

Supply Chain Management in Healthcare Industry: A Critical Review

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Abstract:-The supply chain management of health care services, also called the health care logistics is very useful in the practice of patient care. In order to reduce cost and improve the quality of healthcare, it is very much essential to bring efficiency in the healthcare system, and thereby provide great opportunities for healthcare institutions. The supply chain management of healthcare services includes the movement of medicines from wholesalers to clinics or nursing units. The accessibility and availability of these products affects the efficient functioning of the medical institutions. Thus, the study helps to identifying the various issues and challenges in supply chain management faced by healthcare sector and also identifying the ways available to tackle these issues.

Keywords:- Supply Chain Management, Healthcare Industry, Healthcare Logistics, Supply Chain Strategies, Cost Management.

I. INTRODUCTION

The supply chain management is the management of flow of products and services. It involves the movement and storage of raw materials, work-in-progress inventory and the finished products from the point of origin to the point of consumption, through interconnected or interlinked channel or networks.

Supply chain strategies are considered to be the critical backbone of every industry. The paper discusses the supply chain management in the healthcare industry. The healthcare supply chain management is the network of medicines, equipments, laundry, food, vendors, healthcare institutions etc. The supply chain management in healthcare industry faces various challenges in its long run. Cost management is one such issue, but the degree of concern in this area is declining year after year. According to logistics decision makers report, the rapid growth in the business, the fuel prices, the cost of procuring raw materials, government regulations and the new

trends in market are some challenges in managing supply chain costs. Uncertainties have its impact on supply chain management in healthcare sector, but a certain percentage of decision makers in this field ignore these concerns.

The supply chain management in the healthcare industries is very complex. But, the processes involved in the supply chain is similar to that of other industries; it starts with procurement of raw materials, its formulation, packaging, shipment of products to wholesalers and to retailers, and its reach to concerned medical institutions and thereby to patients. Counterfeiting in supply chain is one of the issues faced by the drug companies and it means the reach of fake drugs into the market. Therefore, more visibility is required in the area of supply chain management in healthcare industry.

The article emphasizes on bringing out the aspects of supply chain management in healthcare industry and also points out the various issues and challenges in the supply chain in the sector. The study also brings out the effective and viable ways to sort out the problems so as to tackle it.

II. LITRATURE REVIEW

The paper by Jed de Varies & Robbert Huijsman (2011) gives an overview of the complex structure of supply chain management in the healthcare services. In addition, more research needs to be done in addressing enablers and barriers while implementing IT in health care services context. It is still unknown, the influences of different stakeholders in establishing supply chain management relationship between different health care services providers. And it is very much necessary to make a SWOT analysis of supply chain management such as lean and agile manufacturing, business process management and Lean Six Sigma. It is not very much known about how these philosophies are applied or practiced by the health care services. The article concludes that, with a monodisciplinary focus, interdisciplinary focus must be given

to supply chain management issues in health care services. And the scope of problem requires knowledge from various disciplines and thus the article provides an overview of supply chain management in health care services.

The article was prepared by NoorfaHaszlinnaMustaffa and Andrew Potter (2009) to evaluate inventory management in the private health care sector in Malaysia, with an object to focus on the distribution of medicines, i.e. from the wholesalers to the clinics. Interviews and other statistical techniques were conducted to find the main issues related to the supply chain. The two main findings from the case study were-urgent order and stock availability at wholesaler. The major issues in supply chain were also identified. The study also reveals that the modern supply chain management techniques can be more beneficial to healthcare sector supply chain in the developing countries.

The paper was prepared by Vikram Bhakoo, Prakash Singh and Amrik Sohal (2011) to study the nature and significance of arrangement the Australian hospital supply chain uses to manage its inventories. It was a case study conducted among 10 healthcare institutions. The study revealed that there exist various collaborative arrangements in the supply chain partners like the 'ward box' system amongst the distributors and the healthcare institutions. Mostly, the department of material management was engaged in participating in outsourcing arrangements with distributors and healthcare institutions. Several uncertain factors were found out which contributed to emergence of such collaborative arrangements. The limitation of the study was that, it was limited only to the Australian healthcare sector. The practical implication of the study is that, the collaborative arrangement so discussed will help to improve the inventory management throughout the supply chain.

