

Building A New “Hospital Governance” Model Based on The Made in Vietnam Lean Management Philosophy Through The Practice of The Covid-19 Pandemic

Thanh Nguyen Tien¹
FPT Education and Postgraduate student
Posts and Telecommunications Institute of
Technology
Vietnam's National Coordinating Center for
Human Organ Transplantation, Ministry of
Health of Vietnam
Address: No. 40, Trang Thi Street, Hoan
Kiem, Hanoi, Vietnam
E-mail: ngtuanminhvncchot@gmail.com
Mobie phone: 097 701 3885
ORCID: 0000-0003-1742-6940

Minh Nguyen Dang
Vietnam National University of
Economics and Business
GKM Company
Address: 144 Xuan Thuy, Cau
Giay, Hanoi, Vietnam
E-mail:
dangminhck@gmail.com
Mobie phone: 097 296 1050
ORCID: 0000-0002-1601-2837

Thuy Nguyen Thi Thanh
The Vietnam National Institute of
Educational sciences
Address: No. 101, Tran Hung
Dao Road, Hoan Kiem District,
Hanoi, Vietnam
Email:
thuythanh26789@gmail.com
Mobie phone: 036 645 0288
ORCID: 0000-0003-4270-2986

Abstract—Research and propose a new model of “Hospital governance” based on The Made in Vietnam lean management philosophy a model is written based on recent research on practical activities in Vietnamese hospitals. The studied model has been effectively applied in some hospitals in Vietnam and provides the application process and some conditions for successful implementation. The model can be extended to domestic and international hospitals, including developed and developing countries.

Index Terms—Hospital management, Tam The, The Made in Vietnam lean management philosophy.

JEL Classification—M1, I18.

I. INTRODUCTION

The hospital governance model in European countries was built including three different levels, each with its distinct characteristics, interacting with each other in the decision-making process, ensuring functional management, and tasks governance structure. [1]. The model is considered by the World Health Organization as a standard model for countries around the world to apply when transitioning to an autonomous mechanism to meet practical requirements. The transformation of hospital governance models in Asian countries began after being motivated by successes in Europe and was associated with reforms in health policy, especially the policy of broad Autonomy of medical institutions' public health departments [2].

In Vietnam, we applied the three-level hospital governance model as the World Health Organization recommended, piloting a broad autonomy and self-responsibility mechanism at four hospitals: Bach Mai, Cho Ray, Viet Duc Friendship, and K hospital. Bach Mai and K hospitals are two hospitals that have been operating under a new model

since 2020. After two years of application, the results of the pilot process of the model revealed many problems such as brain drain, mass layoff, or employee dissatisfaction with the hospital's strategies and methods of implementation in implementing the application. Besides the old problems that have not been completely solved such as hospital overload, medical waste, hospital hygiene, hospital revenue... and finally, they all asked to stop the pilot application, new problems arose during the experimental period. The point of comprehensive autonomy and self-responsibility mechanism of hospitals recently has raised questions about the appropriateness of sustainable management that is being applied.

Stemming from these practical issues, the research was carried out to (1) review the model and activities of hospital governance in public hospitals in Vietnam today, (2) research the shortcomings and shortcomings of hospital governance activities in hospitals in Vietnam today, and (3) propose a new hospital governance model suitable to Vietnamese culture, social, economic and human characteristics based on the theory of lean management Made in Vietnam.

II. THEORETICAL BASIS

A. The Made in Vietnam lean management philosophy

The Made in Vietnam lean management philosophy is a management thinking that creates profits (added value) for an organization (enterprise) by using human intelligence (intelligence of the organization) to minimize waste costs. This thinking is explained through the following formula system [3]:

$$\text{Profit} = \text{Revenue} - \text{Cost} \quad (1).$$

$$\text{In there: Costs} = \text{Actual costs} + \text{Waste} \quad (2).$$

¹Author contact

Waste = Tangible waste + Intangible waste (3).

