligation of pharmacy officers to report drug stock conditions regularly. Control measures are also carried out by ensuring that the planning that has been prepared at the beginning of the year is in accordance with our current drug needs."

Not only internal control, Tembok Dukuh Health Center also conducts monitoring and evaluation activities for the management of drug supplies. These activities are carried out periodically to control and avoid errors. Based on the explanation in the puskesmas SOP, pharmacy officers monitor usage from the results of stock-taking every month and monitor drug expiration dates. Planning evaluations are also carried out using the ABC method, VEN and a combination of ABC and VEN.

B. *Evaluation of Accounting Information Systems and Internal Control of Medication Inventory Based on PIECES Analysis*

According to James Wetherbe (2012), the use of PIECES analysis aims to correct or improve the system in terms of six aspects, namely aspects of performance, information, economics, control, efficiency, and service. In this study, the PIECES analysis method was used by researchers as a basis for analysis to identify the main problems in the accounting information system and internal control of drug supplies at the Tembok Dukuh Health Center in Surabaya City in more detail. Through this analysis, researchers evaluated and found system weaknesses based on six predetermined aspects. Evaluation of the current system is carried out to understand the root of the problems identified at the beginning and to develop recommendations for appropriate solutions to overcome these problems.

1. Performance

Performance analysis assesses the ability or performance of the system in achieving company goals which can be measured by throughput and response time. The performance of a system can be said to be good when it can be accessed or process data quickly, provide complete and traceable output, and have high fault tolerance (Septiani et al., 2023). Based on the results of interviews with pharmacy officers, in achieving effective and efficient drug inventory management, Puskesmas Tembok Dukuh Surabaya has implemented computerized inventory management by system with the help of various applications such as SIMBOK, SIMPUS and e-catalog. These various applications have different functions, for example SIMBOK which is specifically used to record the inflow and outflow of drug supplies, SIMPUS for the service system to patients and e-catalog which functions as a platform where puskesmas procure or shop online using the BLUD budget. The existence of system assistance makes performance more efficient because work can be done directly on the system and there is no need to make records manually. This statement is in accordance with what was conveyed by Mrs. Mayang in the interview as follows:

> "...with the system, the performance is more practical because the stock is directly recorded on the system and calculated automatically so that at any time you can find out the final amount of stock and where the medicine is distributed."

Meanwhile, the observation results show that the response time required by the system in doing a job is relatively fast, for example, the time required for the login process is only about 20-25 seconds, while inputting data takes about 5-8 minutes depending on the number and

type of drugs received. The average time required to input receipt data is about 2-3 minutes per drug. Based on the analysis of the performance aspect, it shows that there are no problems or weaknesses identified. The interview results also explained that so far, the system used has never experienced a fatal error resulting in incorrect output/information. Pharmacy officers can re-edit data on the system when they accidentally make a mistake, so that the results of the input process can be corrected.

2. Information

The information aspect focuses on analyzing how the level of accuracy, relevance of information, flexibility and presentation of information produced by the current system (Prima & Adrianti, 2020). A system is categorized as good when it is able to produce the right information, according to user needs, presented in a format that is easy to understand and interpret and easily adapted to needs (Tullah & Hanafri, 2014). Based on the results of the interview, the level of accuracy of the accounting information system implemented by the Surabaya City Tembok Dukuh Health Center is classified as good. This was conveyed by Mrs. Mayang in her interview as follows:

> "With the use of the system, the information generated is much more accurate and in accordance with the situation in the warehouse so that it helps in making the right decisions, for example when the puskesmas should procure more drugs, or what drugs to reduce or increase the amount of purchases."

This statement shows that the system operation has fulfilled the accuracy and relevance of information indicators. Based on the results of the interview, it is also known that the output produced by the SIMBOK application, such as the final report on drug inventory, has so far always been accurate and has never been wrong except for human error that forgot to input the expenditure of drug supplies to sick puskesmas employees. Meanwhile, other applications such as

The e-catalog used as a drug shopping platform provides complete and accurate information including the name of the provider/distributor, address, product specifications and market price. The information is presented in a format that is in accordance with the provisions, easy to understand and can be accessed at any time. This helps interested parties make informed decisions based on updated information. Unlike the e-catalog, the SIMBOK application only presents information for recording the overall drug inventory so that it cannot find out the amount of drug inventory in each warehouse, both the main warehouse, pharmaceutical warehouse and service desk. Based on the analysis of the information aspect, researchers evaluate that in terms of system information it is still not good. Recording all drug supplies in SIMBOK is put together so that it is difficult to identify and find out information on the amount of inventory in each warehouse. Puskesmas Tembok Dukuh needs to develop features for the SIMBOK application, especially in the inventory recording menu.

