Transforming model of the pharmaceutical supply chain: a conceptual framework at hospitals in Viet Nam

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ABSTRACT: This paper aims to search for pharmaceutical supply chain and supply chain theories related to hospitals in Vietnam. This is the first phase of research to develop a framework to transform the pharmaceutical supply chain model to adapt to the development trend of the industrial 4.0 era and the COVID-19 epidemic. The theoretical method is the basis applied in the research to the point of view of experienced pharmacists. Interviews were conducted with key pharmacists in the pharmaceutical supply chain from pharmaceutical manufacturing companies, pharmaceutical distribution companies, hospital Pharmacy Faculty, and pharmacist training universities in Ho Chi Minh City, Vietnam. The results show aspects that need to be transformed model of the pharmaceutical supply chain in the hospital. First, problems in hospitals are identified in the pharmaceutical supply chain. The next phase of this study will explore the aspects that need to transform the pharmaceutical supply chain model in hospitals in Ho Chi Minh City, Vietnam. The final step will evaluate the relationship of variables predicting at the hospital in the pharmaceutical supply chain. This study provides new insight into the pharmaceutical supply chain management in hospitals in Vietnam. The research results generate insights for hospital leaders about hospital pharmacy operations, which link to the pharmaceutical supply chain. By connecting and adapting principles to real-world contexts, stakeholders involved in the pharmaceutical supply chain will improve hospital performance in better patient care.
KEYWORDS: Supply chain, Pharmacy hospital, Healthcare, Pharmaceutical industry

I. INTRODUCTION

Impact of the COVID-19 epidemic in Vietnam's pharmaceutical industry. Pharmaceutical supply chains have struggled to adapt to the global COVID-19 pandemic and prioritize planning for the future. Shortage of supply due to the disruption of the supply chain. Imported pharmaceutical materials account for a large proportion, about 80-90% of the demand in Vietnam. China and India are the two most significant sources of pharmaceutical raw materials for Vietnam, accounting for 63.7% and 16.7% of the proportion of imported pharmaceutical materials, respectively, in 2019. In the first two months of 2020, due to supply in China and India were affected, import turnover of pharmaceutical materials from China and India was USD 27.2 million (-30.0% yoy) and USD 9.4 million (- 25.8% yoy). Therefore, the total value of imported pharmaceutical materials in the first two months of 2020 also decreased by 30.8% yoy, reaching 46.5 million USD (Cuong, 2020).

Vietnam's innovative pharmaceutical industry has the potential to create value for the nation. Despite the challenges of the regulatory environment. There are many opportunities offered by Vietnam's resources and workforce(International, 2020). The pharmaceutical supply chain in Vietnam is a complex system that involves many intermediaries between manufacturers and consumers. The supply chain sector in Vietnam has a high competition level from the domestics and local enterprises(T. A. Nguyen, Vitry, & Roughead, 2017).

The current pharmaceutical supply chain needs reorganization. The many layers within the distribution network, each contributing a compounding mark-up along the supply chain, serve

to inflate medicines' final price (T. A. Nguyen et al., 2017). In Vietnam, Hospitals are facing the problem of overcrowding in public hospitals. Long wait times are a major dissatisfaction for patients. Reducing wait times benefits not only the patient but also the hospital in terms of overall workload reduction(S. T. T. Nguyen et al., 2018).

Clinical pharmacy is key to the quality use of medicines. Clinical pharmacists in hospitals are part of multidisciplinary health care teams and are focused on improving the quality of medicine use. Clinical pharmacy in the hospital is still facing many difficulties, lack of human resources, lack of knowledge and skills for clinical pharmacists, lack of application of information technology to update drug information resources. Hospitals had hospital-based pharmacy activities, and the direct patient care was limited. Training, education, and expanded workforces are needed to improve clinical pharmacy services(Trinh et al., 2018). Key elements of hospital pharmacy should be focused on implementing international standards that reinforce and standardize worldwide pharmacy practices to achieve professional goals and goals of care patients, helping to meet the general expectations of society(Van Vo, Sunantiwat, Pumtong, Vo, & Anuratpanich, 2020)

II. LITERATURE REVIEW

In today's modern pharmaceutical industry follow the trend of global pharmaceutical supply chain integration. The expanded national pharmaceutical supply chain presents specific challenges for the organization in maintaining the quality of pharmaceutical products to the end-user. The pharmaceutical supply chain is a complex system that begins with the raw materials processed by the manufacturers to create the pharmaceutical products to the primary and secondary wholesale distributors who repack, the distributors such as hospitals and community pharmacies, all of which lead to drug users(Rees, 2011).

