Practice of and Reflection on Medical Consortium by County-Level Hospitals Trusted to Provincial-Level Leading Hospitals

Jin CHEN\textsuperscript{1,a}, Hong HU\textsuperscript{2,b,*}, Wei-Wei DU\textsuperscript{2,c}, Jia-Long ZHU\textsuperscript{2,d}

\textsuperscript{1}College of Health Science and Nursing, Wuhan Polytechnic University, Wuhan, 430023, China
\textsuperscript{2}Renmin Hospital of Wuhan University, Wuhan, 430060, China
\textsuperscript{a}chenjin929@sina.com, \textsuperscript{b}honora320@live.com, \textsuperscript{c}8376327@qq.com, \textsuperscript{d}rmyyxcb@126.com

*Corresponding author

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Abstract. Building new regional medical consortium in the model of trusting county-level hospitals to provincial-level large-scale public third-level grade-A hospitals can optimize the allocation of medical resources, promote two-way referral system and rational shunting of patients, and drive multi-sited practice of physicians. Furthermore, it can constantly improve regional medical service level, and achieve the goal of medical reform—comprehensive reform of county-level public hospitals. By introducing general situation where two county-level hospitals are trusted to Hubei Provincial People’s Hospital, this study analyses its operation performance and existing problems, and then puts forwards developmental countermeasures and recommendations for provincial-level hospitals to hold county-level hospitals in trust to build a medical consortium, including driving reorganization of medical resources, making clear roles of all the parties concerned, clarifying internal governance structure of hospitals under trust, reinforcing policy guidance, enhancing internal developmental force of trusteeship, intensifying supporting, and improving functions of medical consortium incrementally.

Introduction

Medical consortium is a type of syndicate of medical institutions mainly consisting of cross-administration subordination and cross-asset subordination of medical institutions of different levels and categories, which promotes the downward movement of high-quality medical resources and improves basic-level medical service capacity through the longitudinal flow of resources within medical consortium. Currently, medical consortium roughly forms “four fields”: alliance of urban medical institutions, linkage of county-level medical institutions, link of big urban hospitals and county-level hospitals, and alliance of provincial medical institutions.

Hospital trusteeship model is an important way for city-level major hospitals to be linked with county-level hospitals to build a medical consortium. It is mainly about putting administrative power, power of assignment of personnel and decision-making power in operation and management under the trusteeship of medical institutions on the premise of maintaining their nature, subordination, status of employee and responsibilities, and maintaining financial input of governments of all levels and relevant policy. Trusteeship model can strengthen the sense of responsibility and sense of mission of trustee hospital, and is conducive to the building of two-way referral system with clear-cut responsibilities and flexible mechanism and relatively close coordination and distribution of responsibilities between medical institutions of different levels. Organizations like Shanghai Ruijin Medical Group have already made effective attempts \cite{1}.
Practice of Hubei Province People’s Hospital Holding County-level Hospitals in Trust

To further implement the requirements stipulated in Opinions on Comprehensive Reform Experimentation of County-Level Public Hospital of the State Council, medical reform of Hubei Province should be advanced in a deep-going way. Since 2011, with the strong support of the Health and Family Planning Commission of Hubei Province, Hubei Provincial People’s Hospital (Renmin Hospital of Wuhan University) directly held two county-level hospitals in Hubei Province in trust—Hanchuan City People's Hospital and Zhongxiang City People’s Hospital, and conducted new experimentation of regional medical consortium.

Characteristics of Trusteeship Model within Medical Consortium after Over Three Years of Operation

**Trusteeship Exercises “Five Maintains”**. After the implementation of the trusteeship, medical institutions within medical consortium maintains its status of an independent legal entity, property subordination, channels for financial investment, functional positioning of institutions, and status of employees. Overhead of medical institutions within medical consortium is appropriated in the original way, that is, acquiring budget fund from finance of governments of all levels; capital construction of regional health planning and configuration of large equipment should be conformed to that local government finance is responsible for the input; stock assets and incremental assets of medical institutions under trust are all managed by local governmental state-owned assets authorities. Trusteeship expenses are used to pay personnel management expense of trustee and are subject to the supervision of the both sides.

