Building China’s Regional Municipal Healthcare Performance Evaluation System:
A Tuscan Perspective

HAO LI, SARA BARSANTI, ANNA BONINI

Working paper n. 04/2012
Working Paper n. 04/2012

AUTHORS: HAO LI*, SARA BARSANTI*, ANNA BONINI*

* Istituto di Management - Scuola Superiore Sant'Anna di Pisa

Corresponding Author’s address:
Istituto di Management - Scuola Superiore Sant'Anna
Piazza Martiri della Libertà, 24 - 56127 PISA – Italy
tel.: (+ 39) 050 883 893
fax: (+ 39) 050 883 936
e-mail: hao.li@sssup.it
Web site: http://idm.sssup.it

Acknowledgments
The authors wish to thank Prof. Sabina Nuti, Prof. Lino Cinquini, Manuela Dal Poggetto and Maria Miettinen in Laboratorio Management e Sanità, Istituto di Management, Scuola Superiore Sant'Anna; Prof. Youhe Si and Ms Yusi Chen in the College of Economics & Business Administration, Chongqing University. Special thanks are due to the editor and the deputy editor and the anonymous reviewers for their continuous encouragements and insight comments in improving the quality of this paper.

Please quote this way:
Abstract

Regional healthcare performance evaluation system (PES) can help optimize healthcare resources on regional basis and to improve the performance of healthcare services provided. The Tuscany region in Italy is a good example in meeting these requirements. China is yet to build such a system based on international experience. In this paper, based on comparative studies between Tuscany and China we propose that the Chinese managing institutions can select and commission a third party agency to respectively evaluate the performance of their affiliated hospitals and community health service centers. Following some features of the Tuscan experience, the Chinese municipal PES can be built by focusing on the selection of an appropriate performance evaluation agency, the design of an adequate performance evaluation mechanism, and the formulation of a complete set of laws, rules and regulations. When a PES system at city level is formed, the provincial government can extend the successful experience to other cities.

Classification JEL: I18

Keywords: healthcare performance; performance evaluation system; evaluation agency; evaluation mechanism; evaluation laws, rules and regulations
Index

1. Introduction ......................................................................................................... 5
2. Performance evaluation comparison ................................................................. 6
3. Conceptual model: Key elements of a PES in health care ................................ 8
4. Discussion: changes and adaptations ............................................................... 10
5. Other aspects to be considered ........................................................................ 12
6. Conclusion & Policy Implications ....................................................................... 12
1. Introduction

China launched a new round healthcare reform in April 2009. Public hospitals are being separated from ownership and control [1]. Different levels of official ranks of public hospitals are being cancelled, which makes hospital directors focus more on strategic development of the hospitals rather than concerning about their own political status [1]. Corporate governance is being introduced into public hospitals [1, 2]. In parallel, many Chinese experimental cities are constructing community health service centers (CHSCs) [3, 4]. However, patients are reluctant to go to these centers because the facilities and services are of much lower quality and safety compared with those in hospitals, revealing an imbalance of resource allocation [5]. On the other side, the low efficiency of the healthcare system has caused big wastes whereas China is short of financial resources for healthcare. In order to improve the performance of the healthcare system, external accreditation and internal performance evaluation have been carried out in the Chinese hospitals. A new policy of paying for performance is also being implemented in the Chinese CHSCs [6], while China still lack of performance evaluation tools [7]. Although there are some Chinese literature on government performance evaluation, there is limited research in performance evaluation system (PES) in healthcare.

Tuscany region in Italy has been gaining more and more attention by international researchers for its outstanding healthcare performance in recent years [8-10]. The Tuscan regional healthcare PES is of particular attention to China, because it has been used as a governance tool for strategic management of its 12 local health authorities (HAs) and 5 teaching hospitals (THs). Besides performance evaluation to improve quality of care, the PES can also help identify where to reallocate health resources at regional level based on performance evaluation [11]. Although healthcare systems differ between Tuscany and China (Tab 1), it’s still possible that China may learn from Tuscany, e.g. the Tuscan PES is originated from Balanced Scorecard and multidimensional reporting [12-15], which have been widely used worldwide. As China is very big, it is difficult to implement a uniform performance evaluation model. The Tuscan experience is helpful for China to explore a new direction of performance evaluation that goes in parallel with accreditation.

