

Research on the Efficiency of Local Government Medical and Health Resources Allocation under Market Economy System

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Abstract. In studying the relevant contents of the market economy system, there are few contents about the allocation of health resources, and the allocation standards related to social equity and economic efficiency are different in various places, and the problem of low allocation efficiency of local governments arises. This puts forward a study on the efficiency of local government medical and health resources allocation under the market economy system. With the support of the framework of the market economy system, the issue of economic and fair benefits is analyzed. According to the principle of optimal resource allocation, construct a three-dimensional structure in order to maximize national investment and benefits. Under the established premise of the market economy system, the optimal medical resource allocation Pareto is determined to measure the efficiency of medical and health resource allocation. Empirical analysis is carried out by using radar charts to analyze the financial capacity of health resource allocation as the main tool. The results of the case analysis show that the radar chart of resource allocation efficiency under the market economy system is in line with the actual situation and is suitable for the establishment of a multi-level medical system in China.

Introduction

The issue of medical and health resource allocation efficiency is an important research content in the field of health economics. From the perspective of the market economy system, based on the socio-economic theoretical research, expand the vision of medical and health resources allocation [1]. Combining theoretical research and empirical analysis to unify social equity and economic efficiency, As the pursuit of medical and health allocation goals, government supervision and market mechanisms to make up for the effective means of medical and health resources allocation.

Starting from the specific problem of optimizing the allocation of medical and health resources, resources are explored in the more general and more practical allocation laws in health economics and other departmental economics [2]. Resource allocation issues can be studied as both social and economic issues. In fact, people gradually realize that economic activities can be manipulated through government regulation to compensate for market deficiencies and deficiencies [3]. In view of the above problems, the efficiency of local government medical and health resources allocation under the market economy system is studied.

With the rapid development of the market economy, it is of practical significance to effectively mobilize the enthusiasm of workers in various industries, increase social productivity, and promote

the long-term stable development of society. At the same time, local governments should adjust their position in market economy management according to the continuous changes in the market economy, coordinate the relationship between the government and the social economy, and build and improve local government medical care under the local government-market relationship economic system. A blueprint for rational allocation of health resources.

Research on the Contents of Economics of Health Resource Allocation Based on Market Economic System

Under the market economy mechanism, individuals and social organizations are the main trading media, which play a key role in the allocation of medical and health resources [4-5]. On the basis of perfecting the basic competition links, study specific systems to regulate the allocation of resources.

For the research on the efficiency of local government medical and health resources allocation, construct a market economic system framework, as shown in Figure 1.

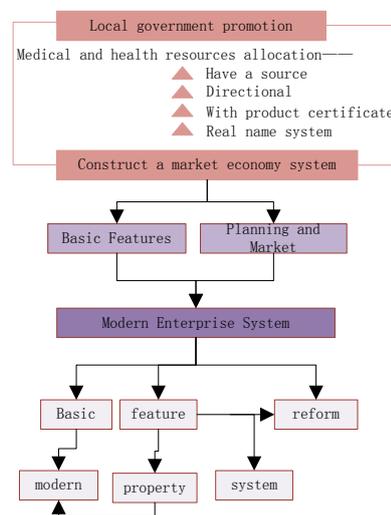


Figure 1. Market economic institutional framework.

Give full play to the positive role of economic analysis in optimizing the allocation of medical and health resources, study its characteristics and related mechanisms, ensure the fair distribution of medical and health resources, and take into account economic interests [6], formulate preferential policies to allocate medical and health care reasonably.

Analysis of Economic Benefits

The allocation of local government medical and health resources requires a certain cost, which is prone to economic problems [7]. On the economic level, the allocation of medical and health resources should follow the principle of maximizing benefits at the lowest cost; combining with local reality, whether the allocation of medical resources reaches the best state, that is, on the premise of ensuring that medical and health conditions do not harm the economic interests of others, a comprehensive evaluation The allocation efficiency of medical and health resources increases resources [8].