**New Hospital Governance Structure**. is established. President-in-charge system headed by hospital management council is practiced in trustee hospital, which realizes the separation of public service from government and the separation of the right of management from the right of ownership. Hospital Management Committee consists of trustor, trustee and government administrative management authority having jurisdiction over the hospital in trust, and trustor acts as the chairman of the Management Committee. The Committee is the supreme management organization and policy-making organ for county-level hospitals which exercises the following powers: determining development strategy and development planning for hospital in accordance with national medical and health policies and laws and regulations, exercising hospital’s decision-making over big issues; reviewing and approving work reports and annual plans of presidents, examining financial budget and final account of hospital; reviewing candidates for vice presidency nominated by presidents, and appointing after reporting for approval in accordance with administration authority of leaders; confirming institution setting of hospital management and deployment of post holders; exercising the right of supervision over the work of leadership of hospital, the right of performance evaluation, and power of distributing salary.

**Optimize Allocation of Medical Resources**. It is recommended to “transplant” scientific management concepts and systems to county-level hospitals and “transplant” scientific, standard management system, procedure and experience of third-level grade-A hospitals to county-level hospital by sending presidents and management team, to further increase management quality and efficacy of county-level hospitals and to improve their scientific management level in an all-round way; and formulate construction planning for key specialties of county-level hospitals in virtue of advantages of third-level grade-A hospitals in specialty and according to the development idea of “hospital having its highlight, department having its feature, doctor having his specialty”. Besides, more efforts should be made to develop key clinic specialties, further select specialties to build provincial-level key clinic specialties, and introduce new medical technologies which fill voids within regions by sending experts, sending doctors to study abroad, equipment renewal, collaboration of scientific researches and other opportunities to county-level hospitals.
**Experiment with Multi-sited Practice of Physicians.** After trusted, flexible personnel flow is practiced in hospitals within medical consortium, sites of medical staff to diagnose and treat are allocated uniformly, and new staff is trained in rotation within medical consortium. Within medical consortium, the scope of practice of medical staff of provincial-level hospitals is extended to multiple medical institutions within medical consortium, and relatively fixed long-term cooperation model is built among doctors with the same specialty within medical consortium. Professionals “are appointed as heads in lower-level institutions” within the term of trusteeship: provincial-level hospitals increase the output of technology and talents, send experts to county-level hospitals to serve as heads of departments; and build a free educational training system which receives medical staff of county-level hospitals to further studies and to receive degreed education, continuing medical education program and medical training.

**Initiate Level-to-level Diagnosis and Treatment.** Two-way referral system is the key to the construction of medical consortium. Medical consortium builds a collaborative work mechanism, and gradually forms the rational pattern where county-level initial diagnosis, two-way referral system, treatment by urgency of the disease, reserved diagnosis and treatment; and meanwhile unblock green channels for treating patients with serious diseases or critical illness; achieve vertical integration of resources, advance the establishment of the mechanism of division of labor and cooperation, and provide residents with continuous medical service covering more processes, and every process is managed by relevant staff from different medical institutions, from diagnosis, treatment, rehabilitation to prevention and healthcare and personalized health management.

**Result**

**Cost-benefit Analysis of Hospital Trusteeship**

The “cross-level trusteeship” model where provincial-level medical centers are linked with county-level hospitals can realize the rational allocation of health resources, sharing of medial service results by letting big hospitals to lead small hospitals and the strong to help the weak, allowing grass roots to enjoy advanced treatment technology and superior medical service of big hospitals in provincial capitals in their hometowns without “leaving their county”, achieving “the goal of increasing outpatient rate within county to around 90%, and basically reaching the goal of the medical reform of county-level public hospital—“serious illness can be treated within county”. See Table 1 for details of trusteeship performance.
Table 1. Contrastive analysis of trusteeship performance (take the Hangchun City People’s Hospital in trust since 2011 as an example).

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of outpatients</th>
<th>Number of discharged patients</th>
<th>Number of operations</th>
<th>Business income (RMB)</th>
<th>Success rate of rescuing critically ill patients (%)</th>
<th>Ratio of drug expenditure to total expenses (%)</th>
<th>Total amount of material benefits issued (RMB)</th>
<th>Total amount of performance distribution (RMB)</th>
<th>Number of city-level key specialties</th>
<th>Number of key specialties of province-wide county-level hospital</th>
<th>Decrease rate of referral outside the city (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>292,000</td>
<td>27,900</td>
<td>6,327</td>
<td>162,000,000</td>
<td>92.0</td>
<td>45.64</td>
<td>1,580,000</td>
<td>15,700,000</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>309,000</td>
<td>32,700</td>
<td>6,570</td>
<td>200,000,000</td>
<td>90.9</td>
<td>43.36</td>
<td>1,380,000</td>
<td>27,130,000</td>
<td>7</td>
<td>0</td>
<td>2.20</td>
</tr>
<tr>
<td>2012</td>
<td>351,000</td>
<td>37,500</td>
<td>9,879</td>
<td>241,000,000</td>
<td>95.4</td>
<td>41.10</td>
<td>2,030,000</td>
<td>33,990,000</td>
<td>12</td>
<td>0</td>
<td>1.90</td>
</tr>
<tr>
<td>2013</td>
<td>535,000</td>
<td>46,100</td>
<td>12,837</td>
<td>397,000,000</td>
<td>97.6</td>
<td>39.39</td>
<td>3,670,000</td>
<td>37,810,000</td>
<td>13</td>
<td>3</td>
<td>3.14</td>
</tr>
</tbody>
</table>

