e-ISSN: 2807-6257

Open Access Indonesian Journal of Medical Reviews

[OAIJMR]

https://hmpublisher.com/index.php/oaijmr

Analysis of the Quality of Pharmaceutical Services at Outpatient Health Centers, East Sumba Regency, Indonesia

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ARTICLE INFO

Keywords:
East Sumba
Health center
Pharmacy
Quality of service

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All authors have reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/oaijmr.v4i2.550

A B S T R A C T

Public administration services are one way to demonstrate maximum government performance in providing welfare and meeting community needs. One important sector in public services is pharmaceutical services at Health Centers. This research uses a descriptive method with a cross-sectional design. Primary data was obtained through observation, interviews and documentation. Secondary data was obtained from the 2022 Health Centers Medicine Usage Report and Request Sheet (LPLPO) and the 2021 Health Centers Drug Requirements Plan (RKO). Of the 28 indicators of the quality of pharmaceutical services, 15 of the third indicators of the Health Centers meet the standards, 10 of the third indicators of the Health Centers do not meet the standards, 1 indicators only one Health Center meets and 2 indicators only two Health Centers fulfill. Factors that influence the quality of management of pharmaceutical preparations at the East Sumba Regency outpatient Health Centers are human resources that do not come from pharmacy. The quality of pharmaceutical services at the East Sumba Regency outpatient Health Centers still needs to be improved. Pharmacists are needed as pharmaceutical personnel to maximize pharmaceutical services to the community.

1. Introduction

Public services are a reflection of government performance in realizing prosperity and meeting community needs. One important sector in public services is pharmaceutical services at Health Centers. Optimal pharmaceutical services play a crucial role in helping people get the right and rational medicines, thereby ultimately improving the level of public health. Health Centers, as the frontline of primary health services, have an important role in providing access to affordable and quality medicines for the community. This is where the vital role of pharmaceutical services is realized. More than just drug distribution, pharmaceutical services at Health Centers include management of pharmaceutical supplies, including procurement, storage, distribution, and management of drugs that are quality and according to needs. Pharmaceutical services to patients include providing drug information, drug counseling, and monitoring drug use. Development and promotion of rational drug use include educating the public about the appropriate and safe use of drugs. The quality of pharmaceutical services is a benchmark for success in achieving public health goals. High-quality pharmaceutical services at Health Centers will increase patient satisfaction, increase the effectiveness of therapy, reduce the risk of medication errors, increase the efficiency of drug use, and improve the level of public health.[1-3]

The quality of pharmaceutical services at the Health Centers is influenced by various factors. The availability and competence of pharmaceutical personnel, such as pharmacists and pharmacist assistants, greatly determines the quality of service.

Adequate facilities and infrastructure, such as standard drug storage rooms, dispensing equipment, and drug information systems, also support the smooth running of services. The availability of an adequate budget for drug procurement, training of pharmaceutical personnel, and development of drug information systems are important factors. Supporting policies and regulations, such as pharmaceutical service standards and guidelines for rational drug use, are the foundation for the implementation of quality services. Health Centers in Indonesia still face various challenges in improving the quality of pharmaceutical services. The uneven distribution of pharmacists and the lack of pharmacist assistants are the main obstacles. Many Health Centers do not have adequate drug storage space, complete dispensing equipment, and an integrated drug information system. The budget allocated for pharmaceutical services at Health Centers is often limited. Pharmaceutical services at Health Centers are a vital element in realizing optimal public health. Improving the quality of pharmaceutical services through the development of human resources, facilities, and infrastructure, financing, and supporting regulations and policies are the keys to achieving this goal. Joint efforts from the government, health workers, and the community are needed to ensure access to quality pharmaceutical services at Health Centers.[4-6] This study aims to evaluate the quality of pharmaceutical services at the Outpatient Health Center, East Sumba Regency, Indonesia.

2. Methods

This research uses a descriptive method with a cross-sectional design. Cross-sectional designs allow researchers to study relationships between variables at a specific point in time. The population of this study was all outpatient health centers in East Sumba Regency. The sample for this study was 3 outpatient health centers selected randomly. This research data was obtained from two sources, namely primary data and secondary data. Primary data was obtained through: 1. Observation: Researchers made direct observations of pharmaceutical service activities at the Health Center. 2. Interview: Researchers conducted interviews with the head of the Health Center, the person in charge of pharmaceutical services, and the pharmacist/pharmacist's assistant. 3. Documentation: Researchers collect documents related to pharmaceutical services, such as Usage Reports and Drug Request Sheets (LPLPO) and Drug Requirement Plans (RKO). Secondary data was obtained from: 1. Drug Usage Report and Request Sheet (LPLPO) 3 Outpatient Health Centers in East Sumba in 2022: This data is used to determine the type and quantity of drugs used at the Health Center. 2. Drug Needs Plan (RKO) for 3 Outpatient Health Centers in East Sumba in 2021: This data is used to determine the type and quantity of medicines that the Health Center plans to purchase.