As society evolves, the pharmaceutical industry landscape continues to change with the rapid pace at which processes are developed and supply chain strategies increasingly complex to deal with the constant changes. On demographics, urban migration, growing health care needs, changing patterns of age-related disease, and increasing public health awareness(Pradabwong, Braziotis, Pawar, & Tannock, 2015). The integrity of the pharmaceutical supply chain is threatened by counterfeiting, importing unapproved drugs and substandard drugs, creating gray markets, and all of which can potentially lead to cause serious harm(Levinson & General, 2017). The illness caused by the

coronavirus during the 2019 crisis (COVID-19) has drawn attention to the possibility of supply chain fragility in meeting patient demand (Mollenkopf, Ozanne, & Stolze, 2020).

The supply chain concept has been stimulated from many directions, including the quality revolution, notions of materials management and integrated logistics, a growing interest in industrial markets and networks, the notion of increased focus, and influential industry-specific studies(Chen & Paulraj, 2004). The supply chain value system and distribution network include the value chains from the supplier, the company itself, the company's distribution channels, the company's buyers and is extended to the product buyers. Its ultimate goal is to maximize value creation while minimizing costs(Dobrzykowski & Vonderembse, 2009). The combined performance of the supply chain, the outcome of all integrated members' efforts, is of significant importance from a measurement perspective(Moons, Waeyenbergh, & Pintelon, 2019).

The supply chain management transformation model requires three main conditions: collaborative governance structures, efficient processes, and an integrated information system. Supply chain management is the right governance structure that allows hospitals to reduce costs and provide high-quality care. It requires that the supply chain management governance evolves to a collaborative approach involving all stakeholders, without which all other efforts to move to the transformation model simply will fail. This collaboration requires the appropriate governance structure and processes. When processes are fragmented or incomplete, they cause errors in ordering the wrong item or quantities (Pinna, Carrus, & Marras, 2015).

Researchers and practitioners view supply chain integration as the basis for supply chain management, which requires the unification of disparate procedures, including sourcing, manufacturing, and distribution. Studies have identified that customer integration, supplier integration, and internal integration are the three primary forms of supply chain integration. Supply chain integration is a concept in enhancing performance and establishing value in supply chain management. To achieve this level of integration, activities in all parts of the organization must work as a whole. The excellent level of internal integration in the supply chain will be reflected in the organization's performance and customer service standards(Sundram, Rajagopal, Bahrin, & Subramaniam, 2018). For example, the hospital supply chain integration in the healthcare sector is

shown in figure 1. Automating and integrating IT systems will allow hospitals to link their logistics processes seamlessly. The centralized management requires hospitals in the network to dialogue continuously with the warehouse and a flow of information that travels in both directions (from the hospital to the Central Warehouse and vice versa)(Pinna et al., 2015).
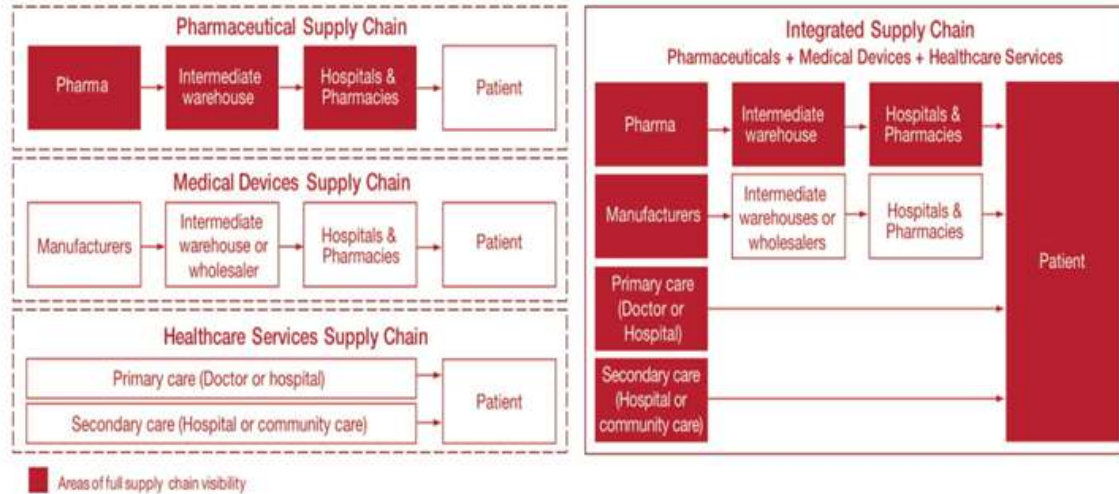
Figure 1: The pharmaceuticals, medical devices and healthcare services supply chains will be fully integrated. *Source: (Communications, 2020)*

