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# Optimization of Logistics Management In Health Services: Literature Review

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**ABSTRACT**

Logistics management in healthcare plays an important role in improving operational efficiency and the quality of patient service. This article discusses strategies for optimizing logistics management, such as the use of health information technology, innovations in logistics systems, and procurement with umbrella contract methods. The aim of this research is to explore how logistics management can improve the efficiency and effectiveness of health care. The research method used is the study of literature to analyze various strategies for optimizing logistical management in health care. The research uses the method of systematic review by studying five elective articles within the period of publication of the last five years. Research results show that optimizing logistics management can help improve the quality of health care and patient satisfaction. Despite this, there are still challenges, such as the problem of the storage of goods, fluctuating needs for medical equipment, and problems in human resource management. Efforts are needed to address these challenges so that logistics management can be optimized in support of effective health care. In conclusion, good logistical management in healthcare can bring great benefits in terms of improving operational efficiency, reducing costs, and improving the quality of patient service.

**Keywords:** Health Services, Logistics Management, Optimization



## INTRODUCTION

Hospitals are institutions that have various characteristics that are influenced by the development of health science, technological advances and social, economic, and cultural conditions of the community in the provision of comprehensive health services. According to the Indonesian Ministry of Health (2009), a comprehensive hospital is a hospital that is able to provide health services and provide inpatient, emergency, and outpatient facilities. To ensure that hospitals continue to advance and develop, good management is needed. Management is an activity that regulates or manages various aspects of an organization so that it can run in a structured manner to achieve the chosen goals (Alvin Murtie, 2012 in (Yusman & Amran, 2020). Management in hospitals includes marketing management, service management, financial management, and operational management, all of which ensure that hospitals become more efficient in providing health services to the community. In addition, there is also logistics management that regulates procurement, planning, receipt, distribution, destruction, and storage, each of which has functions that are interrelated with each other (Jumriah et al., 2023).

Along with the development of technology and science, the government and the DPR have established the Medium-Term Development Plan (RPJMN) to support national development in Indonesia (Daliyanti et al., 2022). The implementation of the RPJMN in this period aims to create an independent,

advanced, just and prosperous Indonesian society through accelerated development in various sectors. The goal is to create a strong economic structure based on competitive advantages, supported by quality and highly competitive human resources throughout Indonesia (Soecipto, 2022). However, in the implementation of the RPJMN for this period, challenges were faced in the form of the spread of a deadly virus known as the Coronavirus which caused the Covid-19 pandemic in Indonesia. The increasing need for PPE and drugs in pharmaceutical installations is one of the procurement processes needed in logistics management (Widodo & Sjaaf, 2022). For this reason, hospitals as business actors providing health services are making improvements in operational management in the form of logistics management that leads to the development and management of logistics starting from integrated planning, design, and ending with control (Yusman & Amran, 2020).

According to Donald J. Bowersox (2002) in the research of Singgih Purnama, C. Dyah S. Indrayanti, 2017, the movement and storage of goods, spare parts, and finished products from suppliers to various business locations and then to customers is part of the strategic management process known as logistics. Therefore, logistics management can be considered as a field that specifically handles the management of goods used in the operational system of a company or agency. Logistics management in hospitals can be interpreted as a strategic management process that includes procurement, storage, distribution, monitoring and provision of materials needed to support the production of hospital services in providing health services to the community (Junus & Ambo, 2020). However, in its implementation there are also obstacles in these functions, one of which is the lack of human resources, poor logistics planning and arrangement and in its budgeting (Erlina, 2022)

From the many previous research results, it is stated that logistics management plays an important role as a factor in improving the quality of service systems and patient satisfaction. Especially in the procurement function which is very important in meeting the service needs of a facility so as to support the quality of the facility (Lestari et al., 2021). Increasing effectiveness and efficiency, both in terms of logistics and clinical, can be achieved by optimizing the management of care logistics (Frichi et al., 2020). The success of hospital logistics managers, including ward heads, depends on their abilities (Eva et al., 2022). Fast and precise solutions in solving problems and obstacles in logistics management must also be a major concern. Inability to overcome problems in logistics management can lead to customer disappointment and damage the reputation of hospital service facilities. Skills that needed by logistics management managers is very important to anticipate problems that may arise, so that logistics operations can run smoothly without obstacles (Laili et al., 2022). The purpose of this literature review research is to find out how to optimize logistics management in the effectiveness of health services, challenges and obstacles to logistics management, and strategies for optimizing logistics management in health services.

## METHODS

Information from related articles and documents was collected in this study through a systematic review method. The articles and documents studied were articles and documents published from 2019 to 2024. The search was conducted using the electronic databases Google Scholar and PubMed. The search was conducted using the keywords "Optimization" AND "Logistics Management" AND "Health Services". The article screening process consists of several stages, namely identification, screening, inclusion, and eligibility. The article search results are selected based on whether the purpose of this study is in accordance with the title, abstract, and content of the article. Inclusion criteria include the availability of the entire article file, conformity with the title, and conformity with the abstract. After going through the screening process, the feasibility test stage of the article is carried out in accordance with the purpose of writing, namely regarding the optimization of logistics management, resulting in a final result of 5 articles that are the source of information for this study.