The aim of the study is to make a first attempt to explore the possibility for some of the Chinese experimental cities to learn from the Tuscan healthcare performance evaluation experience. Following this exploration we try to propose a framework to build China’s own regional municipal healthcare PES.

---

1 In China’s old healthcare system since 1949, hospital directors have official ranks appointed by the government. Besides managing the hospitals as a manager, they also pursue for higher ranks as a government politician.
### Tab 1: Healthcare systems comparison between Tuscany and China

<table>
<thead>
<tr>
<th>Items</th>
<th>Tuscany</th>
<th>Experimental Chinese Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing</td>
<td>Tax-funded universal healthcare system; HAs get budgets from regional government on capitation basis; THs are reimbursed on DRG basis.</td>
<td>Government subsidies and a network of co-existing basic healthcare insurance schemes.</td>
</tr>
<tr>
<td>Hospital type</td>
<td>Few types; limited difference in service capacity</td>
<td>Various types; service capacities vary</td>
</tr>
<tr>
<td>Care</td>
<td>HAs provide healthcare services directly for primary care with GPs, prevention, public health and non acute hospitalization. THs provide second and tertiary services.</td>
<td>Hospitals provide both outpatient and inpatient services. Primary care, prevention and public health are provided by various hospitals, CHSCs and stations, clinics etc.</td>
</tr>
<tr>
<td>Cost containment</td>
<td>HAs and THs face a fixed budget</td>
<td>Hospitals &amp; CHSCs have to bear potential deficits and to control costs to be selected as a designated point provider.</td>
</tr>
<tr>
<td>Cooperation vs Competition</td>
<td>More cooperation than competition</td>
<td>More competition than cooperation</td>
</tr>
<tr>
<td>Payment</td>
<td>Inpatient services are free of charge. Outpatient services are charged of a ticket fee at the point of delivery.</td>
<td>Patients are charged at the point of service; Hospitals keep profit surplus as development funds and bonuses.</td>
</tr>
<tr>
<td>Place of buying drugs &amp; medicine</td>
<td>At outside independent pharmacies</td>
<td>At the hospitals and CHSCs</td>
</tr>
<tr>
<td>Patient choice</td>
<td>GPs as gatekeepers; a patient is required of a referral from the GP to go to a hospital</td>
<td>Patient can choose to go to a CHSC or a hospital</td>
</tr>
<tr>
<td>Health Information systems</td>
<td>A regional health information system collects data (patient health records) from HAs and THs.</td>
<td>Health information systems have been applied for years at local organizational level. Patient health records system is being implemented.</td>
</tr>
</tbody>
</table>

#### 2. Performance evaluation comparison

China has restarted quality accreditation and performance evaluation since 2005 after 8 years of suspension. In 2008, the Ministry of Health of China released a full set of indicators as reference standards for general hospitals to evaluate their performance [16]. Based on the 2008 version, in November 2009 a revision of the General Hospital Evaluation Standards, together with Implementation Rules were released [17] to ask for opinions from the public. As for primary care and public health services, in 2011 the Ministry of Health of China released The implementation guideline solution for the establishment of sample community health service centers [18] and Performance evaluation indicators for community health service institutions [19]. Performance evaluation has been embedded into accreditation.

In contrast, Tuscany has started performance evaluation since 2001, in the context that most of the data and information gathered by the regional health information system were not processed properly and taken good advantage of. These data were not presented in a simple way and the information was
Building China’s Regional Municipal Healthcare Performance Evaluation System: A Tuscan Perspective

inadequate for decision-making, which were not good for the management of the HAs and THs. Therefore, in 2004 the Tuscan regional government commissioned a public university 2 to develop and implement a regional healthcare PES, to monitor the operations of the local HAs and THs and to make sure that the planned regional goals could be achieved.