(Source: Minh, 2015 [3])

Waste costs exist in two forms: tangible waste costs and intangible waste costs.

B. "Tam the"

"Tam the" the foundation of the Made in Vietnam lean management, is defined by the formula:

Tâm Thế = Thấu 1 + Thấu 2 + Ý (4) (Vietnamese term).

Tam The = Deep Understanding 1 + Deep Understanding 2 + Consciousness.

(Source: Minh, 2015 [3])

Accordingly, the attitude is two through one mind; the mentality is not born naturally; it must be formed through education through three main areas: family (from birth), and continuing to foster at school. (agency, organization) when going to school to work and in society (when working and communicating daily) [3]. "Tam the" is at the heart of the Made in Vietnam lean management philosophy and is a central and critical factor in the successful implementation of poor management.

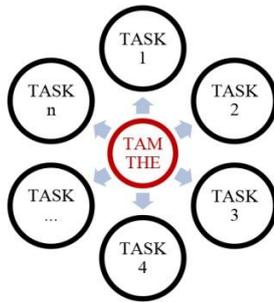


Figure 1. "Tam the" fundamental elements of the Made in Vietnam lean management philosophy

(Source: Minh, 2015 [3])

C. Lean application in hospital

Applying lean management in health was first studied by the authors: Heinbuch (1995)[6], Jacobs & Palfrey (1995)[7], and Whitson (1997)[8] proved appropriate when apply. Mark Graban (2011) when applying the lean governance model to healthcare and healthcare services, has shown that the application of lean governance and its tools will bring success and success. improve operational efficiency in hospitals [9].

Graban when applying lean management to inventory management for patient care activities of hospital departments and wards in the Netherlands and Denmark [9], Richard, Antonio, Hans. (2011) [1] Research in the UK and some European countries have shown that lean management seems to have no end, more and more hospitals in Europe decide to apply it.

Made in Vietnam lean management has been studied and applied in the medical examination department of Bach Mai hospital, which has cut 30-55% of the total time spent in the medical examination department. Recently, research on the management of tangible factors at the Department of Medical Examination, Viet Duc Friendship Hospital (Nguyen Dang Minh and Nguyen Tien Thanh 2020 [11]) over the past 2 years has proven effective and fundamentally changed the image of

the clinic. medical examination, no more crowded scenes. In addition, during the Covid-19 pandemic, Viet Duc Friendship Hospital still operated safely when many other hospitals had to close down.

III. METHODOLOGICAL APPROACH

A. Research process

The study uses a combination of survey methods, in-depth interviews, and practical observation of daily activities at 04 special-class hospitals, 18 central-level hospitals, and first-class hospitals. The data is analyzed as a basis for proposing a governance model. The research procedure and data collection method are depicted in the figure below with the steps below:

