

Management Challenges in Synergic Hospital Planning with Health Service Programs

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ABSTRACT

Articles 28H and 34 of the 1945 Constitution of the Republic of Indonesia affirm that every person has the right to obtain health services and the state is responsible for providing health service facilities, in hospital. The need for hospital facilities in services is still needed, especially in infrastructure development. The existence of the Covid 19 outbreak has made the need for health facilities to increase. The problems in hospitals are very complex including various health professionals, service standards, the era of Industrial Reform 4.0, and hospital design. So far, health programs are often not in line with the development of hospital infrastructure designs, so ineffective and inefficient. The purpose of this study is to synergize the development of health programs in hospitals, management, the development of hospital designs and infrastructure. Hospital facilities must support the program and increase cure rates for patients. The methodology uses qualitative research, observation and literature study. The results of the study recommend that the hospital infrastructure design process should already apply the Building Information Model (BIM). Project management must comprehensive manner from the conceptual stage, from planning until operation. This research recommended to use BIM in the process, in order to obtain optimal results

ABSTRAK

Pasal 28 H dan 34 UUD Republik Indonesia Tahun 1945 menegaskan setiap orang berhak memperoleh pelayanan kesehatan dan Negara bertanggung jawab atas penyediaan fasilitas pelayanan kesehatan yang salah satunya adalah rumah sakit. Kebutuhan fasilitas RS dalam pelayanan masih dibutuhkan, khususnya dalam pengembangan infrastruktur. Adanya wabah covid-19 membuat kebutuhan penyediaan fasilitas kesehatan meningkat. Masalah dalam rumah sakit sangat kompleks meliputi profesi tenaga kesehatan yang beragam, standar pelayanan, era Reformasi Industri 4.0 dan desain rumah sakit. Program kesehatan selama ini sering tidak selaras dengan pengembangan desain infrastruktur rumah sakit, sehingga tidak efektif dan efisien. Tujuan penelitian ini untuk mensinergikan perkembangan program kesehatan di RS, perkembangan penyakit baik menular maupun tidak menular, mendukung program dan meningkatkan angka kesembuhan bagi pasien. Metodologi menggunakan jenis penelitian kualitatif, observasi dan studi literature. Hasil kajian merekomendasikan proses desain infrastruktur RS sebaiknya sudah menerapkan Building Information Model (BIM). Dimana pengelolaan proyek yang dikembangkan secara komprehensif dari tahap konseptual, perencanaan, desain, tendu, pelaksanaan, pengendalian, sampai pengoperasian. Penelitian ini dibatasi hanya pada tahap perencanaan dan direkomendasikan untuk menggunakan BIM dalam prosesnya, agar didapatkan hasil yang optimal.

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INTRODUCTION

In accordance with Article 28 paragraph H of the 1945 Constitution of the Republic of Indonesia, which states that everyone has the right to health services. Article 34 paragraph (3) states that the state is responsible for the provision of proper health service facilities and public service facilities. One of these health services is a hospital (Indrayana.D, 2007)

Hospitals are complex organizations. Different types of health workers with their respective scientific devices interact with each other. Medical science and technology that are developing very rapidly must be followed by qualified health workers so that the provision of quality services, in addition to the availability of the hospital infrastructure facilities itself. The availability of a hospital building that is able to fulfill and facilitate various hospital activities and activities in accordance with the space functions and requirements is an aspect that cannot be separated from the quality of service of the hospital itself. Therefore, in the construction of a hospital, it must begin with a good design process in accordance with the functions and activity needs of each function and unit within the hospital organization itself, along with all its dynamics. In the hospital planning process, the potential risk of design failure is very likely, due to land and building development that is not based on a feasibility study and careful business planning at the early stages of planning.

