PATIENT FACTORS AS MATERIALS FOR THE BLUE OCEAN STRATEGY FOR STROKE INFARC SERVICES IN HAJJ HOSPITAL IN EAST JAVA PROVINCE, INDONESIA

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Abstract

This study aims to analyze patient factors to develop a canvas strategy, and create a niche market for stroke services. The increasing number of hospitals in the city of Surabaya and its surroundings has created increasingly fierce competition so that hospitals can survive. strategy to create a niche market for stroke services according to the patient's needs - demand, and value innovation. This study aims to analyze patient factors to develop a canvas strategy, and create a niche market for stroke services. This study was a descriptive analysis using the cross-sectional method, data were obtained from 43 stroke infarction patient respondents who were treated in the stroke unit room of Haji Hospital, East Java Provision from October to November 2022. Analysis of patient factors with variables, namely socio-demographics, patient condition, new need, and demand, as well as value innovation to develop Canvas and Niche strategies. The results of the study found that acute infarction stroke patients required immediate intravenous thrombolysis within the golden period (maximum 4.5 hours after onset by accelerating the time of arrival at the emergency room, carrying out a CT scan and consulting a neurologist in less than 60 minutes, monitoring treatment post-thrombolysis in the ICU and post-stroke neuro-rehabilitation. Searching from patient factors to create a stroke service niche obtains service demand materials according to the needs of stroke infarction patients, which can be continued as a target hospital for managing stroke infarction services to better satisfy patient needs for intravenous thrombolysis. In order for the implementation of the niche strategy to be more suitable for hospital conditions, further research on hospital factors is needed to complete the canvas strategy that will be compiled.

Keywords: *Blue Ocean Strategy, Niche Market, 4C Marketing Components.*

Introduction

The number of hospitals in the Surabaya area has reached 60 in 2022, with a relatively constant number of market areas causing intense competition. This situation according to Kim, et al (2005), becomes a red ocean that slaughters each other bloody, to be able to escape from this condition the hospital must create a new market space opportunity that makes competition irrelevant so that it becomes a vast blue ocean which is referred to as a blue ocean . The blue ocean strategy is a strategy to create a new market for the vast blue ocean, with the main key being the creation of value innovation and differentiation. blue ocean strategy is the strategy of choice. A choice of strategy that performs focus differentiation. Formulate the use of the Blue Ocean strategy by forming a new concept (Setiawan & Komara, 2020). The method used is the canvas strategy and the four action framework consists of eliminate, reduce, raise, and create. Meanwhile, the financing dimension uses a target costing approach, to ensure that the resulting value innovation has a price that is affordable for patients and hospitals.

In addition to the blue ocean strategy, there are other strategies in dealing with intense industry competition, one of which is the niche market. Ocvirk (2018), explaining that a niche market is a specialized market constellation so that it can protect against large-scale competitors, by satisfying demand that have not been fulfilled (fulfilled demand) or create an entirely new demand. According to Supryanto and Ernawaty Supriyanto & Ernawati (2010), niche advantages are obtained when hospitals look for target markets and serve small segments efficiently and effectively. One type of health service that focuses on customers and is not touched by similar service industries, is an innovative service. Ohmae (1982), argued that in designing a strategy there are 3 players that must be taken into account, namely the corporation (hospital factors), customers (patient factors), and competitors (competitor factors) which is called the "3C triangle". Kartajaya (2007), added C to 4 in the 3C triangle strategy, namely change. to 4C.

To create a service niche market that fits the needs of patients, the strategy needs to start with the specific treatment or action most needed by stroke infarction patients. Thrombolysis is a specific therapy for hyperacute ischemic stroke recommended in the National Guidelines for Medical Services for Stroke Management, National Guidelines for Stroke Management Medical Services, Pub. L. Number HK.01.07/Menkes/394/2019, which is a procedure to dissolve blood clots in blood vessels, improve blood flow and prevent damage to tissues and organs. Thrombolytic therapy is used as an emergency treatment to dissolve blood clots that have formed in large blood vessels or arteries, carried out by giving injections of lytic drugs or clot busters intravenously or through long catheters that deliver drugs directly to the site of the blockage (intra-arterial) Asenso, et al (2018)

According to Rilianto (2016) there are obstacles to intravenous thrombolytic therapy in developing countries which can occur in the pre-hospital, in-hospital, infrastructure and financial phases. Pre-hospital barriers are delays in patients being referred to the hospital caused by the public and health workers' lack of understanding of the signs of stroke, in-hospital barriers include delays in CT scan results, inefficient processes in the emergency room, difficulties in informed consent and uncertainty about onset. The infrastructure barrier is the availability of CT scans at the hospital, and the financial barrier is the high cost of thrombolytic therapy.