3. Economics

In the economics aspect, the analysis is carried out to determine whether the system in terms of financial and benefits is worth it to be implemented by a company (Artaningsih et al., 2023). In this aspect, the economics in question are not only related to costs but also around feature development (Septiani et al., 2023). The system is said to be good in terms of economics when part of the program or the resulting output can be reused or opened in other applications such as Microsoft Office and the resources both human resources and economic resources used in implementing the system are relatively small compared to the use of manual systems (Tullah & Hanafri, 2014). At the Surabaya City Tembok Dukuh Health Center, the

system used in managing drug supplies is currently provided directly by the Government. This is in accordance with the interview statement by Mrs. Marceline:

> "The systems used by the health centers are all free from the government, including operating costs, maintenance and training."

The systems in question include the e-catalog developed directly by the Public Procurement Policy Agency (LKPP) to make it easier for puskesmas to do online shopping, the SIMPUS application created by the Surabaya City Government and SIMBOK made by the Surabaya City Health Office. Economically, puskesmas do not incur any costs for either the development or operation of the system. Before the application is used by the puskesmas, the government will first conduct training and provide the relevant officers with a module to guide the operation of the application. The Surabaya City Government also provides a special team in charge of the application to handle various obstacles experienced by puskesmas. The benefits obtained by puskesmas from the application of these various systems are very economical compared to the costs incurred. Based on the results of this analysis, it is concluded that there are no problems identified in terms of the economy of the system running at the Tembok Dukuh Health Center in Surabaya City.

4. Control and Security

The control and security aspect analyzes the extent to which supervision and control over the system is running well. The system is categorized as good if it has appropriate controls such as restrictions on access rights and is able to control or protect the system so as to prevent damage or data leakage (Tullah & Hanafri, 2014). Based on observations and interviews, Puskesmas Tembok Dukuh has implemented several control measures such as internal audits every year, routine drug inventory reporting, and access restrictions for both the warehouse and the drug inventory recording application.

The SIMBOK application can only be accessed by pharmacy officers, heads of health centers and pharmaceutical officers of the Surabaya City Health Office. However, the head of the puskesmas and the pharmaceutical officer of the Surabaya City Health Office can only monitor without editing inventory data. Drug inventory control measures are also carried out by Mrs. Tiyas as the head of the puskesmas. The following is the narrative from the results of the interview conducted:

> "Sometimes I check the entry and exit of drugs, recording on the stock card and drug expiration date to ensure that everything is in accordance with the procedure. I check at least once a month at an uncertain time or unannounced."

Mrs. Tiyas also said that there is no specific separation of duties for drug inventory management officers due to limited human resources. Based on the analysis of the control and security aspects, the evaluation results show that there is a need for improvement of the current system, especially on the control measures taken. The weakness identified is that there is no separation of duties between the procurement, receiving, distribution and warehouse sections. All tasks are shared and handled by two pharmacy officers, but the division of workload is still not balanced.

5. Efficiency

This aspect focuses on knowing whether a system can efficiently answer and help solve problems, especially in terms of automation (Risqullah et al., 2023). The system is said to be efficient when it can help and facilitate users in achieving the desired goals, is easy to repair when errors occur and does not waste excessive time and human resources (Septiani et al.,

2023). Based on interviews conducted with pharmacy officers, it is known that the SIMBOK application has been integrated with SIMPUS so that the health service process can be carried out more efficiently. The following is what Mrs. Marceline said in the interview:

> "Pharmaceutical services to patients are assisted by the SIMPUS system which is integrated with SIMBOK, making it easier for doctors from various clinics to prescribe drugs. The prescription will automatically be submitted to the pharmacy department to be able to give the medicine to the patient concerned."

