

THE POTENTIAL HOSPITAL STRATEGIC PLANNING IN THE COVID-19 ERA: A SYSTEMATIC REVIEW

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ABSTRACT

The COVID-19 pandemic has had a negative impact on hospitals. Hospitals have to survive and make various modifications in an effort to adapt to uncertain conditions, even transform the hospital's strategic plan that has been made previously. This study aims to re-evaluate various hospital strategic plans and evaluate aspects that often change during a pandemic, as well as determine the potential for strategic planning that can be used. We initially conducted an English literature search using the electronic database, PROQUEST, Scopus, Pubmed, Science Direct, 2020-2021. After that, the study quality assessment and data extraction were carried out. A total of 1951 eligible articles were identified, The remaining 18 studies were screened. Subsequently, 10 articles were removed after a full-text review. Finally, 8 articles met the inclusion criteria for this review. Most of the hospitals in the sample show increasing and decreasing returns to scale. The inefficiency stems from the hospital's suboptimal scale, not from a lack of management ability to convert inputs into outputs. Public health centers develop systems for office support, infection control, hospital coordination, and outsourced inventory control. The impact of COVID-19 that can be felt by the community in the field of health services is the lack of availability of hospitals that can accommodate COVID-19 patients and non-COVID-19 patients. There are still many hospitals that still accept non-COVID-19 patients who have comorbidities, while hospitals also accept COVID-19 patients, one of which is asymptomatic people (OTG) who are difficult to detect. Efforts to respond to the pandemic from the start and then implement strategic measures are highly dependent on the resilience of hospitals. Strategic planning transformation can be a solution for hospital organizations to remain resilient and advanced in an uncertain era.

Keywords: COVID-19, hospital, hospital resilience, planning, strategic

ABSTRAK

Pandemi COVID-19 memberi dampak negatif pada rumah sakit. Rumah sakit harus bertahan dan melakukan berbagai modifikasi sebagai upaya adaptasi dengan keadaan yang tidak menentu, bahkan mengalami transformasi terhadap rencana strategis rumah sakit yang sudah dibuat sebelumnya. Kajian ini bertujuan untuk mengevaluasi kembali berbagai perencanaan strategis rumah sakit dan mengevaluasi aspek-aspek yang sering berubah selama pandemi, serta menentukan potensi perencanaan strategis yang dapat digunakan. Kami awalnya melakukan pencarian literatur bahasa Inggris menggunakan database elektronik, PROQUEST, Scopus, Pubmed, Science Direct, tahun 2020-2021. Setelah itu dilakukan penilaian kualitas studi dan ekstraksi data. Sebanyak 1951 artikel yang memenuhi syarat diidentifikasi, Sisanya 18 studi disaring. Selanjutnya, 10 artikel dihapus setelah tinjauan teks lengkap. Akhirnya, 8 artikel memenuhi kriteria inklusi untuk tinjauan ini. Sebagian besar rumah sakit dalam sampel menunjukkan skala hasil yang meningkat dan menurun. Inefisiensi berasal dari skala suboptimal rumah sakit, bukan dari kurangnya kemampuan manajemen untuk mengubah input menjadi output. Puskesmas mengembangkan sistem untuk dukungan kantor, pengendalian infeksi, koordinasi rumah sakit, dan pengendalian inventaris yang dialihdayakan. Dampak COVID-19 yang dapat dirasakan masyarakat di bidang pelayanan kesehatan adalah kurangnya ketersediaan rumah sakit yang dapat menampung pasien COVID-19 dan pasien non-COVID-19. Masih banyak rumah sakit yang masih menerima pasien non COVID-19 yang memiliki penyakit penyerta, sedangkan rumah sakit juga menerima pasien COVID-19 salah satunya adalah orang tanpa gejala (OTG) yang sulit dideteksi. Upaya merespons pandemi sejak awal dan kemudian menerapkan langkah-langkah strategis sangat bergantung pada ketahanan rumah sakit. Transformasi perencanaan strategis dapat menjadi solusi bagi organisasi rumah sakit untuk tetap tangguh dan maju di era yang tidak pasti.

