Annual Report

2013
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CHERE

CHERE is an independent research unit affiliated with the University of Technology, Sydney. It has been established since 1991, and in that time has developed a strong reputation for excellence in research and teaching in health economics and public health and for providing timely and high quality policy advice and support. Its research program is policy-relevant and concerned with issues at the forefront of the sub-discipline.

CHERE has extensive experience in evaluating health services and programs, and in assessing the effectiveness of policy initiatives. The Centre provides policy support to all levels of the health care system, through both formal and informal involvement in working parties, committees, and by undertaking commissioned projects. For further details on our work, see www.chere.uts.edu.au.

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Advisory Board

The Advisory Board plays an important role in guiding the strategic directions of CHERE, and monitoring its performance. The Board has an independent Chair, and its members are appointed for their expertise and knowledge of government, the health sector, and universities, and with a commitment to research. Other members are appointed for their individual expertise.

**Professor Lloyd Sansom, AO (Chair)**  
Emeritus Professor, Division of Health Sciences  
University of South Australia

**Professor Denzil Fiebig**  
School of Economics, University of NSW

**Professor Stephen Taylor**  
Associate Dean, Research and Development  
UTS Business School

**Dr Liz Develin**  
Director (Acting), Centre for Epidemiology & Evidence  
NSW Ministry of Health

**Professor Chris Baggoley**  
Chief Medical Officer  
Department of Health and Ageing

**Mr Mike Woods**  
Deputy Chairman  
Productivity Commission

**Professor Jane Hall**  
Director Strategy, CHERE

**Professor Rosalie Viney**  
Director, CHERE

**Professor Marion Haas**  
Deputy Director, CHERE

**A/Professor Stephen Goodall**  
Deputy Director, CHERE
2013 has been an exciting year of development and growth for CHERE. Once again, we have seen an overall growth in our research output and research income, and important developments in terms of policy.

The success of our economic evaluation team has continued to be an achievement for the Centre, and the high quality of their work and industry engagement was recognised in the 2013 UTS Vice Chancellor’s Research Excellence Awards, with the whole team being jointly awarded the Award for Research Excellence through Partnership. This award is fitting recognition of the credit the team brings to the Centre, the Business School and the University both in terms of contributions to policy and practice, but also to developments in economic evaluation methods.

The Centre also had some very important research successes. Dr Richard Norman, our Chancellor’s Post-Doctoral Fellow was awarded a NHMRC Early Career Fellowship, as well as being a Chief Investigator on two NHMRC grants (one with Rosalie Viney, which continues the Centre’s program of research on valuation of quality of life) and an ARC grant. Associate Professor Stephen Goodall was the lead CI on the same ARC grant, to investigate the value of the loss of consumer choice in mandatory public health programs. The nature of CHERE’s research means that many of our peer reviewed grant applications are with clinical collaborators, and in addition to the two successful project grants led by Centre staff, our researchers were Chief Investigators on another three NHMRC projects, an NHMRC partnership program and an NHMRC Centre for Research Excellence. CHERE’s APHCRRI Centre for Research Excellence, established in 2012 has continued to flourish in 2013, with high quality research outputs and high level policy engagement. In addition to these nationally competitive grant successes, the Centre has also been successful in continuing significant commissioned projects, most notably being awarded a renewal of its contract with Cancer Australia to provide health economics support and expertise to the Cancer Clinical Trials Groups across Australia.

The year also saw the continued success of our PhD program, with two students, Alison Pearce and Heni Wahyuni completing their studies, and three new students – Paula Cronin, Philip Haywood and Sheena Arora - commencing and being awarded post-graduate scholarships. Paula, Sheena and Philip are all research staff of the Centre, as are Jody Church and Bonny Parkinson, who are continuing their studies. The PhD program therefor represents an important investment in capacity building for the Centre. The high quality of our research students is evident in their successful progression, their peer reviewed publications and their presentations at national and international Conferences. CHERE’s teaching role in the University has continued to grow, with the new Health Technology Assessment subject being taught in both the Summer and Spring semesters, and CHERE staff involved in supervision of honours and masters students within UTS, as well as hosting international research students.

