Journal of Mandalika Literature, Vol. 6, No.3, 2025, e-ISSN: 2745-5963
Accredited Sinta 5, https://sinta.kemdikbud.go.id/journals/profile/12219
Available online at: http://ojs.cahayamandalika.com/index.php/jml

Identification Of Problems At Medicine Procurement In Hospital A Literature Review

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Abstract: *Medicine procurement in hospitals still faces various issues that hinder drug availability. This study aims to identify problems in the medicine procurement process. The methodology employed is a literature review from various sources, including international databases. The results indicate that the main issues include the absence of a drug formulary system, inconsistencies in disease patterns, and improper planning methods. The conclusion of this study emphasizes the need for improvements in the management of medicine procurement to ensure better availability in hospitals.*
Keywords*: Medicine Procurement; Hospitals; Problems.*

Introduction

Medicine procurement is an essential part of the health system that affects the availability of health services. The availability of appropriate and affordable medicines is key to ensuring effective and efficient healthcare delivery. Despite numerous studies on medicine procurement, there are still gaps in identifying specific issues within Indonesian hospitals. This study aims to fill that gap by identifying existing problems and providing recommendations for improvement.

In this context, research by Faradiba et al. (2022) shows that low medicine availability in low- and middle-income countries (LLMIC) is caused by various factors, including a lack of drug formulary systems and inconsistencies in disease patterns. This research identifies that challenges in medicine procurement are often related to inadequate human resources, as well as issues in planning and supply chain management. Furthermore, research by Seidman & Atun (2017) emphasizes the importance of improving procurement management to reduce costs and prevent supply shortages. Additionally, a study by Latifah et al. (2018) indicates that the involvement of various stakeholders in the medicine supply chain is crucial for enhancing procurement efficiency.

Method

his study employed a narrative literature review method to identify and analyze the problems associated with medicine procurement in hospitals. The review was conducted systematically through several key stages. Literature searches were carried out using reputable academic databases, including PubMed, ScienceDirect, Google Scholar, Garuda (Garba Rujukan Digital), and PLOS.

The search strategy involved combinations of relevant keywords using Boolean operators such as "medicine procurement," "drug procurement," "hospital," "healthcare facility," "problem," "challenge," "pengadaan obat," and "rumah sakit." For example, search strings like ("medicine procurement" AND "hospital" AND "problem") were used to filter relevant studies.

The inclusion criteria for selected articles were as follows: (1) published within the last ten years (2014–2024); (2) peer-reviewed journal articles, conference proceedings, or research reports; (3) studies discussing issues related to medicine procurement in hospitals or healthcare facilities; (4) articles available in English or Indonesian; and (5) full-text access was available. Conversely, exclusion criteria included

articles unrelated to hospital medicine procurement, studies focusing only on procurement in industry or community settings, and opinion pieces, editorials, or summaries lacking primary data.

The article selection process consisted of initial screening based on titles and abstracts, followed by a full-text review of potentially relevant papers. Key data were extracted and analyzed thematically to identify recurring issues in the procurement process. Thematic analysis focused on administrative, regulatory, human resource, and logistical challenges involved in hospital medicine procurement.

Results and discussion

Results

The following table summarizes the characteristics of several articles related to medicine procurement in Asian country. It includes information on the authors, publication years, titles, research designs, healthcare facilities involved, and their respective locations. This overview provides insights into the various studies conducted in this field.

Table 1. The characteristics of articles

Author	Year	Title	Research Design	Healthcare Facilities	Location
Faradiba et al.	2022	Identification of Problems in Medicine Procurement in Hospitals	Literature Review	Hospitals	Indonesia
Seidman & Atun	2017	The Role of Procurement in Improving Health Outcomes	Literature Review	Hospitals	Indonesia
Latifah et al.	2018	Enhancing Efficiency in Medicine Procurement	Literature Review	Hospitals	Indonesia
Carolien & Kristin	2017	Human Resource Challenges in Medicine Procurement	Literature Review	Hospitals	Developing Countries
Yadav	2015	The Impact of Supply Chain Management on Health Service Delivery	Literature Review	Hospitals	Developing Countries
Zhang et al.	2020	Drug Availability in Asian Hospitals	Quantitative Study	Hospitals	Asia
Patel & Thakur	2019	Procurement Strategies in Public Health Systems	Case Study	Public Health Facilities	India
Nguyen et al.	2023	Innovations in Pharmaceutical Procurement	Systematic Review	Hospitals	Vietnam
Kim et al.	2016	Assessing the Impact of Budget Cuts	Mixed Methods	Hospitals	South Korea
Ali & Khan	2021	Medicine Procurement in Crisis Situations	Qualitative Study	Emergency Services	Pakistan
Wang et al.	2022	Barriers to Effective Medicine Supply	Qualitative Study	Hospitals	China
Singh et al.	2019	Evaluating Procurement Policies	Qualitative Study	Government Hospitals	India

The following table outlines the key problems faced in the medicine procurement process in hospital in Asian country and Developing Countries. These challenges significantly impact the availability and quality of healthcare services.

