

# Research on Land Security for Rural Grass-roots Medical and Health Construction

## -- Taking Bobai County as an Example

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### Abstract

Under the normalization of epidemic prevention and control, primary health organizations are faced with severe challenges, that is , the supply of land for primary medical facilities in rural areas is in short supply, and the contradiction between supply and demand needs to be resolved urgently. The rural grass-roots level is an important part of the epidemic prevention and control work, and it is also an important hurdle to win the battle against the epidemic. It has become an important topic to study how to ensure the construction land of rural primary medical facilities and build a solid epidemic prevention network. Taking Bobai County, Guangxi Province as an example, this project investigates the current situation of primary medical facilities resources in the county since the outbreak of the epidemic, analyzes the current layout of its land use, and proposes optimization suggestions and safeguards for the layout of rural primary medical facilities construction land based on the concept of equalization of public services. It can not only provide a scientific decision-making basis for the county's territorial space planning to respond to the normalized epidemic prevention and control work through land use regulation , but also has theoretical and practical significance for ensuring the health of the whole people and promoting rural revitalization.

### Keywords

**Primary Medical and Health Care; Land Use Layout; Land and Space Planning.**

### 1. Introduction

As a large agricultural country with a large population, my country's public service system is still not perfect, there are long-term shortcomings in the rural medical and health sector, and there is a large gap between urban and rural areas and regions. The sudden new crown epidemic has brought severe challenges to the medical and health field, especially the grass-roots health organizations, and exposed many defects in the field of medical services. Among them, the problem of insufficient rural medical and health facilities and unreasonable layout is particularly prominent. Under the situation of normalized epidemic prevention and control, in order to better carry out prevention and control work, the state has invested sufficient funds in the construction of rural primary medical and health facilities, hoping to improve the current situation of rural primary medical care and play its important role in the process of epidemic prevention and control. role. In this process, the demand for rural grassroots medical land is strong, but the contradiction between supply and demand is seriously insufficient. In order to solve this problem, many natural resource departments have innovatively introduced special

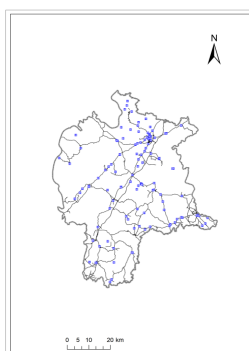
policies, made every effort to do a good job in guaranteeing services, and reserved enough land and space planning for the land for medical and health facilities, so that the site selection is more reasonable and the land use is guaranteed. And on this basis, to promote the goal of equalization of urban and rural public services.

The guarantee of rural grassroots medical land is reflected in two aspects: planning and guarantee. The planning includes the planning and utilization of national land space, whether the planning is scientific and whether the layout is reasonable; the protection of medical land includes policies, laws and construction standards, and whether the protection of policies and laws is complete, and whether the allocation conforms to the construction standards for health land. In view of the above-mentioned problems in primary medical and health land, the rationality of the planning layout is analyzed through traffic accessibility, and corresponding solutions are put forward to ensure the medical land. The research object is Bobai County, Guangxi Zhuang Autonomous Region, which is a typical southern rural area.

## 2. Spatial Planning and Layout of Land for Rural Primary Medical Facilities

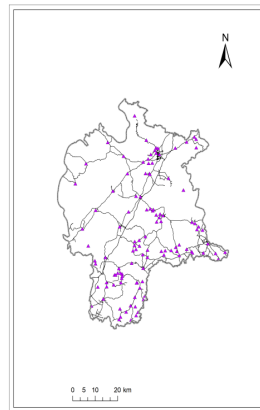
The land use layout of medical and health facilities is an important link in the configuration of infrastructure and public service facilities in national land space planning, and is inseparably linked to building a healthy China, serving the people, and realizing rural revitalization. Under the normalized epidemic situation, rural areas cannot become a shortcoming in epidemic prevention and control. The prevention and control of the new crown epidemic has made rural grassroots governance face a major challenge. Scientific planning of the land for grassroots medical facilities to improve the governance efficiency and quality of rural grassroots response to public health emergencies has become a major difficulty in current national land and space planning.