Table 2 compares performance evaluation practices between Tuscany and China [20-24]. The comparison is based on the Chinese indicators of hospitals of 2009 and the Chinese indicators of CHSCs of 2011 with the Tuscan PES indicators of 2009 [25].

Tab 2: Performance evaluation comparison between Tuscany and China

<table>
<thead>
<tr>
<th>Items</th>
<th>Tuscany</th>
<th>Experimental Chinese cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Analysis and reporting system</td>
<td>Organizational-level data presented in indicator-benchmarking with an annual public regional report</td>
<td>Field inspection with standards and a full set of indicators</td>
</tr>
<tr>
<td>Evaluation institution</td>
<td>A third party agency commissioned by the regional government</td>
<td>A committee of experts organized by the health administrative departments 3</td>
</tr>
<tr>
<td>Perspective</td>
<td>Multi-dimensional performance evaluation to monitor regional and local strategic goals</td>
<td>Overall evaluation on the activities and quality of care</td>
</tr>
<tr>
<td>Performance dimensions</td>
<td>Population health status, regional policy targets, clinical quality of care, patient satisfaction, staff assessment, efficiency and financial performance</td>
<td>Hospitals: Hospital functions and mission; patient safety goals; patient services; quality management and improvements; hospital management; medical quality evaluation indicators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHSC: institution management, public health services, primary care health services, traditional Chinese medicine services, and satisfaction</td>
</tr>
<tr>
<td>Targets</td>
<td>Specific targets (change every year) for each HA and TH</td>
<td>JCI standards and ISO 9001 standards</td>
</tr>
<tr>
<td>Performance rewarding system</td>
<td>Already in use</td>
<td>To be developed and implemented</td>
</tr>
<tr>
<td>Frequency of monitoring</td>
<td>Clinical quality indicators are quarterly monitored for internal use and feedback. Others are annually monitored.</td>
<td>Once every year</td>
</tr>
<tr>
<td>Accreditation</td>
<td>The PES provides parts of indicators for the accreditation of HAs and THs</td>
<td>Instant data acquired by the experts</td>
</tr>
</tbody>
</table>

The Tuscan PES serves as a supplement to overcome the defects of accreditation, making performance improvement efforts continuous. In many Chinese cities, the health administrative departments annually employ a committee of external experts to conduct field inspections on healthcare providers. The related quality improvement efforts are temporary: when the inspections are finished, most of the providers step back to their previous conditions of providing services. In this sense, the Tuscan framework can help

---

2 Scuola Superiore Sant’Anna of Pisa
3 In China, the health administrative departments (from national to local) include the MoH, the provincial BoH, the municipal BoH, and the district/county BoH.
consolidate performance improvement achievements. Further, the Ministry of Health of China indicators for accreditation emphasize reaching a certain level of standards instead of achieving specific goals, giving little attention to cost sustainability. In contrast, evidence from Tuscany indicates that higher performance can lead to lower costs [26]. As the representatives of government owners, the Chinese managing institutions also face cost constraints and it is their responsibility to apply another full set of indicators that are capable of internally tracking the performance of the hospitals and CHSCs, at the same time providing some data support for external accreditation.

3. Conceptual model: Key elements of a PES in health care

The transformation of Chinese hospitals from joint administration to the administration by one institution is based on Coase Theorem [27]. According to this theory, if the property right is well-defined and transaction costs are zero, then the most efficient or optimal economic activity will occur regardless of who holds the rights [28]. The Coase Theorem implies that in public policy, greater efficiency can be obtained by clearly assigning property rights, reducing and eliminating transaction costs [29]. In the Chinese hospital system, the relationship between the hospital and the government should be clarified and the property right system should be reformed [27, 30]. More deeply, the separation between ownership and control is being conducted to solve the governance problems [1].