Kata Kunci : COVID-19, rumah sakit, ketahanan rumah sakit, perencanaan, strategis

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Introduction

The World Health Organization (World Health Organization) has determined the occurrence of the Corona Virus Disease 2019 (COVID-19) Pandemic.¹ On March 11, 2020. At the time of the determination of the pandemic, the COVID-19 outbreak had hit 114 countries with 118,000 cases and 4,291 deaths.² Therefore, the Government of Indonesia, on March 31, 2020, has declared COVID-19 as a Public Health Emergency through Presidential Decree Number 11 of 2020, followed by Presidential Decree Number 12 of 2020 concerning the Determination of Non-Natural Disasters Spread of COVID-19 as a national disaster on April 13, 2020.³

"COVID-19 is a disease caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS CoV-2).⁴ On December 31, 2019, WHO first studied the existence of this disease after there were reports of clusters of cases of viral pneumonia in Wuhan, People's Republic of China.⁵ Common symptoms of COVID-19 are fever, cough, and fatigue. Other complaints that can arise are loss of taste or smell sensation, sore throat, headache, muscle aches, diarrhea, chills, nasal congestion, conjunctivitis, skin lesions, and nausea and vomiting. 80% of COVID-19 cases will recover without requiring hospital treatment, 15% of cases will require oxygen assistance, and 5% of cases will require intensive care.⁵ Complications that can occur are respiratory failure, acute respiratory distress syndrome (ARDS), sepsis, thromboembolism, and multiple organ failure."⁶

To prevent the spread of COVID-19, the Indonesian government has implemented various policies, such as implementing Large-Scale Social Restrictions (PSBB) to implement strict Health protocols. The policy regarding PSBB is regulated in Government Regulation Number 21 of 2020 concerning Large-Scale Social Restrictions in the Context of Accelerating Handling of COVID-19 (26). Hospitals also issue policies to prevent transmission of COVID-19 infection in the hospital area by referring to the COVID-19 Prevention and Control Guidelines by the Ministry of Health.⁷ The rapid spread of the virus and its effects that potentially endanger human life are the main problems in preventing and controlling COVID-19.⁷

Based on data from the IDI Mitigation Team until January 27, 2021, 647 health workers died due to exposure to COVID-19, so it can be concluded that the transmission of COVID-19 to health workers in hospitals is a problem that has not been appropriately handled.⁸ The COVID-19 pandemic has affected all aspects of human life. It results in a decrease in the quality of human life in terms of the health sector and has a significant impact on a nation's economy.⁷ It is not much different from what is experienced by the hospital sector, where the hospital's financial condition has, of course, experienced a quite disturbing impact due to the COVID-19 pandemic.⁵ The reduced number of patient visits at the beginning of the pandemic caused the flow of hospital income and income to be disrupted. The demand for the provision of Personal Protective

Equipment (PPE) and COVID-19 treatment rooms that must comply with standards has resulted in higher hospital expenses.⁵ Adjustments in educational flow in teaching hospitals and postponement of elective surgery impact hospital finances. A journal in England stated that reflecting on what happened during this pandemic, and a nation should have sufficient preparedness and readiness to face pandemic conditions.⁹

According to the World Health Organization, Hospital is a part of a medical and social organization that has the function to provide complete health services to the community, both curative and preventive, outpatient services reaching families and the home environment. Hospitals are capital-intensive and labor-intensive (resource-intensive), and technology-intensive industries. Human resources are the main component of the service process in hospitals. Hospital products or services can be in the form of private goods (doctor services, pharmacy nursing, nutrition), public goods (parking services, front office, cleaning service, housekeeping, laundry) and externality (immunization)."¹⁰

"Hospitals, in general, have a mission to provide quality and affordable health services to the community to improve the health status of the community. Therefore, hospitals need to have planning preparations, to be able to choose and set strategies and targets so that effective and efficient programs and projects are arranged."⁷

Hospitals must remain operational even with less stable financial conditions. Hospitals must think about the concept of an adaptive hospital to the pandemic so that patients still believe and feel safe to come for treatment because hospitals must serve patients with COVID-19 complaints and non-COVID-19 patients.¹¹ The concept of a secure hospital created by a hospital must be spreadable to touch all levels of society. Therefore, the hospital's marketing strategy is one of the keys to successfully adapting to this new standard era.¹² Hospital management must offer a hospital concept that can adapt to the business conditions of the pandemic era.⁵ The COVID-19 pandemic has harmed hospitals. Hospitals must survive and make various modifications to adapt to uncertain situations, even transforming the hospital's strategic plans that have been made previously.⁵ Strategic Planning is the best way to achieve many goals, but which one is best depends on the criteria used. However, tactics are decisions that have to be made when implementing strategy. This strategic planning option may or may not be successful, depending on the criteria used. These options are durable, unchangeable, and cover highly structured situations.¹³