Studies on connections along the pharmaceutical supply chain system at hospitals are rare in Vietnam. Ho Chi Minh City issues a policy to develop a clinical pharmacy in hospitals and pharmaceutical supply chains for 2021-2025(City, 2021). In summary, this study extends the previous literature review that underpins the conceptual framework development how to integrate the pharmaceutical supply chain in hospitals is more of a pressing policy concern with the following issues(Quan, 2020): The issues of managing human resources for pharmacists in Hospital; The problems of total quality management for drugs in Hospital; The problems of supplying and managing pharmaceutical products in hospitals. The issues of Information technology in the hospital.

III. MATERIALS AND METHOD

Supply chain studies show the relevance of design decisions, and analysis reveals the role of influencers in supply chain operations with operational choices in practice(Melnyk, Narasimhan, & DeCampos, 2014). In this study, a qualitative research approach is also used to gain insight into the underlying reasons, attitudes, and motivations behind different behaviors under the activities in the pharmaceutical supply chain at hospitals in Ho Chi Minh City(Rosenthal, 2016). Ho Chi Minh City is one of the largest cities in Vietnam. The study identified topics with the literature review in the context of the proposed observed variables framework discussed for interview questions in table 1(Europe, 2003). The questions are designed to elicit an understanding of the interviewee's observations during specific work or experience(Jamshed, 2014). Interviewed pharmacists provided specific insight into the research question with operational processes, identified experiences, or social experiences occurring within a particular location and context within the pharmaceutical supply chain in hospitals (Doody & Bailey, 2016).

Research results may reveal potential weaknesses and possibilities for supply chain management implications. Interviews were conducted at separate times. A descriptive qualitative design study using telephone and face-to-face interviews were conducted from November 2020 to June 2021. Interviews were practiced with an average duration of 30 minutes with the main ideas about the factors in table 1, collected the opinions of the participating pharmacists, and used additional questionnaires used to search and complete the information. The interviewees in this study included 15 Pharmacists participating in the pharmacy field and having practice certificates following the law of Vietnam(Babar, 2015). Pharmacists were randomly selected for interviews from pharmaceutical factories, pharmaceutical distribution companies, hospital pharmacy

departments, and pharmaceutical training universities with ten years of working experience or more (Turner III, 2010).

Interview results from recordings, conducting interview analysis. Content analysis is often the general term used to describe it. The resulting analyses are simulated performed according to studies in qualitative research in health sciences(Rosenthal, 2016). The research raises strategic questions related to research models developed from theoretical knowledge, previous research, experience, or practical needs on the job(Doody & Bailey, 2016). The study proposes the following conceptual framework covering the factors involved in transforming the pharmaceutical supply chain in hospitals