medical facilities in Bobai County are disorganized, resulting in uneven distribution of medical resource supply and unbalanced demand within the scope; improper layout of some medical service facilities leads to problems such as poor accessibility and low utilization rate. The contradiction between the overall increase in demand for medical services in small towns and the lack of planned supply has become increasingly prominent. The unbalanced spatial distribution of medical and health facilities, the unbalanced population of beneficiaries, and the unequal quality of access to medical services constrain the effectiveness of medical resources. Supply and distribution, to a certain extent, hinder the realization of the goal of equalization of public services. Land space planning relies on traditional index matching and service radius positioning methods for the layout of medical facilities. Due to the lack of predictability of major public health events, the scientific rationality of the decision-making plan is affected to a certain extent, and the service effect after the implementation of the plan is not good. Improper handling of public health emergencies may result in significant losses in follow-up work.



**Figure 1.** Distribution map of medical and health institutions

The POI data of primary medical and health institutions in Bobai County was crawled through AutoNavi map, and the data of medical facilities that met the requirements were obtained after screening, and the distribution map of medical and health institutions in Bobai County was obtained through ArcGIS software (Figure 1); distribution map of residential areas (Figure 2).

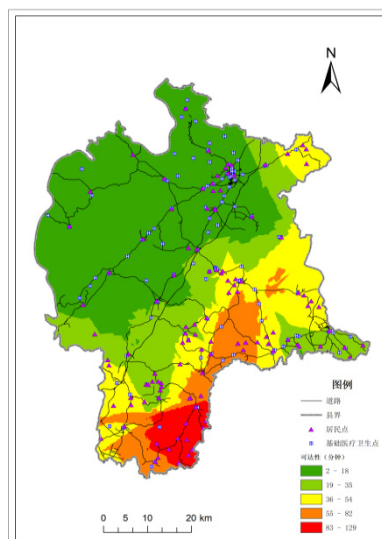


**Figure 2.** Distribution map of settlements

### 2.1. Analysis of Traffic Accessibility in Location Selection of Medical and Health Facilities

The accessibility of public transport refers to the convenience of using the public transport system from the point of departure to the destination, and is the key to evaluating the interaction among the public transport system, travelers and land use. Relevant departments judge the reasonableness of the time and space allocation of public transport through the factors such as travel time, distance and cost, and finally feed it back to the planning level to judge whether the station and route planning is scientific and reasonable and whether the layout is optimal.

According to the location and residential points of medical institutions in Bobai County, the obtained data is added to ArcGIS and classified, and the travel time of residential points is used as the interpolation point to perform interpolation to obtain the accessibility of public transportation from residential points to medical and health institutions in Bobai County. Distribution (Figure 3), this study selects the main highways commonly used for public transportation, and the driving speed is assumed to be based on the 18 km/h driving time of the local common travel tools.



**Figure 3.** Schematic diagram of traffic accessibility

According to the traffic accessibility diagram (Figure 3), the time for residents in the dark green area of the northwest to reach the medical service point by means of transportation is within 2-18 minutes, which is in the optimal layout range; The time is controlled within half an hour, and the traffic convenience is relatively good. The rest of the yellow and orange areas are generally accessible, and the red areas are poor.

Combined with the analysis of local geographical and environmental factors, the rural areas in this area are hilly and rugged, and the population is relatively scattered. Medical and health services are mostly built-in towns and administrative villages, and some are far away from residential areas, resulting in conflicts between the supply and demand of medical services, which is not conducive to the efficient use of resources. Equalization of access and medical services. The planning and construction of public facilities such as rural primary medical and health care is a weak link in rural revitalization and development and responding to public emergencies. In the related new crown epidemic prevention and control work, it is not uncommon for large-scale infection events due to imperfect rural medical facilities. Therefore, it is necessary to pay attention to Construction of primary medical and health facilities. The layout of medical and health land is not only affected by the service population, service radius, and land security, but also by geographical factors and the influence of traffic and surrounding environment. Therefore, in the national land space planning, it is necessary to emphasize the scientific and reasonable layout of medical and health land, improve the distance accessibility of health resources, and ensure that residents can use local common means of transportation or walk within 30 minutes in principle.

