

Discussion on the Operational Efficiency of Public Hospitals under the Background of "National Examination"—Taking a Public Hospital in Wuhan as an Example

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Abstract: The three-level public hospital performance appraisal (commonly known as the "National Test") launched in 2019 has prompted public hospitals to strengthen the following four aspects of hospital management: medical quality, operational efficiency, sustainable development and satisfaction evaluation. This article analyzes one of the most important first-level indicators—operational efficiency, in order to strengthen the awareness of performance appraisal in public hospitals. It addresses the problems of insufficient coordination and cooperation of functional departments, relative shortage of operating talents, performance appraisal systems to be improved and inadequate hardware resource allocation. By improving the organizational structure, promoting the efficiency of resource utilization, establishing a scientific performance evaluation system and strengthening the management of consumables, the goal of refined hospital management will be achieved. On this basis, the focus of development of tertiary public hospitals will be promoted from scale expansion to quality and efficiency, and the mode of hospital management will be changed from extensive administrative management to comprehensive performance management, which can promote more scientific and fair income distribution, and to improve efficiency and quality, and promote the implementation of comprehensive reform policies in public hospitals.

1. Introduction

In 2019, in order to implement the "Opinions of the General Office of the State Council on Strengthening the Performance Appraisal Work of Tertiary Public Hospitals" (State Council [2019] No. 4), scientifically carry out the performance appraisal work of tertiary public hospitals, and ensure that the performance appraisal data are objectively comparable, the National Health Commission issued the "Operation Manual of Performance Appraisal of Tertiary Public Hospitals (2019 edition)". In the whole index system, there are 4 first-level indicators, 14 second-level indicators and 55 third-level indicators. Performance appraisal is the "baton" and "bull nose" to

promote the development of public hospitals and guide the scientific, standardized and high-quality development of public hospitals [1].

2. Indicator positioning and orientation analysis

2.1 Indicator positioning

The four first-level indicators of the "National examination" include medical quality, operational efficiency, sustainable development and satisfaction evaluation. Providing high quality medical services is the core task of tertiary public hospitals. Operation efficiency reflects the level of hospital's fine management. Talent team construction and teaching and research ability reflect the hospital's sustainable development ability, which is an important indicator to reflect the innovative development and sustainable and healthy operation of tertiary public hospitals. Patient satisfaction is an important manifestation of social benefits of tertiary public hospitals, and improving medical staff satisfaction is an important guarantee for hospitals to provide high-quality medical services [2].

2.2 Orientation analysis

After the analysis of 55 three-level indicators of the "National Examination", the following nine directions are summarized (as shown in Table 1):

Table 1: Performance appraisal index guidance analysis table of tertiary public hospitals

SN	Index guidance	Keys and difficulties	Countermeasures
1	Functional localization of difficult critical cases	Rate of third and fourth grade surgery, CMI	DRG
2	Public welfare	Cost-control	Central procurement of drug and consumables, rational use
3	Implement the medical reform	Graded diagnosis and treatment	Medical union
4	Personnel training	Standardized teaching	Discipline construction, personnel training, two-wheel drive
5	Scientific research	Innovation	Team, platform, project and result transformation
6	Optimize the service	To improve the patients' medical experience	Medical service pre-registration in smart hospital
7	Medical quality and safety	Implementation of core system	Training, supervision and evaluation
8	Medical operation efficiency	Average length of hospitalization, on-time operation rate	Based on resource utilization assessment
9	Sustainable development	Talent team	Incentives

2.3 Importance of operational efficiency

According to the requirements of the "Opinions of The General Office of the State Council on Strengthening the Performance Appraisal Work of third-level Public Hospitals [2019] No. 4", the basic principle of the performance appraisal work of third-level public hospitals is to adhere to the public welfare orientation and improve the medical service capacity and operational efficiency. The goal is to promote the development mode of tertiary public hospitals from scale expansion to quality and efficiency through performance assessment, and the management mode from extensive administrative management to all-round performance management, so as to promote more scientific and equitable income distribution, improve efficiency and quality, and promote the implementation and effectiveness of the comprehensive reform policy of public hospitals [2].

The weight of the four parts of the "National examination" (medical quality, operational efficiency, sustainable development and satisfaction evaluation) is about 4:3:2:1, among which the assessment of hospital operational efficiency accounts for a relatively large proportion, which directly affects the results of hospital performance assessment, and is also one of the inevitable requirements to further promote the "three changes" and achieve the "three improvements".

