CHE | CSIRO alliance: The path to healthier pensions

A research alliance between the CSIRO and Monash University has been successful in obtaining $9 million of funding for the next three years to create a CSIRO Flagship Collaborative Program in Superannuation Research. The program includes industry partners and researchers from a number of universities in Australia as well as Warwick University in the UK.

The Centre for Health Economics is a research stream leader in the program. Our particular research stream will focus on the impact of fluctuations in wealth over time on individual life circumstances. A specific interest is in the impact of fluctuations in the value of wealth over time on measures of health status, wellbeing and health care expenditure. The research will also look at the adequacy of pension income in retirement to sustain an acceptable quality of life (including health) and how that varies in the years after retirement.

An understanding of this issue is vital for policy-makers who aim to develop post retirement incomes policies that seek to improve elderly Australians’ wellbeing and health outcomes, and reduce future health care expenditures. The research will involve the econometric analysis of high-quality Australian longitudinal data to provide evidence on this issue, and will also use complementary British data to provide valuable comparisons.

The research leaders are Professors Anthony Harris and Michael Shields and A/Prof David Johnston assisted by a newly appointed research fellow Dr Kompal Sinha.
How well is quality of life measured in economic evaluation studies?

An important question for health economists has been how to include the quality of life in the evaluation of health services so policy makers can compare services which extend life with services which affect the quality of life.

Over time the method that has evolved has been to measure the benefits of health services using quality adjusted life years (QALYs). These are calculated as the years of life affected by a service multiplied by the ‘utility’ of the health state where ‘utility’ measures the strength of people’s preferences for the health states.

To compare health services, economists compare the cost of the service with the increase in the number of QALYs and, if nothing else is important, they will recommend the funding of services which have the lowest cost per QALY gained. Deciding which services should be adopted by Medicare therefore needs accurate measurement of the cost of services and of the ‘utility’ from years of life-expectancy.

“Deciding which services should be adopted by Medicare needs accurate measurement of the cost of services and of the ‘utility’ from years of life-expectancy.”

A major study at the CHE has been comparing the different ways economists measure ‘utility’. Funded by the NHMRC, Professor Jeff Richardson, Angelo Iezzi, Munir Khan and Aimee Maxwell, have collected information from 8,022 individuals in six countries and seven disease areas using seven instruments (EQ-5D, SF-6D, HUI 3, 15D, QWB, AQoL-4D, AQoL-8D).

The results of the survey – the largest of its sort ever conducted – are of concern. The different techniques for measuring utility produce very different results. Replacing one technique with a second technique chosen at random will lead, on average, to a discrepancy in the measurement of change of 41 percent; that is, the choice of technique will cause (on average) a 41 percent difference in the apparent cost effectiveness of a service.

The survey also included questionnaires that measure subjective wellbeing. The second worrying finding is that subjective wellbeing does not correlate very highly with measured utility; that is, as we now measure quality of life, the health services which appear to maximise utility may not maximise subjective wellbeing. These results represent a significant challenge for research economists and psychologists.

“...the choice of measurement technique will cause (on average) a 41 percent difference in the apparent cost effectiveness of a service.”
Many of our Pacific island neighbours are low or middle income countries; this makes delivering effective and efficient health care a challenge. These countries are looking to improve the health of their population, and achieve the Millennium Development Goals by 2015, but they must do so with highly constrained budgets. In these countries the need for informed resource allocation is crucial; it really is a matter of life and death.

Solomon Islands is one such country; it is one of the poorest countries in the Pacific. Its GDP per capita is US$1786, 23% of the population lives below the poverty line, and it ranked 143 out of 187 countries in the UN’s 2012 Human Development Index. 80% of its 515000 people live in rural areas, the population is highly dispersed across nearly 1000 islands, many have limited access to health services.

“The Ministry of Health and Medical Services (MHMS) has produced a National Health Strategic Plan (NHSP) 2011-2015 which outlines a number of programs and priorities to improve the health status of Solomon Islands nationals. In particular there is a plan to reorganize the provision of primary care health services. However, there is limited evidence to enable the implementation of this plan, and little is known about the resources used in delivering health care or the cost of these resources.

CHE has been contracted by the World Bank to undertake a study to contribute to this evidence base. We will be undertaking a national representative survey of health facilities, including hospitals, to examine the costs of service delivery. We hope that the study will help the MHMS to improve resource allocation, increase efficiency of expenditures in the health sector, and support its transition from input-based to output-based budgeting.