However, the separation between ownership and control has caused some principal-agent problems. Both the principal and the agent may not have the same interests due to incomplete and asymmetric information [31]. It is important to minimize the agency loss. The stewardship theory is a supplement of the agency theory, which holds that interests of the steward are directed by organizational objectives [32], which can be understood in many ways. As for performance evaluation, these objectives can be defined as performance objectives, reflected and achieved by a series of performance indicators. If these objectives are agreed by both parties in a well-designed mechanism, healthcare directors may work in the best interests of their managing institutions. The evaluation agency plays an important role in designing this mechanism with the managing institutions.

According to the incentive mechanism, managers need to be motivated to maximize their efforts [33]. However, when rewards are dependent on data held by professionals, dysfunctional behavior may result [20]. Managers also seek benefits by performance gaming, distortion, data manipulation etc, which are to take advantage of the loopholes in the rules and systems under which they operate [34]. A proper supervision mechanism is therefore necessary to constrain the CEOs’ behaviors of not acting at the best interest of their principals.

Besides a good evaluation agency and a well-designed evaluation mechanism, a complete set of laws, rules and regulations should be in place to assure the effective functioning of both the evaluation agency and the evaluation mechanism. Tab 3 is a summary of the Tuscan PES reflected in three elements. Following some features that the Tuscan experience pointed out we propose that the Chinese experimental cities can start building their own regional PES based on these three elements.
Tab 3: The three elements of healthcare PES

<table>
<thead>
<tr>
<th>Elements</th>
<th>Key Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation agency</td>
<td>- Third agency without direct relations with HAs and THs;</td>
</tr>
<tr>
<td></td>
<td>- Multi-disciplinary background;</td>
</tr>
<tr>
<td></td>
<td>- Able to conduct performance evaluation activities and training activities</td>
</tr>
<tr>
<td>Evaluation mechanism</td>
<td>- Measuring principles and evaluation methods</td>
</tr>
<tr>
<td></td>
<td>Balanced scorecard, multi-dimensional reporting, inter-organizational benchmarking</td>
</tr>
<tr>
<td></td>
<td>- Performance incentive mechanism</td>
</tr>
<tr>
<td></td>
<td>Financial incentive (variable wage compensation for performance) and non-financial incentives (the honor of achieving good performance, reputation</td>
</tr>
<tr>
<td></td>
<td>damage)</td>
</tr>
<tr>
<td></td>
<td>- Performance supervision mechanism</td>
</tr>
<tr>
<td></td>
<td>A transparent PES, CEO presentation of “best practice experience” in regular meetings, public involvement in supervision</td>
</tr>
<tr>
<td>Evaluation laws, rules and</td>
<td>- Set of laws</td>
</tr>
<tr>
<td>regulations</td>
<td>to make performance evaluation a compulsory activity for the HAs and THs;</td>
</tr>
<tr>
<td></td>
<td>to appoint the evaluation agency and stipulate its functions;</td>
</tr>
<tr>
<td></td>
<td>to stipulate how the CEO will be compensated for their performance;</td>
</tr>
<tr>
<td></td>
<td>- Set of rules and regulations about regular meetings and seminars, information disclosure, training</td>
</tr>
</tbody>
</table>

Building China’s municipal PES

Fig 1 shows our conceptual model that some of the Chinese experimental cities can follow when building their own regional municipal PES. In the model, the two managing institutions commission a third party agency to conduct performance evaluation over their hospitals and CHSCs. In the Chinese experimental cities, public hospitals and CHSCs are the main bodies to provide healthcare services, which are the main subjects to be evaluated for their performance. In the new round healthcare reform, patients are expected to shift between these two groups for treatment [1]. The performance evaluation can be conducted respectively but managed by the same evaluation agency, so as to facilitate data flow between them, and to reduce the difficulty of integrating the two PES systems into a comprehensive one.

