

Enhancing Efficiency in Hospital Supply Chains: A Project on Material Planning Optimization through Centralized Procurement

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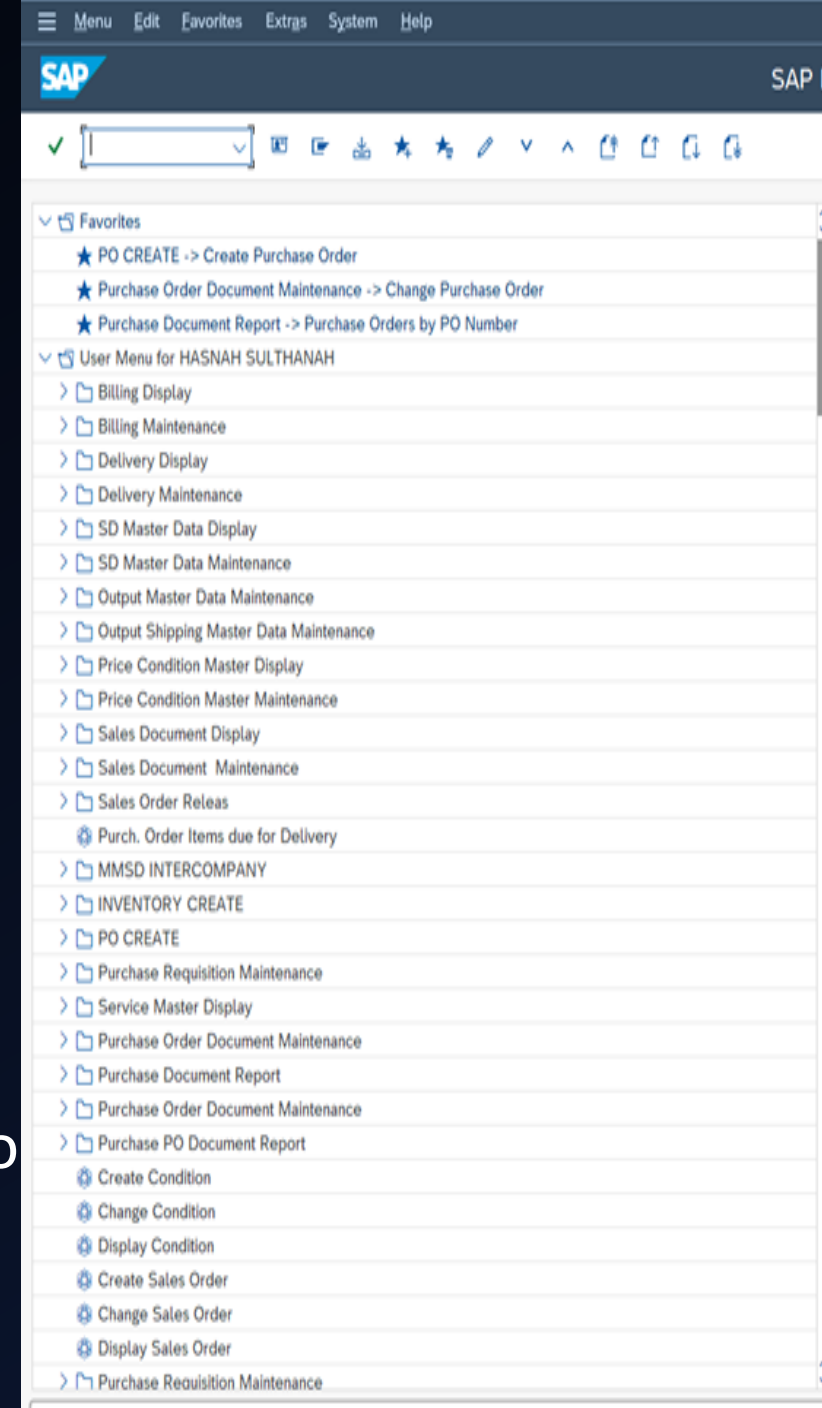
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INTRODUCTION

- Hospital supply chains are complex networks of interconnected processes, including procurement, inventory management, distribution, storage, warehousing, transportation, and information systems.
- Understanding these intricacies is crucial for devising effective material planning strategies to ensure seamless availability of critical supplies and medications.
- Supply chain management (SCM) is the strategic coordination and integration of all supply chain activities to maximize value creation, minimize costs, and enhance competitiveness.
- In hospitals, it involves optimizing procurement, distribution, and management of materials and resources essential for healthcare delivery.
- Key principles include integration, collaboration, visibility, flexibility, and continuous improvement.
- Benefits of effective SCM include cost reduction, enhanced quality, risk mitigation, innovation, and a competitive advantage.
- Procurement management in hospitals involves demand forecasting, supplier selection, contract negotiation, order placement, and inspection.

