

EVALUATING THE IMPACT OF THE LOCAL PUBLIC HOSPITAL
REFORM AND MEASURING EFFICIENCY OF THE HEALTH CARE
SYSTEM IN JAPAN

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ABSTRACT

The health care system of Japan is considered as one of the best in the world in various aspects such as availability, effectiveness and efficiency. The Japanese population has the longest life expectancy among all OECD countries, while the health care spending as a share of GDP is below the most of developed countries in OECD. The success of Japanese health system is contributed to policy-makers who have been proficient at balancing the demands and supplies with dexterous skills of controlling medical prices under the universal health coverage.

Under the context of private sector dominated health care system, the private hospitals are inclined to pursue “profit” rather than performing public functions. Thus, Local public hospital (LPH) system in Japan is considered as an important countermeasure in maintaining equality of the system. LPHs intensively get involved in securing medical services for local residents by performing “policy-based medical services” (PBMS). During the first decade of 21st century, as one of the largest industries owned by local government, LPH’s unfavorable performance worsened financial conditions of local government and threatened the equality of the system. Thus, the Ministry of Internal Affairs and Communications (MIC) launched the LPH reform in late 2007. The results from the reform surveillance data show that the financial performance of LPHs has been greatly improved: the percentage of LPHs operating

with surplus increased from 25.5% in 2006 to 52.3% in 2010, and annual deficit sharply decreased from more than 190 billion yen to minus 5.6 billion (surplus) yen during the same period.

The financial performance, however, is only one side of the coin. What were systemic effects of the reform? Could the efficiency-improvement oriented reform be justified? These issues may concern policy-makers more. However, there are few studies addressing the issues. In this research, first we described the characteristics of health care system and basic health policies in Japan; second, we investigate the impact of the LPH reform at different levels, from organizational to local health care system levels; finally, we proposed a way to measure the efficiency of local health care system in Japan, and further exam the relationship between volume and outcome efficiency.

Basic health policies and the LPH status and reform were described in **Chapter 2**. Japan's basic health policy is characterized as a combination of publicly-financed health insurance system and a laissez-faire approach to how services are delivered. The policy leads to private sector dominated health care system in Japan. The local public hospital system is considered as an important measure to guarantee the fair accessibility by implementing PBMS which include high-tech medical care, services for remote areas, emergency services and other non-profitable health care services. The LPH reform launched by MIC in late 2007 included following three major components: first, publicizing and monitoring three key performance indicators; second, reorganizing local health care delivery system and third, initiating organizational reform. The reform aimed not only to enhance the fiscal soundness of the system but also to improve equal access to high quality health care.

Chapter エラー! 参照元が見つかりません。 investigated distribution of hospital resources in Japan, and the impact of the LPH reform on equality of health care system and on financial conditions between private and local public hospitals. Our findings reveal that hospital resources were concentrated on HKD, TKY, OSK and other 6 developed and populated prefectures. Density of hospital resources, however, was higher in those underdeveloped prefectures in southern parts of Japan. The prefectures in northern parts had larger proportion of LPH beds. The results of “gap” analysis indicated that though total number of physicians increased for all prefectures through the research period, the “physician gaps” among prefectures increased. More increased physicians went to developed prefectures. We believe downsizing or even closing LPHs because of local financial pressure aggravated the imbalance in physicians among prefectures. The effect of medical staff training policy and other related health policy could not be neglected, neither. For financial performance, compared with private hospitals, the annual growth rate of medical revenue of LPH substantially increased by 2.3% after the LPH reform, which implies that private hospitals and LPHs adopted different strategies to improve their performances after the reform. Some scholars worried that the reform overstated the importance of the financial soundness and compromised the accessibility of medical services. Combining the fact that distribution of hospital resources had worsened from 2006 to 2011, our findings supports the rising concern about the trade-off between pursuing financial performance and performing public functions.

The impact of the LPH reform on hospital staff and national medical expenditure (NME) was investigated in **Chapter** エラー! 参照元が見つかりません。 . Many

studies have revealed that lack of health professionals and imbalance in doctors had been a problem of health care system in Japan for a long time. Our findings indicate that more medical staff were attracted by prefectures with low proportion of LPH beds after the reform. As the LPHs were considered as financial burden for many prefectures, local government had made great efforts to wipe out the deficit of LPHs by downsizing, merging, privatization and many other measures to improve the efficiency of LPHs. Those policies may lead to less increase of hospital staff in prefectures with large proportion of LPH beds. Results about prefectural NME per capita indicated that the MNE equally increased among prefectures regardless of the proportion of LPH bed. These findings imply two possibilities. On the one hand, hospital staff in prefectures with high proportion of LPH bed may assume more workload than those in low LPH bed prefectures, or in other words, possible reduced health care quality in prefecture with high proportion of LPH bed. On the other hand, more patients in high LPH bed prefectures might seek for health care in prefectures other than those where they live. Because though number of local hospital staff did not increase as many as low LPH bed prefectures, demands (NME per capita) evenly increased among all prefectures. Local governments in Japan might have well controlled the deficit of LPHs but at the expenses of accessibility or health care quality. In order to examine the hypothesis, studies about local provision of medical services and patient flow across prefectures need to be conducted.

In **Chapter** エラー! 参照元が見つかりません。 , the efficiency of local health care system in Japan was investigated, and the relationship between health care volume efficiency and health outcome efficiency was analyzed using two-stage data

envelopment analysis (DEA) approach and correlation analysis. At first stage, the improved slacks-based measure (SBM) DEA model is used to estimate efficiency scores for three DEA models based upon service volume efficiency (SVE), general outcome efficiency (GOE) and outcome efficiency for the senior (OES). At second stage, we apply Tobit model to identify the significant exogenous determinants influencing efficiency scores. Finally, relationship between volume and outcome efficiency is investigated using partial correlation analysis by controlling the factors identified by Tobit model. The results reveal that the correlation coefficient between SVE and GOE under the assumption of constant returns-to-scale (CRS) is statistically significant even after controlling the exogenous factors; while the SVE and GOE scores under variable returns-to-scale (VRS) are not significantly correlated with each other after controlling these factors. The GOE and OES scores are highly correlated. These findings indicate that the high SVE may not be necessarily associated with high health outcome efficiency. The effect of economies of scale plays an important role in volume-outcome efficiency relation. The reason, however, still need to be further investigated. The prefectures with high GOE are capable of producing high OES.

In conclusion, this study indicates a possible compromise of equality of health care system in Japan, though financial performance of LPHs had been significantly improved. The accessibility to health care for residents in prefectures with high proportion of LPH beds might have been undermined during 2005 to 2010. Those consequences might partially result from the LPH reform, but the impacts of other health care policies implemented during the same period could not be neglected, neither. The efficiency analysis shows that high volume efficiency does not always associate with high

outcome efficiency. The effect of economies of scale plays an important role in volume-outcome efficiency relationship. Thus, the volume efficiency improvement oriented policy can be hardly justified unless there are evidences supporting that these policies would result in better outcome efficiency for the populations. More comprehensive studies are needed to obtain more convincing policy implications.