In several studies, emphasized the importance of a clear strategy in hospital development so that the various resource needs needed, both human resources, equipment resources and infrastructure are met (Oktamianti & Pebrina, 2019). Furthermore, (Misnaniarti, 2012) 6 requirements for hospital construction based on Law Number 44 of 2009, namely: a) inadequate building requirements b) infrastructure requirements that were not yet available c) resource requirements human beings, especially medical personnel, are still lacking d) pharmaceutical requirements e) lack of funding f) lack of support from the legislative body. Andi Saguni (2020) in a study of emerging spatial structures in hospitals during the pandemic requires development feasibility studies, as well as studies / cases of health services, in a master plan for developing health service facilities, service fulfillment programs, human resources, SPA, financing and phasing. (Djalante, et al 2020) in a presentation on Hospital Strategy for Responding to the Covid-19 Pandemic in the New Normal Era, stated that hospital burdens are getting heavier, hospital income has decreased by 30 to 50%. It was stated that a number of hospitals in the country were threatened with bankruptcy due to the prolonged COVID-19 pandemic. The average hospital income even fell by 50 percent.

This also makes it difficult for hospital administrators to cover operational costs. The hospital burden is also getting higher in handling COVID-19 patients. There are also hospitals that are already in danger of collapsing in front of their eyes due to the impact of this prolonged corona outbreak pandemic. (Djalante, et al 2020) concluded the importance of energy-conscious architectural applications in hospital buildings through the use of natural lighting and ventilation, which are expected to reduce hospital operating costs so as to minimize medical costs for people in North Pontianak District. From these studies, the planning aspect plays a very important role.

In hospital development planning, there are different views of health and non-health workers in the hospital in the design of a hospital. The functions and needs of the use of the building are prioritized for patient safety and risk management. The goal of the patient being admitted to the hospital is to get well, be comfortable, avoid the risk factors for other diseases. The patient does not think about the right to comfort and recover in the hospital. Health workers think about how to carry out functions for the care and treatment of patients with all hospital facilities running well.

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Beautiful buildings are desired by everyone and can speed up the recovery of patients. The hospital is a place that also requires smooth operation of the hospital, is not constrained and is in accordance with service standards. Hospitals also produce medical and non-medical waste as well as hazardous materials. Planning involves planning consultants in terms of building, electrical, mechanical and plumbing. Beautiful construction from the point of view of a planner from various disciplines such as architect, mechanical and electrical, environmental engineering.

The author's experience in working in a hospital in making hospital master plans there must be a synchronization between the implementation of hospital programs that are mastered by health workers and planners. The beauty of a hospital must support the hospital's function in health services. The construction of infrastructure and facilities must be in line with the hospital's strategic plan, increase health personnel, increase the implementation of health programs in hospitals as well as improve communication technology, information technology and the latest developments in the era of the Industrial Revolution 4.0. a project (Giatman, 2011) in his scientific oration stated the importance of paying attention to this aspect of planning. This expert said Building Information Modeling (BIM) is a project management model developed in a comprehensive and integrated manner from the conceptual, planning, design, tender, implementation, control, handover and dismantling stages through a comprehensive and integrated data-based system. This study aims to find out how the hospital can synchronize as health service users to coordinate with this BIM model system.

RESEARCH METHOD

This research was conducted with a literature study approach combined with the author's direct experience as a bureaucracy and hospital leadership so far, and deepened with discussions and in-depth interviews with a number of parties who are experts in their respective fields.

RESULT AND DISCUSSION

(Klaus Schwab, 2016) through The Fourth Industrial Revolution stated that the world experienced four stages of revolution. The era of the Industrial Revolution 4.0 fundamentally resulted in a change in the way of thinking of humans, and were related to one another, not only technology, but also education, economy and health.

Three elements of education, economy and health are Human Development Indicators (Human Development Index)(Nurkholis, 2016). The index developed by Amartyan Sen & Mahbub Ul Haq in 1990 shows that in 2019 Indonesia was ranked 111. In this ranking, the HDI score recorded was 0.707; with a life expectancy of 71.5; the expected number of years of education 12.9; average years of education taken 8.0; and income per capita 11,256. Although by UNDP Indonesia was recently classified as a country with a high HDI; although there is no increase in ranking; still this condition deserves our attention, because we are still left behind with several friendly countries.

In this HDI ranking, the Philippines, which is ranked 106th with a per capita income far below Indonesia's (9,540), still outperforms Indonesia with an HDI score of 0.712. Then Thailand which has a score of 0.765; still outperformed Indonesia in 77th position. Furthermore, Malaysia is in 61st position, with a score of 0.804. These friendly countries are still recording achievements in terms of human development that are better than Indonesia according to UNDP.