Analysis of the Problem of Fair Benefits

An important issue in analyzing the allocation of local government health resources from an

economic perspective is the issue of equity. Under the market economy system, under the conditions of equality and harmony, the distribution of medical and health resources also needs to be fair [9]. In response to the problem of excessive urban-rural gaps, local governments should actively formulate relevant policies, give full play to the role of government mechanisms, regulate the market environment, and stop the vicious price increase of medical and health resource allocation [10]. Ensure that every citizen has the right to fair medical services and treatment, and to protect people's health [11].

Improve Local Government Medical and Health Resources Allocation Efficiency

With the support of the market economic mechanism, analyze the problems of economic benefits and fair benefits, and ensure that the allocation of medical resources reaches the optimal Pareto under the premise of not damaging the economic interests of others, and realize the reasonable allocation of medical resources of local governments [12].

Building a Three-dimensional Architecture

Under the market economy system, the efficiency of local government medical and health resource allocation is studied on a three-dimensional structure, as shown in Figure 2.

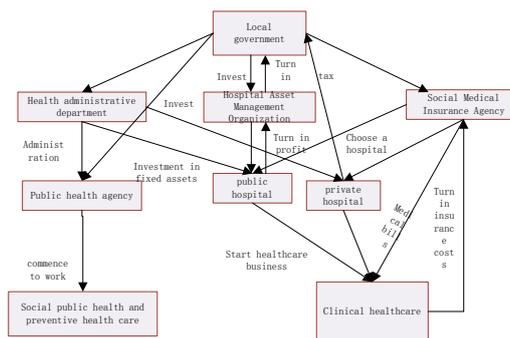


Figure 2. Three-dimensional architecture.

The local government that allocates medical and health resources is the responsibility and management of the hospital [13]. According to the principle of optimal resource allocation, the hospital is allocated resources to maximize national investment and benefits. The establishment of medical and health institutions in various places has broken the current practice of setting by administrative divisions, greatly reducing the number, raising the construction standards, and leaving a certain space for the development of local government hospitals [14]. The development and application of advanced medical methods, representing the level of the industry, and stabilizing market prices are the main functions of local governments in allocating medical and health resources. The local government will also return this part of the tax to the medical insurance fund. The medical insurance institution can be regarded as a commercial business. While ensuring its own development, it accepts the social individuals to pay medical insurance premiums on the one hand. To allocate local medical and health resources [15].

Pareto Optimal

Under the established premise of investing in the market economy system of the medical and health sector, the allocation of local government medical and health resources reached Pareto optimal.

Because of the special nature of medical and health resources, you can choose projects and plans that can achieve specific goals and minimize costs, and transform the cost-benefit analysis method that generally measures the efficiency of resource allocation into a cost-effectiveness analysis method for measurement.

Suppose the two allocation methods of medical and health resources are X and Y, and the given quantity is X1 and Y1. Public hospitals and private hospitals are A and B, respectively. Figure 3 shows the distribution of medical resources between the two hospitals.

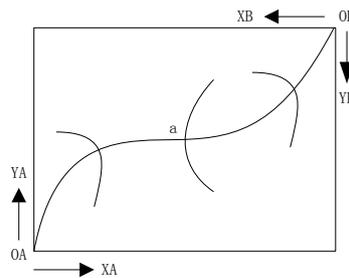


Figure 3. Distribution of medical resources between two hospitals.