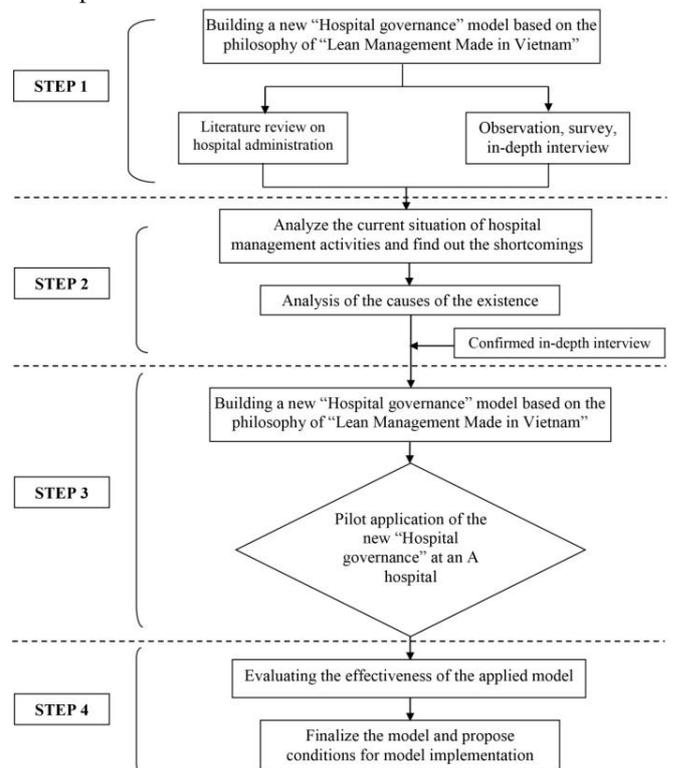


Figure 2. Research process

(Source: The research team proposes and implements)

B. Data collection methods

The research team collected data (primary and secondary) through the synthesis of research documents, practical observations, surveys, and in-depth interviews (done in two rounds).

- *Secondary data collection method:*

The study collects secondary data to synthesize.

- *Primary data collection method:* Primary data used in the study was collected using three methods: **Observe**, **Survey by questionnaire**, and **In-depth interview**.

During the study, the discussion was done twice:

The first time: Performed in step 1 of the research process, leaders, department managers, and hospital wards were interviewed using representative sampling.

The second time: Implemented in step 3 of the research process, the time was conducted with 05 members of the Management Board, and 05 members of the Board of Directors of selected hospitals for interview by representative sampling method.

The data collection process is shown in the following figure:

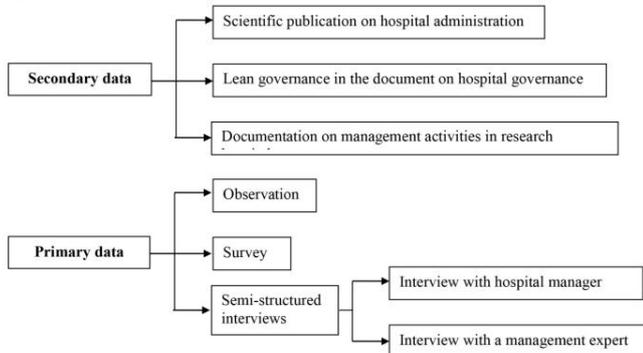


Figure 3. Data collection methods (Source: The research team proposes and implements)

The results of in-depth interviews are an essential input to help the research team develop proposals, evaluate effectiveness, modify and perfect the model, and determine conditions for implementation.

TABLE 1. PARTICIPANTS IN IN-DEPTH INTERVIEWS IN ROUNDS

| Number of people participating in in-depth interviews | Amount of people |
|-------------------------------------------------------|------------------|
| Round 1: | 50 |
| Hospital Management Board | 10 |
| Hospital Board of Directors | 10 |
| Head of department, hospital room | 30 |
| Round 2: | 10 |
| Hospital Management Board | 5 |
| Hospital Board of Directors | 5 |

C. Survey methods, in-depth interviews, and data processing methods

After qualitative research, group discussion, and expert analysis to determine the group's causes using the theory of Made in Vietnam lean management with three factors bearing cultural, social, economic, and human characteristics. Vietnamese:

- "Tam the" is the foundation to support the activities of staff, and doctors in the hospital when performing the work of upholding the Hippocratic oath and medical ethics.

- Using lean thinking in all activities to make every medical examination and treatment work more accurate, faster, and more satisfied with patients.

- Commitment from hospital leaders, departments to staff, doctors and nurses will always perform and maintain so that the quality of medical examination and treatment and expertise is always maintained at the best.