The purpose of strategic planning is generally defined as something to be achieved in the long term, such as survival, security, and maximizing profit¹³: more tangible goals, namely the achievement of things that are important to achieve goals. Achieving the target will be closer to the plan. Goals are generally more specific, measurable, and usually include a target and timeframe.¹³ Strategic planning is also a set of managerial decisions and actions determining an organization's

long-term performance.¹³ Strategic planning as a field of study includes integrative attention to the policies of public organizations with a heavier emphasis on the environment and strategy.¹³

The Strategic Plan is the essential reference for determining the strategy undertaken by the company to manage current conditions to project conditions in the future¹³ is no longer relevant. This effort needs to be made so that the hospital can maintain its sustainability.¹³ Until now, there have been many studies conducted on the risk of spreading COVID-19 both to the general public and to professionals, but very few studies have been conducted on the hospital's strategy in carrying out its functions to be able to maintain its sustainability. Therefore we did this systematic review to find out the hospital's strategic plan that is right for the COVID-19 pandemic period and to find out the differences in the strategic objectives of Government Hospitals and Private Hospitals during the COVID-19 pandemic and before the COVID-19 pandemic based on reports from previous studies.

Method

The search for articles in this paper uses the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) instrument and a flow chart compiled according to the PRISMA 2009 checklist guideline for the studies selected in the search process and sequentially assessing the feasibility of articles. The search for articles and information is carried out comprehensively through electronic databases from various sites as data sources. The opening of the area begins by opening <https://remote-lib.ui.ac.id>, which then searches from other pages, namely Pubmed, Scopus, Proquest, and Science Direct for English articles, articles in full text without the need for additional fees (free full text), since 2020-2021 with Boolean (OR and AND), and a search strategy is carried out by entering the keywords Hospital, Strategic, Planning, Hospital Resilience, Healthcare Resilience, coronavirus, COVID-19 to identify studies regarding the Plan Hospital Strategy during the COVID-19 pandemic. From the search, 1,926 articles were found. Eligible studies were the Scholarly Journal, Original article, author reviews, clinical trials, meta-analyses, randomized clinical studies, literature reviews on the role of hospitals in maintaining resilience in the COVID-19 pandemic era. In contrast, Systematic reviews were excluded from the search.

Data Selection and Extraction

Duplicate articles will be removed, after which potential articles will be screened through titles and abstracts to find relevant sources. The full text of the relevant articles will then be read and judged against the inclusion and exclusion criteria.

Table 1. PICO Method (Population, Intervention, Comparison, Outcome)

PICO	Keterangan
Population	Hospital/Healthcare/Rumah Sakit
Intervention	Strategic Planning/ Strategic Management/Rencana Strategies
Comparison	Rumah Sakit sebelum dan saat era pandemi COVID-19
Outcome	Hospital Sustainability in COVID-19 Era/Hospital Resilience

Study Quality Assessment

Studies that meet the inclusion criteria will be continued for study quality assessment to determine the risk of bias. Studies will be assessed using the CASP Checklist Tools consisting of 12 questions.

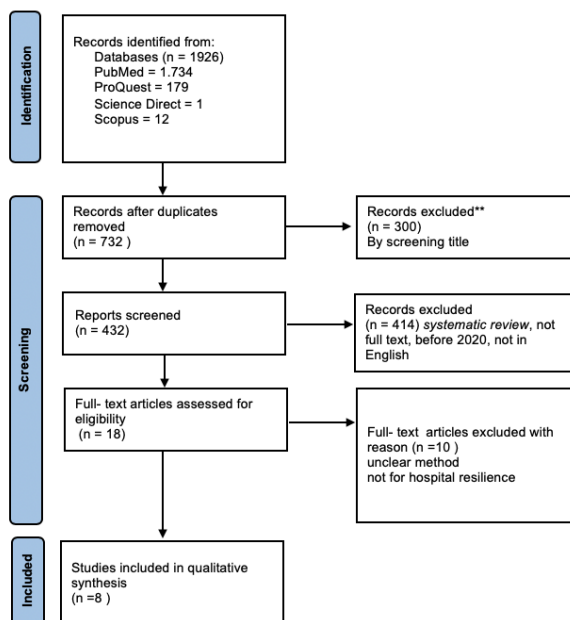


Figure 1. Flowchart of Study Selection According to PRISMA Guidelines

Results

A total of 1951 eligible articles were identified through an initial search PubMed = 1,734, ProQuest = 179, Science Direct = 1, Scopus = 12, of whom 1194 were excluded due to duplication, and 300 articles were excluded due to inappropriate title, then 414 articles were excluded due to content in title and abstract are not relevant to this review. The remaining 18 studies were screened. Subsequently, ten articles were removed after a full-text review. Finally, eight articles met the inclusion criteria for this review.

