

# Association Between Clinic Physician Workforce and Avoidable Readmission: A Retrospective Database Research

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**Background:** To reduce hospitalization costs, it is necessary to prevent avoidable hospitalization as well as avoidable readmission. This study aimed to examine the relationship between clinic physician workforce and unplanned readmission for ambulatory care sensitive conditions (ACSCs).

**Methods:** Using the DPC database, we identified patients aged  $\geq 65$  years who were admitted with ACSCs from home and discharged to home between April 2014 and December 2014 ( $n = 127,209$ ). The outcome was unplanned readmission for ACSCs within 30 or 90 days of hospital discharge. A multilevel logistic regression model was developed with patients at the first level and regions (secondary medical service areas) at the second level.

**Results:** The high full-time equivalents (FTEs) of clinic physicians per 100,000 population were significantly associated with decreased odds ratios for 30-day and 90-day ACSC-related readmissions.

**Table. The risk of readmission for ACSCs associated with FTEs of clinic physicians per 100,000 population**

	Readmissions for ACSCs within 30 days		Readmissions for ACSCs within 90 days	
	Adjusted odds ratio (95% CI)	P	Adjusted odds ratio (95% CI)	P
FTEs of clinic physicians per 100,000 population				
1st quartile	Reference		Reference	
2nd quartile	0.95 (0.85–1.06)	0.331	0.92 (0.83–1.02)	0.107
3rd quartile	0.86 (0.77–0.97)	0.013	0.84 (0.76–0.94)	0.002
4th quartile	0.87 (0.78–0.98)	0.024	0.86 (0.77–0.96)	0.007

Odds ratios were adjusted for age-group (65–74 years, 75–84 years, 85–94 years, and  $\geq 95$  years), gender, body mass index, Barthel Index at discharge, surgery, length of stay, plan of home care program at discharge, 19 comorbidities, FTEs of hospital physicians per 100,000 population, number of hospital beds per 100,000 population, and population density of inhabitable areas. Abbreviations: ACSCs, ambulatory care sensitive conditions; FTEs, full-time equivalents; CI, confidence interval.

**Conclusions:** Among patients who had history of admission for ACSCs, greater clinic physician workforce prevented the incidence of readmission due to ACSCs. Regional medical plans to prevent avoidable readmissions should incorporate policy interventions that focus on the clinic physician workforce.