



Review Article

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Study on the Development Needs of the Tadulako General Hospital as Class B State University Hospital for Education (After the Palu City Earthquake)

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Abstract

Regulation of the Minister of Education and Culture Number 8 of 2021 concerning State University Hospital (RSPTN) states that to improve the quality of higher education, research, and health services, teaching hospitals have an important role in the implementation of medical education, education and research in the health sector, and health services. This is an opportunity for Tadulako General Hospital as one of the RSPTN in Indonesia to develop itself from a Class C non-Educational Hospital to a Class B Education Hospital. However, the 2018 earthquake caused this planning to experience obstacles, because the Tadulako RSU building was one of the buildings at Tadulako University that was affected by the disaster.

This study aims to conduct a study of the development needs of the Tadulako General Hospital into a Class B Education Hospital. The specific objectives are to conduct studies from aspects of geography, demography, socio-economics, morbidity and mortality, policies and regulations as well as studies of land, buildings and human resources.

The method used in the study of developing the needs of Tadulako General Hospital is Mix Method, through quantitative and qualitative approaches. Quantitative studies were conducted through questionnaires and checklists. While the qualitative study through direct observation to the Tadulako General Hospital and in-depth interviews.

The results of the study show that: 1) The geographical conditions of Central Sulawesi provide opportunities for hospital development; 2) Demographically, Palu City has a potential market in the field of Hospital services; 3) People's purchasing power increases and is supported by the value of local wisdom, nosarara nosabatutu and sintuvu; 4) The high incidence of tropical diseases and traumatology (due to disasters) gives the Tadulako General Hospital an opportunity to focus on excellence in these two fields; 5) Policies and regulations support the establishment of Tadulako General Hospital as a Class B Education Hospital; 6) Land and buildings support the increase in hospital class, while the recruitment of resources must be done gradually.

Conclusion: The construction and development of the Tadulako General Hospital into a Class B Education Hospital is feasible by taking into account the fulfillment of the recommendations on the standards of the Class B Education Hospital.

Keywords : state university hospital, needs assessment, class B education hospital

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Introduction

Hospital is a health service facility that carries out a complete individual health service function that provides inpatient, outpatient, emergency, and referral services, and is used for the functions of education, training, and research in the fields of medicine, dentistry, and other health.

In Law Number 44 of 2009 concerning Hospitals it is stated that the hospital is a health service institution for the community with its own characteristics that are influenced by the development of health science, technological progress, and the socio-economic life of the community which must continue to be able to improve services that are of higher quality and affordable by the community in order to realize the highest degree of health [1].

In Law Number 44 of 2009 concerning Hospitals that hospitals can be designated as Teaching Hospitals after meeting the requirements and standards of Teaching Hospitals. Teaching Hospital is a hospital that provides integrated education, research, and health services in the field of medical and/or dentistry professional education, continuing education, and education of other health workers.

In the Regulation of the Minister of Education and Culture Number 8 of 2021 concerning State University Hospital (RSPTN) that to improve the quality of higher education, research, and health services, teaching hospitals have an important role in the implementation of medical education, education and research in the health sector, as well as health services [2]. Government Regulation Number 52 of 2017 concerning Implementing Regulations of Law Number 20 of 2013 concerning Higher Education, stipulates that every state university that has a medical faculty, needs to have a teaching hospital or have a hospital that cooperates with teaching hospitals and educational facilities medical. [3]

This is an opportunity for Tadulako General Hospital as one of the RSPTN in Indonesia to develop itself from a Class C non-Educational Hospital to a Class B Education Hospital. However, the 2018 earthquake caused this

planning to experience obstacles, because the Tadulako General Hospital building was one of the buildings at Tadulako University that was affected by the disaster [4].

This study aims to conduct a study of the development needs of the Tadulako General Hospital into a Class B Education Hospital. The specific objectives are to conduct studies from aspects of geography, demography, socio-economics, morbidity and mortality, policies and regulations as well as studies of land, buildings and human resources.