The two sub-PES systems are respectively connected to the health information systems owned by the two managing institutions, which collect data reported by the hospitals and the CHSCs through their information systems. This pattern of data collection can facilitate data flow and reduce the difficulties of data acquisition compared with directly connecting the two sub-PES systems to the health information systems of the hospitals and CHSCs. In terms of other indicators that are difficult to acquire data directly from the health information systems of the managing institutions, interviews and surveys can be conducted [35]. Each of the two sub-PES systems is connected to a performance rewarding system to decide the directors’ variable wages. Then, the evaluation agency would be responsible for integrating the two subsystems into a comprehensive municipal PES.
4. Discussion: changes and adaptations

To make the conceptual model more feasible to be implemented in some Chinese cities, some changes and adaptations concerning the three elements are necessary.

Performance evaluation agency

In some Chinese cities, managing institutions are trying to commission a hospital association to conduct quality accreditation and performance evaluation [36]. However, fairness of the performance evaluation process and results cannot be guaranteed because: (1) this type of association is not separated from the government in real sense but rather like a derivative; (2) many of the association members are senior managers from hospitals. Referring to the Tuscan experience, a public university having multi-discipline background in healthcare management could be a good choice. However, the university should avoid having direct relations with the healthcare providers to be evaluated. When a good public university is impossible, a third party agency independent from the government such as a not-for-profit research institute may also serve as a second choice [37].

As to the members of board of directors of the third party agency, Tuscany has included the regional government and academic scholars into the board. Unlike Tuscany where the budget comes directly from the regional government, the Chinese public hospitals and CHSCs get most of the financing from the insurer. Therefore, both the managing institution and the insurer are core stakeholders to be given a member position in the board. Besides, some delegates from the academic circles can also be incorporated into the board as Tuscany does so as to keep the advancement of the PES.

Performance evaluation mechanism

Benchmarking has been widely used in the Tuscan PES to overcome the defects of simple self-comparison. To enable benchmark possible in the Chinese hospital system, the indicators can be divided into two parts, with one
part applied to all the hospitals, and the other part applied only to hospitals of the same type to represent the specific features of each hospital. Concerning the CHSCs, as they are very similar, the governments can implement standard performance evaluation at city level with benchmark by adopting a full set of standard indicators. In this way benchmarking will gradually become possible and go deeper for performance improvements. Further, although the Tuscan indicators differ from the Ministry of Health of China indicators, the principles and evaluation methods of the PES can still be referable to China: Balanced Scorecard and multi-dimensional reporting to incorporate China’s own indicators. However, the dimensions of the Tuscan PES can be tailored to incorporate China’s own indicators, giving priorities to clinical quality and patient satisfaction.

The financial incentives reflected by the Tuscan performance rewarding system plays an active role for the CEOs to make performance improvements. Unlike Tuscany where the regional government allocates the funds to the providers, the Chinese hospitals get few funds from the managing institutions. The Chinese managing institution of hospitals can specify either using some proportion of hospital profits or providing special funds to pay for directors’ variable wages. The managing institution of CHSCs can allocate more funds to pay for performance. With proper indicators design, it is possible to balance the profits and the public nature of healthcare providers. If the performance is indeed improved, the cost may get reduced and the providers become more competitive to gain more contracts from the insurers.

As for the supervision mechanism, at the beginning of the Tuscan PES operation, the CEOs mostly paid attention to what have been mentioned and emphasized and neglected those not in the list [10]. The Chinese evaluation agency can pay special attention to indicators with understanding performance, asking the directors to explain how they have achieved these good results [38]. In this way, reputation can be used as an effective lever to constrain the directors’ negative behaviors. Besides, on-site inspections and uncertainty can also be introduced to deal with the gaming phenomenon, distortion, data manipulation etc [39], which have already been proved effective in China [40].