IV. RESEARCH RESULTS

A. Current practice of hospital governance in Vietnam results

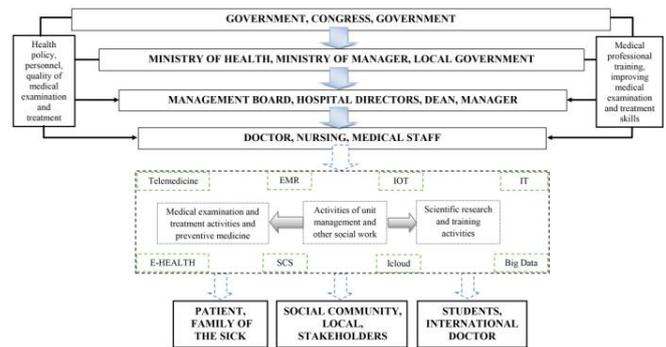


Figure 4: The current model of hospital management in Vietnam (Note: IT (Information Technology); IoT (Internet of things); EMR (Electronic medical records); SCS (Safety Cyber Security); E-HEALTH (Electronic health))

(Source: Synthetic research group)

Through analysis of secondary documents, observations, surveys, and in-depth interviews, the research team synthesized the hospital governance model currently applied in public hospitals in Vietnam (Figure 4). The model is divided into three levels: macro (National Assembly, State, Government, Ministry of Health), intermediate (Management Board, Board of Directors), and micro (the department that carries out specialized activities subject, profession).

B. Problems in medical examination and treatment

The survey results show that medical examination and treatment activities at public hospitals from the point of view of Made in Vietnam lean management have 07 main types of waste. The most are two wastes: procedures payment (84.2%) and the medical examination and treatment process (83.2%). The primary wastes in the medical examination and treatment process shown in Figure 5 show that the primary scraps belong to the management of medical examination and treatment activities: payment procedures, having to ask for the medical examination and treatment process and waiting for results. Medical examination and treatment, Travel during medical examination and treatment (all fees are assessed by 80.1% of respondents as existing).

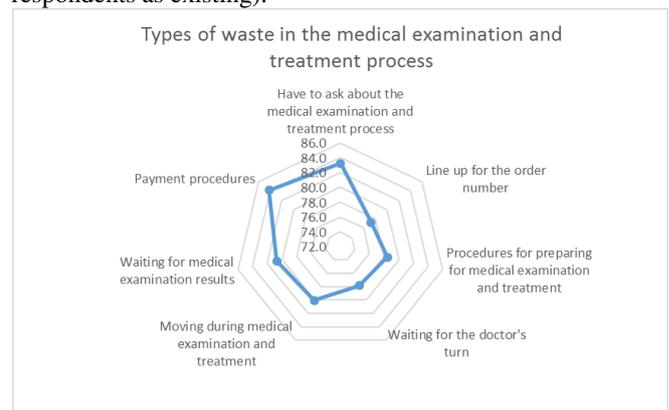


Figure 5. The main types of waste in the medical examination and treatment process

(Source: Analytical research team)

Research on the medical examination and treatment process found that 78.5% of the surveyed people rated the medical examination and treatment process at the hospital as unorganized and optimal as the leading cause of the above seven types of waste. Also, from the point of view of Made in Vietnam lean management, the layout of clinical, subclinical, and laboratory departments in the medical examination and treatment process is not optimal (82.6% of survey respondents rated it) as one of the causes of the unnecessary increase. According to the survey results in Figure 6, two content is not good: the medical examination and treatment process is waiting for the conclusion of a specialist doctor (72.5%) and moving to the examination rooms and rooms testing (62.1%).

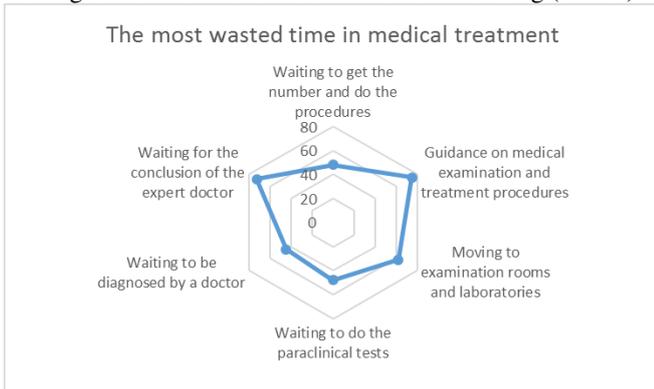


Figure 6. The most time wasted in medical examination and treatment (Source: Analytical research team)

C. Problems in hospital governance

After the Survey, the research team conducted in-depth interviews with medical professionals, managers, and heads of specialized departments in the hospital who are directly involved in medical examination and treatment daily. Management activities from the department level to the whole hospital. Table 2 below summarizes the general opinions of experts about the inadequacies in the governance model of public hospitals in Vietnam today.