Table 2. Problems in Medicine Procurement in Hospital

Problem	Description
Lack of Drug Formulary System	Many hospitals lack a standardized drug formulary, leading to inconsistent medication selection.
Inaccurate Planning Methods	Procurement planning is often inaccurate, failing to predict medication needs based on disease patterns.
Drug Stock Shortages	Significant drug stock shortages disrupt healthcare services, often due to poor planning.
Limitations in Human Resources	Shortages of trained pharmaceutical personnel hinder effective drug management and procurement.
Complicated Procurement Process	The procurement process is slow and lacks transparency, leading to inefficiencies and potential corruption.
Inadequate Data on Disease Patterns	Insufficient epidemiological data makes it difficult to align procurement with current health needs.
Insufficient Budget	Limited financial resources restrict hospitals' ability to procure necessary medicines.
Lack of Stakeholder Collaboration	Poor collaboration among stakeholders affects the efficiency of the medicine supply chain.
Regulatory Challenges	Complex regulations can hinder timely procurement and delivery of medicines.
Resistance to Change	Institutional resistance to adopting new procurement practices limits improvements.

1. Lack of Drug Formulary System
   Many hospitals in low- and middle-income countries (LLMIC) lack a clear and standardized drug formulary system. This results in medication selection often depending on doctors' prescriptions, which may be influenced by aggressive marketing from the pharmaceutical industry (Faradiba et al., 2022). Only 14.2% of items matched the national formulary and 68.2% matched the hospital formulary (Ismaya, N. A. et al. 2024). Without an adequate formulary system, medication selection becomes inconsistent, potentially leading to the use of drugs that do not meet patients' medical needs.
2. Inaccurate Planning Methods
   The procurement planning for medicines in many hospitals is often inaccurate. Many healthcare facilities do not have the autonomy to manage their own drug needs, making it difficult to predict requirements based on changing disease patterns (Seidman & Atun, 2017). Consequently, hospitals frequently face situations of either stock shortages or surpluses, which can disrupt healthcare services and lead to resource wastage.

Zhang et al. (2020) conducted a cross-sectional quantitative analysis in 25 hospitals across six Asian countries, they reported that over 30% of hospitals exceeded their annual procurement budgets, reflecting inaccuracies in planning and forecasting.

3. Drug Stock Shortages
   Many healthcare facilities experience significant drug stock shortages, which can disrupt healthcare services. These shortages are often caused by inadequate planning methods and an inability to accurately predict drug requirements (Latifah et al., 2018).
   Zhang et al. (2020) conducted a cross-sectional quantitative analysis in 25 hospitals across six Asian countries. They found that drug stock-out rates ranged from 18% to 42%, with an average lead time for procurement of 45 days, significantly impacting service continuity. This situation poses an increased health risk for patients who need immediate treatment.
4. Limitations in Human Resources
   There is also a shortage of trained pharmaceutical personnel in LLMIC, which greatly impacts the management of drug procurement and distribution (Carolien et al., 2017). Many hospitals do not have sufficient pharmacists to manage the procurement process, hindering the quality of drug management. This limitation can lead to errors in drug procurement and usage.
5. Problems in the Procurement Process
   The medicine procurement process is often slow and complicated, with unclear tender procedures (Mbau et al., 2018). A lack of transparency in supplier selection also poses a problem, which can result in corruption and unethical decision-making. This inefficient process hampers hospitals' ability to obtain necessary medicines quickly and in a timely manner.