Methodology

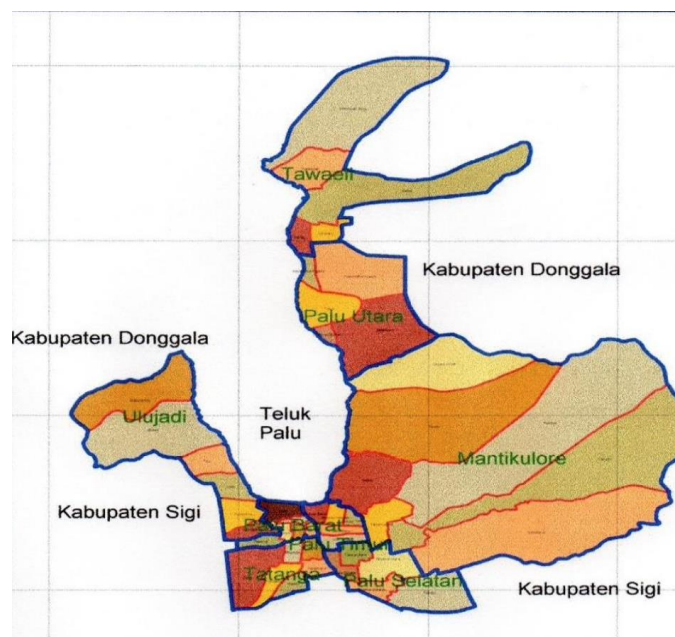
The method in the study of developing the needs of Tadulako General Hospital is the Mix Method, through quantitative and qualitative approaches [5][6]. Quantitative studies were conducted through questionnaires and checklists. Meanwhile, the qualitative study was conducted through direct observation to Tadulako General Hospital and in-depth interviews with the leadership of Tadulako University, the Director of Tadulako Hospital and Dean of the Faculty of Medicine, Tadulako University. In addition, a document review was also carried out which included the statutes of Tadulako University, the profile of the Tadulako General Hospital, the Strategic Plan of the Faculty of Medicine and the Tadulako Hospital and other documents.

Results and Discussion

a. Geography Study

Geographically, Central Sulawesi is the largest province on the island of Sulawesi, with a land area of 61,841.29 km² covering the eastern peninsula and part of the northern peninsula as well as the Togian Islands in Tomini Bay and the Banggai Islands in Tolo Bay, with a sea area of 189,480 km² covering 13 District/City. Palu City as the capital of Central Sulawesi Province is located in the Palu valley plain and Palu bay and is administratively divided into 8 sub-districts and 46 urban villages, as shown in the map below [7][8]:

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Tadulako General Hospital is located in the same area as Tadulako University, located at coordinates $S = 0^{\circ} 50' 34.85''$ and $E = 119^{\circ} 53' 48.72''$, located in Tondo Village, Mantikulore District, Palu City, Central Sulawesi. As the provincial capital, Palu can be accessed by land, sea and air. Heavy trade traffic, especially with the stipulation of the Pantoloan area of Palu City as one of the Special Economic Zones (SEZ) and the establishment of the Capital of the Archipelago in East Kalimantan, which is a short distance from the city of Palu [9].

This geographical condition provides opportunities for the development of health facilities, especially hospitals.

b. Demographic Studies

Based on data from the Department of Population and Civil Registry of Palu City in 2020, the population of Palu City is 371,365 people, this number has increased by 0.47% from 2019. Data from the Central Statistics Agency of Palu City also noted an increase in the life expectancy of the population of Palu. from 2014 – 2020. When compared to the life expectancy of the Indonesian population in 2020 of 73.4 years, Palu City is still below the national figure (71.04 years).

In general, the human development of Central Sulawesi continues to progress during the period 2010 to 2021, from 63.29 (in 2010) to 69.79 (in 2021) or an average growth of 0.95 percent per year. The Human Development Index (HDI) of

Central Sulawesi is still below the National HDI figure of 71.94 or is included in the "medium" group. As for Palu City, the Human Development Index (HDI) in 2020 is 81.47. This figure is above Indonesia's HDI in 2020 of 71.94 and Central Sulawesi in 2020 of 69.79 [7][10].

With an average population growth rate per year (2010-2020) of 1.25% (results of the 2020 census), the population of Central Sulawesi from year to year will increase significantly. Several supporting indicators such as: Life Expectancy is increasing, the composition of the population is dominant in the productive age, Human Development Index (HDI) is also increasing (meaning the level of education, economy and life expectancy is increasing). This has become a large and potential market in the health sector, especially hospital services [7].

c. Socio-economic Studies

Palu City is one of the cities in Central Sulawesi Province with a fairly rapid level of development with economic growth and supporting activities being the orientation of city development. The city of Palu has several advantages as an economic and government center, including: it is passed by state and provincial roads, has a port and is also equipped with an airport. The strategic location of Palu City, equipped with facilities that support economic activities, further strengthens the vision of Palu City as a city based on trade, services and industry. The socio-economic study of the people of Central Sulawesi, especially the

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city of Palu, includes: community characteristics, education level, livelihoods and social patterns of the community [11].