Good health will cause people to be productive and human productivity will cause the economy to improve. A good economy will lead to a good education that makes humans

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develop in understanding knowledge in the field of life. The 2020 Covid pandemic has shaken the world with the death rate reaching millions of people. Indonesia, this figure is also very fantastic and reached the highest positive figure in the world in February, exceeding the figure of 14,000 people. The Work from Home policy leaves everyone with a dilemma. Two Choices: Health or Economy. Humans still need what Maslow's theory of clothing and food explains in the basic pyramid rather than education on Bloom's theory.

Research and development in the health sector has yielded satisfactory results, the covid 19 vaccination has been carried out which at the first stage prioritized for health workers. In the situation on February 20, 2021, Nopriadi through Kompas TV, from the survey results, 36 to 50% were willing to be vaccinated against Covid 19. Approximately 50-60% stated that they are not interested, are still doubtful and are not willing to be vaccinated now. The covid 19 vaccine also provides protection for around 65% and in how many years people who have been vaccinated still adhere to health protocols. Science continues to develop; even bacterial viruses will undergo gene mutations which will require more sophisticated antivirals and anti-bacteria. Compass.co. (January 22, 2021) stated that the Regent of a district in Jogjakarta was confirmed positive for Covid 19, after receiving the Covid 19 vaccine last week. This shows that education to the public about public health must always comply with the discipline of health protocols. There is no guarantee that hospitals will have excess beds to treat Covid patients who need them.

The hospital is divided into a general hospital and a special hospital. General hospitals consist of class A, B, C, and D hospitals based on the number of beds (Njoto, 2011). Special hospitals such as mental hospitals, leprosy and eye hospitals are divided into class A, B, and C hospitals. This is also in accordance with the classification of the hospital. The readiness of hospitals to increase the number of facilities and infrastructure is in line with the construction of infrastructure. This means that the need for class expansion and upgrading cannot be avoided. Several challenges will occur with this condition, as the Minister of Health Regulation limits expansion of beds. Want to go with prospective hospital patients who need excellent hospital services.

Future hospital planning challenges must be in line with program development. Planning is carried out by a planning consultant, with a committed officer from the hospital. Hospital facility users are health workers who serve patients who need maintenance and services. The contractor is the consultant who built it and the supervisor is the supervisory consultant who is an expert to represent the hospital owner. The main tasks of each seem ideal, but in reality, the challenges in the management of the construction project implementation for hospitals are not in tune with the minimum health service standards and the development of health care programs.

From the informant's experience 1, coordination and communication among health workers must be carried out before submitting a budget. To submit a budget, management, health workers who propose facilities and infrastructure as well as infrastructure sit together with those who manage hospital planning every year the activity is carried out. For hospitals with BLUD status, there is flexibility in financial management. The proposed facilities and infrastructure must be determined whether they are allocated in the BLUD budget or APBD budget for hospitals located in the province or district / city. Based on the results of these deliberations, the hospital is fighting for proposals for the procurement of facilities and infrastructure or the construction of new buildings to the government through musrenbang, discussions with the regional financial management team, guided by the provincial / district / city RPJMD and the Hospital's Strategic Plan. Development proposals are processed through fighting for involvement in several stages including in the Provincial DPRD until finally the

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Budget Implementation Documents (DPA) and Budget Expenditure Plans are issued for activities held through the funds of Regional Public Service agencies.

In general, the building planning process begins with the needs of users complete with specifications and requirements, both general and specific. Based on the needs and requirements, a new design or engineering process begins to produce a planning document. This activity is the task of the planning consultant or construction management. This work is usually done manually by a multidisciplinary team, at least from 5 areas of expertise (architect, civil, mechanical, electrical and environmental). Problems often arise that the resulting design is not synchronized between the five fields, usually the problem is only realized when it will be implemented in the field.

