

This research focuses on the impact of the 7:1 hospital bed ratio, which involves one nurse per seven patients, on the medical supply system. This ratio was established in 2006 as part of the revision of medical service fees and has been in effect for over a decade. Our study employs a quantitative approach to examine the effects of the April 2018 revisions, which represent the culmination of the most recent reorganization of hospital beds, on the allocation of hospital beds, average length of stay, and medical care costs. We use hospital-based monthly panel data consisting of individual medical and hospitalization receipt data, comprising around 14 million cases from the Japan Health Insurance Association (JHIA), which insures approximately 40 million patients as of August 2022. We employ four objective variables: the number of patients, the average length of hospital stay, the medical cost per day, and the total medical cost by hospital bed function. The main explanatory variable is a dummy variable that takes a value of 1 after the April 2018 revision, and we use a discontinuous regression design (RDD) with time as the assignment variable.

Our results indicate that the number of hospitals with acute care functions, including 7-to-1 beds, decreased discontinuously by approximately 100 facilities across Japan after the revision. This led to a decrease of about 2.6 patients and an 11% reduction in total medical care costs. However, the average length of hospital stay increased by about 0.3 days, and the medical cost per day increased by about 6.3%. These findings suggest that, while the revision of the medical service density proxy variable resulted in an increase in medical cost per day and more intensive care was provided in the acute phase function, the decrease in the number of beds with this function may have contributed to a decline in the number of patients and, consequently, in total medical care costs. These results are consistent with the policy objectives of the revision and can be evaluated to a certain extent.