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Evaluating continuity of care incorporating a time protective effect of general practitioner care on diabetes related potentially preventable hospitalisations: An application of threshold effects model

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Background

Continuity of care with a general practitioner (GP) is vital for management of chronic conditions including diabetes as it provides proactive care facilitating opportunities to prevent or delay progression of disease.

Aim

To capture the proportion of time people with diabetes are under the protective effect of contact with a GP using the Cover Index and its effect on potentially preventable hospitalisation (PPH) and length of stay (LOS).

Method

The linked self-report and administrative health service data of 267,153 participants in the 45 and Up study in New South Wales (NSW) in 2006-2009, obtained from the NSW Centre for Health Record Linkage and the Australian Government Department of Human Services, were used. A cohort of 21,965 people aged 45+ years identified with diabetes before July 2009 and followed up to 2015 were included in the analysis. Time duration protective effect of GP contact was estimated according to severity of diabetes using threshold effect models and then used to calculate the Cover Index. The effect of levels of GP cover on PPH and unplanned PPH and related LOS were estimated using negative binomial models weighted for the inverse probability of treatment to control for observed pre-treatment covariate imbalance.

Results

Perfect GP cover was observed among 56% of people in the study cohort. Compared with low GP cover, having perfect GP cover was significantly associated with lower PPH (IRR 0.21, 95%CI 0.13-0.35), LOS for PPH (IRR 0.12, 95%CI 0.06-0.24),

unplanned PPH (IRR 0.36, 95%CI 0.19-0.68) and LOS for unplanned PPH (IRR 0.39, 95%CI 0.17-0.85) after controlling for the observed pre-treatment covariate imbalance.

Conclusions

This study suggests that longitudinal continuity of care measured by incorporating a time protective effect of a GP (cover) may be an important factor associated with reduction in PPHs and length of stay independent of other measures of longitudinal continuity.

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