Table 1: Characteristics of research questions to interview pharmacists

The main ideas of the factors	Sources for this review
- Essential trends in the management of pharmacist human resources in hospitals - The requirements of associated industry standards in the management of pharmaceutical human resources in hospitals	(Muhia, Waithera, & Songole, 2017); (Trinh et al., 2018); (Bekema et al., 2019); (Quan, 2020), (City, 2021).
- The causes of total quality management barriers in hospitals related to the pharmaceutical supply chain - An environment that links all the successful total hospital quality management initiatives needed for the pharmaceutical supply chain	(T. A. Nguyen et al., 2017); (Kristianto & Tarigan, 2019); (Van Vo, Sunantiwat, Pumtong, Vo, & Anuratpanich, 2020); (Quan, 2020); (City, 2021).
- Disruptions in the product supply network and hospital relationships to the pharmaceutical supply chain - Elements that help link essential relationships for hospitals on a common platform, connecting with pharmaceutical suppliers	(Dobrzykowski & Vonderembse, 2009); (Rees, 2011); (Muhia et al., 2017); (Quan, 2020); (City, 2021).
- Trends of digital transformation model for the hospital in pharmaceutical supply chain - Digitally assist hospitals in risk management and forecasting of pharmaceutical supply chain disruptions approaching the innovative hospital trend	(Pinna et al., 2015); (Bekema et al., 2019); (Singh, Kumar, & Ahmad, 2020); (Quan, 2020); (City, 2021).
- Integrated pharmaceutical supply chain model among the perspectives of agility, resilience, and sustainability - Hospitals connect pharmaceutical supply chain relationships and integrated operations in patient-centered care	(Shaw, Rosen, & Rumbold, 2011); (Levinson & General, 2017); (Waluyowati, Surachman, & Aisjah, 2018); (Quan, 2020); (City, 2021).
- Hospital performance innovation trends with the integrated pharmaceutical supply chain in healthcare - The trend of hospitals collaborating in the pharmaceutical supply chain improves efficiency across the entire value chain	(Pradabwong et al., 2015); (Fredrick, 2018); (Moons et al., 2019)); (Mollenkopf et al., 2020); (City, 2021).

IV. ANALYSIS AND FINDING

In this study, we seek a research framework and help describe the transformation of the pharmaceutical supply chain model in hospitals. First, a general search was carried out for research articles, using tools and methodologies (supply chain, hospital pharmacy, healthcare). The study analyses the concepts, experiments. It presents human resource management, total quality management, product supply, and information technology related to hospital performance in the pharmaceutical supply chain(Melnyk et al., 2014). In addition, the study found that the transformation of the pharmaceutical supply chain that needs to be integrated is an important mediator for the efficiency of the pharmaceutical supply chain in

hospitals. Third, the study uses interviewing approaches based on the factors, categorizing the agents described in table 1. Finally, the proposed research conceptual framework results were analysed and discussed from the collection of research articles and pharmacists' opinions (Figure 2).

Pharmaceutical supply chain management at the hospital maximizes value as we improve customer service and increase hospital profitability. This study presents a strategic choice on hospital performance in the pharmaceutical supply chain as a dependent variable, influenced by independent variables (human resource management, total quality management, product supply, and information technology). The proposed research

results with the supply chain integration intermediate variable research model significantly improve cooperation to improve efficiency across the entire value chain for hospitals in the pharmaceutical supply chain. The factors that can affect the performance of the supply chain, from which the research analysis. The dependent variable of the study is the performance of the pharmaceutical supply chain, which is influenced by the independent variables; information, staff capabilities, technology infrastructure, and inventory control(Fredrick, 2018).

They were collecting interview ideas for pharmacist human resource management at the hospital. Human resource management standards in the health sector play an important role. In pharmacist human resource management. A pharmacist in the correct position is the first step in effectively implementing the hospital's strategy in the pharmaceutical supply chain. Implementing pharmaceutical supply chain management in hospitals requires pharmacists to recognize how their work affects others in the hospital, the various parties downstream, and upstream in the pharmaceutical supply chain. It should be noted that a typical supply chain also involves human systems, which can pose the following challenges and difficulties in coordinating supply chain operations. Supply chain members have conflicting goals or objectives and disagree on decisions in action(Muhia et al., 2017).
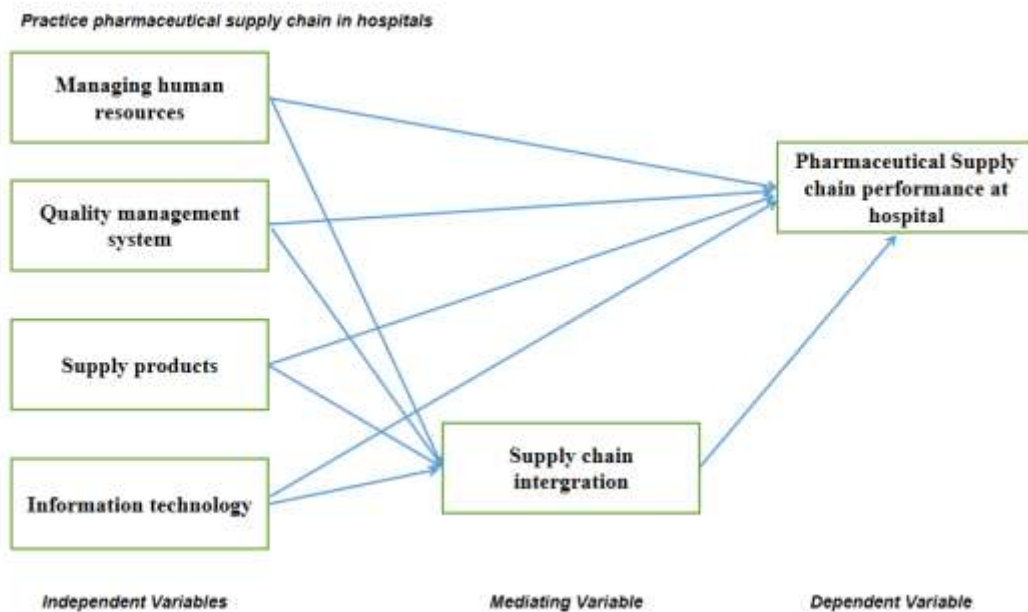