A major focus and highlight of the year was the International Health Economics Association World Congress, which was held in Sydney in July. CHERE and the Australian Health Economics Society were the joint local organisers of the Congress and Professor Jane Hall was the co-host with Professor Denzil Fiebig from the University of NSW, who is a member of our Board. A number of CHERE staff were also
involved in the local organising committee and also presented papers at the Congress, including at the opening plenary. The Congress saw more than 1300 health economists from around the world gather in Sydney for a meeting that celebrated 50 years of health economics, with 2013 marking the 50th anniversary of the publication of Kenneth Arrow’s seminal paper. Notably, Australia has almost as long a history in health economics, particularly in empirical analysis and in the contribution of health economics to policy. The Congress was an outstanding success and a credit to Jane and all the other members of the organising committee. CHERE staff have also made other important contributions to the health economics and health services research professions. Jane Hall has provided leadership and guidance in her role as Director of Strategy, and led important new initiatives. 2013 saw the launch of the Health Policy Fellowship Program, an initiative of the Health Services Research Association of Australia and New Zealand that has been led by Professor Jane Hall and Professor Marion Haas. Associate Professor Stephen Goodall has taken on the role of President of the Australian Chapter of ISPOR, and Bonny Parkinson organised the very successful inaugural Australian Health Economics Doctoral Workshop in conjunction with the annual Health Economics Conference.

There have been some changes in staff during the year. As always, we are very sorry to lose high quality staff, but welcome the opportunity for them to pursue other opportunities. In 2013, Alison Pearce left the Centre to take up an exciting opportunity as a post-doctoral fellow at the National Cancer Registry in Ireland. Yuanyuan Gu has taken up a research fellow position at Monash University and Stephanie Knox at the National Centre for Immunisation Research. I would like to thank each of these departing staff members for their contributions to the Centre and wish them the best in their new positions. We have also welcomed several new staff to the Centre – Jenny Houltram, Chunzhou Mu, Jenny Wong and Milica Kecmanovic. We were also delighted to welcome back Richard De Abreu Lourenco who is returning to CHERE after several years of invaluable experience in the private sector, particularly in economic evaluation of new technologies.

I also want to take special note of the contribution of our support staff, Gretchen Togle our executive assistant, Vanessa Nolasco, finance manager and Liz Chinchen, research manager. Gretchen and Vanessa have provided wonderful support to the staff, and particularly to the Management Group, in terms of managing all aspects of administration and finances, and in particular in taking on additional roles following the retirement of Liz Justic at the end of 2012. Liz Chinchen’s vital role in supporting the research activities of the Centre was recognised in her receiving a Highly Commended in the University’s Career and Professional Development Awards.

On behalf of CHERE, I want to thank the CHERE Advisory Board for their continued support throughout 2013. Professor Richard Madden, who has been the Chair of our Board since the Centre’s establishment at UTS, has stepped down at the end of 2013. Richard has provided outstanding support to the Centre’s staff over the past decade – with thoughtful advice and guidance, strong advocacy and expert knowledge of health services research and health policy, and I want to thank him for his lasting impact on the Centre. We are delighted that Professor Lloyd Sansom has agreed to take on the role of Chairing the Board. His in-depth knowledge of the health policy landscape in Australia and internationally, as well as his outstanding career in research leadership will provide us with valuable guidance. My thanks also for the wonderful support and leadership shown throughout the year by the CHERE management team, Jane Hall, Marion Haas and Stephen Goodall. They not only ensure that the Centre continues to excel, but also that it runs smoothly on a day to day basis. Their mentorship of
CHERE's research staff is critical to the success of the Centre. Finally, I want to thank all of the CHERE staff for their dedication, enthusiasm and hard work. Their research output demonstrates these qualities but it is the willingness to take on new tasks, develop new skills and tackle new projects, and their engagement with each other’s research that makes it such a pleasure to be the Director of the Centre.
About CHERE

The Centre for Health Economics Research and Evaluation is a recognised Research Strength of the University of Technology, Sydney. It is located in the UTS Business School. CHERE was established in 1991 and became a Centre at UTS in 2002. CHERE is recognised nationally and internationally as a centre of excellence in health economics.

CHERE contributes to the University’s mission through:

- Achieving research excellence through knowledge creation and dissemination
- Using research outcomes to contribute to the development of health policy and practice
- Providing informed commentary to the community debate on health policy
- Providing health sector relevant education to facilitate the application of economic analysis to health policy and practice.

