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Evaluating policies that simultaneously target several chronic diseases in Australia's ageing population

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Abstract

Introduction: Chronic diseases – e.g. heart disease, cancer, diabetes – affect around 80% of older Australians, are the main causes of disability and premature death, and account for 70% of health expenditures. Australia's population is ageing, so in future both the prevalence of chronic diseases and the related treatment costs are expected to increase considerably.

We will report on a new person-level model-system able to account for multiple chronic diseases (comorbidities) that Australians may acquire as they age. Under different assumptions about the rate at which Australia's population ages, we will simulate policy interventions that simultaneously target several chronic diseases.

Methods: The chronic disease model-system we developed links disease-specific progression sub-models to an 'Umbrella' microsimulation model representing the Australian population. The current version considers type 2 diabetes, cardiovascular disease (CVD), and CVD as a complication of diabetes. It projects 20 years ahead and accounts for individuals' demographic, socioeconomic and health-risk-factor characteristics; progression of their health status over time; their number of chronic diseases; their quality of life; and health-related expenditures. Also, it estimates the costs and the benefits of simulated policy interventions.

Results: Under different assumptions about the rate of population ageing, we will report on simulations of a 'life-style-change' policy intervention. The simulations will simultaneously account for people with diabetes only, CVD only and with CVD as a complication of diabetes. We will estimate the extent to which intervention-induced adoption of healthier lifestyles is likely to attenuate the impact of population ageing.

Conclusion: Accounting for multiple chronic diseases at the level of the individual allows improved predictions of the health, quality of life and expenditure implications of population ageing.