Figure 2: Conceptual framework transforms model of pharmaceutical supply chain in hospitals, Vietnam

A supportive environment is all about the total quality management initiatives needed to succeed in hospital service organizations. The field of health is more and more interested because it is related to human health. Inadequate implementation of quality control can lead to poor results. Returned products, recalled or complained products/services create a bad impression between the hospital and the customer. At worst, safety-related issues can affect the trust and long-term viability of the hospital. The benefits of implementing total quality management in the supply chain(Kristianto & Tarigan, 2019): First, implementing total quality management positively and significantly impacts supply chain integration. Second, implementing total quality management in companies can create an appropriate documentation system for each department to facilitate better communication. Third, the implementation of total quality management has a positive impact on supply chain performance and employee satisfaction. Fourth, supply chain integration has a positive impact on employee satisfaction and supply chain performance. The causes of total quality management barriers fall into three categories: (Hospital) ineffective or inappropriate total quality management model; (2) ineffective or inappropriate methods of implementing total quality management; and (3) the environment is not suitable for implementing total quality management.

Pharmaceuticals are an essential physical chain in the healthcare system. Hospitals cannot allow disruptions to the supply of pharmaceutical products from a supplier. Hospitals need to connect with suppliers directly to collaborate on a common platform. Supply management does not stop at finding suppliers but has to actively create and maintain close or less binding relationships with other suppliers to optimize the costs of investing in these products. Link and still achieve the highest value. Therefore, supplier relationship management has become an important requirement of hospitals in the modern pharmaceutical supply chain. Supply chain management manages the relationship between a supplier's supplier and a customer's customer through supply chain participants, primarily using information flow and logistics activities to achieve competitive advantage and customer satisfaction(Muhia et al., 2017)

The correct use of technology has been advocated as a new strategic perspective on supply chain management(Ageron, Bentahar, & Gunasekaran, 2020). In the era of Industry 4.0, supply chains operate on technology, and digital supply chains include all information about products, transactions, and locations; stored and shared electronically. Supply chain transactions can be summed up as a process (customer gives supplier money, the supplier provides the customer with a product or service, and customer and supplier exchange an information number). The innovative implementation of electronic procurement systems can create value for businesses by using resources supporting information technology in supply chain management. Hospitals are a link in the pharmaceutical supply chain. Hospitals need to choose and apply technology most optimally "smart," maximum support for work, and user-friendly(Quan, 2020). The Department of Health of Ho Chi Minh City has the policy to send information technology applications to hospitals to develop pharmaceutical supply chain management software for the whole hospital, communicating data when necessary(City, 2021). Around the world, Covid-19 has posed significant challenges for businesses and governments. New innovative technology is playing an important role in fighting the crisis. Organizations need to invest in developing robust digital infrastructure quickly. There are a lot of tools available to enable work-from-home positions and make life much easier. Change the behavior towards work from home and is a welcome move. Pay attention to everyone's happiness (Singh, Kumar, & Ahmad, 2020).