Luker & Grimer (2011), describes the predictors of quality of acute stroke services, there are 3 variables, namely demographic (age, gender, accommodation, comorbidities), stroke event (degree of severity, time of admission) and hospital stay (stroke unit) level of severity and willingness stroke units.

Method

The design of this research is cross sectional. This research was conducted at the Hajj Hospital in East Java Province, with the data collection process being carried out from October to November 2022. Patient factors are socio-demographic variables, patient conditions, new needs and demands.

Sampling used a non-probability method or non-random selection, namely all stroke infarction patients who were hospitalized at the Haji General Hospital in East Java Province from October to November 2022 minus the number of stroke patients who met the exclusion criteria. While the instrument used for data collection was a questionnaire on socio-demographic data related to stroke, which consisted of gender, age, education, occupation and address.

Data analysis was carried out in stages including descriptive analysis of patient factors, hospitals, opportunities, strategy canvas analysis, and the four action framework. Descriptive analysis was carried out on variable research by making a frequency distribution based on the category of each variable and each parameter, which is expressed in the distribution of frequencies and percentages. Parameters in the form of a scale of 1-4 have their respective weights to assess the results of each variable and develop an issue strategy.

Result and Discussion

Result

In this section, descriptive research results are presented on each research variable and analysis of the canvas strategy and four action framework. This research was conducted at the East Java Province Hajj Hospital located on Manyar Kertoadi street, Klampis Ngasem sub-district, Sukolilo District, Surabaya city. This class B teaching hospital belonging to the East Java Provincial Government has an organizational structure in accordance with Governor's Decree number 114 of 2021 concerning Nomenclature, Organizational Structure, Description of Duties and Functions and Work Procedures of the Hajj Regional General Hospital of East Java Province, led by a Director and assisted by three deputy directors, namely Deputy Director of Medical and Nursing Services, Deputy Director of Medical and Educational Support and Deputy Director of General Affairs and Finance.

The canvas strategy shows that there is a gap between the research results and the standard that becomes the blue ocean target curve in a graph. The blue ocean canvas strategy concept shows horizontal lines which are currently competing industry factors or current investments, and vertical lines are supply levels.

The consideration for determining the gold standard is based on the fact that the management of stroke infarction must be based on empirical evidence with the latest research and is covered by applicable regulations, because non-compliant medical treatment is considered a malpractice for doctors and hospitals, can be fatal for patients. The gap between the research results and the gold standard illustrates the obstacles in implementing stroke infarction according to the updated management.

Measurements were made on hospital factors, namely hospital care quality (access, availability, technical quality, functional quality and amenities), hospital image and cost of stroke services to meet the needs and demands of stroke infarction patients. Key indicators are determined by the size of the gap between hospital conditions and the gold standard, to then become the steps of the four action framework. Of course, the condition of resources between the research hospitals will be different from the

conditions of other hospitals, so that the resulting key indicators of the canvas strategy have specific specifications for research hospitals.

Based on the research results, the canvas strategy image on a horizontal line outlines key indicators consisting of CT scan time less than 50 minutes, neurologist consultation time <60 minutes, thrombolysis protocol 24 hours/7 days, medical rehabilitation consultation, length of stay > 5 days, long inpatient stroke unit 48-72 hours, inpatient class 1,2 and 3 variants, stroke ambulance, neuro-interventional doctor, special stroke clinic, stroke awareness community program and stroke faculty. The results of these key indicators can be different from other hospitals, which need to be measured based on the variables access, availability, technical quality, functional quality, amenities, image and cost. So that the resulting blue ocean strategy results are difficult to imitate because they are not necessarily compatible with resource constraints in other hospitals.