TABLE 2: RESULTS OF IN-DEPTH INTERVIEWS WITH EXPERTS IN THE HOSPITAL

| Interview | n | Unreasonable detected |
|-------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Member of the Management Board of a public hospital | 10 | The current organizational structure has not yet defined the position, role, and function of the Hospital Management Board, especially in decision-making |
| | | The staff structure of the hospital management board is still too inclined towards medical expertise, and management expertise has not paid attention |
| | | The mechanism for consulting and proposing health policies of the Board of Management to higher levels is fragile and is not given due attention |
| | | The role of stakeholders in establishing the hospital management board structure has not been considered |
| Member of the Board of Directors of a public hospital | 10 | The way of management development strategy depends a lot on expertise, personality, and leadership capacity in different periods |
| | | Current hospital governance activities are administratively rigid and inflexible like a social service unit |
| | | Patient medical data that is still closed is considered a separate property that has not been linked between hospitals for sharing and use |

| | | |
|-------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------|
| | | Current hospital governance activities are administratively rigid and inflexible like a social service unit |
| Heads and deputy heads of specialized departments in the hospital | 30 | The current way of operating requires medical professionals to be both specialists and managers, so it is difficult to do both well |
| | | Many regulations and processes are framed without openness for hospitals to research and apply novelty actively |
| | | Monitoring and evaluation still use people; people in the hospital will not ensure objectivity and fairness |
| | | Human resource management is still administratively heavy, and expertise usually has not oriented the development roadmap for each employee |

The results of this practical study are similar to those of Dale, H., and Krishna, H. of “Asia Pacific Observatory on Health Systems and Policies” published in 2015 when researching 07 regional countries Asia Pacific region including Vietnam for ten years (2003-2013) [2].

D. Causes of current hospital governance model problems

According to the in-depth interviews, hospital managers at all levels agree that public hospitals in Vietnam face a problem of efficiency in hospital governance. The results of Autonomy over the past time have shown that most hospitals cannot continue usefully self-manage without the support of the state budget. Through in-depth interviews, the research team uses the 5-Whys tool to analyze the causes and find the root cause of the problem. This is the method introduced by Sakichi Toyoda in the 1930s and used widely in the Toyota group until now [13].

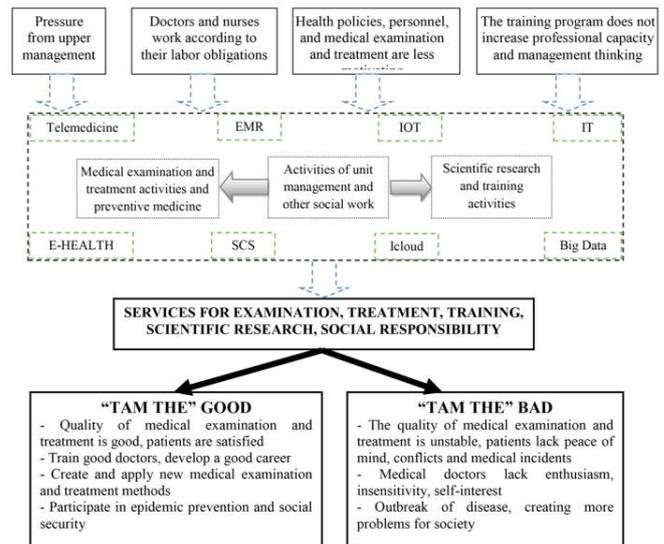


Figure 7. Current issues and results of hospital governance in Vietnam (Source: Synthetic research group)

After analyzing the causes of current hospital management problems such as:

- Pressure from superiors (state management principles, administrative orders).
- Doctors and nurses work according to their labor obligations (have not yet created the mentality to participate in activities at the hospital).

