



# How does separating government regulatory and operational control of public hospitals matter to healthcare supply?

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## ABSTRACT

This paper evaluates the effect of regulatory reform separating the operational control and regulatory oversight of public hospitals in China. Using city-level data and a difference-in-difference (DID) model, this paper estimates the changes in healthcare supply in response to the regulatory reform. Based on the DID estimates, in Weifang between 2006 and 2008, the reform led to a 39.3% increase in the number of doctors per 10,000 residents and 40.1% increase in the number of health workers per 10,000 residents. Similarly, in Suzhou between 2005 and 2008 the reform led to increases of 60.5%, 30.8% and 36.6% for hospital beds, doctors and health workers per 10,000 people, respectively. Moreover, the magnitude of this impact appears to increase over time. Furthermore, the effect of the reform is consistent regardless of whether the separation reform takes place inside or outside the government. These findings lead us to conclude that the government should focus only on the regulation of healthcare markets, while leaving hospital operation to the free market.

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## 1. Introduction

A common Chinese refrain—“*kan bing gui, kan bing nan* (getting medical care is expensive and difficult)” —best summarizes the two major problems of affordability and accessibility in China’s healthcare system today (Liu, Li, Hou, Xu, & Hyslop, 2009). To improve accessibility and affordability of care, two major types of institutional reforms are necessary: changing the structure of China’s healthcare financing and payment systems to better incentivize lower-cost care (Gao, Tang, Tolhurst, & Rao, 2001) and improving China’s health service delivery system to increase access to care (Liu, Pan, & Gao, 2011; Zhang & Kanbur, 2005). Three characteristics of China’s current healthcare financing and payment systems are largely responsible for high medical costs: insufficient government financing of health insurance (Dong, 2009), improper provider payment incentives (Eggleston, Ling, Qingyue, Lindelow, & Wagstaff, 2008), and irrational pricing policies that allows for mark-ups on certain types of drugs, while setting basic service prices below cost (Liu, Liu, & Chen, 2000). China’s healthcare delivery system undermines patients’ access to care through an uneven distribution of existing medical resources and an overall inadequate supply of total medical resources. While the issue of the distribution of China’s medical resources has been dealt with elsewhere (Akin, Dow, Lance, & Loh, 2005; Gustafsson & Li, 2004), this paper mainly focuses on understanding the problems of inadequate Chinese healthcare supply.

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In the post-reform era, China's economy has experienced unprecedented growth. This growth has led to a dramatic increase in China's demand for healthcare. However, China's healthcare supply has not kept pace with demand, although China's total health expenditures were about 24 times greater in 2009 than in 1980 after controlling for inflation,<sup>3</sup> during the same time period hospital beds per 1000 population and registered doctors per 1000 population increased by only 161% and 169% respectively (Ministry of Health, 2011). Additionally, the current number of beds per capita is considerably lower in China than in many other countries from the Organization for Economic Co-operation and Development (OECD) and comparator countries such as Turkey, Japan, and Korea (The World Bank, 2010). This inadequate supply of healthcare directly leads to decreased access to care and may also indirectly lead to higher healthcare prices (Pan, 2011; Zhou, 2008).

Increasing China's healthcare capacity has become one of the primary goals for health policy-makers. In China, 85% of hospital beds are located in government-run facilities. In most of these facilities, the authorities with operational responsibility for the individual hospitals also have general regulatory control over the area's health delivery system. The Chinese central government has become aware that vesting regulatory responsibility and operational responsibility in the same entity may constrain health care supply. Thus, when the most recent round of Chinese health system reform was launched in 2009 (CPC Central Committee & State Council, 2009) and further deepened during the 12th Five Year Plan period (2012–2015) (The State Council, 2009), the policy of “*guan ban fen kai* (separating government regulatory roles from operational functions)” was introduced as one of the reform's core recommendations. This policy is also known as “separation reform.”

However, the government recommendations did not clearly define reform protocols. Two main strategies exist for implementing separation reform: moderate separation reform and thorough separation reform (Lin, Wang, & Wu, 2010; Meng, 2010; Wu & Jiang, 2011; Zheng, Zheng, & Ma, 2010). In moderate separation reform, jurisdiction over operation and regulation of hospitals are vested in two separate groups within the local health department (Jiang, 2007; Liu, 2008). Thorough separation reform advocates creating a more rigid separation between operational control over hospitals and regulatory control over an area's healthcare market. However, there is little consensus about whether the entity with operational control over the hospital should be inside or outside of government (Shen, Yu, & Qing, 2009).

To understand the impacts of different separation strategies on health supply, it is necessary to examine the empirical evidence. Fortunately, local Chinese governments have implemented a number of different strategies when carrying out separation reforms, creating fertile ground for policy research (Pan & Liu, 2010): Shanghai (city), Wuxi (city), and Suzhou (city) set up new organizations as non-profit entities, public service units or corporatized structures to run public hospitals independent from government agencies. For example, in Chengdu (city) and Beijing (City), a new government hospital management agency was made independent from the city health department, which became responsible only for hospital regulation. Weifang (city) adopted an even more moderate approach by conducting separation reforms within its health department; two separate, independent groups inside the health department were given control over hospital operation and regulation, respectively. These “natural experiments” provide us with an opportunity to evaluate the impacts of different methods of separation reforms.

This study contributes to the existing literature in two ways. First, it offers empirical evidence on the impacts of different separation reform strategies on local healthcare supply based on the experiences of three Chinese cities. Second, it explores the dynamic trend of the reforms' impact by comparing the effect of the reform in its first year with its longer-term effect on healthcare supply.

The remaining part of this paper is organized as follows: Section 2 is a brief overview of the background of Chinese health service delivery system in general and the evaluated local separation practices in particular. Section 3 illustrates the research design. Section 4 presents the empirical results. Section 5 discusses the potential limitation of our study and Section 6 concludes with policy recommendations.

## 2. Background

### 2.1. The health service delivery system

Decreasing the existing gap between the demand and supply for healthcare requires an increase in healthcare supply. This increase in supply can be accomplished in two ways: improving the efficiency of existing healthcare facilities and healthcare workers<sup>4</sup>, and/or adding new healthcare facilities and increasing the total number of healthcare workers. These increases can occur both through incentivizing existing public sector institutions to provide higher volumes of care<sup>5</sup> and through mobilizing private capital to invest in healthcare conditional on a limited government health budget.

In China, public hospitals are managed and governed as public service units (PSUs). Similar to PSUs in other sectors, the majority of public hospitals are both regulated and operated by the government, a phenomenon known as “*zheng shi bu fen* (pooling/unification of government agencies and PSUs)”. This type of system creates confusion and blurs boundaries between regulatory and operational responsibilities. It has three main potential negative effects on healthcare supply.

<sup>3</sup> We also employed healthcare price index to deflate the total health expenditure, assuming that this measure would better reflect the real price of healthcare. Healthcare inflation during 1980–2009 was more severe than the overall consumer price index (CPI). Even after adjusting for the healthcare price index, the total health expenditure was 6.78 times greater in 2009 than in 1980, still significantly higher than the increase in the supply of healthcare resources. These calculations are available from the authors upon request.

<sup>4</sup> Partly because the data to examine efficiencies of healthcare facilities is limited and partly because healthcare facilities, especially higher-level public hospitals in urban areas, are already overloaded (Eggleston, 2008; He, 2010), this paper emphasizes increasing healthcare inputs instead of increasing efficiency.

<sup>5</sup> The provision of healthcare services is difficult to measure and is determined by many other factors such as utilization, affordability, etc., therefore this paper examines the reform impact on supply of healthcare inputs instead.

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