2014/2015 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on **4 July** 2014

Supervisor Information (First named supervisor will be the contact):	
Supervisor's Name(s): Dr Hamish Jamieson	
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Research Category (Choose one category only – to be used for judging the students' presentations):

Clinical	Laboratory	Community YES

Project Title (20 words MAXIMUM):

Project Description:

TITLE: Pilot study: Outcomes in cognitive impairment in Canterbury

OUTLINE:

This project will be overseen by a team of people with a variety of different skills in this area. They include Dr Hamish Jamieson (Geriatrician, OUC), Dr Nigel Millar (Geriatrician and Chief Medical Officer, CDHB), Dr Matthew Croucher (Psychogeriatrician, CDHB), Professor Tim Anderson (Neurologist, OUC), Dr Michael Macaskill (Brain Research Institute, UOC), Professor Philip Schluter (Epidemiologist, UC).

OVERVIEW:

Ageing populations result in increasing rates of cognitive impairment and dementia. People with significant cognitive impairment have poor health outcomes. The reasons for these poor health outcomes are complex and multifactorial. In this pilot study we look at predictors of residential care in those with cognitive impairment as identified by a cognitive performance scale.

This project will make use of a pre-existing dataset for older people derived from the International Residential Assessment Instrument (interRAI). The InterRAI assessment was developed by a multidisciplinary collaborative network of academics and clinicians in over thirty countries committed to improving the care of older people. The interRAI interview, takes 90 minutes and asks 236 standardised questions and is designed to be a comprehensive assessment of older people. The interRAI assessment has a specific focus on cognitive impairment and includes a cognitive screen that has a high correlation with two well-established cognitive screens known as the 3MS and the MMSE. There are also questions on many other areas of a participants life including functional dependence, depression-anxiety, psychosocial wellbeing, carer support, mobility, incontinence, pain, fatigue, nutritional status and falls.

The primary purpose of an interRAI assessment and evaluation is to ask standardised questions and then produce standardised recommendations for patient care based on the results. An interRAI assessment is now compulsory for all those being assessed to use age care services or to enter into residential care. While the assessments are used to improve clinical care in-depth analysis of the data will lead to greater improvements in clinical care and patient well-being over the long-term. To date, no specific funds have been allocated to analyse the data. This project focusses on analyzing this unique dataset to identify risk factors for poor outcomes.

This pilot study will utilize the New Zealand National Health identifier number (NHI)-linkage of interRAI data to allow comparisons to be made with medium term outcomes such as hospital readmissions, need for residential care, and mortality. That allows risk factors for poor outcomes in cognitive impairment to be determined. Information obtained will be used to evaluate the complex interplay of factors that lead to poor outcomes for those with cognitive impairment.

To pursue this pilot study there are two aims

AIM ONE: To determine the effect of cognitive performance scale results on outcomes for people with cognitive impairment in Canterbury elderly

AIM TWO: To examine the effect of depression, a chronic disease scale and activities of daily living scales on outcomes in cognitive impairment

METHOD:

1. Ethics approval will be obtained. This study will examine the results of a pre-existing database. All information is stored electronically and is NHI linked, using encryption for data security.

Objective one: To determine the effect of cognitive performance scale results on outcomes for people with cognitive impairment in Canterbury elderly

2. The results of cognitive assessments from 1000 successive CDHB interRAI assessments between 2006 and 2009 will be obtained.

3. Medium-term outcomes will be sourced using the NHI-linkage of the data using the National Minimum dataset, and births, deaths and marriages data for information on hospitalisations, mortality and requirement for residential care.

Outcomes (of recurrent hospitalisations, need for residential care and mortality) will be established for patients with different levels of cognitive performance as identified by the cognitive performance scale. Results will be stratified by age, sex and ethnicity.

Objective two: To examine the effect of depression, a chronic disease scale and activities of daily living scales on outcomes in cognitive impairment

Many confounding factors can influence the outcomes in patients with cognitive impairment. From the interRAI data a number of other validated outcome scales can be produced. We will use three of these scales to determine the extent to which these factors are influencing outcomes. The scales are

A: The depression rating scale. This will be used as a clinical screen for depression within the interRAI assessment and is based on the answers from to ten questions. This scale has been validated against other commonly used scales for depression – the Hamilton Depression Rating Scale and the Cornell Scale for Depression.

B: A Health, End-stage Disease and Signs and Symptoms (CHESS) scale can be derived from interRAI data and is used as a chronic disease burden score. A number of studies have shown that higher CHESS scores are highly predictive of adverse outcomes including mortality and poor self-rated health.

C: The ADL (Activities of Daily Living) Scale stratifies activities of daily living according to the stage of the disablement process in which they occur.

Multiple regression on depression rating scale, CHESS score, and activities of daily living scale will be used to assess the size and significance of the three scales in predicting medium term outcomes (including recurrent hospital admissions, requirement of residential care and mortality) , adjusting for confounders such a gender and age. Multivariate analysis and multiple comparison adjustment will be used to control for multiple testing.

TIMETABLE:
This project is designed as a stand alone project and will be completed in six weeks – with the remaining four weeks used for data analysis and write up.

POTENTIAL OUTCOME: This information will be used to improve the care of older people in with cognitive impairment in Canterbury

BIBLIOGRAPHY

1. Carpenter, G.I., *Accuracy, validity and reliability in assessment and in evaluation of services for older people: the role of the interRAI MDS assessment system.* Age Ageing, 2006. **35**(4): p. 327-9.
2. *http://ithealthboard.health.nz/our-programmes/common-clinical-information/comprehensive-clinical-assessment-aged-care-interrai.*
3. Smith, J., D. Whiddett, and I. Hunter, *User experience of interRAI assessment tools in New Zealand.* Stud Health Technol Inform. , 2013. **192**: p. 744-8.
4. Bernabei, R., et al., *Multidimensional Geriatric Assessment: Back to the Future Second and Third Generation Assessment Instruments: The Birth of Standardization in Geriatric Care* Journal of Gerontology Series A, 2005: p. Pp. 308-313.
4. Morris, J.N., et al., *MDS Cognitive Performance Scale.* J Gerontol, 1994. **49**(4): p. M174-82.
5. Morris, J.N., K. Berg, and B.E. Fries, *Scaling functional status within the interRAI suite of assessment instruments.* BMC Geriatrics, 2013. **13**: p. 128-134.
6. Hirdes, J.P., et al., *Reliability of the interRAI suite of assessment instruments: a 12-country study of an integrated health information system.* BMC Health Serv Res, 2008. **8**: p. 277.