Quality Evaluation of Medical Insurance Management in Public Hospital – The Case of a Hospital in Hebei Province, China

Cuicui Ping [1, 2, *], Orlina Ursula D. Regua [1]

[1] College of Business Administration, University of the Cordilleras, Baguio City, Benguet, Philippines 2600

[2] Hebei Engineering University Affiliated Hospital, No.81, Congtai Road, Handan City, Hebei Province, China 056008

* Corresponding Author Email: fsyynhbpcc@126.com

Abstract. This paper studied the establishment of a quality evaluation system for medical insurance management in a public hospital in Hebei, China, as an example. The paper used the analytic hierarchy process (AHP) as well as the balanced scorecard approach, and the model developed suggests that the hospital should pay more attention to the patient perspective when evaluating the quality of medical insurance management.

Keywords: Medical Insurance Management, Quality Evaluation, Public Hospital, Analytic Hierarchy Process, Balanced Scorecard.

1. Introduction

China's medical insurance system is part of the Chinese health care system, with medical insurance as the mainstay and medical assistance as the backbone [1]. The basic medical insurance includes employee medical insurance, which is for the urban employed population, and resident medical insurance, which is for the non-employed population and the rural population [2]. In 2020, the number of people covered by basic medical insurance in China will be 1.391 billion, with a coverage rate of over 95%. The basic medical assistance in health insurance subsidizes more than 99.9% of the poor population to join health insurance [1], which is important to protect the health care of the residents. However, the sustainability of medical insurance will be a problem in the future due to the large population, the serious aging problem, and the decrease of fiscal revenue [3]. In addition, the unreasonable increase in medical costs and the growing problem of expensive medical care not only increase the financial burden of patients, but also bring a greater impact on the stability of the medical insurance fund, which puts higher demands on the management and risk control of the medical insurance fund [4].

As a provider of medical services, Chinese public hospitals not only assume the role of providing quality medical services to Medicare patients, but also take the responsibility of controlling the rising costs and improving the quality of Medicare. However, currently, violations of medical insurance funds in the form of induced hospitalization, false hospitalization, disaggregated hospitalization, medication without medical prescription, excessive medical treatment, and false treatment have occurred, and violations of medical insurance regulations have been exposed from township health centers to large and well-known tertiary medical institutions. As the National Health Insurance Administration continues to increase its efforts to combat fraudulent insurance practices, public hospitals must take the initiative to strengthen the standardized management of medical insurance funds, improve various management systems, and pursue production and development in a legal and compliant manner [5].

Public hospitals are the main body of China's medical service system, and the study of the management of public hospital medical insurance can provide a reference for the future improvement of the medical insurance system.

2. Literature Review

The research results in the field of hospital medical insurance management have developed in line with the reform of the medical and health system, especially the hospital management and health insurance management system.

The medical insurance system is a system of funds raised and allocated in a country or region for the purpose of preventing and treating diseases of citizens in accordance with the local insurance rules. Hospitals must not only provide medical services but also pay attention to controlling medical costs. The degree of implementation and effectiveness of the implementation of medical insurance policies by hospitals is related to the basic role of medical insurance in medical reform and the regulation of the allocation of medical resources. In medical insurance, public hospitals are the middle force connecting the government and patients, the main provider of medical and health services in China, the main force to protect the public's demand for basic medical services, and the main organizational vehicle to achieve the policy goal of public health by improving medical quality, reasonably controlling medical costs, and steadily increasing medical insurance revenue and other hospital medical insurance management (Mu, 2016) [6].

At the same time, hospitals are also users of medical insurance coordination funds, which can lead to wastage of funds if they are not managed properly. Study found that due to the differences in the operational goals of hospitals and medical insurance, the lack of economic awareness of traditional medical services, the lack of good communication mechanisms, and the lack of scientific and standardized medical insurance management. Most of the public hospitals are under pressure in operation and management, and most of them have problems such as "excessive growth of medical costs, overrun of medical insurance funds, risk of rejection by medical insurance, and coexistence of insufficient and excessive supply of medical services" (Jiang, 2019) [7].

To solve the above problems, it is important to evaluate the quality of medical insurance management in public hospitals. Quality evaluation of public hospital medical insurance management is a process based on scientific quality evaluation standards and evaluation systems to evaluate whether the quality of internal medical insurance management in hospitals meets the requirements of national medical insurance policies, whether it takes into account medical cost control and medical service quality, whether it meets the common interests of insured patients, hospitals and medical insurance authorities, and whether it takes into account both social and economic benefits (Li, 2017) [8].

Therefore, this paper focuses on the evaluation of the performance of medical insurance management in a public hospital in Hebei Province, China, in order to evaluate the quality of the current hospital's medical insurance management, identify the current problems, and serve as a reference for improving the quality of its management.

3. Methodology

This paper uses the balanced scorecard and the Analytic Hierarchy Process (AHP) to develop a model for evaluating the quality of medical insurance management in the public hospital in Hebei Province, China.

The balanced scorecard is used in the construction of the medical insurance performance management evaluation system, taking into account the health care market environment and the hospital's own strategic positioning and goals.

The Balanced Scorecard is not a process of medical insurance management formulation, but a system of implementation, feedback and correction of the currently formed hospital development strategy in terms of medical insurance management in the process of the hospital's own strategic management combined with medical insurance management (Zhu, 2019) [9].

Table 1. Quality Evaluation of Medical Insurance Management Based on Balanced Scorecard [10].

