

Meeting abstract

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Health resource reallocation by casemix data in Japan

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Introduction

The healthcare system in Japan is characterized by long hospital stay and a large excess of hospital beds. The average length of hospital stay, and the number of beds per population for acute-care hospitals, are both about twice the average of those in other OECD countries. Insufficient functional differentiation of Japan's hospitals has been claimed as the cause of such inefficiency in the healthcare system.

Since governments have not assigned functions to hospitals, and have imposed very few restrictions on hospital performance (other than the number of hospital beds), even small private hospitals - which are the dominant type of hospital in Japan - can provide advanced surgery, such as cardiac interventions, just as university hospitals do. In recent years, a shortage of physicians, the excess workload placed on them, and the increased risk of medical errors have all become major political issues in healthcare. This is due to the introduction of a new postgraduate training system for doctors, a decrease in the length of hospital stay, and advances in medical technology.

Health resource reallocation needs to be considered in order to overcome these political difficulties in healthcare. However, there have been no adequate indicators for a quantitative assessment of the need and supply of regional healthcare in Japan. In our research, we examined the availability of casemix data in Japan to estimate and visualize health-resource allocation.

Methods

Using the micro data of the Patient Survey of Japan in 2005, regional disease structures were estimated for MDC (Major Diagnostic Category) groups, surgery, acute, and chronic care in 360 medical service areas (MSA) and 47 prefectures. Hospital performance was evaluated using Patient Survey data and the casemix registry from acute-care hospitals. Functionally undifferentiated hospitals were defined as those with fewer than 50 patients within each MDC category per year, and having less than a 30% share of patients within each MDC in the MSA.

Regional hospital undifferentiation indicators were defined as the ratio of patients treated in undifferentiated hospitals in the 47 prefectures. Regional health resources to be allocated were estimated from the disease structure, and the typical clinical process for each disease was revealed by casemix registry data from the acute-care hospitals.

Results

Travel of patients across the borders of the designated MSAs was observed. It was found to be significant for cardiac, orthopedic and cancer surgery (odds ratio: 1.7 to 2.3). This indicates that that patients travel more for non-emergency, advanced surgery. Therefore, such health-service specific factors need to be taken into account for health resource reallocation and functional differentiation of hospitals.

Regional hospital undifferentiation indicators differed from 9% to 40% among the 47 prefectures, and were

inversely associated with the utilization rate for cardiac interventions. This suggests that a concentration of surgical procedures may increase the use of the procedures. The estimated need for acute-care beds was about 40% of the current number of beds, indicating a large excess of acute-care beds in most regions in Japan. Simulated reallocation of health resources from chronic care to acute care predicted an improvement in the shortage of physicians in acute-care hospitals.

Conclusion

Using the casemix data of Japan, we show the feasibility of visualizing the regional need and supply of healthcare services, and estimating the regional health resources to be allocated.

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