Performance evaluation laws, rules and regulations

Unlike Tuscany, China is still in its early stage of building a complete set of laws, rules and regulations for healthcare performance evaluation. In some cities the municipal government has released a regional law in government performance management [41], in which third party agencies are allowed to monitor the performance of government departments. Based on this law, the municipal government can formulate a document in healthcare performance evaluation. After discussion and approval by the municipal and provincial People's Congress Standing Committees, this document can further be established as a regional law, in which a third party agency is selected and appointed to develop, implement and operate a PES to monitor the services provided by the hospitals and CHSCs.

The managing institutions can then formulate specific rules and regulations with the evaluation agency as regards to the details of how the performance evaluation activities will be carried out, such as making rules and regulations on regular meetings and seminars, incentives, information disclosure, training, etc.
5. Other aspects to be considered

Difficulty in selecting indicators

According to the Tuscan experience, one of the key principles to select indicators is to develop a set of potential indicators through literature review, reference of national, regional and sub-regional measurement systems, discussions of professionals and practitioners organized as expert panels. Then with a consensus conference, the evaluation agency can select the indicators with professionals as part of the PES indicators [11]. It is important to improve the quality of indicators by applying common definitions, data collection procedures and methods for the construction and presentation of indicators. Priorities should be given on developing valid indicators based on existing data sources, before suggesting new data for collection. Professionals presenting at the consensus conference must agree on the selection criteria: (1) the indicators have to capture an important performance aspect; (2) the indicators have to be scientifically sound; (3) the indicators have to be potentially feasible [42].

Resistance to change

As the essence of public hospital reform depends on government reform [43], which may be the biggest resistance to change in selecting a performance evaluation agency. In the formulation stage of the PES, sources of resistance to change may come from the distorted perception, interpretation barriers and vague strategic priorities, low motivation for change, and lack of creative responses. In the implementation stage, sources of resistance lie in the political and cultural deadlocks to change, as well as the subsequent leadership inaction, embedded routines, collective action problems, lack of necessary capabilities to implement change, cynicism, etc [44]. Besides the institutional reform of government departments, the managing institutions can deal with the resistance to change through: (1) asking volunteer hospitals and CHSCs to do pilot experiments; (2) providing relevant policy and funding supports; (3) getting all relevant stakeholders involved in the mutual development of the PES; (4) reducing communication difficulties and make managers have the competence by training; (5) making directors’ personal objectives in line with the performance objectives by motivation.

6. Conclusion & Policy Implications

In our study, based on the Tuscan performance experience, in order to improve the performance of the municipal healthcare system, the managing institutions in China’s experimental cities can commission a third party agency to design two sub-PES systems to evaluate the performance of their hospitals and CHSCs respectively. When a regional healthcare PES at city level is formed, the provincial government can extend the successful experience to the other cities. Besides, although our study is focused on “municipal PES”, the basic principles and methods can also apply to other contexts, such as building a rural PES on county basis, benchmarking county hospitals etc.

This study provides Chinese policy makers with a broader framework from Tuscany as regards to the building of China’s own regional healthcare PES. It can help understand how a regional healthcare PES can be used to
monitor healthcare services. The government can use the PES to decide where and how much to put the limited healthcare resources, so that the supply side (provider) and the demand side (insurer) can be balanced. With the PES, the directors will have specific performance objectives in mind to achieve. They can further split these objectives into smaller parts and get all the staff involved and responsible for the performance. In this way a pay-for-performance salary system will also be formed at the local organizational level. Finally, the framework we propose for China may also be considered by other developing countries having similar situations like China.
References

6. The state council of China. The opinions on establishing and perfecting the compensation mechanisms of basic healthcare institutions. 2010. Translated from 国务院办公厅关于建立健全基层医疗卫生机构补偿机制的意见.
17. Ministry of Health of China. The evaluation standards of general hospitals (revised version) & its implementation rules (draft for public opinion) 2009. Translated from 卫生部综合医院评价标准(修订稿)及综合医院评价标准实施细则(征求意见稿)
24. Wang Z, Qiu Z, Lin JH. Comparative study of JCI accreditation with general hospital


41. The municipal government performance management statute in Harbin city. 2009; Translated from 哈尔滨市政府绩效管理条例.