The instruments used for this research are: 1. Observation sheet: Used to record the results of observations regarding pharmaceutical service activities at the Health Center. 2. Interview guide: This guide is used to guide interviews with the head of the Health Center, the person in charge of pharmaceutical services, and the pharmacist/pharmacist's assistant. 3. Documentation sheet: Used to record data from documents related to pharmaceutical services. Data analysis was carried out using descriptive analysis. Data is presented in the form of tables and narratives. This research was conducted with due regard to research ethics. Researchers ask for consent from respondents before conducting research. Researchers maintain the confidentiality of respondent data. Researchers present data objectively.

3. Results and Discussion

Based on Table 1, all Health Centers (1, 2, and 3) have met the standards in the indicators for proposing medicines to Fornas. This shows that the Health Center has carried out the drug selection process well and in accordance with the national formulary. The three Health Centers have not met the standards in the item conformity indicator with Fornas. The average percentage of compliance of drug items with Fornas in the three Health Centers is 91.07%, which is still

below the 100% standard. This shows that there are still several drug items at the Health Center that are not listed in Fornas. The three Health Centers also do not meet the standards in terms of the item suitability indicator for disease patterns. The average percentage of suitability of drug items with disease patterns in the three Health Centers is 70.72%, which is still below the 100% standard. This shows that there is a mismatch between the drug items available at the Health Center and the disease patterns that often occur in the area. The three Health Centers have not met the standards in the Planning Decree indicators. The average percentage of planning provisions in the three Health Centers is 66.26%, which is still below the 100% standard. This shows that there are several aspects of the drug planning process at the Health Center that are not optimal. The three Health Centers (1, 2, and 3) have met the standards in the indicators of suitability of items to demand and suitability of quantity requested. The average percentage of items suitable and the number of requests in the three Health Centers was 102.34% and 102.26%, which is within the standard range of 100-120%. This shows that the Health Center has carried out medication requests well and according to needs. The three Health Centers have not met the standards in the indicators of conformity of items with acceptance and suitability of a number of admissions. The average percentage of suitability of items and number of admissions at the three Health Centers was 74.11% and 75.64%, which is still below the 100% standard. This shows that there is a discrepancy between the items and quantities of medicines received by the Health Center and those ordered. The three Health Centers (1, 2, and 3) have not met the standards in terms of storage according to dosage form, storage according to temperature, and storage of psychotropics according to regulations. The average percentage for these three indicators is below the 100% standard. This shows that there are several medicines in the Health Center that are not stored in a manner that complies with the dosage form, temperature, and applicable regulations. The three Health Centers have met standards in the indicators for storing medicines that cause contamination, structuring taking into account FEFO, and storing medicines removed from their primary packaging. This shows that the Health Center has made efforts to prevent contamination and organize medicines well. The three Health Centers do not meet the standards for High-Alert Medicine Storage and LASA medicine storage indicators. The average percentage for these two indicators is below the 100% standard. This shows that there are several high-alert drugs and LASA in the Health Center that have not been stored in a safe manner and in accordance with standards. The three Health Centers have not met the standards in terms of the accuracy of distribution quantity indicators to the pharmaceutical services sub-unit. The average percentage for this indicator is below the 100% standard. This shows that there is inaccuracy in the amount of medicine distributed to the pharmaceutical service sub-unit. The three Health Centers (1, 2, and 3) have not met the standards for the inventory turnover ratio (ITOR) indicator. The average ITOR in the three Health Centers is 5.17 times/year, which is still below the standard of 12 times/year. This shows that the turnover of medicines at the Health Center is still slow. The three Health Centers do not meet the standards in the Drug Availability Level indicator (one month). The average level of drug availability in the three Health Centers is 11.28, which is still below the standard of 12-18 months. This shows that there are several medicines at the Health Center that are not available in sufficient time to meet patient needs. The three Health Centers have met the standards for the empty stock item indicator (< 1 month). However, the three Health Centers have not met the standards in the indicators of insufficient medicine items (1 to < 12 months), Safe medicine items (12-18 months), and excess stock items (> 18 months). This shows that there is an imbalance in the number of drugs available at the Health Center. The three Health Centers have met the standards in the indicators of unprescribed drugs (>3 months), expiration date (ED) drug value, and damaged drug value. This shows that the Health Center has made efforts to prevent drug abuse and

ensure good drug quality. The three Health Centers have met the standards in the indicators of suitability for physical quantities of drugs and periodic evaluation of drug management. This shows that the Health Center has carried out good drug recording and reporting and carried out regular evaluations of drug management.