This study follows on from previous research we have undertaken in Papua New Guinea to cost primary care services, and is part of a growing stream of development projects at CHE, including research on household resource allocation for persons living with HIV in Uganda, a recent World Bank funded project to assess the economic rate of return of a sanitation and nutrition program in Indonesia, and a current NHMRC project evaluating a diabetes prevention program in Kerala, India. This research is being led by A/Prof Paula Lorgelly, with support from Katherine Gilbert, A/Prof Duncan Mortimer, Dr Nicole Au, Rohan Sweeney, Jean Spinks, Susan Gillespie and Prof Ajay Mahal in the Faculty of Medicine, Nursing and Health Sciences and Dr Wayne Irava at Fiji National University.
Socioeconomic Gradients in Bodily Pain

Understanding the causes and extent of socioeconomic (SES) inequalities in health is one of the most important research areas in both the social sciences and medicine. Arguably, one indicator of health that should be central to measuring the extent of such inequalities is the experience and severity of chronic pain, which imposes a substantial burden on individuals and families.

Recent research by Michael Shields, together with Andrew Jones (University of York) and Stefanie Schurer (RMIT University, Melbourne), documents the extent of socioeconomic (SES) inequalities in bodily pain using longitudinal data from Australia (HILDA), Britain (BHPS) and Germany (SOEP), with a particular focus on whether such inequalities widen over the life course.

They use random effects logistic and kernel regressions to estimate odds ratios of experiencing severe pain by income, educational qualification and occupational status, and to graph age-pain profiles, while accounting for individual heterogeneity. Cohort level regression analysis is also used to control for cohort effects.

They find that low SES is consistently related to higher levels of bodily pain in each country and inequalities widen with increasing age. In particular, the odds of experiencing severe bodily pain for individuals in the lowest, relative to the highest, household income quartile is up to 2 times higher, while the odds for those with minimum relative to university education being up to 2.5 times higher. For each country, the odds of experiencing severe pain by machine operators are up to 2.7 times higher than for professionals.

Maximum levels, and maximum SES differences in pain, are both reached at around age 60, with the differentials ranging between 0.2 and 1.5 of sample standard deviations. There is no evidence of convergence of pain profiles by age 70. Controlling for cohort effects in the Australian data confirms the results from the age-group analysis. Taken together these results suggest that low SES and manual work have cumulative health effects over the lifecycle.

Figures result from kernel regression of pain on age while controlling for education, occupation, marital status and foreigner status and individual-specific random effects (bandwidth=2). Levels of pain are standardised to mean 0 and standard deviation of 1.
Upcoming Events


Sept | Oct | Nov 2013: Dr Peter Sivey (La Trobe), Prof Xueyan Zhao (Monash), Dr Natalie Carvalho (Melbourne) and Prof Julie Ratcliffe (Flinders) will present seminars at the CHE.

14-16 April 2014: Fifth Australasian Workshop on Econometrics & Health Economics, Esplanade Hotel, Fremantle. Registrations & submissions are due by Friday 1st November.

CHE’s PhD program: Growing from strength to strength

From five students in 2010, the CHE’s PhD program now has 12 students, with two more starting later in the year. This is by far the biggest doctoral program in Health Economics in Australasia. It is also a successful program, with all of our graduates now in employment in academic positions. Dr Julie Abimanyi-Ochom is a Research Fellow at Deakin University, Dr Gang Chen is a Research Fellow at Flinders University and Dr Nicole Au is a Senior Research Fellow in CHE (having recently been awarded an ANPHA fellowship).

Our students are undertaking research across a range of topics from childhood health to perinatal mental health, from complementary medicine to chronic disease, from alcohol purchasing to health system financing and funding decisions – using a range of techniques from qualitative interviews to discrete choice experiments to quantitative analysis of large cohort datasets.

As of 2014 new students will be enrolled in the Specialist Streams in Economics PhD Program which will involve undertaking coursework in the first year of candidature and broader skills based training throughout the degree. A/Prof Paula Lorgelly will be Director of this program.

The university has two scholarship rounds each year, and many of our students are successful in obtaining full fee paying scholarships and stipends. We have just been successful in receiving funding for another Cochrane Scholar; this is CHE’s third in 4 years, an excellent achievement. Qualified applicants interested in pursuing a PhD in Health Economics are encouraged to email buseco-che.hdr.enquiries@monash.edu
Several CHE staff and students presented their work at the 9th World Congress on Health Economics, Sydney.

Prof Anthony Harris presented a paper at the AMA Tasmanian Health Conference.

In collaboration with Prof Joanna Coast (University of Birmingham, UK), Mr Colin Sindall (Director, Prevention & Population Health, Department of Health) and Dr Jenny Proimos (Principal Medical Advisor, Department of Education and Early Childhood Development), A/Prof Paula Lorgelly gave a workshop on use of the capability approach for evaluating complex interventions.

Prof Michael Shields presented a paper on the labour market consequences of poor mental health to the Centre for Health Economics, University of York.

CHE staff and students will present their work at the 35th Conference of the Australian Health Economics Society (AHES) and the 1st Australian Health Economics Doctoral (AHED) Workshop, Canberra.

A/Prof David Johnston & Dr Nicole Au will present papers at the HILDA Research Conference, Melbourne.

Selected recent publications


