

The Impact of Hospital Overcrowding on Quality of Care: Evidence from China

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Research

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Abstract

Background This study examines the impact of healthcare staffing levels on the quality of healthcare services. **Methods** We use data from a 10% random sample of inpatients in a city in China from January 2014 to June 2019, and annual reports from healthcare providers to exclude disease types related to air pollution. The final analysis uses a sample of 1122 disease types and 862,722 cases from 517 hospitals. The impact of changes in hospital admissions on length of patients' stay in hospitals (patient hospital days) and the mortality rate of patients is analyzed by building ordinary least squares and instrumental variable measurement models and comparing the differences in the impact of healthcare staffing levels on the quality of care between different levels of hospitals. **Results** The patient hospital days decrease and mortality rate increases with increased attendance. Using the instrumental variable method, for every one-unit increase in the number of visits to the hospital, there is a 5.87% decrease in patient hospital days and an increase in mortality of about 0.37%. Both results are significant at the 1% level. The impact of healthcare staffing level on the quality of care varies between different levels of hospitals. The quality of care in tertiary hospitals is most affected by the number of visits, with an average decrease of 4.36% in patient hospital days and an increase of 0.27% in mortality for every one-unit increase in visits, significant at the 1% level. **Conclusions** Currently, China is in the transition period of a healthcare reform, and faces a large shortage of medical resources, there is considerable variation in healthcare staffing across different tiers of hospital. Continued sole reliance by hospitals on increasing the working hours of medical staff to meet patients' medical needs is not sustainable, and may even have a negative impact on the quality of medical services.