**RESULTS**

| NO | RESEARCHER | TITLE | METHOD | RESULTS |
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| 1 | Eliana et al. (2023) | Optimization of the Implementation of Medical Device Repair Regulations and Procurement Strategies Using the Umbrella Contract Method in IncreaseEffectiveness of Logistics Management at Gambiran Regional Hospital, Kediri City | Qualitative | The results of this study indicate that intervention strategies are used to create SOPs, service maintenance agreements, and umbrella agreements. To ensure that officers understand the procurement procedures, socialization is carried out. This intervention is expected to improve the efficiency of hospital logistics management. In this article, hospital logistics management is very important to improve the quality of health services. This study found problems and solved them with useful strategies. These strategies include implementing MoUs with third parties to improve medical equipment and using umbrella contract methods for logistics procurement. It is expected that these solutions will improve the efficiency and effectiveness of logistics management at Gambiran Hospital, Kediri City. |
| 2 | Eva et al. (2022) | Effectiveness of E-Logistics and Tele-Logistic InOptimization of Nursing Logistics Management in Inpatient Rooms: An Innovation Program | Qualitative | The results of the study indicate that optimizing logistics management in health services is very important. This finding confirms that effective logistics management can reduce health costs by half in hospitals. In addition, this study also highlights the importance of the role of logistics in improving service quality and patient satisfaction. By optimizing care logistics management, significant efficiency and effectiveness can be achieved, both from a logistical and clinical perspective. In addition, innovations in e- and tele-logistics are expected to improve the planning, purchasing, storage, and maintenance of nursing logistics |

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| | | | | to improve the quality of nursing care. |
| 3 | Anggaraeni& Zainafree (2022 | Analysis Management BMHP Logistics During the COVID-19 Pandemic | Qualitative | During the COVID-19 pandemic, research found several challenges in managing the logistics of Disposable Medical Materials. (BMHP) at the Salatiga City Health Service Pharmacy Installation. Although in general the BMHP logistics management process is running well, there are still several aspects that are not optimal, such as inefficient storage of goods, difficulties in procuring goods, and limited building space. To optimize logistics management, increasing the efficiency of storage of goods, improving the procurement process by considering increasing needs, and increasing building space to meet the increasing needs of BMHP due to the increase in COVID-19 cases are solutions. In addition, improving infrastructure, employee training, and using electronic catalogs for procurement and distribution of goods can also help optimization. |
| 4 | Bailiff et al. (2020) | Impact Of Health Information Technology Optimization On Clinical Quality Performance In Health Centers: A National Cross-Sectional Study | Cross-Sectional Study | The study results showed that the use of health information technology (ICT) can optimize logistics management and improve clinical performance in health centers. Organizations that optimize ICT show better clinical performance, especially in chronic disease prevention and management. The study showed that practices that reported being at stage 2 MU (Meaningful Use) or above experienced significant benefits in communication coordination, patient care, and data management. Improvements in the stages of MU (Meaningful Use) have led to improvements in the quality of care that enhances the health center's |

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| | | | | patient care capacity for disease prevention, health promotion, and chronic disease management. |
| 5 | Dear,F (2020) | Medical Equipment Logistics Management at Health Centers | Qualitative | The study showed that there were a number of problems in the management of medical device logistics at the Boja II Health Center, Kendal Regency, that needed to be fixed. The elimination of medical devices, planning, and management of human resources were some of the logistics functions that were not optimal. Reporting of goods to the Health Office was still a problem. The health center infrastructure was still lacking, but its condition was good and suitable for use. It was hoped that complete facilities and infrastructure would increase patient satisfaction and improve the effectiveness of health services. By creating a Room Inventory Card (KIR) and Goods Inventory Card (KIB), logistics management could be optimized by increasing storage according to provisions, reducing the accumulation of inventory, and improving logistics control. |