Planning cost distribution system according to Presidential Decree 16/2018, the budget for building planning is below 100 million for direct appointment. Funding ranges from 100-200 million through direct elections and above 200 million through public tenders or tenders. The problem that will arise is that around 4% of financing is not sufficient using this BIM-based model. To implement the planning of hospital facilities and infrastructure in the form of buildings, several policies are reviewed.

Conditions that require attention and become a focus are how the planning activities of facilities and infrastructure or hospital buildings are carried out so as to minimize problems and realize patient safety and avoid risk factors. (Azhar et al., 2008) (BIM) is a solution offered for comprehensive project management from the conceptual, planning, design, tender, implementation, control, handover, operation to dismantling stages. This comprehensive modeling system is integrated with a big data base which is the key to the era of the Industrial Revolution 4.0 (Kensek & Noble, 2014) real situations, accurately and able to predict the appearance and results according to the required specifications. This model can also help hospital facility owners to avoid mistakes

Problems can usually be resolved quite well during planning through internal communication and coordination, however to ensure a communication and coordination system is not easy, due to the complexity of problems with limited resources, limited time, with a number of regulations that must also be considered. BIM (Kensek & Noble, 2014) as a digital technology will help accelerate infrastructure development because the Industrial Revolution 4.0 era has entered the joints of the national economy. All parties can take advantage of the added value for the implementation of infrastructure development. The existence of this BIM is very important today and, in the future, related to the problem of hospital infrastructure development.

A concept of the BIM model or Building Information model based on integrated big data technology, this problem can be significant. The BIM concept that has been able to integrate all the work that has been completed with all the requirements of the specifications and supporting regulations, can be inputted into a system that is well integrated, so if there is a conflict or gaps the system design will give an alarm to all parties concerned to be able to make improvements.

The time of planning, there must be communication with hospital users who have special needs that will be included in the system. To unify this, the BIM voter requirements are compatible with the prepared standards or not. All software or coding must be integrated so that there is harmony and the importance of standardization. If we go international, we can't just use SNI, so we use international standards. BIM is a digital technology-based model with initial entry requirements. Users only get reports, while data entry is only planners and supervisors according to their respective main tasks and functions. Getting into computerization demands professional work.

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By itself each party will review again. Usually, an indication of the occurrence of a problem is commonly found or known during planning, but more often it is known during construction or during utilization or operation, so the problem becomes complicated. However, by implementing BIM, an indication of problems can be found during planning, making financing easy and effective. This means that technical problems that may occur in construction or operation have been brought up during planning, so as to eliminate large wastes. So BIM allows carrying out planning problems, thereby reducing the risk of technical development errors. Technical problems greatly affect the running of health services.

Risk management and patient safety are imperative in the hospital. This program has standards and steps that must be carried out. (Lambunbatu, 2019) Patient safety in the hospital is a system where the hospital makes patient care safer which includes risk assessment, identification and management of things related to patient risk, reporting and analysis of incidents, the ability to learn from incidents and their follow-up and implementation of solutions to minimize risks and prevent injuries caused by mistakes resulting from taking an action or not taking the action that should be taken for the safety of hospital patients. The construction of hospital facilities must take into account both the aesthetic, physical, mechanical and electrical construction as well as plumbing during planning.

CONCLUSION

From the results and discussion, it can be concluded that in the construction of hospital infrastructure, a study must be carried out in line with the health service program and its development according to the hospital class. The factors of budget, human resources, funds, regulations need to be considered. The use of Building Information Modeling (BIM) can be used in managing hospital infrastructure development. The parties with an interest in Building Information Modeling include owners, designers and engineering, estimators, contractors. management must coordinate well.

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APPENDIX

Problem: Concept, operational, accuracy, features to monitor a policy meeting is not the same as a technical meeting. At the time of the conceptual arrangement Search for Policy the Ministry of PU, look for BIM about a 2-storey project and a building area of 2000m² Design and construction of one unit, already working in a private sector, who owns the BIM. M.Giatman said that planning should be the construction management. There is a The Policy Ministry of PU but limited to socialization, especially since the Covid-19 pandemic.

The building requirements are inadequate because they are still in the physical realization stage, the infrastructure requirements are not yet available, the human resource requirements, especially medical personnel, are still lacking, and the requirements for pharmaceuticals and equipment have not been realized.

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