Integrated supply chains allow companies to access other resources, thus improving the efficiency of companies in meeting customer needs(Waluyowati, Surachman, & Aisjah, 2018). Integrative care is a term that reflects an interest in improving the patient experience and achieving greater efficiency and value from health delivery systems(Shaw, Rosen, & Rumbold, 2011). For example, a team of pharmacists in the pharmaceutical supply chain provides leadership, systems support, and expertise to enable the organization to support the continuum of hospital inpatient and outpatient care(Bekema et al., 2019). The Ho Chi Minh City Department of Health plans to expand telemedicine services to outpatients in the community(City, 2021).

"Hospital performance" must be defined in relation to clear objectives that reflect the values of different stakeholders (such as patients, pharmacists, pharmaceutical suppliers, government pharmaceutical industry standards). The aim is to address the fragmentation of inpatient and outpatient services in the pharmaceutical supply chains, facilitating more frequent and continuous care. Hospitals can better coordinate with population dynamics in the process of social development, increasing rates of chronic diseases and epidemics(Abuzour et al., 2020).

V. CONCLUSION

Vietnam is in international integration, participating in the global supply chain and conducting research on the pharmaceutical supply chain. This paper is the first step of the study, which proposes a framework to enhance the transformative capacity of the pharmaceutical supply chain in hospitals in Ho Chi Minh City. Research, conduct interviews with key pharmacists, determine factors of established variables, and propose a conceptual framework for transforming the pharmaceutical supply chain model at hospitals in Ho Chi Minh City. The independent variable factors (Human resource management, Total quality management, Product supply, and information technology application) helps to implement integration is an intermediate variable. Hospitals actively transform flexibly in the pharmaceutical supply chain to improve organizational performance, a dependent variable. Performance-enhancing hospitals can manage risks and manage disruptions to the pharmaceutical supply chain, meeting the hospital's goals of minimizing risks and ensuring patient safety.

REFERENCES

[1]. Abuzour, A. S., Hoad-Reddick, G., Shahid, M., Steinke, D. T., Tully, M. P., Williams, S. D., & Lewis, P. J. (2020). Patient prioritisation for hospital pharmacy services: current approaches in the UK. European Journal of Hospital Pharmacy.

[2]. Ageron, B., Bentahar, O., & Gunasekaran, A. (2020). Digital supply chain: Challenges and future directions. Paper presented at the Supply Chain Forum: An International Journal.

[3]. Babar, Z. U. D. (2015). Pharmacy practice research methods.

[4]. Bekema, C., Bruno-Tomé, A., Butnoris, M., Carter, J., Diprose, E., Hickman, L., . . . Teasdale, T. (2019). Standard of practice for pharmacy technicians to support clinical pharmacy services. Melbourne: Society of Hospital Pharmacists of Australia.

[5]. Chen, I. J., & Paulraj, A. (2004). Understanding supply chain management: critical research and a theoretical framework. International Journal of Production Research, 42(1), 131-163.

[6]. City, D. o. H. o. H. C. M. (2021). Development of clinical pharmacy, pharmaceutical supply chain in the period of 2021-2025. http://www.medinet.hochiminhcity.gov.vn/chuyen-muc/trien-khai-chuong-trinh-hanh-dong-thuc-hien-nghi-quyet-dai-hoi-dang-bo-so-y-te-c1081-42448.aspx.

[7]. Communications, G. C. A. a. (2020). Pharma 2020: Supplying the future -- Which path will you take? www.pwc.com/pharma2020.

[8]. Cuong, N. V. (2020). Pharmaceutical industry update report. www.fpts.com.vn.

[9]. Dobrzykowski, D., & Vonderembse, M. (2009). Healthcare supply chain and IS strategy for improved outcomes. Paper presented at the Proceeding of Production and Operations Management Society 20th Annual Conference, Orlando, FL.

[10]. Doody, O., & Bailey, M. E. (2016). Setting a research question, aim and objective. Nurse researcher, 23(4).

[11]. Europe, W. R. O. f. (2003). How can hospital performance be measured and monitored? http://www.euro.who.int/document/e82975.pdf.

[12]. Fredrick, E. J. (2018). Factors Influencing Performance in Pharmaceutical Supply Chain: A case of Medical Stores Department (MSD) in Dar es salaam Region. Mzumbe University,

[14]. International, K. (2020). Value of Innovation: Unlocking the Potential of the Innovative Pharmaceutical Industry in Vietnam. https://home.kpmg/vn/en/home/insights/2020/07/blue-sky-report-value-of-innovation.html.