3. Problems in public hospitals

3.1 Inadequate coordination and cooperation between functional departments

Under the traditional organizational structure of public hospitals, business management is mostly vertical management mode. Although centralized and unified command is guaranteed and the rights and responsibilities of all levels are clear, many matters involve the cross-functional of multiple departments in the actual operation of hospitals. Vertical management implemented by levels is not conducive to the integration of management systems such as quality and efficiency, and it is easy to cause management to become a mere formality. There are many assessment indicators of tertiary public hospitals, involving medical management, nursing management, human resources, energy consumption records, equipment management and other aspects[3]. Therefore, it is necessary to carry out multi-department collaboration in the form of "MDT" to realize timely communication and knowledge sharing among departments. The hospital needs to set up a separate operation management department, or determine an internal organization with the lead function of operation management, and change the vertical management according to the level to flat direct management, strengthen layout planning and overall coordination, so as to promote the coordination of multi-department management.

3.2 Relative shortage of operational talents

In the Notice on carrying out the "Annual Activities of Economic Management of Public Medical Institutions" issued by the National Health and Health Commission, it is clearly required to promote business and financial integration and promote the quality and efficiency of economic management. The integration of industry and finance requires both clinical business knowledge and financial knowledge. For large public hospitals, hospital business has a high degree of specialization and highly concentrated professional knowledge. Some clinical managers only understand business but not management, and some administrative personnel only understand management but not business, so they lack compound talents.

3.3 The performance appraisal system needs to be improved

Take a public hospital in Wuhan as an example. According to the policy requirements of Strengthening the Construction of "Nine intolerances" issued by the National Health and Health Commission and the State Administration of Traditional Chinese Medicine in December 2013, the hospital has implemented a performance reform plan with balanced scorecard as the core since 2014, breaking the previous revenue and expenditure balance accounting model and taking performance budget as the core. The evaluation system of four dimensions of department cost control, workload, work efficiency and public welfare has been established to comprehensively reflect the operation performance of the department. However, some indicators of the balanced scorecard, such as talent indicators and management indicators, are difficult to be measured by quantitative indicators, resulting in fuzzy assessment of some dimensions, which is not conducive to reflecting the risk technology differences of different positions, and is not conducive to stimulating the enthusiasm of employees. For administrative logistics managers, the common practice in hospitals is to implement the "average performance bonus", which cannot reward hard work and punish laziness. And the assessment is more of a formality, not in the assessment process to find and solve problems. The scope of application of the assessment results is only for performance allocation, and it does not play a due role in the operation and management of the hospital. For example, the performance plan is not timely adjusted according to the internal and external environment, and the scientific nature is only reflected at a certain stage, etc., which are all manifestations of the assessment being mere formality[3].

3.4 Improper allocation of hardware resources

The budget for public hospitals of the National Health Commission in 2023 is 4739.6703 million yuan, a decrease of 1940.9774 million yuan (29.05% decrease) compared with the actual amount in 2022. Major public hospitals have continued to advocate a "tight life" in recent years. Under the premise of tight budget, how to allocate the existing site, platform, equipment and other resources to different uses to meet the diversified needs of various types of business in the hospital to the maximum extent is a test of the resource allocation level of the hospital. For public hospitals, especially large public hospitals, large projects, multiple hospital areas, and dispersed resources are not conducive to unified management and easy to cause resource waste, which requires hospitals to open up the allocation of resources among hospitals and departments.

4. Measures to improve operational efficiency

4.1 Improve the organizational structure

At the end of 2020, the National Health Commission and the National Administration of Traditional Chinese Medicine jointly issued the "Guiding Opinions on Strengthening the Operation and Management of Public Hospitals" (National Health Finance (2020) No. 27), under the guidance of the spirit of which, the hospital established an operation and management committee, led by the president and the secretary, led by the chief accountant, and the deputy director of the hospital. The heads of the medical, teaching and scientific research departments closely related to the operation of the hospital as members will be independent of the operation from the financial management, re-sorting the process, emphasizing the coordination of management, and dedicated personnel.

4.2 Improve the efficiency of resource utilization

4.2.1 Improve the utilization efficiency of operating room resources

In order to standardize the operation order and improve the efficiency of operating tables, the hospital regularly carries out special actions for on-time operation, and includes them in performance assessment. The on-time rate of the first operation increased from 60% before actions to 90%. Spare operating rooms were closed, and the average number of daily operating tables per operating room increased from 2.87 before to 3.18. In addition to improving the on-time opening rate and consecutive operation rate, the development of the visualization module of the entire operation management is also important to effectively improve the utilization rate of the operating room [4].

4.2.2 Encourage non-working day surgery

"Efficient medical treatment" mainly focuses on three time points - the time to stay in bed before hospital, the time to wait before surgery, and the time to stay in hospital after surgery [5]. In this regard, on the basis of the completion of the working day surgery points index, the hospital sets up a reward for non-working day surgery points (on the basis of the working day surgery reward, 50% will be directly awarded to the surgical team), promotes the full and reasonable use of operating room resources, alleviates the problem of patients' long waiting time for surgery (especially across weekends), and reduces the average length of hospitalization, thus improve the bed turnover rate and the efficiency of medical operation.

