

The Role and Application of Comprehensive Budget Management in Hospital Cost Control

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Abstract: *With the continuous deepening of China's medical reform policy, it has had a considerable impact and influence on the application of public hospitals. Comprehensive budget management is an important component of hospital internal management and an effective measure to improve the overall operation and management level of hospitals. This article analyzes the role and application of comprehensive budget management in hospital cost control under the new medical reform situation. It conducts an analysis of the importance of comprehensive budget, the application status of comprehensive budget, discusses the existing problems, and proposes targeted and effective solutions, thereby providing useful references for the implementation of comprehensive budget management in public hospitals.*

Keywords: Public hospital Comprehensive budget Cost control.

1. Introduction

China's medical reform is constantly deepening, and the country's medical system is undergoing a comprehensive transformation and upgrading. While hospitals are improving the quality of medical services, they also need to continuously integrate internal resources and control hospital costs [1]. As an indispensable key part for the normal operation of hospitals, the management model of financial management is also transforming towards the construction of management capabilities, the integration of business and finance, and the construction of informatization. Comprehensive budget management will also become a new way for hospitals to achieve refined management and improve management levels.

2. The Role of Comprehensive Budget Management in Hospitals

2.1 Ensure the Realization of the Hospital's Strategic Goals and Anchor the Direction of Cost Control

Guided by the strategic goals of the hospital, a closed-loop management process of "strategic planning - annual plan - budget preparation" is formed [2]. With the long-term strategic goals of the hospital as the core, it is decomposed into annual plan goals that can be decomposed into data standards and executable as specific work contents, and detailed and implemented in the processes of budget preparation, execution, adjustment and assessment. For instance, when a certain tertiary Grade-A hospital was formulating its five-year plan, it put forward the goal of building a regional center in the future. Through comprehensive budget management, it transformed the targets such as equipment purchase, talent introduction, and scientific research investment into specific budget targets for each year and implemented them effectively [3]. It controlled various cost and expense expenditures and ensured the priority allocation of resources required for strategic goals.

Comprehensive budget management, through the decomposition and layer-by-layer decomposition of the hospital's overall goals, achieves a coordinated advancement

of "the entire hospital as one chessboard". Each department formulates relevant budgets based on its job responsibilities and business characteristics, ultimately ensuring that the goals of each department are consistent with the hospital's overall business goals. This is not only a constraint on the hospital's economic behavior, preventing the occurrence of over-budget and out-of-budget situations in various economic activities, but also the most effective and clear strategic guideline for controlling related costs, enabling the work of each department to be carried out closely around the hospital's goals.

2.2 Enhance the Efficiency of Resource Utilization and Optimize the Effectiveness of Cost Control

Budget management implements reasonable resource planning and allocation for the funds of various departments in the hospital. Through the budget, the hospital formulates reasonable resources and budgets based on the business needs, historical information, and business development plans of each department's sections. During the process of resource allocation, it is carried out in accordance with the business development needs of each department [4]. Carry out relevant resource planning and allocation for the financial management information and non-financial information of medical and chemical equipment consumables and labor related to the hospital, and try to avoid some unnecessary waste of funds in the hospital. Hospitals should rationally prepare their budgets and carry out relevant purchases of large medical equipment. Through the scientific allocation of budgets, they should coordinate factors such as the demand analysis of business volumes in various departments and the utilization rate of large equipment to configure the procurement plan for large medical equipment in the hospital, preventing unnecessary losses caused by equipment idleness.

Comprehensive budget management ensures that all expenses are spent within the budget plan by controlling the process of use at each link. During the implementation of comprehensive budget management, hospitals should establish budget execution monitoring, supervise the status of resource usage in real time, and promptly discover and solve the waste of resources. Standardize the management of medical service quality through refined cost management, reduce the cost

input per unit of service, effectively improve the utilization rate of resources, and maximize the input and output of various resources.

