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The utility of historical electoral roll records and their effect on the association of regularity of GP contact and potentially preventable diabetic hospitalisations

Moorin, Rachael[1*] and Youens, David[1]

[1]Curtin University

Background

Correctly ascertaining person-time at risk is paramount to longitudinal studies of health services research and relies on the ability to track the status of individuals throughout the study. Administrative health data contain limited information on where study subjects live in the time between episodes of health service use. Accurate ascertainment of person-time at risk is important particularly when it varies differentially across exposure groups or covariates. Historical electoral roll data allows better specification of person-time and also provides longitudinal information on geographic location facilitating the inclusion of accessibility and socio-economic status longitudinally. This study evaluated the utility of Australian historical electoral roll data to capture place of residence throughout the time line of a whole of population longitudinal cohort study over 20 years to better ascertain person-time at risk and changes in socio-economic status (SES).

Approach

The association between regularity of GP contact and potentially preventable hospitalisations (PPHs) in WA was modelled using person-level linked data where the time at risk and socio-economic status for both the exposure (regularity of GP contact) and outcome (PPHs) was assumed to be constant throughout the follow up until death. The analysis was then repeated incorporating historical (longitudinal) electoral roll data. These data partitioned follow up time and socio-economic status according to location of residence within the State to better characterise access and SES and included removal (out-of-State/country migration) and re-enrolment records.

Results

Substantial differences were found in the number of people at risk (46,625 (13%) of people were never at risk) and person-time at risk (reduction of 473,708 (22%) person-years at risk) when cross-sectional electoral roll and health administrative data were augmented using historical electoral roll data. Substantial changes in residential postcode (up to 25 changes) were observed and these impacted on the accessibility and SES classification across the duration of the study. These changes significantly impacted the magnitude of the relationship between GP contacts on PPHs determined by models.

Conclusions

Currently cross-sectional electoral roll data are available to researchers in WA solely for the purposes of identifying and characterising a cohort at baseline. However these data are longitudinal and contain important information that improve analyses. Information on their utility is important so as to leverage their availability from the Australian Electoral Commission.

*Corresponding Author:
Email Address: r.moorin@curtin.edu.au (R. Moorin)

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