The horizontal length of the block diagram represents the number X1 of the first type of medical and health resource allocation X, and the vertical height represents the number Y1 of the health resource allocation Y. OA is the origin of public hospital A, and private hospital B is the origin of OB. The X consumption in the figure represents the medical resource allocation X of the public hospital A from left to right, while the vertical figure represents the medical resource allocation Y of the public medical institution A. From the OB level to the left, it represents the consumption of private hospitals in the allocation of medical and health resources X and XB, and the allocation of Y and YB in the vertical direction represents the private hospital B. At any point, such as point a, it is equivalent to the cost of public hospital a and the cost of private hospital B. Therefore, the following formula holds:

$$\begin{aligned} XA + XB &= 1 \\ YA + YB &= 1 \end{aligned} \tag{1}$$

Determine a set of numbers at any point in the block diagram, which represents the consumption of each type of medical and health resources allocated by public and private hospitals, and meet the above formula.

When the transaction reaches a certain state, any medical resource allocation transaction will reduce the satisfaction of at least one person, then this state is the best state of the transaction. In terms of economy, this exchange is most effective. Therefore, if the combination of factors reaches this state, any recombination of resource allocation factors in the health sector will reduce the output of at least one medical device, then this state is the best production state. From the perspective of economic benefits, this kind of medical and health resource allocation is the most efficient.

In view of the existence of a series of problems in the development process of the allocation efficiency research method supported by theory, from the perspective of social equity and economic efficiency, the government's efficiency in the allocation of medical resources under the local market

economic system is studied, and A brief analysis of the regulatory effect. Using the relevant theories of economics, taking the fair process of resource allocation as the core process, and addressing the market failure, this paper proposes a study on the efficiency of local government medical and health resource allocation under the market economy system. Based on the current medical and health resource allocation model, and on the basis of perfecting the previous allocation model, a medical and healthcare system is constructed to improve the health level of our residents.

Empirical Analysis

For the rationality of the research on the efficiency of local government medical and health resource allocation under the market economy system, empirical analysis is needed.

Data

The main contents of China's health resource allocation are: institutional settings, beds, information resources, equipment, technology and other configurations. Increase the health workforce indicators, and determine the representative indicators of China's basic medical resource allocation according to actual needs, such as the number of basic medical institutions, the number of beds, the health workforce, large-scale medical equipment, and health facilities. For the income and expenditure of medical institutions, the secondary evaluation indicators are shown in Table 1.

Table 1. Secondary evaluation indicators.

index	project
	Number of different types of institutions
Number of basic institutions	
number of beds	Total bed days, number of beds, total bed days occupied by discharged patients, bed turnover times, bed utilization rate
Health manpower	Number of professional assistant doctors, number of pharmacists, number of technicians, number of trainee doctors, technical personnel, nurses
Large medical equipment	Low-cost equipment-less than 500,000 yuan
	Medium-priced equipment-500,000 yuan-990,000 yuan
	High-priced equipment-more than 1 million yuan
Health facilities	Total revenue / ten thousand yuan, total expenditure / ten thousand yuan, financial project subsidy expenditure / ten thousand yuan, total cost / ten thousand yuan

Basic Health Input and Output Analysis

The selection of evaluation indicators using the DEA method requires that the number of decision units, the number of input indicators and the number of output indicators satisfy the following formula:

$$2(m+n) \leq T \quad (2)$$

With the support of formula (2), the credibility of the evaluation results is high. Based on the above five secondary evaluation indicators, the input and output of local government medical and health resource allocation are determined, as shown in Table 2.

Table 2. Input and output of local government medical and health resources allocation.

City / County	Input indicators		Output indicators	
	Number of pharmacists / person	Number of beds	Number of clinics / person / year	Admissions / person / year
City A	1980	1450	6452180	15241
City B	1880	200	1540605	2055
City C	1055	280	1850300	3450
City D	205	50	310251	125
E County	852	400	1850081	2541
F County	550	250	1515054	602
City G	605	365	505025	4800
County H	780	410	1085042	4503
I County	491	155	724781	1650

Result Analysis

The input indicators of local government medical and health resources in 9 cities / counties are far less than the output indicators. The radar chart is an important tool for analyzing the financial capacity of local government medical and health resources allocation. 4 is shown.