2.3 Enhance Risk Management Capabilities and Build a Solid Defense Line for Cost Control

The whole-process risk prevention and control refers to establishing a budget management process of pre-budget early warning, in-process control and post-event reporting in the pre-budget preparation, in-event monitoring and post-event analysis, and scientifically predicting the future income and expenditure of the hospital. Implement the industry situation and policy changes, predict possible risk factors, and arrange contingency plans in advance to avoid risks [5]. Under the trend of the reform of the medical insurance payment system, hospitals have foreseen in advance that medical insurance cost control will affect the structure of income and business income, and have made arrangements in aspects such as cost control to avoid policy risks.

At each node of budget implementation, dynamic analysis of budget execution and budget deviation analysis are carried out to promptly identify problems and deviations and make timely adjustments. Real-time warnings are issued for budget execution and some unconventional revenues and expenditures that occur, and they are confirmed and adjusted according to the revenue and expenditure situation. During the budget analysis stage, items that deviate from the budget are promptly revealed, and the causes and results are analyzed. The reasons for the formation of the deviations are identified in a timely manner, and suggestions are put forward. So that the hospital can reduce or avoid risks and effectively control them.

3. The Application Issue of Comprehensive Budget Management in the Internal Control of Hospital Costs

3.1 The Budget Preparation System is Not Sound

At present, in the budget preparation system of public hospitals, the decomposition of preparation targets is not specific enough, the foundation of budget preparation is not solid, and the budget preparation method still remains at the concept of "base + growth", only increasing or decreasing around the previous year's budget execution figure, without fully considering the real-time dynamic changes such as the development of department business and policy changes. Some public hospitals, such as a certain tertiary hospital in Guiyang City, failed to take into account the reality that the new hospital area was put into use, which led to a significant increase in the workload of diagnosis and treatment in the new campus compared to the same period and insufficient budget [6]. As a result, the utilization rate of some high-end equipment purchased was seriously low, causing waste of resources and other phenomena. Meanwhile, during the budget preparation process, there was insufficient collaboration between multiple departments. The finance department lacked sufficient information exchange and transmission with clinical departments and medical technology departments, resulting in a mismatch between the budget targets and the actual business of the hospital. For

instance, in a certain municipal hospital, there was once a situation where the demand for medical consumables reported by clinical departments differed significantly from the actual amount of consumables used in clinical practice. The main reason was that the purchasing department did not have sufficient information on the development of diagnosis and treatment technologies in clinical departments, resulting in distorted budget preparation.

3.2 The Intensity of Internal Audit Supervision is Insufficient

Meanwhile, the internal audit of public hospitals has problems such as broad and incomplete supervision over the budget execution stage and weak accountability. The focus of internal auditing is concentrated on the legality audit of financial revenue and expenditure [7]. There is a lack of in-depth supervision over the process links that affect the cost control effect of budget execution and the efficiency of resource allocation and utilization. For example, the result of an internal survey of 50 public hospitals shows that only 28% of public hospitals have implemented dynamic auditing for the entire process tracking of budget execution. Most hospitals only conduct centralized audits at the end of the year and fail to correct deviations in budget execution in a timely manner. The implementation of audit conclusions lacks effective supervision. Some public hospitals have failed to effectively enforce accountability for overspending and disciplinary violations that occurred during the budget execution process. For instance, after a certain hospital was audited for the excessive use of consumables in some departments, it did not strictly hold the leaders and staff of these departments accountable, which led to the continuous occurrence of excessive consumption problems and undermined the seriousness of budget constraints.

3.3 The Information System is Not Perfect

The low degree of informatization in budget management leads to a relatively low level of cost control work. At present, the existing information systems in hospitals often have the phenomenon of information silos. For example, the budget preparation system cannot be shared in a timely manner with the Hospital Information Management (HIS) and Hospital Resource Planning (HRP) systems. At the beginning of the launch of the pilot project of comprehensive budget management in a provincial hospital, due to the mismatch of data interfaces among various information systems, a large number of personnel had to be mobilized in the budget preparation stage to conduct a large amount of basic data summary work, resulting in low work efficiency and a high error rate. Meanwhile, there is a lack of intelligent analysis and early warning modules among various systems. At present, most hospital budget management systems can only meet the simple data entry and statistics work, lack scientific and intelligent early warning and analysis of budget execution differences, and are even more difficult to make auxiliary decisions for cost control from the perspective of big data [8]. During the budget management process of a certain hospital, it failed to promptly observe the price increase in the drug procurement market. As a result, it incurred a lot of additional procurement costs when purchasing drugs. The reason for this is that the relevant sections of the information system lack the

ability to conduct timely dynamic monitoring, early warning and management.

