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Analysis Effectiveness System Planning and Procurement of Drugs in Hospitals: A Case Study in the Pharmacy Installation

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Abstract: *This study aims to analyze the effectiveness of drug planning and procurement systems in hospitals, with a special focus on pharmaceutical installations. An effective drug planning and procurement system is essential to ensure the availability of the right drugs, in adequate quantities, and at the time needed. This study uses a qualitative approach with a case study method to delve deeply into the process of planning, procurement, stock management, and distribution of drugs in hospital pharmaceutical installations. Data was collected through in-depth interviews with pharmacy staff, direct observation, and analysis of related documents. The results of the study show that despite the existence of a structured drug planning and procurement system, there are still several challenges faced, such as delays in delivery, inaccurate projections of drug needs, and limitations in information technology. The study also found that increased staff training, the use of more sophisticated information systems, and improvements in coordination between departments can improve the effectiveness of drug planning and procurement systems. The findings of this study are expected to provide insight for hospital management and policymakers in optimizing the drug procurement system to improve health services.*

Keywords: *Drug Planning, Drug Procurement, System Effectiveness, Pharmaceutical Installations, Hospitals*

Introduction

The hospital drug planning and procurement system is a series of processes involving various stages to ensure the availability of the right medications, in adequate quantities, and at the right time. The primary goal of this system is to support optimal healthcare services, avoid drug shortages or excesses, and minimize operational costs.

a) Drug Needs Planning
The medication needs planning process begins with identifying the types and quantities of medications needed based on historical usage data, disease patterns, and projected future needs. This data is typically collected through a hospital management information system (SIMRS), which records patient medication use. Effective planning requires collaboration between the pharmacy team, physicians, and hospital management to ensure the accuracy and relevance of medication needs.

b) Drug Procurement
Drug procurement involves the process of selecting and purchasing drugs from suppliers. This process must consider factors such as drug quality, price, supplier reliability, and delivery time. Hospitals commonly use e-procurement systems to increase efficiency and transparency in the procurement process. These systems allow hospitals to submit requests, evaluate bids from various suppliers, and manage contracts electronically.

c) Drug Stock Management
Once medications are received, managing inventory is crucial to ensure their availability and quality. An effective inventory management system is necessary to monitor expiration dates, storage conditions, and stock levels. This system also assists in conducting regular audits and monitoring medication usage to identify potential issues such as overstocking or understocking.

d) Drug Distribution
   Distribution of medications from the pharmacy warehouse to various healthcare units within the hospital must be timely and as needed. This distribution process requires strong coordination between pharmacy staff and healthcare units to avoid delays or errors in delivery. An integrated information system is essential to monitor the distribution flow and ensure medications reach the right destination.
e) Evaluation and Monitoring
   Regular evaluation and monitoring are conducted to assess the effectiveness of the drug planning and procurement system. Performance indicators such as drug availability, obsolescence, and procurement cost efficiency are used to identify areas for improvement. Feedback from users, such as doctors and nurses, is also invaluable in improving this process.

An effective drug planning and procurement system is crucial to supporting hospital operations and ensuring patients receive timely and quality treatment. Implementation of information technology, ongoing staff training, and transparent procurement policies are key to the success of this system.

The drug planning and procurement system in hospitals is a vital component in ensuring the timely availability and distribution of medications according to patient needs. The effectiveness of this system directly impacts the quality of healthcare services and patient safety (Wulandari, 2018). The hospital pharmacy department is responsible for managing all aspects related to medications, from needs planning to procurement and distribution (Purwanto, 2020). Given this crucial role, evaluating the effectiveness of the drug planning and procurement system is crucial to ensure the process runs efficiently and effectively (Sari, 2019).

Although numerous studies have been conducted on pharmacy management in hospitals, studies specifically evaluating the effectiveness of drug planning and procurement systems are limited. Most studies focus on clinical aspects and drug distribution, while planning and procurement aspects are often neglected (Kurniawan, 2017). Furthermore, there is a gap in understanding the factors that influence the effectiveness of these systems across hospital types, including size, facilities, and management (Yulianti, 2016).

This research is particularly urgent given the increasing complexity of drug needs in hospitals and the demands for better healthcare delivery. Inefficiencies in drug planning and procurement can lead to drug shortages, increased operational costs, and negatively impact patient safety (Hidayat, 2019). Therefore, a case study of a hospital pharmacy is necessary to identify constraints and opportunities for improvement in the drug planning and procurement system (Rahmawati, 2021).

Previous research has shown that an effective drug planning and procurement system can improve hospital operational efficiency and the quality of healthcare services (Setiawan, 2018). A study by Susanto (2019) found that implementing information technology in pharmacy management can reduce errors and improve accuracy in drug requirement planning. Meanwhile, another study by Lestari (2020) revealed that good coordination between various hospital departments plays a crucial role in the success of the drug procurement system.