The resulting horizontal line depicts the key indicators of hospital success in developing value innovation for stroke infarction services. The hospital curve line describes the current condition of stroke services in hospitals, while the blue ocean curve line depicts the target level in order to meet the new needs and demands of stroke infarction patients. Value demand from patients is shown by the patient's need for the latest treatment to destroy blood clot blockages in brain blood vessels within 4.5 hours (golden period) which can be done through thrombolysis.

These key indicators are in line with research (Griesser et al., 2009) which conducted research on door to needle delays, namely low public awareness of stroke, the length of CT scan time and the length of contacting a neurologist. Door to needle is the length of time calculated from the time the patient enters the emergency room until the patient receives thrombolysis therapy, with a target time of 60 minutes.

In addition, there is a 24-hour/7-day thrombolysis protocol to ensure that thrombolysis is ready to be carried out outside working hours or on holidays, because patients can come at any time and on any day. Not all hospitals are ready to carry out thrombolysis 24 hours/7 days, because when thrombolytic drugs are given, close monitoring must be carried out by doctors and nurses.

Another thing that causes thrombolysis failure is hospital delay, late arrival of patients to the emergency room until it passes the golden period of thrombolysis. The golden period is the golden time that has the best benefits if given to stroke infarction patients, calculated from the onset of stroke symptoms until 3 hours or 4.5 hours afterward. In the key indicators of the canvas strategy there are stroke ambulances and stroke awareness community programs as the hospital's efforts to reduce hospital delays.

The added value stroke services obtained on the horizontal line above are neuro-intervention doctors, special stroke clinics, and stroke faculty. Intravenous thrombolysis can be performed by general practitioners under the supervision of a neurologist, but intra-arterial thrombolysis, thrombectomy or stenting must be performed by a neurologist with additional neurointervention competence, namely, a minimally invasive procedure into the blood vessels of the brain with the help of radiological imaging tools.

The addition of the above services will add to the cost of stroke services, in the concept of value innovation blue ocean that the addition of benefits must be accompanied by a reduction in costs, so that the strategy of cost leadership and differentiation can go hand in hand. The key indicators for reducing costs in this canvas strategy are length of stay >5 days, length of stay in the stroke room, and class 1, 2, and 3 variants.

The blue ocean strategy on strategic pricing towards strategic costing is carried out through streamlining operations and cost innovations which are processes of streamlining costs from production to distribution. Reducing costs in value innovation is carried out through reducing and eliminating actions, which are traced to direct and indirect costs.

Socio-Demographic Characteristics of Stroke Infarction Patients in Hajj Hospital East Java, Surabaya, Indonesia

Table 1. Socio-Demographic Characteristics of Stroke Infarction Patients in the Stroke Unit from October to November 2022 at the Hajj Hospital East Java Province

Socio Demographic	n	%
Age		
35–44 years	3	7,0
45–54 years (*middle age*)	10	23,3
55–64 years (*elderly*)	15	34,9
65–74 years (*young old*)	10	23,3
>75 years (*old*)	5	11,5
Total	**43**	**100,0**
Gender		
Man	25	58,1
Woman	18	41,9
Total	**43**	**100,0**
Education		
No/never attended school	1	2,3
Not/finish SD/MI (*elementary school*)	2	4,7
SD/MI	5	11,6
SMP/MTs	9	20,9
SMA/MA	18	41,9
Graduate University (D3/D4/S1)	8	18,6
Total	**43**	**100,0**
Work		
Not working	12	27,9
Government employees	1	2,3
Provate sector	3	7,0
Entrepreneurs	20	46,5
Farmer	3	7,0
Other	4	9,3
Total	**43**	**100,0**
Domicile		
Surabaya	39	90,7
Sidoarjo	1	2,3
Madura	1	2,3
Etc	2	4,7
Total	**43**	**100,0**

Table 1. Shows the socio-demographic characteristics of patients, patients starting in the age group of 35-44 years, gender differences are not significant, the majority

of patient education have graduated from college, the majority of jobs are self-employed and the majority domicile is in the Surabaya area.