4. Effective Strategies for the Application of Comprehensive Budget Management in Hospital Cost Control

4.1 Improve the Budget Preparation System

To address the drawbacks of the current hospital budget preparation process, such as insufficiently specific responsibility decomposition and inadequate preparation of cost data, a scientific and refined budget preparation process should be designed. First, optimize the budget preparation process and adopt the zero-based and activity-based costing methods for budget preparation. The zero-based budgeting concept guides each department to re-evaluate work needs starting from zero when preparing departmental budgets, rather than using the “base + growth” method. For instance, in the budget preparation process of a certain tertiary hospital for the purchase of medical equipment planned to be introduced in a certain year, a zero-based budgeting method was adopted [9]. The hospital organized multiple discussions, including the directors of clinical and medical technology departments and relevant experts, on the necessity, demand scenarios and expected outputs of the equipment to be purchased. This made the medical equipment purchase budget more in line with reality and reduced unnecessary idle equipment. Activity-based costing analyzes the constituent factors that drive costs in the medical clinical service process and deeply calculates the actual resource consumption of each business. The activity-based costing method adopted by a certain hospital for the budget preparation of surgical departments refines the cost factors such as surgical process consumables, manpower, and equipment utilization, thereby improving the accuracy of consumable cost control in this hospital.

Second, coordinate the unified collaboration of all departments. Establish a budget preparation working group led by the hospital's leadership and mainly composed of departments such as finance, clinical practice, medical technology, and logistics. Determine the responsibilities of each department, such as the finance department for multi-department coordination and data consolidation, clinical departments providing business volume and resource requirements, and the procurement department providing market unit prices for procurement, etc. In addition, a communication platform for budget preparation should be established, and multi-departmental seminars should be held regularly to ensure the organic integration of budget targets and business implementation. A municipal hospital has effectively reduced the budget deviation rate of consumables by introducing a three-level review system of “department application - department preliminary review - committee final review” [10].

The third is to improve the basic database for budget preparation. Establish a basic database for hospital budgets, including incorporating the diagnosis and treatment data from the HIS system, the income and expenditure data from the financial system, and the resource consumption data from the HRP system into the hospital budget preparation. Also, effectively collect external data such as adjustments to

medical insurance payment policies and changes in centralized drug procurement prices, so as to achieve precise data and information support in advance during the budget preparation process. A provincial and municipal hospital in a certain province has adopted the construction of a big data analysis model. By applying the medical insurance DRG/DIP payment reform policy in advance, it has optimized the cost structure of disease types, resulting in a continuous increase in the medical insurance payment surplus rate.

4.2 Strengthen Internal Cost Audit Supervision

In view of the problems such as the weak internal audit force and the insufficient play of the role of audit supervision in public hospitals, public hospitals should establish an all-staff and all-process audit supervision mechanism. First, expand the scope of audits. In addition to the traditional audits of the legality and compliance of financial revenues and expenditures in public hospitals, incorporate the economy, efficiency and effectiveness of budget execution into the audit scope, and increase audits on the effectiveness of resource utilization and cost control. For instance, a certain hospital conducted an audit on the efficiency of medical equipment usage. Through the analysis of relevant indicator data such as the operating rate of medical equipment and the positive rate of examinations, It is proposed that the equipment with low utilization efficiency should be adjusted or stopped for use to improve the utilization efficiency of the equipment, so as to greatly increase the average utilization rate of medical equipment in this hospital.