Table 2. Study Characteristics

No	Title	Author	Objective	Methods	Results
1	A Strategic Financial Management Evaluation of Private Hospitals' Effectiveness and Efficiency for Sustainable Financing: A Research Study	Kourtis, Michael, et al 2021	To evaluate the performance of private hospitals and identify conditions that ensure sustainable financing of the sector.	Data Envelopment Analysis (DEA) was used as the primary tool to measure efficiency and effectiveness among fifteen (15) large private hospitals in Greece. The audited financial report data is analyzed as the basis for assessing its performance. The input-oriented model is applied because employee assets and expenses are more likely to be under management control in private hospitals' revenue and CFFO.	Most of the hospitals in the sample show increasing and decreasing returns to scale. The inefficiency stems from the hospital's suboptimal scale, not from a lack of management ability to convert inputs into outputs.
2	Adapting to the unexpected: Problematic work situations and resilience strategies in healthcare institutions during the COVID-19 pandemic's first wave	Juvet, Typhaine M et al 2021	To address this knowledge gap by identifying the main disruptions experienced by health workers in Switzerland during the first wave of the pandemic and their subsequent regulatory strategies.	This qualitative evaluation was part of a large longitudinal study that included self-administered online questionnaires. Previously submitted papers rely mostly on open-ended questions. Study data were collected and managed using REDCap (Research Electronic Data Capture), a secure web-based software platform designed to support data retrieval for research studies (Harris et al., 2019). Prospective participants receive an email explaining the research and inviting them to participate. Respondents participated by voluntarily clicking on links in emails, and they were allowed to fill out questionnaires during their working hours.	Two possible ways to strengthen Meso-level resistance. First, a more systematic approach to safety and risk prevention processes among support staff would increase their risk awareness, increase their access to PPE, strengthen their coping strategies and demonstrate that they have a valuable role in the adaptive response of health institutions. Second, the pandemic places significant demands on senior and middle managers and teams and employees regarding communication skills, teamwork, decision making, conflict resolution, and emotional baggage. Institutions can support their managers by providing resources to help them improve their communication, transparency, empathy, and team management skills. Strengthening managerial and communication skills will alleviate employee misinformation, uncertainty, injustice, or burnout. Support processes can also be developed for employees in teamwork, decision making, cooperation, conflict resolution, and emotional support. In general, this will also increase the resilience of health workers as individuals in anticipating various challenges ahead.
3	Developing sustainable public health care systems for responding to COVID-19 in Japan	Yoshioka-Maeda, Kyoko et al 2021	To introduce the development of a new sustainable public health care system related to COVID-19 in Japan: division of labor, security of staff, and transfer of duties.	Descriptive study. Japan's Ministry of Health, Labor, and Welfare implemented good practices regarding resource allocation and developed full readiness for a sustainable public health care system by September 2020.	Public health centers develop systems for office support, infection control, hospital coordination, and outsourced inventory control. To reduce the workload of PHN, a support team of three to four office workers developed a response manual for residents and a format for telephone consultation regarding COVID-19. In addition, the development of an infection control team and a web-based hospital