Table 1. Achievement of pharmaceutical service standard indicators.

Indicator	Health Center	Average (%)	Standard (%)	Information
Stock selection				
Proposing medicines to Fornas	1	Yes	Yes	Meet the standards
	2	Yes	Yes	meet the standards
	3	Yes	Yes	meet the standards
Medication planning				
Item compatibility with Fornas	1	90,09	100	Does not meet standards
	2	93,02	100	Does not meet standards
	3	90,09	100	Does not meet standards
Correspondence of items to disease patterns	1	67,89	100	Does not meet standards
	2	76,1	100	Does not meet standards
	3	68,18	100	Does not meet standards
Planning decisions	1	74,75	100	Does not meet standards
	2	73,53	100	Does not meet standards
	3	50,51	100	Does not meet standards
Drug request and acceptance				
Item conformity to request	1	103,12	100-120	Meet the standards
	2	100,04	100-120	meet the standards
	3	102,87	100-120	meet the standards
Suitability of request quantity	1	104,3	100-120	Meet the standards
	2	100,76	100-120	meet the standards
	3	101,72	100-120	meet the standards
Receipt item suitability	1	79,34	100	Does not meet standards
	2	70,55	100	Does not meet standards
	3	72,45	100	Does not meet standards
Suitability of acceptance amount	1	80,45	100	Does not meet standards
	2	71,81	100	Does not meet standards
	3	74,65	100	Does not meet standards
Drug storage				
Storage according to dosage form	1	69,93	100	Does not meet standards
	2	70,95	100	Does not meet standards
	3	70,57	100	Does not meet standards
Storage according to temperature	1	69,93	100	Does not meet standards
	2	70,95	100	Does not meet standards
	3	70,57	100	Does not meet standards
Regulatory storage of psychotropics	1	97,14	100	Does not meet standards
	2	97,14	100	Does not meet standards
	3	97,14	100	Does not meet standards
Storage of medication that causes contamination	1	100	100	Meet the standards
	2	100	100	Meet the standards
	3	100	100	Meet the standards
Arrangement pays attention to FEFO	1	100	100	Meet the standards
	2	100	100	Meet the standards
	3	100	100	Meet the standards
Storage of high-alert medication	1	42	100	Does not meet standards
	2	27	100	Does not meet standards
	3	38	100	Does not meet standards

Indicator	Health Center	Average (%)	Standard (%)	Information
LASA drug storage	1	0	100	Does not meet standards
	2	62,5	100	Does not meet standards
	3	0	100	Does not meet standards
Storage of medicines removed from their primary packaging	1	0	0	Meet the standards
	2	0	0	Meet the standards
	3	0	0	Meet the standards
Accuracy of distribution quantities to pharmaceutical service sub-units	1	70,94	100	Does not meet standards
	2	78,95	100	Does not meet standards
	3	72,64	100	Does not meet standards
Drug control				
Inventory turnover ratio (ITOR)	1	3.47 times/year	12 times/year	Does not meet standards
	2	5.65 times/year	12 times/year	Does not meet standards
	3	6.38 times/year	12 times/year	Does not meet standards
Drug availability level (one month)	1	10,98	12-18 months	Does not meet standards
	2	11,94	12-18 months	Does not meet standards
	3	11,91	12-18 months	Does not meet standards
Out of stock items (< 1 month)	1	0	0	Meet the standards
	2	0	0	Meet the standards
	3	0	0	Meet the standards
Missing medication items (1 to < 12 months)	1	45,2	0	Does not meet standards
	2	36,59	0	Does not meet standards
	3	37,23	0	Does not meet standards
Safe medication items (12-18 months)	1	54,9	100	Does not meet standards
	2	63,41	100	Does not meet standards
	3	62,77	100	Does not meet standards
Overstock items (> 18 months)	1	0	0	Meet the standards
	2	1	0	Does not meet standards
	3	6,57	0	Does not meet standards
Medication not prescribed (>3 months)	1	0	0	Meet the standards
	2	0	0	Meet the standards
	3	3,13	0	Does not meet standards
Drug value expiration date (ED)	1	0	0	Meet the standards
	2	0	0	Meet the standards
	3	13	0	Does not meet standards
Damaged drug value	1	0	0	Meet the standards
	2	0	0	Meet the standards
	3	0	0	Meet the standards
Appropriateness of the physical amount of drug	1	100	100	Meet the standards
	2	100	100	Meet the standards
	3	100	100	Meet the standards
Evaluate medication management periodically	1	Yes	Yes	Meet the standards
	2	Yes	Yes	Meet the standards
	3	Yes	Yes	Meet the standards