**DISCUSSION**

Optimization of Logistics Management in Health Service Effectiveness, In providing good and appropriate health services, hospitals need good management to maintain the running of the health service structure so that it can provide satisfaction and pleasure to customers in receiving treatment. The key to effective and efficient organizational management can be done by implementing good internal control by involving the arrangement of organizational responsibilities, in this case is the management of management logistics (Daeli, 2023). Logistics management includes a series of decisions to manage goods efficiently, including planning needs, procurement or collection, moving, storing and distributing goods to customers (Kusumastuti & Sugiama, 2019). The purpose of logistics management is to ensure the availability of the tools needed for health services in accordance with the right quantity, quality, time, and location, and at an efficient cost. To achieve this, concepts such as standardization (such as technical standards, storage, destruction, and procurement), optimization according to needs, and accurate implementation are used. In a study conducted by Eva et al. (2022), which stated that proper logistics management has been shown to reduce health costs by 50%. Innovation in the form of tele-logic in logistics management can also improve logistics planning, purchasing, storage, and maintenance so as to improve the quality of service and patient satisfaction.
The use of health information technology that has been adopted into hospitals can optimize logistics management and improve clinical performance in health centers. It is hoped that with the designed health information technology, using the web, the presentation of information will be easier and the

condition of asset and logistics inventory in the Hospital can be monitored more efficiently. All incoming and outgoing assets and logistics can be monitored clearly without errors that can interfere with the process of providing assets and logistics. (Limbong & Sianipar, 2022). In a study conducted by Baillieu et al. (2020), the results of the study showed that ICT optimization showed better clinical performance, especially in terms of prevention and management of chronic diseases. ICT in terms of optimizing logistics management has been shown to provide real benefits in communication coordination, patient care, and data management.

Challenges and Obstacles of Logistics Management, Health logistics management in hospitals faces various challenges and obstacles that can disrupt operational efficiency and service quality. According to research by Rahmadan, F. (2020),Boja II Health Center still experiences obstacles in terms of infrastructure and human resources. In addition, there is no warehouse to store medical equipment, so some equipment is stored in the health center hall. Then according to research by Anggaraeni & Zainafree. (2022), there areseveral problems in the management of logistics of disposable medical materials (BMHP) at the Salatiga City Health Service Pharmacy Installation, namely suboptimal storage of goods, problems in obtaining goods, and limited building space. Then in the research of Permatasari., et al. (2020), problems related to the drug logistics management planning system in health centers include shortages and excess drug stock due to the drug selection process that does not comply with existing standards. This is due to the use of a generic drug selection system from the health service that is not optimal. The problem in the form of the absence of a hospital information system that has been implemented has hampered the planning of pharmaceutical supplies, which must be done manually so that it can be said to be less efficient (Ningsih et al., 2018).

The unpredictable fluctuations in the need for medical equipment and medicines, especially during disease outbreaks or seasonal changes, are often a major problem. This situation is made worse by limited budgets and storage space, and hospitals must manage inventory very well to avoid shortages and waste. In addition, problems in human resource management, such as high staff turnover and lack of specific training in logistics management, can disrupt operational continuity and efficiency. Untrained staff may make mistakes about inventory management, which can worsen existing logistics problems. Logistics management is not easy and will become more complex, requiring great organization and attention. This is due to the tendency for negative symptoms to emerge such as ineffective and inefficient use of goods, frequent waste, lack of awareness of the meaning and value of goods, especially equipment, and improper administration in the procurement process.(Easter Rina Situmorang, 2019).Medical devices that cannot be used effectively, efficiently, and effectively are considered a failure in the medical device procurement process in hospitals. (Rahmawati et al., 2024).

Logistics Management Optimization Strategy in Health Services, Optimizing logistics management in health services is an essential strategic step to ensure operational efficiency, reduce costs, and improve the quality of service to patients. To achieve this goal, various strategies can be implemented. According to research by Eliana et al., (2023),implementing MoU with third parties to improve medical equipment and using the umbrella contract method for logistics procurement. Procurement of goods or services through the umbrella contract method is carried out to guarantee cheaper prices, availability of goods or services, and their characteristics that are needed repeatedly for undetermined volumes or quantities of work. Then according to research by Rahmadan, F. (2020), by creating a Room Inventory Card (KIR) and Goods Inventory Card (KIB), logistics management can be optimized by increasing storage according to provisions, reducing the accumulation of inventory, and improving logistics control.Room inventory card is a document used to record all medical goods and equipment found in a particular room or area in a hospital. An inventory card is a document used to record detailed information about each item or group of goods owned by a hospital, regardless of where they are stored.(Ardiansyah, 2014).The next strategy is to create innovations that aim to create a more responsive, efficient, and reliable logistics system, which will have a direct impact on improving the quality of health services and patient satisfaction. This is in line with researchEva et al. (2022), it is hoped that innovations in e- and tele-logistics can improve the planning, purchasing, storage, and maintenance of nursing logistics to improve the quality of nursing care.

## CONCLUSION

Logistics management in health services plays a very important role in improving operational efficiency, reducing costs, and improving the quality of service to patients. Several strategies for optimizing logistics management include the use of health information technology, innovation in logistics systems, and procurement with umbrella contract methods. Literature studies show that optimizing logistics management can help improve the quality of health services and patient satisfaction. However, there are still various challenges and obstacles in health logistics management, such as problems with storing goods, fluctuations in the need for medical equipment, and problems in human resource management. Therefore, efforts are needed to overcome these challenges so that logistics management can be optimal in supporting effective health services.

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