Research Strategy
CHERE develops and uses advanced theory and methods in health economics to achieve excellence in research and produce new knowledge. We have collaborations with other leading researchers in Australia and in other countries. Our research broadly covers the financing, organisation and delivery of health services. Our areas of expertise are financing and the use of health care services; economic evaluation and health outcomes measurement; preferences and decision making in health care; and the health workforce.

Financing the health system and the incentives generated for how health services are used is a key concern in Australia as in other countries. Developments in medical technology and increasing community expectations make it more difficult to ensure that health services deliver value for money. Australia has a unique combination of public and private sources of finance for health care, and public and private sector providers. CHERE has considerable work investigating the impact of these, particularly around private health insurance. There are substantial data sets, collected for administrative purposes and surveys, which have been under-used for research. The increasing availability of panel studies are presenting new opportunities to investigate how individuals respond to changes in personal circumstances, how past experiences within the health system impact on present choices and how changes in the policy setting shape decisions and impact on outcomes. Panel data also allow more sophisticated approaches to control for unobserved heterogeneity across individuals. This approach will allow for better modelling of policy responses over time.

Economic evaluation and health outcomes measurement are an important component of the application of economics research to health care decision making. Increasingly health care funders and providers wish to assess the cost-effectiveness (efficiency) of interventions, not just their safety and effectiveness. Methods in economic evaluation are developing rapidly and CHERE has a strong focus on the application of rigorous and up to date methods, and extending these applications to complex interventions. The assessment of health outcomes that are relevant to end users, sensitive to differences in alternative interventions, and valid in comparing across health care
services remains a major challenge in applying economic evaluation. CHERE is also involved in work that explores how different decision makers use and can use the results of such evaluations.

Individuals make choices about their life styles, whether to use health care, and what services to use. Health system outcomes – aggregate use of services, costs and health outcomes – depend on these choices. So understanding how individuals make choices is fundamental to understanding how the health system works, and predicting the impact of changes in policy settings or constraints. Often the data available do not include all the factors that are relevant to individuals’ choices. Or in the case of new technologies, data simply do not exist as the relevant options are not yet available. Discrete choice modelling of stated preference data can address these crucial gaps and provide more insight into key choices, whether of consumers, providers or funders.

CHERE has developed substantial expertise in the use of this approach in health care settings.

The health workforce is crucial to the productivity, effectiveness and accessibility of health care. To date there has been little Australian research in this field. CHERE is engaged in this topic, particularly around the nursing workforce.

CHERE’s work is broadly based on the following themes:

- Economic evaluation
- Quantitative evaluation of health policy
Economic Evaluation

Economic evaluation is an important component of the application of economics research to health care decision making. Increasingly health care funders and providers wish to assess the cost-effectiveness (efficiency) of interventions, not just their safety and effectiveness.

Methods in economic evaluation are developing rapidly and CHERE has a strong focus on the application of rigorous and up to date methods, and extending these applications to complex interventions. The assessment of health outcomes that are relevant to end users, sensitive to differences in alternative interventions, and valid in comparing across health care services remains a major challenge in applying economic evaluation.

Current projects within this research theme:

Advance care planning

Key Objectives

To evaluate the effect of an advance care planning intervention on patients' end of life wishes and on patients' quality of death

This project aims to evaluate in a randomised controlled trial the effect of a formal advance care planning intervention (ACP) on the documentation of patient wishes, compliance with known end of life (EOL) wishes and the quality of death of patients with progressive incurable cancer on first line chemotherapy. The quality of life of patients subsequent to the intervention, the impact of death on surviving family and the costs of care will also be assessed. The intervention aims to promote discussion between patient and family and the health care team about prognosis and EOL issues and to promote documentation of the patient's preferences for continuing and EOL care. The intervention will also provide patient and family who request information on life expectancy with typical, best case and worst case scenarios for survival time.

Funding source
NHMRC Project Grant

CHERE staff
Jane Hall, Richard Norman, Patsy Kenny

Collaborators
Martin Tattersall\(^1\), William Silvester\(^2\), Josephine Clayton\(^1\), Karen Detering\(^2\), Phyllis Butow\(^1\), Belinda Kiely\(^1\), Jonathan Cebo\(^n\)\(^2\), Stephen Clarke\(^1\), Melanie Bell\(^1\)

1. University of Sydney
2. Austin Health (Victoria)
Advanced heart failure management incorporating LVAD therapy - a pre post cohort, cost effectiveness study (Add Value I, II & III)

Key objectives
Describe the costs, clinical effectiveness and utility, of advanced heart failure management (including LVAD therapy) in a quaternary hospital. Compare the costs associated with advanced heart failure management in the 12 months before and after referral to a quaternary referral hospital.