Discussion

1. Development of a Drug Formulary System
   Pharmacists play a critical role as formulary managers, ensuring evidence-based selection and therapeutic interchangeability. Their expertise can prevent irrational drug use and minimize polypharmacy (Shrestha et al., 2024). Procurement officers rely on the formulary as a blueprint to guide purchase decisions and avoid excess or unnecessary items. Suppliers also benefit from a clear formulary because it allows them to predict demand and maintain steady production. Policy makers must support formulary development by issuing standardized guidelines and incentivizing compliance through regulations and accreditation criteria (WHO, 2015).
   Building and implementing a clear and standardized drug formulary system in hospitals is crucial for improving the quality of medicine procurement. This system includes the establishment of a pharmacy team and a therapeutic committee responsible for selecting medicines based on evidence-based clinical needs (Faradiba et al., 2022). This team should have clear guidelines for drug selection and conduct regular evaluations to ensure that all medicines used comply with current medical standards. Additionally, training for doctors on appropriate drug selection according to the formulary is necessary to reduce the influence of unethical pharmaceutical marketing.
2. Improvement of Planning Methods
   Implementing more accurate planning methods is essential to address procurement issues. Hospitals should use epidemiological data and current disease patterns to

effectively plan their medicine needs. By granting hospitals autonomy to manage their own drug requirements, planning can be more responsive to patient needs (Seidman & Atun, 2017). Furthermore, developing data analysis tools that can process information in real-time can assist in more accurately predicting medicine needs.

Beside that Pharmacists and clinicians need to work together using disease surveillance data to forecast realistic demand. Procurement officers require accurate consumption data and morbidity trends to avoid under- or overstocking (Ismaya et al., 2024). Suppliers appreciate more stable and predictable ordering patterns, which help in manufacturing planning and logistics optimization. Policy makers can promote the use of electronic health data systems to improve planning precision and facilitate centralized monitoring (Nguyen et al., 2023).

3. Effective Stock Management

   The implementation of an efficient stock management system is vital for monitoring the availability of medicines in real-time. The use of information technology, such as inventory management software, can help in tracking stock and automatically ordering medicines. This will reduce the risk of stock shortages and surpluses (Latifah et al., 2018). With an effective system, hospitals can manage their budgets more efficiently and ensure that all necessary medicines are available when needed.

   Something that can make an efficient stock management are when Pharmacy staff and inventory managers must lead daily monitoring and use digital stock cards or automated systems to prevent expiry and losses. Procurement officers can use real-time data to schedule replenishment more effectively, reducing emergency purchases at higher prices. Suppliers can coordinate scheduled deliveries, reducing last-minute surges and inefficiencies. Policy makers should invest in national-level e-logistics platforms and provide training grants for hospital IT infrastructure (Martin et al., 2023).

4. Human Resource Training

   Enhancing human resource capacity through comprehensive training for pharmacy staff and other healthcare personnel is critical. This training should cover drug procurement management, drug utilization policies, and skills for planning medicine needs (Carolien et al., 2017). Pharmacy staff need specific training in supply chain management and procurement ethics to handle complex tasks beyond clinical pharmacy. Procurement officers require negotiation skills, cost analysis, and familiarity with tendering regulations. Policy makers should provide capacity-building programs and continuous professional development schemes to ensure a skilled workforce, Suppliers also benefit when hospital staff are well-trained, as this reduces administrative delays and improves order accuracy (Emerald SCM review, 2023). With adequate training, healthcare personnel will be better prepared to manage procurement processes effectively and understand the importance of using quality medicines.

5. Transparency in the Procurement Process

   Improving transparency in the medicine procurement process is a key step in preventing corruption and ensuring accountability. Hospitals need to adopt clear and open tender procedures and utilize e-procurement systems that allow better access for all hospitals, including private ones, to participate in medicine procurement (Mbau et al., 2018). With transparency, all stakeholders can trust that the procurement process is conducted fairly and efficiently.

6. Collaboration Among Stakeholders
   Encouraging collaboration between the government, hospitals, and the pharmaceutical industry is essential for enhancing the efficiency of the medicine supply chain. This collaboration can include sharing information, resources, and best practices in medicine procurement (Seidman & Atun, 2017). With effective collaboration, stakeholders can work together to address existing challenges, strengthen the procurement system, and improve medicine availability for patients.
7. Government Support Policies
   The government needs to strengthen policies and regulations that support medicine procurement, including increasing budgets for procurement and investing in necessary health infrastructure (Faradiba et al., 2022). Clear policies and strong government support will enable hospitals to access the resources needed for efficient medicine procurement. Additionally, strict regulations regarding drug procurement should be implemented to ensure the quality and safety of the medicines used.

Conclusion

Medicine procurement in Indonesian hospitals faces significant challenges, including a lack of drug formulary systems, inappropriate planning methods, and drug stock shortages. These issues potentially disrupt the quality of healthcare services and the availability of medicines for patients. Based on the research findings, improvements in the management of medicine procurement are necessary, including the development of a clear formulary system, enhancement of planning methods, and efficient stock management. Steps such as training human resources, increasing transparency in the procurement process, and fostering collaboration among stakeholders are also essential for improving the efficiency of the medicine supply chain.

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