The article was prepared by Arun Kumar, Linet Ozdamar and ChunNing Zhang (2008) to go into the cost reduction in the supply chain management in healthcare supplies. The paper is in the form of a case study. In most of the healthcare systems, the manager tries to reduce acquisition price of supplies rather than minimizing the overall delivering cost. Therefore the case study gives a contemporary approach to reduce the costs with the help of process engineering in supply chain management. The managers in healthcare industry are trying out their best to reduce cost without sacrificing quality. In order to reduce cost, the healthcare institutions must ensure that they review all their activities and also the cost associated with it and should avoid all those activities which add no

values. The process engineering mentioned in the paper deals with centralization of warehousing and control of non production goods.

The paper was prepared by Bert Meijboom, Saskia Schmidt and Gert Westert (2011) in order to study the problems that arise in difficult situation in healthcare institutions. And this is because treating a particular patient requires inputs from various sources or healthcare providers. The study deals with the ways to deal with these problems with the help of supply chain management. As the healthcare is concerned with service providing, the service supply chain is required to be very well examined. On the basis of findings from the article, four major issues are categorized, viz, communication, safety of the patient, the waiting times and the integration. All these problems happen within the organization itself, but even then the steps from one healthcare provider to another represent weakest in the healthcare providers system. In this sector information regarding medical records of patients as well as the information regarding the healthcare providers are required to be gathered and processed in an organized and improved manner.

This paper was prepared by Hakan Aronsson, Mats Abrahamsson and Karen Spens (2011) in order to understand the main important factors that are required to be considered while developing a supply chain in healthcare industry. The purpose of the paper is to explain about the application of lean and agile used in process strategy to improve the performance of supply chain and the requirement to establish a supply chain. In the paper, examples of Swedish healthcare settings are used to describe the processes of patient flow and planning for the use of lean and agile strategy in healthcare supply chain management. The supply chain management has the potential to regulate patient flow in healthcare sector. It is all about organization of quick response and flexibility in strategy with the help of combined lean and agile process strategy, and this could be achieved with the help of systems approach along with strategic orientation, and requires a combined effort of all supply chain members. The paper emphasize that focus must be given to leanness and agility together. The healthcare institutions should apply these approaches to improve performance as well as to get the competitive advantage out of it. Unlike manufacturing industry, healthcare industry must not pave way to sacrifice the quality of the products.

The paper was prepared by Fariborz Rahimnia (2010) in order to conduct a study on application of legality in supply chain in the professional services, especially in healthcare service. For the purpose of conducting the study, author used case study approach to analyze the legality of professional services, and the study is conducted at hospital in Iran, a healthcare service provider. This case also emphasize on agile and lean strategies, forced by specific conditions of the patients. It also says that, during the process of analyzing the legality of the professional services, it is very much essential to highlight the importance and role of the human resources. The article also says that through classifying healthcare services into 3 pipelines, it helps in identifying decoupling points for the supply chain. The paper is based on specialized healthcare institutions. Since this research was conducted in one particular healthcare institution, the result thus obtained cannot be generalized to other healthcare institutions.

The paper was prepared by Vikram Bhakoo and Caroline Chan (2011) to analyze the implementation of e business processes in the area of procurement in the healthcare supply chain management where there is involvement of multiple stakeholders. It was a single case study spanning around three years and the data are collected through interviews and other statistical methods. The finding from the study reveals that there were lack of consistency and the quality of the data was also poor. And this was considered to be the reason for the key issues in implementation of e-business in healthcare supply chain. It also points out that, for successful implementation trust and confidence are essential. The practical implication of the article is that, it helps in resolving problems that arise at the time of e-business process implementation in healthcare supply chain which involves multiple stakeholders. The study was a part of Monash Pharmacy Project.