The results of the study show that the education level of the Palu city community has increased from year to year. This has an impact on the level of public awareness that is increasing in the health sector. The phenomenon of employment cannot be separated from economic development. The data shows that the economy of Central Sulawesi will experience positive growth in 2021. From a sectoral perspective, the increase in the economy of Central Sulawesi is due to increased growth in five main business fields, namely the manufacturing, agriculture, mining, trade and construction industries as well as the improving performance of other sectors that were affected in the previous year. Covid-19 pandemic. This condition certainly has a positive impact on people's purchasing power. Reinforced by the slogan Nosarara Nosabatutu (Togetherness), so that harmony can be well maintained in the community. This is a big capital in attracting investment in various fields, including investment in the health sector [12].

d. Morbidity and Mortality Studies

Morbidity and mortality data show that infectious diseases are still a problem in Central Sulawesi and Palu City, in addition to non-communicable diseases whose trend is increasing from year to year. Like other regions in Indonesia, Central Sulawesi and Palu City in particular also experience a triple burden of disease, namely non-communicable diseases (such as Diabetes Mellitus, Hypertension, Heart, etc.), re-emerging infectious diseases (such as: Dengue fever, Tuberculosis and others), and new infection diseases (such as: avian influenza, covid-19, monkey fox and others) [9][8].

The data on outpatient disease patterns in health centers and hospitals as well as inpatient disease patterns in hospitals indicate an epidemiological transition, from infectious to non-communicable diseases. For the cities of Palu and Central Sulawesi, the threat of illness and death also occurs due to disasters (natural and non-natural). The results of the interview with the director of the Tadulako Hospital stated that traumatology cases need special attention. Like the disasters that hit Palu, Sigi and Donggala in 2018. When compared to disasters elsewhere in Indonesia, the impact caused by the earthquake, tsunami and liquefaction in the Pasigala area is quite large [13], as shown in the table below:

Table 1. The impact of the earthquake and tsunami in 3 regions of Indonesia 2018

No	Disaster Impact	Lombok	Palu, Donggala dan Sigi	Selat Sunda
1	Korban meninggal	560 people	2.256 people	437 people
2	Korban luka-luka	1.469 people	4.612 people	9.061 people
3	Korban hilang	-	1.309 people	10 people
4	Mengungsi	396.032 people	206.219 people	16.198 people
5	Kerugian	7,7 Triliun	13,82 Triliun	Belum di rilis

Sumber: BNPB, 2018

The results of the interview with the Dean of the Faculty of Medicine stated that the excellence of the Tadulako Hospital in the field of Tropical Diseases and Traumatology. This is in synergy with the vision of the Faculty of Medicine of Tadulako University "In 2045 the Faculty of Medicine of Tadulako University will excel in community service, especially in the fields of Tropical Diseases and Traumatology through the Development of Medical Education and Research".

This condition is reinforced by the pattern of outpatient disease at Tadulako Hospital in 2020, which shows the high number of visits for tropical diseases such as pulmonary tuberculosis (17%), other tuberculosis (14%), pneumonia (5%) and ARI (4%). Although cases of Non-Communicable Diseases such as Ischemic Heart Disease (22%) also occupy the top 10 inpatient visits at Tadulako Hospital. Likewise, the pattern of inpatient disease at Tadulako Hospital in 2020 is still dominated by infectious diseases (tropical diseases) such as:

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DHF (25%), pulmonary TB (15%), Typhoid Fever (6%) and Pneumonia (5%), in addition to non-communicable diseases (Hypertension 2%).

e. Policy and Regulatory Studies

The 1945 Constitution of the Republic of Indonesia mandates that health services are the right of every citizen, and the state is responsible for providing health service facilities. With the implementation of Universal Health Coverage, the need for health service facilities as health service providers is increasing. The increasing need for health care facilities including hospitals will be followed by an increase in the need for health workers.

Tadulako University is one of the universities in Indonesia that has a Faculty of Medicine and has been providing medical education since 2008. Law Number 20 of 2013 concerning Medical Education states that medical professional education in hospitals is carried out after the hospital is designated as a Teaching Hospital. This means that in carrying out the educational function, the hospital must be able to become an educational area that can improve the competence of students who carry out professional education in their fields.

Government Regulation of the Republic of Indonesia Number 93 of 2015 concerning Teaching Hospitals explains that the regulation regarding Teaching Hospitals aims to: 1) ensure the implementation of health services that can be used for education and research in the fields of medicine, dentistry, and other health by prioritizing the interests and safety of patients/client; 2) provide legal protection and certainty for patients/clients, service providers, students, lecturers, research subjects in the fields of medicine, dentistry, and other health, researchers, administrators of teaching hospitals, and educational institutions; and 3) ensure the implementation of quality services, education, and research in the fields of medicine, dentistry, and other health[14].

Therefore, Tadulako University has the responsibility to provide health facilities (hospitals) that have the function of service, education, and research in the fields of medicine, dentistry, and other health. This is reinforced by the issuance of Government Regulation Number

52 of 2017 concerning Implementing Regulations of Law Number 20 of 2013 concerning Higher Education, which regulates that every state university that has a medical faculty, needs to have a teaching hospital or have a hospital that cooperates with hospitals. educational hospitals and medical education vehicles[15].

Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 8 of 2021 concerning State University Hospitals article 6 regulates the procedures for establishing a State University Hospital (RSPTN), where RSPTN can only be established by State Universities that have medical study programs and/or a dental study program that has the lowest accreditation rating of very good or B[2]. And the Faculty of Medicine, Tadulako University is one of the faculties of medicine in Indonesia that already has accreditation of very good or B.

The Decree of the Minister of Health Number HK.02.02/MENKES/391/2014 concerning Guidelines for Determining Regional Referral Hospitals explains that regional referral hospitals are determined by the Regional Government (Province) and become cross-district/city referrals from at least 4 districts/cities, and have been established as a class B education hospital. In the future, Tadulako General Hospital can take on the role of a class B educational hospital and become a regional referral hospital with excellence in the fields of Tropical Diseases and Traumatology.

f. Land, Building and Resource Studies

According to Minister of Health Regulation No. 147/2010, there is a minimum land area requirement required to establish a hospital in Indonesia. Land area for hospitals with non-storey buildings, at least 1½ (one and a half) times the building area. Meanwhile, for high-rise buildings at least 2 (two) times the area of the ground floor building[16].

Minister of Health Regulation No. 24 of 2016 regulates the Technical Requirements for Hospital Buildings and Infrastructure: a) Calculation of the estimated total floor area requirement for a class A general hospital at least 100 m²/bed; b) Calculation of the estimated needs for the total floor area of the building for a class B general hospital of at least 80 m²/bed; c) Calculation of the estimated total floor area required for a class C

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general hospital of at least 60 m²/bed; d) Calculation of the estimated need for the total floor area of the building for a class D general hospital of at least 50 m²/bed; e) The need for building floor area for special hospitals and teaching hospitals is adjusted to the needs[17].

With the Hospital Standards being referred to as Class C Three-Story Hospitals and Class C Three-Story Hospitals, it can be estimated that the minimum area for a Class C Hospital is 100 beds, so the minimum land area can be calculated.

Minimum Land Area for Hospital : $(T_t \times L_l \times K_{fl})/J_l$

So the minimum land area is 4000 m² for Class C Hospital and 10,666 m² for Class B Hospital. In the Tadulako University Masterplan, the Hospital Area is allocated 42,463 m², this means, this area is very possible and can even be developed further

The results of the function feasibility assessment and recommendations for forensic testing of the strength and security of the Tadulako General Hospital after the disaster showed that the structure of Building B was still good or feasible so that it could be maintained for reuse, while Building A needed strengthening of several parts to maintain its stability and strength for reuse. In order to restore its function as a Class C Hospital, a full re-layout of the space (architecture) or adjustments to meet the requirements or standards of a Class C hospital building is required. continue to pay attention as an RSPTN and its development towards a class B hospital.

Human resources in hospitals consist of medical personnel, non-medical/non-care workers, non-medical/non-care workers with civil servant status and contracts. To carry out the functions and achieve excellence of the hospital in the field of Tropical Diseases and Traumatology, the human resources (HR) of the Tadulako Hospital are supported by the human resources of the Faculty of Medicine, Tadulako University, which consists of Doctoral and Masters in Tropical Medicine, Doctoral and Masters in Microbiology and Parasitology, and Orthopedic Specialists. .

The land condition is very adequate for development into a Class B Education Hospital. Likewise, the plan for the construction of the Tadulako RSUD Building which is designed to be a

Class B Education Hospital. This is supported by the availability of human resources at the Tadulako General Hospital and the Faculty of Medicine. Although currently human resources are not adequate in terms of quantity and competence, gradually Tadulako Hospital together with Tadulako University are obliged to carry out recruitment in stages according to the 5-year strategic plan.

Conclusions and recommendations

The results of the study indicate that the construction and development of the Tadulako General Hospital into a Class B Education Hospital is feasible by taking into account several studies and efforts to fulfill further recommendations. The vast geography of Central Sulawesi and Palu as the provincial capital, increasing population growth rate and Human Development Index (HDI), economic conditions experiencing positive growth and reinforced by the slogan Nosarara Nosabatutu (togetherness), land area, hospital development plans and support human resources from Tadulako Hospital and the Faculty of Medicine, all of which provide positive opportunities for the development of Tadulako Hospital into a Class B Education Hospital.

Excellent services that can be developed are tropical diseases and traumatology. This is in accordance with the study of disease patterns at the Tadulako General Hospital, Palu and Central Sulawesi which are still dominated by infectious diseases (tropical diseases), as well as the conditions of Central Sulawesi and Palu City which are prone to disasters.

Suggestions that the construction of the Tadulako Hospital is oriented to a disaster safe hospital, both in structure, function and management.

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