Goals	Criteria	Alternatives
Quality Evaluation of Medical Insurance Management	Financial perspective	1. Control of pharmaceutical costs (CPC)
		2. Hospital medical insurance fund recovery rate (FRR)
	Customer (Patient) perspective	1. Patient satisfaction (PS)
		2. Patient attractiveness (Through medical insurance development) (PA)
	Learning and growth	1. Efficiency of medical insurance management and services (EMIMS)
		2. Medical insurance policy training and development (MIPTD)
	Internal process	1. Efficiency of the hierarchical treatment (EHT)
		2. Medical insurance service delivery fit (DF)

4. Result and Discussion

The result of the paper is shown in the tables below. In the all the tables, the consistency ratio (CR) is less than 0.1, which means that there is consistency in all the weights.

Table 2. AHP Results at Criteria Level.

Item	Eigenvector	Criteria Weight	CR
Financial perspective	0.765	15.789%	0.004
Customer (Patient) perspective	1.237	25.531%	
Learning and growth	1.112	22.951%	
Internal process	1.731	35.738%	

Table 3 shows the result at alternative level along financial perspective, from the table, it can be seen that hospital medical insurance fund recovery rate (FRR) has a higher weight than control of pharmaceutical costs, which indicates that comparing with the cost, the recovery rate of the health insurance can better represent financial performance of the medical insurance management in public hospital.

Table 3. AHP Results at Alternative Level along Financial Perspective.

Item	Eigenvector	Alternative Weight	Priority Weight	CR
CPC	1.024	45.776%	7.228%	0.006
FRR	1.213	54.224%	8.561%	

Table 4 shows the results at alternative level along customer perspective. In this dimension, patient satisfaction has a higher weight over patient attractiveness (through health insurance development), which indicates that it's more important to satisfy the patient than attract more patient to use medical insurance.

Table 4. AHP Results at Alternative Level along Customer Perspective.

Item	Eigenvector	Alternative Weight	Priority Weight	CR
PS	1.146	52.329%	13.360%	0.002
PA	1.044	47.671%	12.171%	

Table 5 shows the result at alternative level along learning and growth. It can be seen from the table that medical insurance policy training and development has a slight higher weight than efficiency of medical insurance management and services, which means that the training given and the policy being developed are important to the learning and growth of the public hospitals.

Table 5. AHP Results at Alternative Level along Learning and Growth.

Item	Eigenvector	Alternative Weight	Priority Weight	CR
EMIMS	0.912	49.431%	11.345%	0.003
MIPTD	0.933	50.569%	11.606%	

Table 6 shows the results at alternative level along internal process. In the table, it can be seen that medical insurance service delivery fit has a higher weight than Efficiency of the hierarchical treatment, which means that the appropriateness of medical insurance for patients is more important than the efficiency of the level of classification of treatment at the internal process.

Table 6. AHP Results at Alternative Level along Internal Process.

Item	Eigenvector	Alternative Weight	Priority Weight	CR
EHT	0.877	46.748%	16.707%	0.004
DF	0.999	53.252%	19.031%	

5. Conclusion

The construction of a quality evaluation model of medical insurance management for a public hospital in Hebei Province, China, was based not only on theory, but also on the hospital's practices, which made the model more comprehensive. The results suggest that the customer (patient) perspective is what the hospital should pay more attention to when evaluating the quality of its medical insurance management.

References

[1] National Health Insurance Bureau Policy Interpretation “14th Five-Year Plan” national health ins urance plan a question and answer. (2021, September 30). National Healthcare Security Adminis tration. Retrieved August 26, 2022, from https://web.archive.org/web/20220126030020/http://www. nhsa.gov.cn/art/2021/9/30/art_38_6144.html

[2] National Health Insurance Bureau Suggested Proposal Letter from National Health Insurance Bur eau on the Response to the Proposal No. 2844 (Medical Sports No. 152) of the Fourth Session of the 13th National Committee of the Chinese People's Political Consultative Conference. (202 1b, October 26). National Healthcare Security Administration. Retrieved August 26, 2022, from https://web.archive.org/web/20220126025918/http://www.nhsa.gov.cn/art/2021/10/26/art_110_7263.ht ml

[3] China’s social security reform faces four major problems and five major challenges-Xinhua. (20 16, February 3). Xinhua. Retrieved August 26, 2022, from https://web.archive.org/web/202201260 51202/http://www.xinhuanet.com/politics/2016-02/17/c_128726709_2.htm

[4] Lee, C., Sun, H., Guan, Q. The Effect of China's Basic Medical Insurance Schemes on Health Service Utilization [J]. Value in Health, 17(7): A428.

[5] Jia, Y. (2019, May). Study on the quality evaluation of medical insurance management within public hospitals. Huazhong University of Science and Technology. Unpublished Thesis.

[6] Mu, Y. The history, current situation and trends of the development of China's health insurance system [J]. China Primary Health Care, 2016(02):16-17.

[7] Jiang, L. Research on the problems and related countermeasures in the management of hospital medical insurance funds in the context of new medical reform [J]. China Health Industry, 2017(09):139-140.

[8] Lai, C. Reflections on a new model of hospital health insurance management in the context of medical reform [J]. Management Observation, 2017(28):169-170.

[9] Zhu, X. (2019, March). Research on Performance Evaluation of Medical

[10] Insurance Management in XK General Hospital Based on Balanced Scorecard. China University of Mining and Technology. Unpublished Thesis.

[11] Yao, P. The creation of a comprehensive hospital performance appraisal system based on the balanced scorecard [J]. China Health Resources, 2012 (05): 383-386.