### **3. The Important Influencing Factors of Guaranteeing Rural Grass-Roots Medical and Health Construction**

Scientifically formulating land and space planning and rationally distributing medical and health facilities are the prerequisites for ensuring primary medical and health services. After the planning is completed, it is necessary to ensure the smooth implementation of the planning and improve the follow-up guarantee work. In view of the unbalanced supply and demand of medical land in the county, ambiguous property rights of medical and health land, and irregular construction of medical facilities, this paper mainly puts forward corresponding suggestions from three aspects: medical back-up land, confirmation of land property rights for medical facilities, and standardized construction of medical facilities. Provide reference for rural grassroots medical and health services.

#### **3.1. Ensure the Reserved Space for the Construction of Medical Facilities**

The land for the construction of basic medical facilities in township clinics in this county mainly comes from the collective construction land allocated by the township government, which is used for special rural health public welfare undertakings, and is only used for reasonable occupation of medical and health care. In order to ensure the red line of 1.8 billion mu of arable land, the grass-roots government strictly examines and approves construction land, and the number of special lands allocated for public welfare in the plan has dropped sharply, which greatly hinders the development of rural medical and health services. The construction of township medical and health facilities needs to fully consider the possibility of the long-term existence of the new crown epidemic, and relevant departments should allocate a sufficient amount of land in the planning process to prevent the risk of major health accidents. When the land is urgently needed, choose to give priority to the use of land, introduce special policies such as "emergency land" and "strategic reserve land", give priority to ensuring the land for epidemic prevention and control projects under construction and new medical and health projects, coordinate the supply and demand of land for medical facilities, and make every effort to do a good job in emergency space reserve work for epidemic prevention and control.

### 3.2. Formulate Corresponding Laws and Systems to Ensure the Property Rights of Medical and Health Land

According to the regulations on the management of land for construction of public welfare facilities in rural areas, the land for medical and health care belongs to the scope of construction land for public facilities and public welfare undertakings in towns, towns and villages, and is allocated in accordance with the approval authority stipulated by the province and autonomous region. In the process of building village and town clinics in this county, affected by natural geographical location and social factors, there are cases where villagers' self-built homesteads are used as medical and health construction land. The property rights of health institutions are not clear, and there is no perfect legal and institutional guarantee. There are certain property rights disputes. Therefore, the government should pay attention to it, coordinate the interests of all parties to resettle farmers with occupied land, and issue corresponding laws and regulations to clarify the land property rights of medical and health land.

### 3.3. Strengthen Supervision and Promote the Construction of Rural Clinics with High Standards

As a key node of the epidemic prevention and control network, primary clinics play a vital role in public health and basic medical services. The implementation of high standardization construction of clinics plays a pivotal role in improving the capacity of grass-roots medical and health services and promoting the implementation of the rural revitalization plan. The county lacks a standardized overall plan for the construction of village clinics, and there is blindness in the construction site selection. The standards of health centers and clinics vary from place to place, and the service levels are uneven, resulting in polar differences in medical services in the region. Therefore, in the construction of clinics, it is necessary to strengthen supervision, gradually improve health service facilities, and strive to achieve high-standard construction goals.

## 4. Concluding Remarks

"Strengthen the services of rural grass-roots medical and health facilities , transform and upgrade village clinics, eliminate service gaps, and improve the grass-roots medical and health service system ", whether it is for the current improvement of the epidemic prevention and control system, the construction of the medical system network, or the realization of the goal of equalizing public services. profound meaning .

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