Table 2. Condition of Infarction Stroke Patients in the Stroke Unit from October to November 2022 at the Hajj Hospital in East Java Province

Patient Condition	n	%
Causes of Stroke Infarction (Etiology)		
Thrombus	37	86,0
Emboli	4	9,3
Unspecified stenosis/occlusion	1	2,3
Etc	1	2,3
Total	**43**	**100,0**
Concomitant Diseases (Comorbid)	n	%
Coagulation disorders	0	0
Heart failure	13	30,2
Heart failure	4	9,3
Hypertension	22	51,2
Malignancy	1	2,3
Respiratory disease	1	2,3
New invasive procedure or surgery	0	0
Etc	1	2,3
There isn't anything	1	2,3
Total	**43**	**100,0**
NIHSS (severity level)		
Light (score ≤5)	19	44,2
Medium (score 6-14)	20	46,5
Weight (score 15-24)	4	9,3
Total	**43**	**100,0**

Table 2. Regarding the patient's condition, it was found that the most common cause of stroke infarction was thrombus (86%), with the most common comorbidities namely hypertension (51.2%), diabetes (30.2%) and the NIHSS score was the majority in the mild and moderate group.

Table 3. Characteristics of new need and demand for stroke infarction patients in the stroke unit from October to November 2022 at Haji Hospital East Java Province

New Need and Demand	n	%
Arrival time at the emergency room (IGD)		
<3 hours	18	41,9
3–6 hours	7	16,3
7–24 hours	8	18,6
>24 hours	10	23,3
Total	**43**	**100,0**
Thrombolysis action		
Yes	0	0
No	43	100,0
Total	**43**	**100,0**
Vital Signs Monitoring	n	%
Yes	40	93,0
No	3	7,0
Total	**43**	**100,0**
Doctor R Consultation	n	%
No	33	76,7
>48 hours	10	23,3
Total	**43**	**100,0**

Table 3. Arrival of patients at the hospital for more than 3 hours by 48.1%. Thrombolysis action was 100% not performed and monitoring of vital signs, most was performed (93%). Physician consultation was not carried out (23.3%).

Research Kartajaya (2007), in an effort to increase door to needle time used the FAST code, which is a protocol that starts from information on emergency ambulance services to the hospital emergency room to immediately prepare to receive stroke patients, namely the readiness of emergency room doctors and nurses, the readiness of the CT scan team and the readiness of the pharmacy team.

In the acute infarction stroke management protocol there is also a pre-hospital stroke protocol by ambulance which includes fast stroke symptom screening (face, arm, speak and time) and performs the ABCs of blood and blood sugar checks so that they can report to the emergency room for preparation for stroke patient acceptance. Stroke infarction patients who require monitoring of vital signs as much as 93%, the stroke unit room has 10 beds equipped with monitoring of vital signs on each bed. However, only 55.8% of MRS patients with moderate and severe NIHSS categories, while the other 44.2% were in the mild NIHSS category. So that the need for monitoring vital signs does not take long until conditions are declared stable.

Patients were not consulted with medical rehabilitation doctors at 76.7%, according to study National Guidelines for Stroke Management Medical Services, Pub. L. Number HK.01.07/Menkes/394/2019, that stroke patients should be given early mobilization after 24 hours MRS continued every day for up to 14 days, this is safe and does not increase mortality within 3 months of follow-up. In addition to the

time to start mobilization, the intensity of therapy given depends on the condition of the damage caused by stroke.

PNPK stroke management recommends neurorehebilitation during the acute phase, namely recommendations for motor disorders, recommendations for spasticity and recommendations for sensory disturbances. The protocol for the management of ischemic stroke thrombolysis (Asenso, et al, 2019), establishes a protocol on discharge planning in consultation with the medical rehabilitation team in less than 2 days and above 2 days.

Discussion

The resulting niche market focuses on customers with comprehensive stroke infarction disease specifications, namely pre-hospital, acute care in hospital and post-stroke care in hospital outpatient services. The acute infarction stroke treatment market is limited to patients who live in the Surabaya City area and its surroundings due to the limited transportation time to reach the golden period of thrombolysis, however, post-stroke care services can reach a wider area.

Creating neuro-interventional doctors is one of the important steps to be able to serve acute infarction stroke patients who have passed the golden period of intravenous thrombolysis, with other alternatives, namely intra-arterial thrombolysis and thrombectomy.