- Product evaluation is crucial in supply chain management to ensure products meet quality standards and specifications.
- Techniques for product evaluation include laboratory testing, inspections, supplier audits, and certification programs.
- Quality management systems and control tools like SPC can enhance product quality throughout the supply chain.
- SAP ERP systems, a large company, combine all business aspects on one platform, providing real-time visibility and control.
- Benefits include improved process efficiency, data accuracy, better communication, decision-making, and optimal inventory levels.
- However, implementation can be challenging due to data migration, system integration complexities, resistance to change, and cost overruns.



RESEARCH METHODOLOGY

RESEARCH QUESTION:

- a) Which factors act as major drivers of material planning and procurement in hospital supply chains?
- b) What are the implications of centralized procurement on material planning optimization and supply chain performance in hospitals?
- c) What are the best practices and strategies in enhancing inventory management, warehouse operations, and vendor performance of the supply chain in a hospital setting?

RESEARCH OBJECTIVE:

- To identify and analyze the critical factors influencing material planning and procurement within hospital supply chains.
- To explore the impact of centralized procurement on the efficiency and effectiveness of material planning processes.
- To develop actionable insights and recommendations for improving procurement practices in hospital settings.
- To contribute to the body of knowledge in healthcare supply chain management and provide practical guidance for healthcare administrators and supply chain professionals.

- This study aims to examine the impact of centralized procurement on hospital supply chains.
- The research design is an observational, retrospective cohort study, focusing on acute care hospitals that have implemented centralized procurement in the last two years.
- The study population includes hospitals that have implemented centralized procurement, use a computerized inventory management system, and are willing to provide data related to procurement practices, inventory levels, and supply chain performance metrics.
- The study will last for three months, with a sample size of 50 hospitals. Data collection will be done through review of existing medical records and online questionnaires.
- The study will use statistical software such as SPSS or STATA, with descriptive statistics and bivariate analyses to test the relationship between centralized procurement practice and supply chain performance metric variables.
- A significance level of $\alpha = 0.05$ will be considered.

RESULT

- Centralized procurement benefits hospitals by reducing errors, improving compliance, and enhancing negotiation power.
- It also improves visibility and control, leading to faster procurement cycles.
- High-value items account for 70% of the total demand value, requiring less frequent monitoring.
- Medium-value items require intermediate attention while considering carrying costs.
- Low-value items need careful evaluation for replacement.
- Replenishment strategies based on ABC classification ensure reduced stock outs and improved overall inventory efficiency.
- Centralized procurement positively influences material planning optimization and supply chain efficiency.
- Implementing SAP software improves inventory management and operational performance.
- ABC analysis is an effective tool for prioritizing inventory control efforts and improving turnover rates.

RECOMMENDATION

- This paper suggests that centralized procurement in hospitals can improve supply chain performance by improving inventory administration, enhancing permeability and control, and reducing costs.
- It suggests that centralized procurement, combined with ABC analysis and optimized replenishment strategies, can lead to better inventory control, better monitoring, and more effective contract negotiation.
- However, the study acknowledges limitations, such as being retrospective and relying on existing data.
- The findings align with prior research, but there may be negative implications due to reduced departmental autonomy.
- Effective implementation requires strong leadership commitment, investment in technology, and cross-department communication.

CONCLUSION

- This study examines the impact of centralized procurement on hospital supply chains using a retrospective cohort design.
- The findings reveal improved inventory performance, enhanced transparency, and potential cost savings.
- However, the study acknowledges limitations due to the retrospective design and data quality reliance.
- Future research directions include a prospective study, focusing on long-term viability, and targeted implementation strategies.
- The study suggests that if implemented effectively, centralized procurement can lead to performance improvement in hospital supply chains, improved patient care, and operational efficiency.
- However, hospitals must consider their requirements, resources, and challenges when adopting this approach. Future studies should focus on long-term sustainability and emphasize the efficiency and cost gains of centralized procurement.



Thank You!