- Policies on health, personnel, and medical examination and treatment are less motivating (state management for units with partial Autonomy).
- The training program does not increase professional capacity and management thinking.

E. Proposing a new model of “Hospital governance” + Building a model based on the philosophy of “Lean Management Made in Vietnam.”

From the current situation of the hospital's management activities analyzed above, the research team uses the Made in Vietnam lean management philosophy, which has been successfully applied in many recognized domestic and foreign enterprises [4]. The research team proposes using a new “Hospital governance” model, as shown in Figure 8 below.

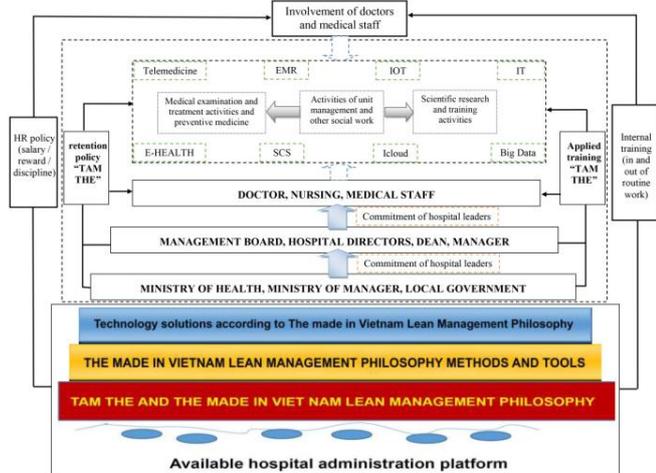


Figure 8: New model of “Hospital governance”

(Source: The research team analyzes and proposes)

The new model is a constructive model that constantly creates and improves added values for Vietnamese public hospitals. Hospital governance activities under the new model are illustrated in Figure 9 below:

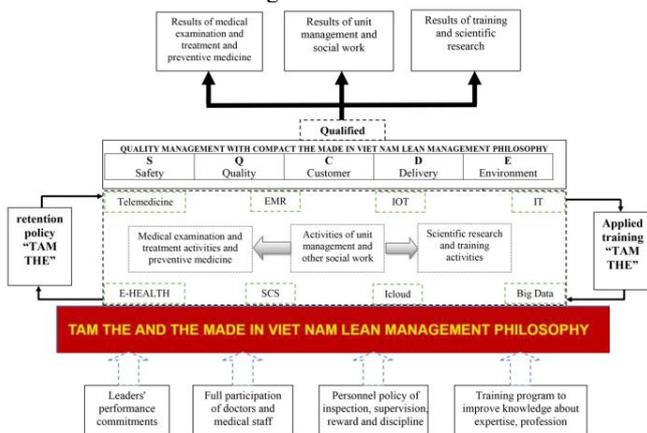


Figure 9: Hospital governance activities in the new model

(Source: The research team analyzes and proposes)

SQCDE (Safety, Quality, Customer, Delivery, Environment) based on the Made in Vietnam lean management method and tool with the “Tam the” platform will improve the

management and value platforms. Hospital culture treatment available [12].

The new hospital management model based on the Made in Vietnam lean management philosophy will ensure all operations are created according to the: $Y = Tam\ the\ X\ (A1; A2; A3; A4)$. In there:

- A1 is the commitment to support of hospital leaders.
- A2 is the driving force for the full participation of doctors and nurses in the hospital.
- A3 is the personnel policy, inspection, supervision, reward, and discipline in the hospital.
- A4 is a training program fostering knowledge for all doctors and nurses in the hospital.