The uniqueness of this research lies in its holistic approach to evaluating all aspects of the drug planning and procurement system in hospital pharmacy installations. It focuses not only on technical efficiency but also considers managerial aspects, policies, and interdepartmental coordination (Putri, 2021). This research will also utilize an in-depth case study approach,

providing richer and more specific insights into best practices and challenges faced in real-world contexts (Nugroho, 2017).

The purpose of this study is to analyze the effectiveness of the drug planning and procurement system in a hospital pharmacy and identify factors that influence its performance. This study is expected to provide practical recommendations for improving the efficiency and effectiveness of the drug planning and procurement system in hospitals. Benefits of this study include improved quality of healthcare services, reduced operational costs, and enhanced patient safety through better medication management.

Method

Study This use approach qualitative with method studies case (Yin, 2018). Approach This chosen For give deep understanding about effectiveness system planning and procurement home remedies sick , especially in the Pharmaceutical Installation . Study method case allows researchers For explore phenomenon in context life real and get comprehensive picture (Creswell & Poth, 2018) .

Data sources in study This consists of from primary data and secondary data . Primary data is obtained through interview deep with parties involved in planning and procurement drugs in the Pharmacy Installation , such as head installation pharmacy , pharmacists , and staff administration . Secondary data obtained from documents official House sick , report annual , as well as relevant literature (Merriam & Tisdell, 2016) .

Data collection techniques used in study This covering interview in-depth , observation participatory and analysis document (Yin, 2018). Interview deep done with use guidelines semi-structured interviews For allows further exploration deep to topic research (Kvale & Brinkmann, 2015). Observation participatory done For observe direct planning and procurement process drugs in the Pharmacy Installation . Analysis document used For study documents related to supporting primary data (Bowen, 2009).

Data that has been collected analyzed use method analysis thematic (Braun & Clarke, 2006). The data analysis process begins with transcription interviews and note-taking results observation . Next , the data is coded and grouped to in relevant themes with focus research . Analysis thematic allows identification patterns and themes main thing that appears from the data, as well as help in understand complexity system planning and procurement drugs in the Pharmacy Installation (Nowell et al., 2017). Data validity and reliability are maintained through data triangulation , namely with compare and confirm information obtained from various data sources (Patton, 2015).

With approach qualitative this , it is hoped study can give in -depth and comprehensive overview about effectiveness system planning and procurement home remedies sick , and offer useful recommendations For improvement system the .

Results and Discussion

Findings

Based on analysis that has been done , found a number of findings important related effectiveness system planning and procurement drugs in the Hospital Pharmacy Installation . First , accuracy in planning need drug Still become challenge main . The number of case out of stock stock and medicine expired show that system prediction need drug not optimal. This is aggravated with lack of accurate and unreliable historical data existence algorithm sophisticated predictions , so that the planning process Still manual and based on estimation rough (Sari et al., 2021; Hidayat et al., 2020).

Second , integration between system information at the Pharmacy Installation with other departments in the house Sick Still not enough adequate . Data from survey show that often happen

incompatibility between amount the necessary medication with what is available , as a result lack of communication and integration system between department . As a result , there was delay in procurement and distribution drugs , which have an impact negative on service patients (Putri & Wahyudi , 2019; Mulyono et al., 2018).

Third , the system procurement drug Still very depend on one or two suppliers main , which gives rise to risk tall to delay shipping and fluctuations price . Findings This indicates that diversification suppliers Not yet implemented in a way effective , so that House Sick prone to to various risk external that can bother smoothness operational . In addition , the long and bureaucratic procurement process also becomes constraint alone in ensure availability drug in a way appropriate time (Rahman & Anwar, 2021; Susanto et al., 2020).

Fourth , lack of training and development capacity source Power humans in the Pharmaceutical Installation become factor inhibitor main in increase effectiveness system planning and procurement medicine . Many staff pharmacy that has not fully understand use technology information and e-procurement systems , so that Still happen error in recording and ordering medicine . This is confirm the need improvement competencies and skills through ongoing training (Hernawan et al., 2021; Yulianti & Kurniawan, 2020) .

Analysis and Discussion

1. Evaluation System Drug Planning in Pharmacy Installation

System planning drugs in the Pharmacy Installation are very rely on historical data use medicine and prediction future needs . Based on results interview with head installation pharmacy , found that use method forecasting is often face challenge accuracy (Merriam & Tisdell, 2016). This caused by fluctuations amount patients and changes pattern an incurable disease always can predicted with accurate (Yin, 2018). In addition , the lack of integration between system information pharmacy with system information House Sick in a way the whole thing also hinders smooth planning process medicine (Patton, 2015).

Observation direct show that staff pharmacy often must do ad-hoc adjustments in plan procurement drug For overcome lack sudden stock (Creswell & Poth , 2018). Adjustment this , although efficient in term short , can cause inconsistency in management stock drug term long . This is indicates existence need urge For development more systems responsive and adaptive to change need drugs (Braun & Clarke, 2006).

Analysis document from report annual House sick also revealed existence mismatch between plan procurement and realization use drugs . Data shows that a number of type drug often experiencing overstock, while type drug other precisely often deficiency (Bowen, 2009). Imbalance This cause problem storage and risk expired medicine , which ultimately can increase cost operational House sick (Nowell et al., 2017).

