

Geographical Variation and Convergence of Medical Cost in Japan
—Medical Resources, Services, and Health Outcome—
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Summary

[Background Objectives] This study examines the geographical variance and convergence of medical resources, medical services, and health outcome in Japan for the 1982-2002 period to evaluate the medical system. Over a half century Japan has adopted a nationwide universal health insurance plan and has successfully achieved higher health outcomes shown in higher longevity across regions in Japan. Still there are significant geographical variances in medical resources (physicians, nurses, beds), medical practices, and medical cost such as cost/person (C/N). Based on the supplier induced demand theory, the Japanese government can reduce medical cost by limiting the new entry of medical resources in regions which has more medical resources. This study intends to analyze variance and convergence to evaluate the policies to restrain medical cost for the aged.

[Method and Data] This study uses data of the 47 prefectures in 1981-2014. As medical resources, we focus on the number of physicians, nurses, and beds. medical cost, we distinguish three types of medical services “hospitalization”, “outpatient”, and “dental” services each for the “general” and the “aged” population. Prefecture level medical cost is the aggregated medical cost of each cities, towns, and villages in “Municipal Health Insurance Plan.” This study uses the method to identify the source of convergence of geographical variance of income as in Asrdubali, Sorensen, and Yosha (1996) and Nakakugi and Fujiki (2005). By decomposing medical “Cost per capita (C/N)” as the product of “cost per day (C/D)”, “days per event (D/E)” and “events per population (E/N)”, we identify the sources of variance and factors inducing convergence of medical cost across prefectural regions. We also estimate speed of convergence in an absolute and conditional convergence sense. based on Barro and Sala-i-Martin(1995).

[Results and Discussions] We found the significant geographical variance in “cost per capita (C/N)” for the “aged hospitalization” in the early 1980s, which has decreased rapidly since then. This is caused by the decreasing variance of “events per population (E/N)” which in turn is closely related to “beds per population”. A suppliers induced demand assumption may hold for the aged hospitalization. The introduction of the long-term care insurance plan in 2000 had further induced convergence. Cost per day (C/D) for aged hospitalization and aged outpatient services are found to offset the reduction of medical expenditure. Government regulation limiting entry and increase medical resources as well as introduction of long-term care insurance in 2000 significantly helped convergence.

Key words: medical, health, geography, convergence JEL: J14, J18, O49

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