+ Model verification results

The proposed model was discussed and verified again with medical experts and practitioners (members of the Board of Management of the Public Hospital; the Board of Directors of the public hospital, and deputy heads of specialized departments in the field of medicine) Hospital). The test results are listed in the table below:

TABLE 3. PRACTICAL VERIFICATION OF THE NEW “HOSPITAL GOVERNANCE” MODEL

| Medical professionals, administrators | n | Comments on the model |
|-------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Member of the Management Board of a public hospital | 5 | <ul style="list-style-type: none"> - The professional's position is worthy compared to the manager's position when making hospital management decisions - The medical examination and treatment process quality standards are built, measured, and monitored to ensure standards will limit incidents - Ensure the rights, roles, and responsibilities of relevant parties in the process of governance and decision-making |
| Member of the Board of Directors of a public hospital | 5 | <ul style="list-style-type: none"> - Activities of medical examination and treatment, preventive medicine, training, and scientific research are flexible, easy to adapt to changes, and can be fully autonomous - The hospital operates safely against epidemics, ensuring the goal of both fighting the epidemic and providing medical examination and treatment to meet social needs - Developing a hospital culture, motivating creativity, innovation and creating a sustainable brand independent of individuals - People (medical doctors) are the center of medical equipment, technology, science, and technology that will enhance operational efficiency and service quality to meet the requirements and changes of society - Doctors and nurses feel secure with their work and life for a long-term commitment |

+ Pilot application of a new “Hospital governance” model based on the philosophy of “Lean Management Made in Vietnam.”

The new model of “Hospital governance” based on The Made in Vietnam lean management philosophy has been deployed and applied at Hospital A (central line) in Hanoi city according to the following process:

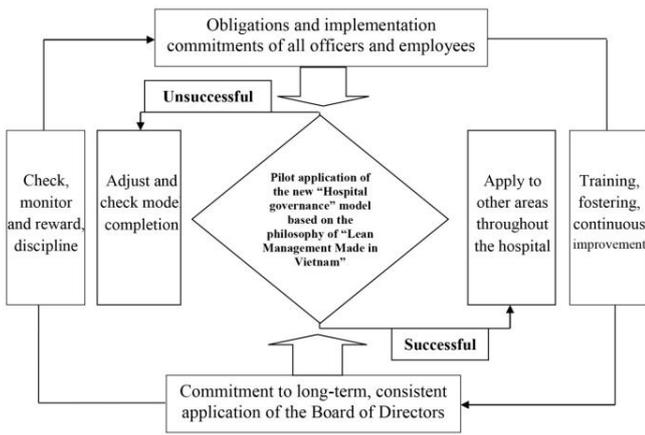


Figure 10. The process of applying the new “Hospital governance” model
(Source: The research team analyzes and proposes)

After six months of pilot application at the emergency department of Hospital A, it has brought about remarkable results, and the measurement results are shown in the table below:

TABLE 4. EFFECTIVENESS OF PILOTING THE APPLICATION OF THE NEW “HOSPITAL GOVERNANCE” MODEL AT A HOSPITAL

| Criteria | before long | After applying | Improve |
|----------------------------------------------------------------|--------------|----------------|---------|
| Time from emergency to clinical transfer | 118,3 minute | 69,8 minute | 41% |
| Operating time for emergency patients | 134,4 minute | 87,6 minute | 35% |
| Time to the hospital until a cerebral vascular intervention | 55,2 minute | 48 minute | 14% |
| The total time the patient was in the emergency room | 112 minute | 65 minute | 42% |
| Satisfaction rate when going to the emergency room of patients | 45% | 76% | 31% |

Based on the pilot results of applying the new “Hospital governance” model based on the “Lean Management Made in Vietnam” philosophy after six months of application, Hospital A has summarized and submitted it to the governing body. The Ministry of Health healthcare allows application in other departments and rooms of the whole hospital.

+ *Conditions for successful application of the new “Hospital governance” model*

Leaders at all levels in the health system need to clearly define the philosophy of healthcare development with the spirit of national pride (Made in Vietnam) throughout, and at the same time make a firm commitment and determination to implement it in the long term until the end does not change according to term thinking.