For overcome problem this , recommended implementation technology more information integrated and use algorithm more forecasting sophisticated . Technology like ERP (Enterprise Resource Planning) system can help align data from various department and provide more predictions accurate about need drugs (Kvale & Brinkmann, 2015). In addition , training for staff pharmacy about use technology this is also very important For increase effectiveness system planning drug .

2. Analysis of the Drug Procurement Process in Pharmacy Installations

Procurement process drugs in the Pharmacy Installation involves a number of stages start from ordering , receiving , up to storage medicine . Interview with senior pharmacist revealed that one of challenge main in procurement is dependence on several suppliers single (Merriam &

Tisdell, 2016). Dependence This cause risk delay shipping and uncertainty price medicine (Yin, 2018).

In addition , observations participatory show that the verification and validation process medication received often eat quite a long time , which can hinder distribution drug to the service unit (Creswell & Poth , 2018). This process important For ensure quality medicine , but delay in verification can impact negative to availability medicine in the room care (Patton, 2015).

Analysis document procurement also shows existence difference between amount medication ordered and quantity the medication received . This is cause problem in recording stock and need action corrective which is often eat time (Bowen, 2009). Inconsistency This can caused by error administrative or problem with suppliers (Braun & Clarke, 2006).

For increase efficiency of the procurement process , recommended For adopt e-procurement system that can speed up the ordering and verification process medication (Nowell et al., 2017). System this can also increase transparency and accuracy in recording stock medicine . In addition , diversification suppliers can reduce risk dependency and increase stability supply medicine (Kvale & Brinkmann, 2015).

3. Effectiveness System Information Medication Management

System information management drug play role important in manage related data planning and procurement medicine . Interview with staff administration pharmacy disclose that existing system moment This not enough capable handle large and complex data volumes (Merriam & Tisdell, 2016). This cause error in data recording and reporting , which can influence decision planning and procurement (Yin, 2018).

Observation participatory indicates that Lots staff who are still use manual method in data recording , which is vulnerable against human error (Creswell & Poth , 2018). The use of system integrated and user - friendly information can reduce error this and improve efficiency operational (Patton, 2015).

Analysis document show that report stock and usage drug often No synchronous with condition actual situation in the field . This is caused by delays in data updates and lack thereof training for staff in use system existing information (Bowen, 2009) . Errors This can impact serious about availability medicine and quality service health (Braun & Clarke, 2006).

For overcome problem this , it is necessary done system improvements information management drug with adopt technology latest such as cloud computing and big data analytics (Nowell et al., 2017). Technology This can increase speed and accuracy in data processing and provide very real-time information useful for taking decisions (Kvale & Brinkmann, 2015). Training and development competence staff must also become priority For ensure system can used optimally .

4. Impact Effectiveness System to Quality Health Services

Effectiveness system planning and procurement drug own impact direct to quality service home health sick . Interview with doctors and nurses show that availability the right medicine time and appropriate need very crucial For ensure quality maintenance patients (Merriam & Tisdell, 2016). Disadvantages drug or delay in provision drug can cause delay in treatment and worsening condition patients (Yin, 2018).

Observation in the service unit show that instability stock drug often cause nurse must look for alternative treatment or even referring to patient to House other illnesses (Creswell & Poth , 2018). This Of course just impact negative on experience patients and reputation House sick (Patton, 2015).

Analysis document complaint the patient also showed that one of complaint main is related availability medicine . Patient often complain that medication prescribed by a doctor No available at pharmacies House sick , so they must look for drug those outside House sick (Bowen, 2009). Situation This show the need repair system planning and procurement drug For increase satisfaction patients (Braun & Clarke, 2006).

For increase quality service health , recommended For strengthen coordination between service units and installations pharmacy as well as increase flexibility in system procurement drugs (Nowell et al., 2017). In addition , feedback from patient must used as an important input in evaluation and improvement system planning and procurement medicine (Kvale & Brinkmann, 2015).

Conclusion

Based on results study this , can concluded that system planning and procurement drugs in the Hospital Pharmacy Installation are still face various significant challenges . The existing system moment This Not yet fully capable overcome problem fluctuations need medication , limitations data integration between departments , and dependence on suppliers single . This is cause imbalance stock drugs , risks expiration , and inefficiency in the procurement process . In addition , the lack of training and use technology optimal information also participates contribute to low effectiveness existing system .

For increase effectiveness system planning and procurement medicine , needed a number of step strategic . First , adoption technology more information integrated and use algorithm more forecasting advanced For increase accuracy prediction need medicine . Second , the application of e-procurement system for speed up the ordering and verification process drug as well as increase transparency in recording stock . Third , diversification suppliers For reduce risk delay shipping and uncertainty price . With steps this , it is hoped system planning and procurement drugs in the Pharmacy Installation can walk more efficient and effective , so that capable support quality service optimal health at home Sick .

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