[15]. Jamshed, S. (2014). Qualitative research method-interviewing and observation. Journal of basic and clinical pharmacy, 5(4), 87.

16]. Kristianto, I., & Tarigan, Z. J. H. (2019). The impact TQM System on Supply Chain Performance through Supply Chain Integration and Employee Satisfaction. Petra International Journal of Business Studies, 2(1), 8-17.

[17]. Levinson, D. R., & General, I. (2017). Drug Supply Chain Security: Wholesalers Exchange Most Tracing.

18]. Melnyk, S. A., Narasimhan, R., & DeCampos, H. A. (2014). Supply chain design: issues, challenges, frameworks and solutions. In: Taylor & Francis.

[19]. Mollenkopf, D. A., Ozanne, L. K., & Stolze, H. J. (2020). A transformative supply chain response to COVID-19. Journal of Service Management.

[20]. Moons, K., Waeyenbergh, G., & Pintelon, L. (2019). Measuring the logistics performance of internal hospital supply chains–a literature study. Omega, 82, 205-217.

[21]. Muhia, J., Waithera, L., & Songole, R. (2017). Factors affecting the procurement of pharmaceutical drugs: a case study of Narok County referral hospital, Kenya. Med Clin Rev, 3(4), 20.

[22]. Nguyen, S. T. T., Yamamoto, E., Nguyen, M. T. N., Le, H. B., Kariya, T., Saw, Y. M., . . . Hamajima, N. (2018). Waiting time in the outpatient clinic at a national hospital in Vietnam. Nagoya journal of medical science, 80(2), 227.

[23]. Nguyen, T. A., Vitry, A., & Roughead, E. E. (2017). Pharmaceutical policy in vietnam. In Pharmaceutical policy in countries with developing healthcare systems (pp. 75-94): Springer.

[24]. Pinna, R., Carrus, P. P., & Marras, F. (2015). Emerging trends in healthcare supply chain management—an Italian experience. Applications of Contemporary Management Approaches in Supply Chains, 117-137.

[25]. Pradabwong, J., Braziotis, C., Pawar, K. S., & Tannock, J. (2015). Business process management and supply chain collaboration:

a critical comparison. Logistics Research, 8(1), 6.

[26]. Quan, N. H. K. (2020). International Integration of Pharmaceutical Supply Chains in Vietnam: An Overview of Challenges and Opportunities at Hospitals in Ho Chi Minh City. International Journal of Medical and Health Sciences Research, 7(1), 37-48.

[27]. Rees, H. (2011). Supply chain management in the drug industry : delivering patient value for pharmaceuticals and biologics. Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

[28]. Rosenthal, M. (2016). Qualitative research methods: Why, when, and how to conduct interviews and focus groups in pharmacy research. Currents in pharmacy teaching and learning, 8(4), 509-516.

[29]. Shaw, S., Rosen, R., & Rumbold, B. (2011). What is integrated care. London: Nuffield Trust, 7, 1-23.

[30]. Singh, M. K., Kumar, V., & Ahmad, T. (2020). Impact of Covid-19 Pandemic on Working Culture: An Exploratory Research Among Information Technology (IT) Professionals in Bengaluru, Karnataka (India). SSRN Electronic Journal, 12(5), 3176-3184.

[31]. Sundram, V. P. K., Rajagopal, P., Bahrin, A. S., & Subramaniam, G. (2018). The role of supply chain integration on green practices and performance in a supply chain context: A conceptual approach to future research. International Journal of Supply Chain Management, 7(1), 95-104.

[32]. Trinh, H. T., Nguyen, H. T., Pham, V. T., Ba, H. L., Dong, P. T., Cao, T. T., . . . Brien, J.-a. (2018). Hospital clinical pharmacy services in Vietnam. International journal of clinical pharmacy, 40(5), 1144-1153.

[33]. Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice investigators. The qualitative report, 15(3), 754.

[34]. Van Vo, B., Sunantiwat, M., Pumtong, S., Vo, T. Q., & Anuratpanich, L. (2020). Factors that Predict Hospital Pharmacy Practice in Vietnam. Systematic Reviews in Pharmacy, 11(6), 275-279.

[35]. Waluyowati, N. P., Surachman, D., & Aisjah, S. (2018). The Utilization of Long-Term Relationship and Supply Chain Performance in Improving SMEs Performance. American Journal of Theoretical and Applied Business, 4(3), 79-89.