4	Challenges and Opportunities From COVID-19 for Global Sustainable Development	Seshaiyer, Padmanabhan, et al 2020	To answer the challenges of finding solutions and controlling the COVID-19 pandemic. Related efforts will help better understand the nature of the spread of COVID-19 compared to past infectious diseases, its relationship to factors such as high temperatures, social distancing, super-spread, and spatial distribution, and their impact on the global economy socio-cultural relations. And politics and health policy more generally.	Identify critical targets for achieving SDG-3 (Good Health and Well-Being) that will help strengthen capacity to improve health care response and policies to understand, combat and control COVID-19.	coordination system reduces the workload of Puskesmas in each community to prepare for a pandemic. In conclusion, Puskesmas should consider managing limited human resources and providing exceptional care for COVID-19 patients. Division of duties, securing staff, and shifting responsibilities are essential strategies for developing a sustainable public health care system. Identifying symptoms, tracking viruses, distributing and monitoring resource availability, and identifying social determinants and impacts can involve large amounts of data. Around the world, this has fueled the need for unprecedented multi-disciplinary partnerships and collaborations to create innovation networks for advanced research, rapid prototyping, and commercialization better to understand the challenges and opportunities of the COVID-19 pandemic.
5	Preserving Organizational Resilience, Patient Safety, and Staff Retention during COVID-19 Requires a Holistic Consideration of the Psychological Safety of Healthcare Workers	Rangachari, Pavani et al 2020	To use the organizational resilience framework to discuss the potential impact of a steadfast approach to healthcare worker support on resilience, patient safety, and staff retention in the context of hospital ICUs during the COVID-19 pandemic.	An organizational resilience framework model to discuss the potential impact of a steadfast approach on healthcare worker support on patient safety and staff retention in hospital intensive care units (ICUs) during COVID-19. The discussions, in turn, helped develop recommendations for HCOs to address these challenges.	Two sets of recommendations for HCO leaders to maintain resilience, patient safety, and staff retention during and after the COVID-19 pandemic: 1. Create an environment of trust, psychological safety, and empowerment to enable individual workers to communicate patient safety concerns to managers. 2. Develop a communication structure to enable the organization to learn from individual health workers' problem-solving and communication strategies. Green human resource practices, collaboration in supply chain networks, knowledge analysis and management, and technological innovation are essential aspects of the hierarchical structure for practical improvement. The related criteria are (1) green capability, (2) green motivation, (3) operational efficiency, (4) environmental regulation, and (5) energy conservation. The theoretical and managerial implications are further discussed.
6	Sustainable total resource management in Thailand healthcare industry under uncertain situations	Tseng, Ming Lang et al 2020	To validate sustainable total resource management measures and provide a hierarchical structure for managing medical resources for the healthcare industry in Thailand.	Delphi fuzzy method to filter the less essential attributes to increase the validity of the measurement. Fuzzy interpretive structural modeling transfers complex interrelationships into hierarchical structures and provides direction for practical improvement.	

7	Strengthening the EU's Response Capacity to Health Emergencies: Insights from EU Crisis Management Mechanisms	BEAUSSIER, Anne-Laure et al 2020	To describe the mechanism of the European Union (EU) response to health emergencies in the context of a more integrated Health Union.	Using insights from previous research and secondary literature, Union Health could not have been achieved without more resources and funding at the EU level, which is at the heart of the current discussion around a fourth health program, called the EU4Health Programme. However, there are also opportunities to structurally reform the instruments of the health insurance framework, which is currently based on non-binding intergovernmental arrangements. A hybrid data envelopment analysis (DEA) approach to study the sustainability of hospitals in Portugal under environmental, social, and economic perspectives, in collaboration with the Portuguese Ministry of Health. In particular, the proposed methodology combines decision maker preference information (through utility-scale construction and determination of Möbius coefficients) and criterion interactivity due to the integration of Choquet's multiple criteria preference aggregation model in the DEA approach.	The early stages of the COVID-19 crisis highlight the many limitations of EU health crisis management. However, since then, progress has been made, when coordination improved significantly, recognizing the vital need to adopt coordinated measures and pool resources to ensure a rapid and sustainable supply of essential goods. Learning from experience, UE is now speaking with a more unified voice and advancing towards more integrated instruments.
8	Are the Portuguese public hospitals sustainable? A triple bottom line hybrid data envelopment analysis approach	Pederneiras, Yasmim Maia et al 2021	To find out how sustainable health services, especially those that consume the most resources—hospitals—are indispensable for a sustainable future.	A hybrid data envelopment analysis (DEA) approach to study the sustainability of hospitals in Portugal under environmental, social, and economic perspectives, in collaboration with the Portuguese Ministry of Health. In particular, the proposed methodology combines decision maker preference information (through utility-scale construction and determination of Möbius coefficients) and criterion interactivity due to the integration of Choquet's multiple criteria preference aggregation model in the DEA approach.	About 30% of the 29 sample hospitals assessed as efficient across the three perspectives in 2018, only 1 was fully sustainable.