Hospital leaders are committed to supporting doctors and medical staff to be autonomous in medical examination and treatment activities, creative in research and innovation through the full support policy for doctors and staff healthcare does its job.

With the support of hospital leaders and doctors and nurses' central position, medical staff needs to be seriously involved, and responsible for always being proactive and creative in cutting waste costs and improving operational efficiency in health care services quality.

Both medical leaders and medical staff are committed to continuous improvement flexibility in their work, always ensuring the conditions to maintain “Tam the” to improve efficiency, quality, safety, and effectiveness results in meeting requirements and adapting to new social changes.

V. CONCLUSION

The Made in Vietnam lean management philosophy has proven effective in businesses (manufacturing, services) and organizations in Vietnam. The research has created a new model of “Hospital governance” based on The Made in Vietnam lean management philosophy and proven practical results; the new model will eliminate irrationalities in hospital management today. The study has pointed out the components of the model, the implementation process, and the necessary conditions to implement the model into practice in the Vietnamese health sector. When applied, the model helps to improve operational efficiency and the quality of medical examination and treatment services to be safe and effective, meet requirements, and adapt to changes in society (such as the Covid-19 pandemic) for both developed and well-developing countries.

REFERENCES

- [1] B. S. Richard, D. Antonio, F. W. D. Hans, “Mapping new governance models for public hospitals”, *Governing Public Hospitals - Reform strategies and the movement towards institutional Autonomy*, Observatory Studies Series No. 25. London. ISBN: 9789289002554 (ebook), 2011, pp 55 - 74.
- [2] WHO, *World health statistics 2020: monitoring health for the SDGs, sustainable development goals*. Geneva, 2020.
- [3] C. Yingyao, “Public Hospital Autonomy in China: Review and Outlook”, *Int J Health Plann Mgmt*, 29, pp. 141–159, 2014.
- [4] N. D. Minh, *Lean Management in Vietnam – The Road to Success* (1st ed.), VNU Publishing House, Hanoi (in Vietnamese), 2015.
- [5] N. D. Minh, “A New Decision Making Model Based on the Made in Vietnam Lean Management Philosophy” *Economics and Sociology* 11, no. 1, pp. 44-66, 2018, doi:10.14254/2071-789x.2018/11-1/3.
- [6] E. S. Heinbuch, “A case of successful technology transfer to health care: Total quality materials management and just-in-time”, *Journal of Management in Medicine*, 9(2), pp. 48 – 56, 1995.
- [7] S. M. Jacobs, and S. Pelfrey, “Applying Just-In-Time Philosophy to Healthcare”, *Journal of Nursing Administration*, 25(1), pp. 47-51, 1995.
- [8] D. Whitson, “Applying Just-In-Time systems in health care”, *IIE Solutions*, 29(8), pp. 33–38, 1997.
- [9] M. Graban, *Lean Hospital*, Based on the print edition (ISBN 9781138431591), New York, 2011.
- [10] R. Priolo, *Meet a champion of Catalonia’s lean healthcare movement*, Link: <https://planet-lean.com/lean-healthcare-catalonia-rosa-simon/> [truy cập 29/9/2022], 2016.
- [11] N. Đ. Minh, & N. T. Thanh, “Tangible Elements Management Solutions to Improve the Quality of Medical Examination and Treatment Services of Examination Department, Vietnam - Germany Friendship Hospital”. *Industry and Trade magazine*, 2, pp. 182-188, 2020 (in Vietnamese).
- [12] N. Đ. Minh, & N. T. V. Ha, “Made in Vietnam - Lean Management Model for Sustainable Development of Vietnamese Enterprises”. *Procedia CIRP* 40, pp. 602-607, 2016, doi:10.1016/j.procir.2016.01.141.
- [13] T. Ohno, “Foreword by Norman Bodek”, *Toyota production system: beyond large-scale production*. Portland, Or: Productivity Press. ISBN 0915299143, 1988.