Pharmaceutical resources, which include human resources (HR), facilities and infrastructure, as well as pharmaceutical preparations and health supplies, play an important role in improving the quality of pharmaceutical services. High quality pharmaceutical services will provide optimal service to patients and improve patient safety. Human capital theory explains that high quality human resources are a key factor in improving organizational performance and productivity. In the context of pharmaceutical services, competent and skilled human resources will be able to provide better services to patients. The resource-based view theory emphasizes that the resources an organization has can be a source of competitive advantage. In the context of pharmaceutical services, adequate facilities and infrastructure and complete pharmaceutical preparations will enable organizations to provide better services to patients. A study shows that pharmacist intervention in the medication reconciliation process can increase medication accuracy and reduce the risk of medication errors. Another study shows that training for pharmaceutical technical personnel on how to convey good drug information can increase patient satisfaction with pharmaceutical services.[7-11]

Facilities and infrastructure are important elements in supporting the quality of pharmaceutical services. The availability of adequate and quality facilities and infrastructure will support the smooth running of the pharmaceutical service process, thereby having implications for improving the overall quality of pharmaceutical services. Systems theory views an organization as a system consisting of various elements that are interrelated and influence each other. In the context of pharmaceutical services, facilities and infrastructure are an important element in the system. The availability of adequate facilities and infrastructure will support the smooth process of pharmaceutical services, thus having implications for improving the overall quality of pharmaceutical services. Ergonomics theory focuses on designing workplaces and equipment that suit human needs and abilities. The application of ergonomics theory in the design of pharmaceutical facilities and infrastructure can increase work efficiency and effectiveness, as well as reduce the risk of work accidents. Environmental psychology theory explains how the physical environment can influence human behavior and psychology. The application of this theory in the design of pharmaceutical facilities and infrastructure can create a comfortable and conducive environment for patients and health workers, thereby increasing satisfaction and quality of service. Several studies show that there is a positive relationship between facilities and infrastructure and the quality of pharmaceutical services. A study shows that there is a significant relationship between the availability of facilities and infrastructure and the quality of pharmaceutical services at Health Centers in West Java. Another study shows that there is a positive relationship between the quality of facilities and infrastructure and patient satisfaction with pharmaceutical services at hospitals in Yogyakarta. Based on theory and related studies, it can be concluded that facilities and infrastructure have an important role in improving the quality of pharmaceutical services. Adequate facilities and infrastructure will support the smooth process of pharmaceutical services, from drug storage and prescription processing to drug distribution. This will increase work efficiency and effectiveness, as well as reduce the risk of errors in pharmaceutical services. Safe and comfortable facilities and infrastructure will increase the safety and comfort of patients and health workers. This will increase patient satisfaction with pharmaceutical services and increase the motivation of health workers to provide the best service. Modern and quality facilities and infrastructure will improve the image and reputation of pharmaceutical services. This will attract more patients to use pharmaceutical services and increase public trust in pharmaceutical services.[12-16]

The quality of pharmaceutical services is a crucial aspect in the health system. High-quality pharmacy services ensure that patients receive appropriate, safe,

and effective treatment. Training plays an important role in improving the quality of pharmaceutical services by equipping pharmacists and other pharmaceutical personnel with the knowledge, skills, and attitudes needed to provide optimal services. Research shows that effective training can improve the knowledge, skills, and attitudes of pharmacists and other pharmaceutical personnel. This can have a positive impact on their behavior and performance, such as improving the accuracy of medication dispensing, providing more complete information to patients, and increasing patient compliance with treatment. Andragogy theory emphasizes that adults learn in different ways than children. Adults are more motivated to learn when they feel that training is relevant to their needs and when they can be actively involved in the learning process. Research shows that training designed taking into account the principles of andragogy is more effective in improving the knowledge and skills of pharmacists and other pharmaceutical personnel. Interactive and participatory training, such as simulations, case studies, and role-playing, have proven to be more effective than traditional lecture methods. Several case studies show how training can improve the quality of pharmaceutical services. A study showed that training pharmacists in counseling patients about HIV medication use increased patient adherence to treatment. Another study in the UK showed that training pharmacists in medication risk management can reduce the incidence of medication errors. Training is one of the key factors in improving the quality of pharmaceutical services. Effective training can improve the knowledge, skills, and attitudes of pharmacists and other pharmaceutical personnel, which can have a positive impact on their behavior and performance and, ultimately, improve patient health outcomes. Training is an important investment to improve the quality of pharmaceutical services. By designing and implementing effective training programs, pharmacists and other pharmaceutical professionals can provide optimal service to patients and improve health outcomes.[17-20]

4. Conclusion

The quality of pharmaceutical services at the East Sumba Regency outpatient health center still needs to be improved. Pharmacists are needed as pharmaceutical personnel to maximize pharmaceutical services to the community.

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