4.2.3 Implement centralized reservation and online self-billing for large-scale equipment inspection

Centralized reservation for large-scale equipment inspection items should be implemented, so that the utilization rate of large-scale inspection equipment will be improved, the cost and waste will be reduced, the time from appointment to inspection to report will be shortened.

It is necessary to exploit online self-service billing, which aims to include common examination items that are in high demand by patients into the appointment list. So time-sharing and triage can be realized and crowd can be avoided. Patients do not have to wait for a long time. The overall medical efficiency and patient satisfaction will be improved. Taking a public hospital in Wuhan as an example, the average waiting time for appointment of large equipment inspection items at this stage is significantly reduced compared with 2021, as shown in Table 2.

Table 2: Changes in the reservation waiting time of large equipment inspection compared with 2021

Large equipment inspection items	Current average reservation waiting time (h)	Average reservation waiting time in 2021 (h)	Decrease in 2021 compared with 2019
CT	2	16	88%
MRI	30	48	38%
General radiation	1	2	50%
Ultrasound B	2	9	78%

4.2.4 Establishing a common Device Management Platform

A public equipment management platform that can be reserved across hospitals should be established. Equipment can be deployed and used in a unified way by encouraging departments to

put idle equipment into the platform. Accordingly, optimal allocation of resources will be promoted, repeated purchase of equipment will be avoided, and the efficiency of utilization will be improved.

4.3 Establish a scientific performance appraisal system

4.3.1 Establish a performance appraisal system reflecting post differences

Taking a public hospital in Wuhan as an example, since 2018, it has continued to promote the performance reform of sub-sequence (medicine, nursing, technology and management) with knowledge value as the orientation and resource efficiency as the goal; At the same time, the rules of income distribution has been standardized, a performance distribution system based on primary distribution has been established to ensure fairness and justice. The hospital continuously improves the gold content of operating income, effectively controls operating costs, so as to promote the high-quality development of hospitals. Special attention should be paid to the systematic and objective quantitative assessment indicators and measurement methods for medical, nursing and technical sequences. In contrast, the assessment standards for administrative and logistics managers are not easy to quantify. Besides the basic indicators such as rank and title, length of service, etc., the hospital divides 20% of the original fixed performance, which can be adjusted by the direct management leadership according to the actual work performance of the employees, rewards the good and penalizes the bad, using economic leverage to mobilize the enthusiasm of managers and further improve management efficiency. Taking a specific management department as an example, 80% of the 20% dynamic performance is determined by the post coefficient, and the other 20% is allocated by the department head according to the specific performance of the employee's work completion quality in the month and the completion of temporary tasks. The post coefficient is comprehensively assessed by the knowledge ability level (20%), problem solving ability (60%) and risk responsibility (20%), and is approved once a year on the basis of following the differences of positions, refining the assessment indicators to really make an incentive role.

4.3.2 Performance reform in bottleneck departments

In the performance reform plan for medical technicians, the waiting time of appointments is included in the assessment, which changes the drawbacks brought by the overall efficiency assessment of the department, implements more refined assessment based on workload and RBRVS (resource-based relative value ratio), strengthens the efficiency of resource utilization, improves the efficiency of medical service, and greatly arouses the enthusiasm of the medical technology departments.

4.3.3 Timely and dynamic adjustment of performance appraisal indicators

In order to adapt to the assessment and DRG payment trend of national third-level public hospitals, the hospital continuously and dynamically revised the physician balanced scorecard performance assessment indicator system, and gradually incorporated DRGs-related indicators, cost control indicators, the intensity of use of inpatient antibiotics, and the utilization rate of Class I incision prevention into the performance assessment, giving full play to the role of the "baton" of performance assessment.

4.4 Strengthen the management of the use of drugs and consumables

The hospital sets up a secondary warehouse in all surgical departments and puts into effect "one thing, one code" scanning and charging system of consumables, completing a closed loop from

bidding to settlement. In 2022, the average drug cost and consumable cost per CMI decreased by 20.4% and 10.6% respectively, which means the medical burden on patients was further alleviated.

5. Conclusions

The "National examination" of public hospitals is conducive to improving the quality and efficiency of medical services and enhancing the enthusiasm and creativity of medical staff. It is helpful to deepening the reform of the medical and health system and promoting the high-quality development of public hospitals. It is beneficial to implement the performance appraisal system of public hospitals and improve the modernization level of hospital management. Public hospitals should take the "National examination" as an opportunity to continuously improve medical services, enhance the level of fine management, promote the stable and orderly development of hospitals, and the implementation of the Healthy China strategy.

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