The article prepared by McKone-Sweet, Kathleen E, Hamilton, Paul, Willis and Susan B(2005) deals with the challenges and barriers in the supply chain of healthcare industry. The findings from the article suggest that lack of support from managers or the executives, communication, calculation of supply chain cost and performance, collection of data and its analysis and sharing, improper incentives to the supply chain members and lack of skill and knowledge about supply chain practices are the major barriers to healthcare supply chain system. The article

suggest that there is tremendous opportunities for change in supply chain management of healthcare industry and the recommendations for the management in this industry is been classified into three levels, i.e. the organizational level, the operational level and the environmental level. The organizational level is with regard to hospital executives, the operational level with regard to materials and supply chain management and the environmental level with regard to GPO (Group Purchase Organizations) and distributors. The study was thus able to identify the basic barriers in healthcare supply chain and address the barriers with certain recommendations.

The article prepared by Duangpun Kritchanai (2012) analyses the improvement in healthcare supply chain management in Thailand. Unlike other industries, the supply chain of the healthcare industry is very complex. In Thailand the supply chain practices in healthcare services is inefficient and inconsistent. The study conducted reveals that the main three issues with healthcare supply chain in Thailand is inaccurate information, inefficiency in business process and fragmented system. Therefore, as a consequence of these problems three interventions are stated; business process re-engineering, standardization and sharing of information. The problems in supply chain affect the operational efficiency and will lead to low safety of patients. The paper also emphasizes that, for the improvement of supply chain, the attitude and participation of the supply chain players are essential. The study contributes to develop a framework for the improvement of supply chain in healthcare sector in Thailand by analyzing the recent problems that have occurred in the industry.

III. FINDINGS

In the present day scenario, the supply chain management in health care industry is a matter of concern. The various factors that affect the healthcare supply chain are required to be viewed as dynamic. Efficient healthcare supply chain management is required for safety of the patients. Therefore it is very much essential to have a proper, efficient and successful healthcare supply chain. In order to achieve a successful supply chain, there must be cost effectiveness, appropriate quantity, standard quality, on time delivery, proper installation and training, proper maintenance and transparent as well as trustworthy service. Certain other barriers which are present in developing countries include poor infrastructure, political instability, and lack of skilled and trained employees. Due to these barriers in supply chain, there are chances of stock-outs and thus lead to wastage and unfulfilled needs. The actual situation and desired health situation are required to be

evaluated and the demand is to be forecasted and it should be ensured that the supply meets the demand. Proper decision making is required in this context. The supply chain does not end with the final product being available to customer, ongoing evaluation is also required to ensure the success of the supply chain process.

The managers and experts in healthcare sector very well knows that material management can only help in reducing cost of operation and increase the quality of healthcare. The main objective of supply chain management in healthcare industry is to deliver the products at right time to the providers such as hospitals, clinics, nursing homes, pharmacies and physicians. The stakeholders in healthcare supply chain are the producers, purchasers and providers. The producers are the manufacturers, the purchasers are the distributors and the providers are the end users of products. In order to maximize the patient care, there should be consistency in the integrated supply chain strategy of healthcare sector. This could be achieved only by improving the patient care, minimizing the time required for material handling and cost of medical staff and reducing inventory.

Co-ordination and integration process are essential for smooth functioning of supply chain and certain factors such as organizational culture, poor leadership, power-interest relationship between the stakeholders etc. acts as a hindrance in integration and co-ordination process.

IV. CONCLUSION

The article gives an overview of the supply chain management practices in healthcare industry. It is important for all healthcare institutions to have a successful supply chain. Many improvements and innovations has been made in the field of healthcare supply chain, especially in information sharing, inventory control, process of procurement, communication etc. and all these improvements were made possible with the help of information technology and also cooperation of stakeholders. The players in healthcare supply chain needs to strengthen themselves in areas of segmentation, agility, alignment, measurement and collaboration. The healthcare service providers are nowadays under great pressure due to increased competition, regulations of government, increased cost and demand for high quality products and services. In order to overcome the barriers in healthcare supply chain, the healthcare sector has to prepare collaborations from the very beginning to stack the odds in their favour.

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