Full Text

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Figures

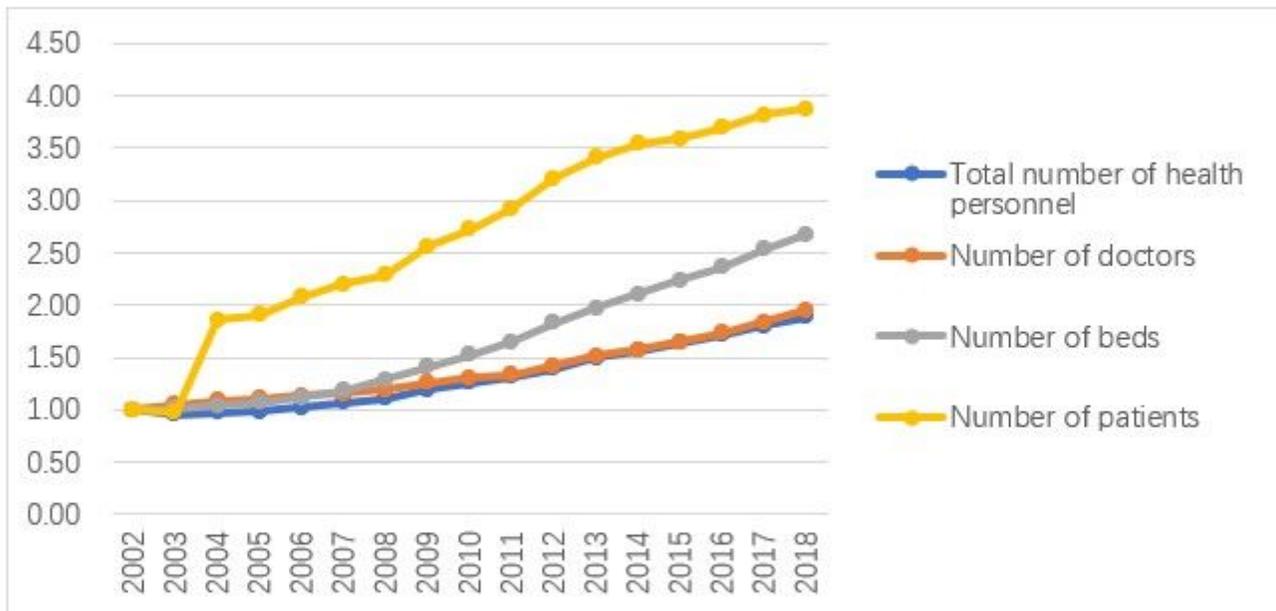


Figure 1

Health personnel, beds, and patient statistics in China from 2002 to 2018

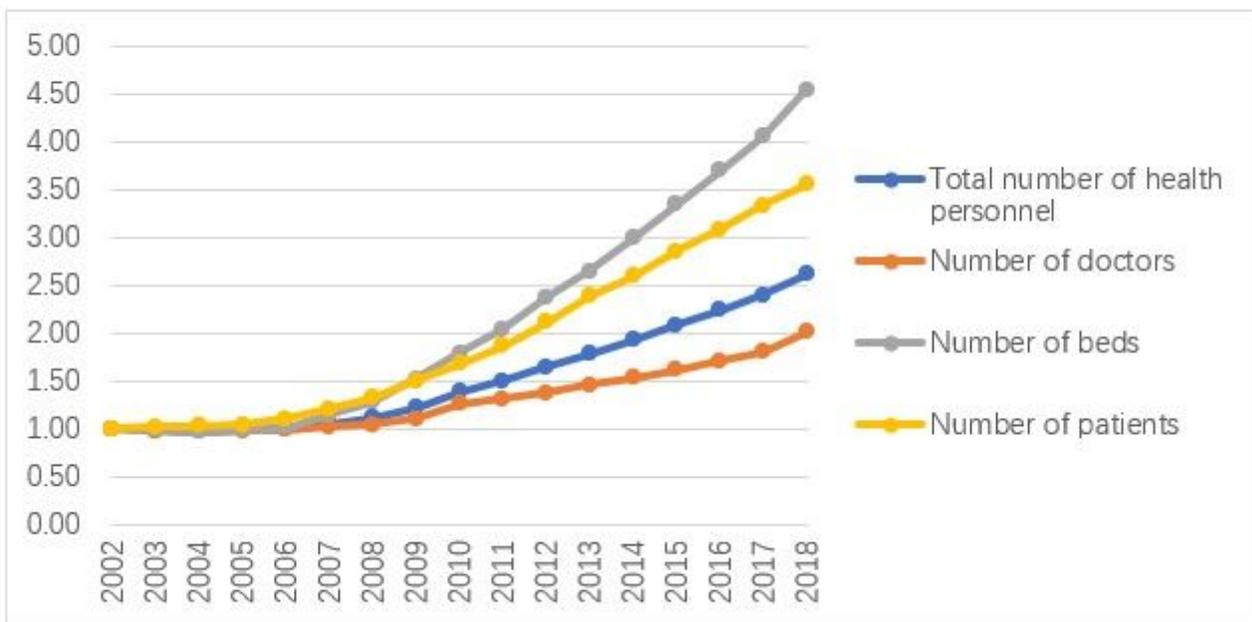


Figure 2

Health personnel, beds, and patient statistics in city studied from 2002 to 2018