Discussion

The impact of COVID-19 that can be felt in the community in health services is the lack of hospitals that can accommodate COVID-19 patients and non-COVID-19 patients.¹⁴ There are still many hospitals that still accept non-COVID-19 patients who have comorbid diseases.¹⁵ At the same time, hospitals also get COVID-19 patients, one of which is an asymptomatic person (OTG) who is difficult to detect (Aida 2020). Things like this are complicated because without realizing it, OTG patients who do not know they are sick can transmit it to other patients or health workers, or staff at the hospital.⁸ Pandemic or Outbreak of Emerging Infectious Diseases (PIE) is unavoidable. And a situation like this will indeed be experienced by every country, including Indonesia.⁸ A Strategic Plan is needed to deal with Extraordinary Events (KLB) or Pandemic Preparedness.⁷

Strategic planning is a part of the strategic management model. An organization's planning is determined based on the organizational situation, strategy formulation, and implementation plan.¹³ Strategic planning is an effort to look into the future and has the following characteristics which is hospital resources and capabilities, opportunities and risks in the environment, usually made by top managers, general and not specific.

Strategic planning is the best way to achieve multiple goals. To determine which one is the best will depend on the criteria used. At the same time, tactics are your choices in implementing a strategy.¹⁶ These strategic planning options will work or not, depending on the criteria used, and these options are long-lasting, not easy to change, and cover highly structured situations. Strategic planning objectives are generally defined as something to be achieved in the long term, such as survival, security, and profit maximization.¹³ Goals are more essential, namely the achievement of crucial goals. Achieving the target will be closer to the plan. Goals are generally more specific, measurable, and usually include a target and time frame. Strategic planning is also a set of managerial decisions and actions that determine long-term performance.¹³ Strategic planning as a field of study includes integrative attention to the policies of public organizations with a greater emphasis on the environment and strategy.¹³

This planning is an initial level that is still global, so it requires further planning efforts that are more specific and shorter term. This plan is usually a translation from the other side of the hospital, namely the expectations of the founders or owners of the hospital, then translated into plans to be achieved.¹³ The strategic plan document describes the organization's objectives and how to achieve its goals. Moreover, strategic plans can be used as a standard evaluation of goal achievement.¹⁷ As part of the healthcare system, hospitals conduct social functions while focusing on financial aspects to run optimally. Good strategic planning of hospitals provides the direction of development activities with a more systematic and rational approach. Some hospitals are experiencing the COVID-19 pandemic in very different ways. Therefore, they attempt to ensure picking up the planning process to adapt as soon as possible.¹³

The strategic decisions taken under uncertain situations such as the COVID-19 pandemic require a different approach that avoids this dangerous binary view.¹⁸ Managers rarely know strategic importance, even in the most uncertain environments. Instead, they can generally identify a range of potential outcomes or even a discrete set of scenarios. This simple insight is compelling because determining which strategy is best and what process should be used to develop it depends vitally on the company's level of uncertainty.¹⁹

No approach can make uncertainty's challenges disappear, but this one offers practical guidance that will lead to more informed and confident strategic decisions.²³ Agility and speed in making decisions with teams in the face of this pandemic crisis require collaboration that can function correctly. Efforts to respond to pandemics at the outset and then implement strategic steps largely depend on the resilience of hospitals that must flow flexibly, solve problems, and face challenges for the sustainability of economic conditions.¹⁷

Efforts to build resilience in the health system can reduce vulnerability to crises with adequate preparation and effective response to sustain them or experience only minor disruptions in the primary health service.²⁰ The concept of endurance refers to the ability to return or avoid distractions. However, this definition is more suitable for the durability of machines whose dynamics of causes and effects are more straightforward.^{21,22} Stability is considered the system's ability to adapt and transform into new structures. Examples of this resilience are in the form of policies, processes, and organizational cultures that make it easier for organizations to function when facing challenges.²³

Various studies mention that the resilience of a health system is always focused on the sudden and acute state of catastrophic and critical shock that occurs suddenly and is temporary.²⁴ This is generally related to the outbreak of a disease, security disturbances, economic crises, human disasters or unspecified natural disasters, and rapid policy reform,²⁵ experience in leadership, expert resources that are strongly motivated and committed to achieving organizational objectives in sufficient numbers, social networks, and collaboration.

Conclusion

The COVID-19 pandemic has harmed hospitals. Nevertheless, the hospital persists and makes various modifications to adapt to uncertain conditions, even transforming the hospital's strategic plan previously made. The stages that must be passed to adjust to new life habits include deciding immediately, surviving, returning, reimagining, and reforming (reshaping). For leaders in the field of health services (including hospitals), this pandemic is a test of resilience in facing the various challenges of the Hospital industry. Efforts to respond to pandemics at the outset and then implement strategic steps largely depend on the resilience of hospitals. Strategic planning

transformation can be a solution for hospital organizations to remain resilient and advanced in an uncertain era.

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Conflict of Interest

The authors declare that there was no conflict of interest in the writing of this manuscript.

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