Based on the results of the description above, there are new findings in developing a model to create a niche market based on blue ocean strategy and hospital care quality. Tracing based on this model is a functional strategy level model approach, namely to implement a competitive strategy through unit roles and interactions between units. It is necessary to use elements of hospital care quality so that the application of the blue ocean strategy can be suitable for increasing benefits (added value) in stroke infarction patient services. The comparator uses a gold standard protocol and does not compare with competitors' factors, so the resulting canvas strategy does not describe industry competition but provides a mapping framework for action for hospitals to achieve a gold standard in accordance with the conditions of the resources they have. To determine the new needs and demands of stroke infarction patients so that the implementation of competitive strategies in hospitals can be successful, an investigation was carried out on the current obstacles in implementing gold standard competitive strategies in the hospital industry.

The new need and demand constraints are managed through hospital factors, namely hospital care quality (access, availability, technical quality, functional quality and amenities), image and cost. So that the canvas strategy gets an overview of the types of key indicators and the level of hospital conditions against the gold standard;. The perception of the value cost trade off which provides a comparison between the value of services and the costs for BPJS patients in the era of National Health Insurance (JKN) has no effect, because in terms of the costs of stroke, it is included in the INA CBG's rates which are borne by BPJS in all hospitals. in collaboration with BPJS. So that patients can choose a hospital with good service without thinking about hospital costs. To reduce and eliminate costs, it can be traced through direct and indirect costs, but choosing actions to reduce and eliminate costs must consider the impact on the safety of stroke infarction patients, so these actions require an understanding of the risks from medical and nursing science. The act of creating is not something that is truly new and different from the existing hospital industry, but is something that does not yet exist in research hospitals and needs to be created so that a competitive strategy can be achieved.

The change factor is a reference opportunity for hospitals in creating services according to the latest times so that change becomes a chance. Hospitals must be able to adapt to current conditions, especially in terms of the use of technology and adjustments to applicable regulations. The niche market created is a specific service for acute infarction stroke patients with the latest comprehensive treatment, namely intravenous thrombolysis, intra-arterial thrombolysis and thrombectomy. What is described by the four action framework is the pre-hospital stage, acute infarction stroke management in hospital and post-stroke outpatient care.

Conclusion

Based on the discussion and analysis above, this research produces the following conclusions:

1) This research was conducted at the East Java Province Hajj Hospital located on Manyar Kertoadi street, Klampis Ngasem sub-district, Sukolilo District, Surabaya city. This class B teaching hospital belonging to the East Java Provincial Government has an organizational structure in accordance with Governor's Decree number 114 of 2021 concerning Nomenclature, Organizational Structure, Description of Duties and Functions and Work Procedures of the Hajj Regional General Hospital of East Java Province in Indonesia.

2) Analysis of patient factors with variables, namely socio-demographics, patient condition, new need, and demand, as well as value innovation to develop Canvas and Niche strategies. The results of the study found that acute infarction stroke patients required immediate intravenous thrombolysis within the golden period (maximum 4.5 hours after onset by accelerating the time of arrival at the emergency room, carrying out a CT scan and consulting a neurologist in less than 60 minutes, monitoring treatment post-thrombolysis in the ICU and post-stroke neuro-rehabilitation.

3) Searching from patient factors to create a stroke service niche obtains service demand materials according to the needs of stroke infarction patients, which can be continued as a target hospital for managing stroke infarction services to better satisfy patient needs for intravenous thrombolysis. In order for the implementation of the niche strategy to be more suitable for hospital conditions, further research on hospital factors is needed to complete the canvas strategy that will be compiled.

4) The blue ocean strategy on strategic pricing towards strategic costing is carried out through streamlining operations and cost innovations which are processes of streamlining costs from production to distribution. Reducing costs in value innovation is carried out through reducing and eliminating actions, which are traced to direct and indirect costs.

5) Patient factors, namely patient characteristics, patient conditions, new needs & demands, and perceptions of cost value trade-offs can be used as material. And the four-action framework can be defined from the stroke service canvas strategy to create a niche market; Blue Ocean Strategy and hospital care quality can be structured as a model to create a niche market.

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