

# RESEARCH DIRECTIONS

## Simulating the effects of health policies on an ageing Australian population

**Associate Professor Federico Girosi and Dr Shima Ghassem Pour from the Centre for Health Research have been granted funding from Capital Markets CRC to predict the trajectory of Australia's near-elderly population in terms of their health conditions, services, and expenditures. The team will build a microsimulation computer modelling tool to simulate how the needs of Australians aged 45 and over will change, and how those changes will impact current and future health policies.**

'Microsimulation models have been used around the world to help predict the effects of disease epidemics, health-care reform, and tax and pension policies', Associate Professor Girosi says. 'They give governments and organisations a more accurate picture of future developments in a population, so that services can be adjusted accordingly.' In Australia, the current health needs of older people have been well-researched, but their projected, future needs have not. For this, an Australian microsimulation tool must be created.

Population data for the microsimulation tool will come from 265,000 Australians aged 45 and over who completed the "45 and Up Study" about their health, lifestyle, and medical expenses. Building on existing microsimulation models such as the Future of the Elderly Model used in the US, researchers will create their own model of an aged Australian population. This microsimulation model will be able to estimate the effects of scenarios like: a reduction in obesity and smoking rates, the effects of changing alcohol and tobacco consumption, changes in blood pressure, survival rates of strokes and heart attacks, and reductions in cancer in Australians aged over 45. In addition, this model will account for correlations between age and frailty, rather than treating them as separate variables,



allowing more accurate predictions of health outcomes.

This microsimulation model will give government agencies and community stakeholders a better idea of the needs and trends of Australia's ageing population. This can be used to predict future medical expenses, demand for aged care facilities, and the effects of different conditions on life expectancy rates.

**Project Title:** Microsimulation model for the estimation of costs and benefits of health policy scenarios in the Australian population over age 45  
**Funding has been set at:** \$360,000  
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