Second, improve the dynamic audit tracking system. A linked audit mechanism of “regular audit + special audit + real-time monitoring” is implemented to track and supervise the budget execution in real time [11]. By means of information technology, the budget execution data is imported into the audit platform, early warning thresholds for key indicators are set, and real-time monitoring of abnormal revenues and expenditures is implemented. The audit platform of a certain hospital has set an early warning line for the expenditure on drugs, medical devices and other consumables. When the department's usage reaches or exceeds this line, the system will issue a warning, and the audit department will proactively conduct audit supervision, which has played a significant deterrent and inhibitory role.

Third, enhance the utilization of audit results and accountability. Establish and improve the audit rectification ledger, urge the determination of rectification responsibilities and time limits, and regularly monitor the rectification situation. For issues such as budget execution overruns and illegal use of funds, strict accountability will be imposed in accordance with the relevant hospital regulations. If the department head of a certain hospital has a budget execution deviation rate greater than 15% for two consecutive years, performance points will be deducted and the qualification for annual excellence evaluation will be cancelled. Moreover, the audit results will be incorporated into the performance assessment and resource allocation of the department to form a reward and punishment incentive and restraint mechanism. If a certain hospital stipulates that departments with compliant budget execution and better cost control will be appropriately given preferential treatment in the budget of the following

year, it will prompt all departments to voluntarily strengthen budget management.

4.3 Intensify Efforts in Information Construction

Regarding the drawbacks of incomplete information systems, public hospitals should establish an integrated and automated budget management information system. Firstly, it is necessary to break the data isolation of the system, achieve data connection of the system, and link business systems such as HIS, HRP, and financial accounting to unify processes and data interfaces. Enable the data and information of each link such as budget preparation, budget execution and budget analysis to be interactively obtained. When a certain hospital was implementing an upgrade project based on HRP, it integrated the budget management module with modules such as material management, equipment management, and performance management. From budget preparation, procurement application, warehousing and usage, cost accounting to performance evaluation, it ensured the data connection throughout the entire process. Reduce manual data entry errors and improve the efficiency of budget management.

Second, enrich the system content and enhance the level of intelligent analysis and early warning. Introduce big data analysis into the budget management system, adopt machine learning methods to mine budget execution data, make judgments on future cost changes, and provide a basis for cost control [12]. For instance, a certain hospital in Mianyang City, Sichuan Province, utilized a data analysis model to predict changes in drug prices and revised its procurement planning in a timely manner, saving over 5 million yuan in drug procurement costs. In addition, enrich the system's early warning module, set early warning thresholds for drug cost execution indicators, hospital cost execution indicators, medical insurance expense execution indicators, etc. When the indicators exceed the thresholds, the system will promptly push early warning information to relevant responsible persons to achieve early detection and early intervention of risks.

Secondly, strengthen the construction of the information technology personnel team. First, introduce personnel who can not only do a good job in information technology but also be familiar with the business work of the hospital to supplement the talents in budget management informatization. Second, regular information technology business training should be conducted for personnel in finance, auditing, clinical and other fields to enhance the information technology application level of all staff [13]. A certain hospital organized a special training session on "Enhancing the Application Capacity of Budget Management Informatization". The budget preparers in each department were able to proficiently use the system and learn common data analysis tools. The efficiency of budget preparation was greatly improved. A long-term mechanism for information system updates was established, and the system was regularly upgraded and optimized, promoting each other with the hospital's management needs.

5. Conclusion

Under the background of the new situation, the internal management level of public hospitals is constantly improving, and financial management is one of the key points of the work. Comprehensive budget management can play an important role in the internal cost control of public hospitals and has a positive promoting effect on improving the overall internal control management level of public hospitals and enhancing the overall service quality. Although there are still many challenges in the application of comprehensive budget management in the internal cost control of public hospitals, a profound interpretation of relevant national policies, combined with the actual situation of the hospital, and in the process of cost management, by improving the internal upgrade supervision intensity, increasing information construction, and strengthening information construction at the same time, it can better help public hospitals optimize resource allocation through comprehensive budget management. Improve the overall service level.

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