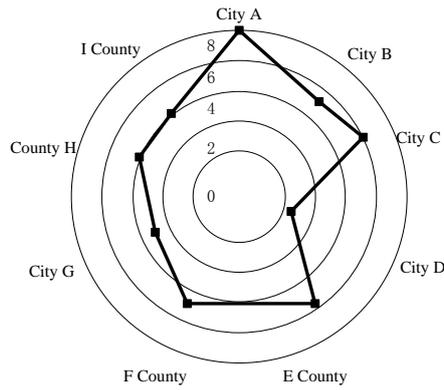


Figure 4. Radar chart of relative efficiency of local government medical and health resources allocation.

Under the efficiency radar chart shown in Figure 4, the relative efficiency of local government medical and health resource allocation is compared and analyzed using the theoretically supported allocation efficiency research method and the allocation efficiency research method under market economy system.

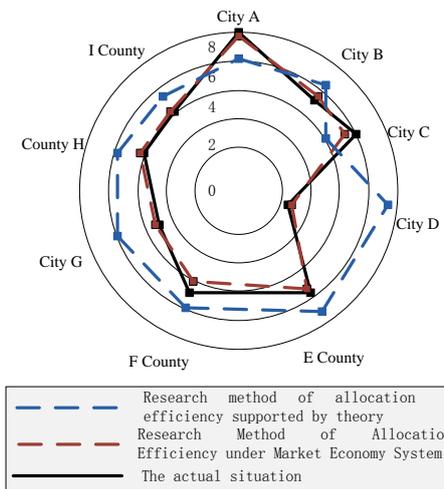


Figure 5. Two methods to configure the relative efficiency radar chart.

It can be seen from Figure 5: The use of theoretical support for the configuration efficiency research method lacks actual situation support, resulting in a large difference between City A and City D and the actual situation, while City B, City C, and City E are small, but also It is worse than the research method of allocation efficiency under the market economy system. The research method of allocation efficiency under the market economy system is basically consistent with the actual situation, although there are discrepancies, but the difference is small.

Discuss

To achieve a reasonable layout and optimal allocation of health resources, we must first follow the principles of fairness and efficiency. This requires that when formulating provincial health resource allocation plans, it is not limited to the Economic analysis, but to consider the whole, to take into account a series of objective issues such as population density, health resource distribution. Only by optimizing the allocation of health resources while taking into account fairness and efficiency can it be possible to achieve efficient and orderly development of China's health undertakings.

Based on this, the following three improvement strategies for optimal allocation of health resources are proposed:

(1). To ensure the basic medical needs of all members of society as a basic goal, while meeting high-level medical and health needs as much as possible. To maximize the fairness of medical and health services.

(2). While adjusting the allocation of health and medical resources according to changes in the health needs of the broad masses of the people, we should fully consider the requirements for the sustainable development of local health undertakings, scientifically formulate plans for health and medical service systems, strengthen management and supervision, and avoid Unsaturated use or excess resources.

(3). Improve the allocation of health and medical resources in developed and remote areas by strengthening macro-control of overall health resources, and then rationally transfer manpower, material resources, and financial resources to ensure that health resources can be used efficiently. In addition, the gap between urban and rural health resources should be further reduced to meet the needs of rural patients for health resources.

Conclusion

The allocation of health resources is a complex and systematic project. The rational allocation of medical and health resources is not only related to social interests, but also related to the economic efficiency of the people. Its management style, operating mechanism and reform direction all require the state to strengthen policy guidance, government leadership, and multi-sector cooperation. Therefore, it is necessary to strengthen information exchange with local governments, sum up experience, and formulate local standards for the rational allocation of health resources based on actual conditions.

However, this study is only a preliminary analysis of the allocation of health resources and the efficiency of local governments. If the quantity of health resources allocated by local governments at all levels can be directly calculated, and combined with the actual situation in the region, the principle planning of regional health classification can be reflected, or The combination of other econometric methods can better reflect the current status of regional health classification.

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