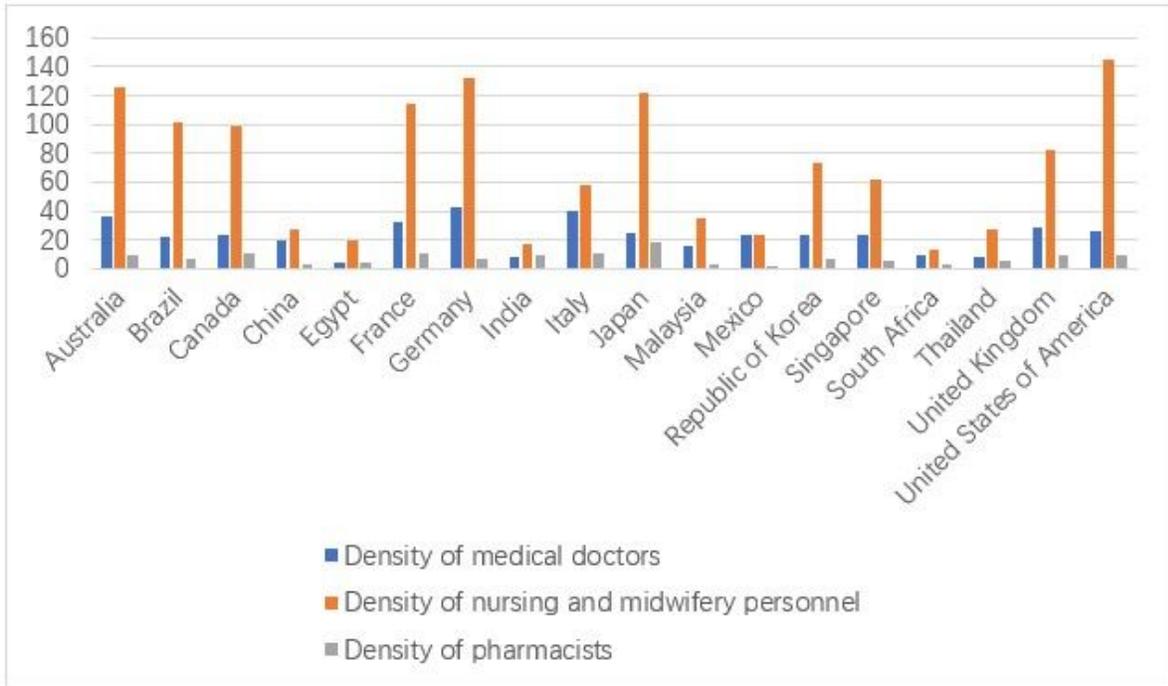


Figure 3

Average density of medical workers (per 10000 population) for certain countries between 2010 and 2018.

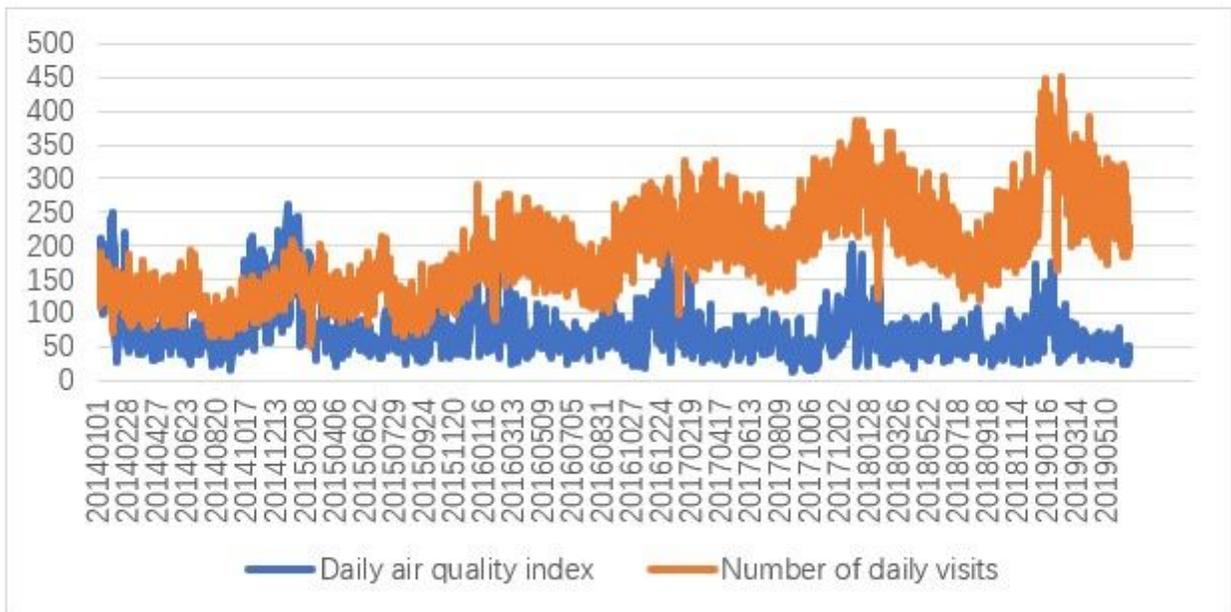


Figure 4

Stroke, heart disease, lung cancer, respiratory disease attendance, and air quality index, January 2014–
June 2019