Based on the interview, it is known that doctors in the service poly do not need to submit patient prescriptions manually to pharmacy officers because prescriptions will be sent automatically to the SIMPUS system in the pharmacy. In addition, because they are integrated, pharmacy officers do not need to re-enter drug supply data in the SIMPUS application so that they can save time. With SIMBOK, pharmacy officers also do not need to record and make reports manually which takes longer. In the procedure for receiving drug supplies, pharmacy officers do not need to record manually and then input data into the application, but the recording will be done directly in the SIMBOK application to avoid wasting time due to double recording. Evaluation of the system based on the results of the analysis of the efficiency aspect shows that there are no problems or weaknesses identified. However, the puskesmas must update the system regularly so that the system is always in accordance with the latest conditions and is able to help complete work more efficiently.

6. Service

The service aspect in this case does not only refer to patient service satisfaction, but how the system helps facilitate services both internally and externally.

The system is said to be good if it can reliably perform the requested commands and provide simple features that are easily understood by users in providing services (Tullah & Hanafri, 2014). Based on the Surabaya City Health Office community satisfaction survey report, the IKM value of the Tembok Dukuh Health Center has increased from 84.81 in 2022 to 91.41 in 2023. This increase shows that with the implementation of the system from an external perspective, there is a change in the quality of health services received by the community, which was originally categorized as good to very good. Meanwhile, internally, the service aspect is measured by the level of ease and reliability of the system in helping officers provide services. The following is Mrs. Mayang's statement regarding the ease of use of the system:

> "I think the existing system is quite easy to use because it provides clear features and guidelines. In addition, the government also conducts training before the system is implemented by health centers."

Based on the interview, it is concluded that the available application is easy to use by officers in helping carry out their duties because it is equipped with features with clear guidelines. The existence of an application operation module and training held by the Surabaya City Government also helped improve officers' understanding of the use of the application. Evaluation of the inventory system in terms of service shows that so far the system has no problems or weaknesses.

The evaluation results based on PIECES analysis show that overall the accounting information system and internal control implemented by the Tembok Dukuh Health Center can be categorized as good. Based on observations and interviews conducted, so far the system has been very useful in helping the process of managing drug supplies to be more efficient and has never caused fatal problems. This assessment is also based on the results of the analysis and evaluation carried out using the PIECES analysis method where only two

problematic aspects were found, namely the information and control aspects. In the information aspect, it is known that the system used only provides an overall recording feature so that the information generated is not fully specific. Meanwhile, in the control aspect, it was found that there were double jobs due to limited human resources so that there was no systematic separation of duties.

The problems that have been identified will cause more weaknesses in the system if not immediately corrected. The lack of specific final stock information will make it difficult for pharmacy officers to perform stock-taking. Pharmacy officers must manually add up the total inventory in the main warehouse, pharmacy warehouse and service desk so that it takes longer. Limited information also prevents pharmacy officers from tracing if there is a difference between the recorded amount and the physical amount of inventory. Meanwhile, the absence of a systematic separation of duties will risk the detection of fraud that occurs. This is because many functions that should be handled by two different parties are handled by the same person, making it easier for them to commit fraud. To overcome these problems, the health center needs to improve the existing accounting information system by developing features in the SIMBOK application so that recording can be done separately between each warehouse. Meanwhile, to improve existing internal controls, the health center must start implementing a systematic and structured separation of duties.

V. CONCLUSION

Based on the results of the study, it can be concluded that the accounting information system for drug supplies at Puskesmas Tembok Dukuh Surabaya City has been well computerized. Puskesmas has used various applications such as SIMBOK, SIMPUS and E-Catalog to support performance to be more efficient. Internal control of drug supplies has also been carried out well, although improvements are needed due to the limited human resources available. Through the PIECES analysis method, researchers identified weaknesses, especially in the information and control aspects. To improve the quality of the system, it is necessary to develop features to be able to obtain more detailed and accurate information. Improving internal control also needs to be done with a clear separation of functions so that the workload can be divided fairly. Nevertheless, the current drug inventory accounting information system is categorized as good because the other four aspects are optimally fulfilled and the existing weaknesses do not hinder performance to cause material errors.

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