



## Evidence for improving health care provision to ensure universal health coverage amid rapid population ageing in Japan

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### Background

Health systems in resource-constrained and rich countries face continued challenges due to increasing population ageing and chronic morbidities. Conditions such as hip fractures and dementia are on the rise and their careful assessment could provide insights into the performance of health systems around access to and equity of health care. Big data in health care can assist to understand patterns of population health and to draw on relevant policies to improve health care and equity. Japan has made tremendous efforts to build large-scale health care databases through relevant laws or other mechanisms. These include for example the Diagnosis Procedure Combination (DPC) database, the National Receipt Database, the Comprehensive Long-Term Care Insurance database, and Adverse Reaction report database. However, the use of these databases to inform policies towards provision of equitable, cost effective, and quality health care services is very limited. This project involved several studies relating to the use of large-scale health care databases to address the growing concerns of equity in access to health care associated with population ageing in Japan. This research brief provides highlights from one of those studies which was based on an analysis of the DPC database, a health care insurance claims database.

### Goal

This research aims: 1) to investigate the association of dementia status with access to hip fracture surgery; and 2) to investigate the relationship between dementia status and waiting time before surgery among older people with diagnosis of closed hip fracture treated in acute care hospitals.

### Methods

The study involved a cross-sectional, secondary data analysis of the DPC database. The database consists of patients' socio-demographic profile; principal diagnoses; comorbidities at admission; complication after admission; and procedures including surgery, medications and devices during hospitalization; length of stay; discharge status; and medical expense. The target population was patients aged at least 65 years with a diagnosis of a closed hip fracture during the study period (April 2014 – March 2018). The outcome variables were: receipt of surgical treatment for hip fracture and number of waiting days until surgery. The main explanatory variable of interest was dementia status. The analyses were adjusted for age, sex, fracture type, comorbidities, coma/consciousness level, ambulance use, as well as hospital characteristics, through multilevel analysis.



### Results

The analytical sample consisted of 214,601 patients with first-time diagnosis of hip fracture, of which 58,400 (27.2%) had mild dementia, 44,787 (20.9%) had severe dementia and 159,173 (74.2%) received hip surgery. The mean number of waiting days before surgery was 3.66 days ( $\pm$  3.72 days). Patients with severe dementia were more likely to receive hip surgery and more likely to experience a shorter waiting time until surgery compared to those without dementia. Older patients were less likely to receive surgery (80 years and above versus 65-79 years) but experienced a shorter waiting time before surgery (90 years and above versus 65-79 years).

### Implications

This study has demonstrated the usefulness of employing large-scale data to address key questions in health care and equity. In contrast to the general trend that patients with psychiatric illness have less access to health care, this study revealed that patients with dementia in Japan may be prioritized for hip surgery. This approach should be considered in Japan and elsewhere in the region to address other relevant health care issues posed by increasing population ageing.