

Developing a new metric to capture continuity of primary care: The application of propensity score methods and threshold effects models using linked administrative data

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Introduction

Enhancement of primary care has been focused in many countries to make the healthcare system more productive in response to increasing burden of chronic conditions. Despite tremendous growth of linked administrative data, methods to use the administrative data to evaluate and improve the performance of primary care have been limited.

Objectives and Approach

The study uses linked administrative data of people diagnosed with diabetes to develop and test a new metric that will facilitate better measurement of continuity of primary care named “cover metric”. Cover adds a time element into our previously developed regularity score compartmentalising days between GP visits into within and outside of a particular time period determined using threshold models that are either associated with a reduced (within) or increased (outside) the risk of hospitalisation. The number of days within is then summed over an ascertainment period of 365 days (calendar year) and an annual proportion calculated for each person.

Results

Three cohorts of people with diabetes were identified based on complication severity index at the baseline year. The risk of hospitalisations among people with diabetes can vary across a range of primary care usage and other covariates. The use of propensity scores allowed us to assess the balance of observed covariates across different levels of primary care usage and to isolate the effect of primary care usage on the risk of hospitalisation from the covariates. The threshold effects models examined how the risk of hospitalisation varied with the length of time following a primary care visit to indicate the time interval which the risk of hospitalisation was lowest. The time interval was then used to construct the cover metric for each defined diabetes severity cohort.

Conclusion/Implications

The new cover metric will significantly contribute to the sparsely available methods for the analysis of linked administrative data in evaluating continuity of primary care. Combination of propensity score and threshold effect models are showcased as useful analytic approaches in the examination of the relationship between primary care and hospitalisations.