Note: In January 2016, the hospital was promoted to third-level hospital from second-level grade-A hospital.

The analysis above shows that after the trusteeship of provincial-level leading hospital, business income, total amount of material benefits issued, total amount of performance distribution for employees of Hanchuan City People’s Hospital are all on the rise, while its ratio of drug expenditure to total expenses declines year by year, reducing the burden of patients and improving social benefit and revenue of the hospital; besides economic growth, the amount of its business increases steadily, and the number of outpatients, total number of discharged patients, and success rate of rescuing critically ill patients all rise year by year, while ratio of drug expenditure to total expenses decrease year by year, which mirrors enhanced professional proficiency of hospital and improved service level. Over the three years of trusteeship, Hanchuan City People’s Hospital develops rapidly, the number of city-level key specialties tops ten, and province wide county-level hospital key specialty arises from zero. Besides, in 2016, the Hanchuan City People’s Hospital was promoted to “third-level grade-B” general hospital, making a historical breakthrough in hygiene of Hanchuan. These data indicate that with the support of trusteeship of provincial-level leading hospital, and with scientific and reasonable management, overall operating efficiency of the hospital is greatly promoted, thus helping economic operation of the hospital enter a virtuous circle.

Discussion

Analysis of Existing Problems in County-level Hospitals Trusted by Provincial-level Hospitals

The “Five Maintains” Have Its Advantages and Disadvantages. That trusteeship practices “five maintains” avoids the major issue of adjustment of property right structure of hospital and decreases real-world resistance for hospital trusteeship, but there are some drawbacks in the meanwhile. This is mainly because legal status of hospital in trust can only be clarified and realized through contract on the premise of level-to-level administration implemented by public hospitals, so there are some risks and uncertainties, as well as overdependence on relevant governmental policies. Therefore, provincial-level hospitals are very hesitant to spare no effort to advance cross-regional and cross-level
trusteeship and carry out long-term and close cooperation between hospitals. Even if they are bound up through special measures like administration in the short-term, it may be a transient market alliance, which is not sustainable.

**Hospitals Have Unsmooth Management System.** Medical consortium, which integrates resources vertically with trusteeship model, is a breakthrough from graded hospital system. However, since there exits uneven developments of medical level, human resources, management level, service level, and economic level, there are conflicts between different medical institutions in business integration, information standard, and even cultural ideology. Although trusteeship model achieves the separation of and balance between contributor (government)’s decision-making power over big issues, management committee’s hospital management decision-making power and president’s hospital management executive power, the status of president delegated by provincial-level hospital in corporate governance structure of current hospital is not clear yet, its management performance remains to be seen.

**A Lack of Constantly Effective Mechanism Balancing Interests.** At present, Chinese public hospitals mostly practice the operating mechanism of “appropriating income and allocating surplus” [2]. When medical consortium is built with trusteeship model, provincial-level hospitals will increase their costs when sending out their managers and medical technicians, while county-level hospitals will decrease its revenues by referring patients, all this will cause conflict of interest within medical consortium. The smooth going of the trusteeship of the two county-level hospitals abovementioned is largely credited to administrative support provided by local governments to a great extent, especially the support in land and fund. More, if provincial-level hospitals need to keep investing personnel and energy, they need to maintain the stability of policy and seek an equilibrium point of interests of the parties concerned.

**It Is Hard to Implement “Downward Referral”.** Provincial-level hospitals are concerned with medical safety of referrals due to factors like medical level and trust of patients [3]. Since county-level hospitals are generally of low medical level, “downward referral” may increase potential medical safety hazards and the probability of occurrence of patient-hospital disputes. Besides, intricate partition of medical liabilities affects the efficacy of two-way referral.

**Development Countermeasures and Recommendations for the Building of Medical Consortium by County-level Hospitals Trusted by Provincial-level Hospitals**

**Drive Reorganization of Medical Resources.** Reorganization of medical resources is the reconfiguration of medical resources under competitive mechanism, including reorganization of medical institution at the micro level and reintegration of medical service system at the macro level. Meanwhile, the reform of property right structure of public hospital involves profound zone of reform of medical service in China, where there are too many uncertainties and high risks. IOT (Investment-Operation-Transfer) model practiced by Phoenix Healthcare Group can be an example. IOT hospital trusteeship does not change ownership and non-profit nature of public hospitals, and its key lies in building an effective corporate governance structure and an operation mechanism which pursues efficiency [4]. By drawing on this model, provincial-level hospitals can take advantageous medical resources, such as brand, talents and technology, as an investment to exchange for operation power of county-level hospitals; hospital management service fees are collected when trusteeship goal agreed by both parties is achieved. Under the IOT model, the government should practically strengthen supervision and guidance while adhering to public nature of county-level hospital.

**Make Clear Roles of All the Parties Concerned.** The most important value of practicing hospital trusteeship is to drive and promote the establishment of rational level-to-level diagnosis and treatment institution and system. This goal is hard to achieve when we only rely on spontaneous behavior of
medical institutions, so gain sharing and risk sharing mechanism must be established, or it is hard to achieve real integration of resources. County-level governments and health authorities should innovate governmental management style, practically implement planning, admission, regulation and supervision functions, and play a leading role in the practice of planning and building of consortium of regional medical service. Provincial-level hospitals emphasize the output of brand, technology, management, capital and excellent executive team, the amplification of value of advantageous medical resources, and the realization of sustainable recreation of value of hospital. While county-level hospitals should pay more attention to improve management level and technological level, reinforce regional medical treatment and service while adhering to public welfare and improving economic and social benefits.

**Clarify Internal Governance Structure of Trustee Hospital.** It is necessary to further deepen the reform of county-level public hospitals, proactively advance the reform of medical service system, especially speed up the reform of governance mechanism, financing system, payment system, staffing and distribution system of county-level hospitals under trusteeship model. It is necessary to build and perfect corporate governance structures like the council (management committee) at the medical consortium level, which not only ensures rights and obligations of the government as the owner of county-level hospitals, but also makes medical consortium relatively independent from health authorities and enjoy full micro-management autonomy in staffing and employment, performance assessment and cost accounting management and other operation mechanisms, truly realizing the separation of public service from government and the separation of management from enforcement[5].

**Fortify Policy Guidance, Strengthen Inner Developmental Force of Trusteeship.** It is recommended to explore green channels for various policies, such as health insurance, finance, and price, within in medical consortium in trust. Besides, insured people in counties should be allowed to see a doctor within medical consortium, which can be done by different medical institutions, and insured quota can be divided and then settled; certified medical practitioners of member institutions within medical consortium should be allowed to practice within the scope of medical consortium and free from the restrictions of sites of practice; regional limitations should be broken; and medical business management and functional integration of medical consortium should be carried out by the virtue of the construction of specialties.

**Strengthen Supporting and Improve Functions of Medical Consortium Incrementally.** First, optimize two-way referral system. It is advisable to implement provincial health one-card for residents, build a platform for information sharing and reservation system and system of treatment transfer, and coordinate the order of seeking the doctor. Second, strengthen construction of information system, build remote consultation center and regional medical image center, clinical laboratory center, and overcome the difficulty in mutual recognition of test results between different medical institutions. Third, practice total quality management within medical consortium, formulate quality standards for medical examination applicable to medical institutions of all levels, ensure overall management and stable quality, apply the PDCA cycle to conduct general management over the operating quality of medical consortium, and find and solve problems timely. Fourth, continue to exploit and increase the potential of medical consortium brand image, and strengthen publicity and popularization of the medical consortium to make more patients in counties acknowledge medical consortium.

**Conclusion**

Building regional medical consortium by putting county-level hospitals under the direct trusteeship of provincial-level large-scale public third-level grade-A hospitals is one of the new directions explored
by the reform of county-level public hospital right now. For provincial-level hospitals, holding county-level hospital in trust to build an “medical consortium” is an effective choice for medical institutions to integrate their medical and health resources and optimize regional health resources in fierce market competition, as well as an important choice to improve regional comprehensive strength.

References