Advanced heart failure incidence and prevalence is increasing in Australia. It remains a common medical discharge diagnosis in Australia and has been estimated to cost more than $1 billion annually. For those at the most severe end of the heart failure spectrum re-hospitalisations are common and costs are compounded by expensive treatment options including transplantation (HTX) and mechanical circulatory support (MCS) with the implantation of left ventricular assist devices (LVADs). We know very little about the actual health resource use of patients with heart failure (particularly in the 12 months prior to LVAD implantation).

Patients will be followed prospectively from time of index admission and LVAD implant should this therapy be implemented. The main cohort will include all patients referred to the heart failure team requiring intravenous diuresis and /or inotropy. Their course will be followed prospectively for 365 days post the date of index admission, and assessed retrospectively for the 365 days preceding index admission.

Funding source
HeartWare

CHERE staff
Stephen Goodall

Collaborators
Ros Pritchard (PhD Student), A/Prof Chris Hayward¹, Prof Trish Davidson², Louise Kershaw¹

1. St Vincent's Hospital
2. UTS Faculty of Health

A population-based comprehensive lifestyle intervention to promote healthy weight and physical activity in people with cardiac disease: The PANACHE (Physical Activity, Nutrition And Cardiac HEath) study

Key Objectives
To determine the effectiveness and cost-effectiveness of a telephone-delivered lifestyle intervention, focusing on healthy weight and physical activity, in people with cardiovascular disease in urban and rural settings

Cardiovascular disease (CVD) is the leading cause of death and the most costly disease group treated in Australia. Maintaining a healthy weight and undertaking regular physical activity are important for the primary and secondary prevention of CVD. However, many people with CVD are overweight and insufficiently active. In addition, in Australia only 20 to 30% of people requiring cardiac rehabilitation (CR) for
CVD actually attend. To improve outcomes of and access to CR, the efficacy, effectiveness and cost-effectiveness of alternative approaches of CR need to be established.

PANACHE is a randomised controlled trial, including an economic evaluation, of patients who have been referred to a CR program. The intervention group receives an 8 week comprehensive lifestyle intervention which comprises of 4 behavioural counselling and goal setting sessions on weight, nutrition and physical activity via telephone; written materials and a pedometer via mail. The control group receives 2 behavioural counselling and goal setting sessions by telephone on physical activity only, plus the written materials and pedometer. Participants complete a pre-questionnaire and two post-questionnaires at 8 weeks and 8 months. The primary outcome is healthy weight (i.e. body mass index). Secondary outcomes include physical activity, sedentary time and reported relevant nutritional habits. Information about resource use and health related quality of life is collected pre and post trial as inputs into the economic evaluation.

CHERE’s role is to determine the relative cost-effectiveness of these approaches to the secondary prevention of CVD. The results of the trial have been used to build a decision analytic model of costs and benefits from within the trial and beyond the trial period. This has been achieved by extrapolating the intermediate clinical (healthy weight and physical activity levels) and quality of life (QALYs) endpoints to the final outcomes (death or cardiovascular events) using epidemiological data. The analysis is complete and a draft paper is in preparation. Further economic analysis is being undertaken by a Masters of Science (Economics) student from the University of York.

Publications

Funding Source
NSW Health Promotion Demonstration Research Grant 2008/2009

CHERE Staff
Marion Haas, Jody Church

Collaborators
Janice Sangster¹, Susan Furber¹,², Margaret Allman-Farinelli³, Philayrath Phongsavan⁴, Andy Mark⁴, Adrian Bauman⁵

¹. Health Promotion Service, South Eastern Sydney and Illawara Area Health Service
². University of New South Wales
³. University of Sydney
⁴. Heart Foundation
⁵. A randomised controlled trial to determine if progressive resistance and balance exercise can reduce falls in residents of aged care facilities (the SuNBEAm trial)

Key objectives
• Is a supervised progressive resistance training and balance group based exercise
program more effective than usual care for prevention of falls among residents over a 12-month follow-up period?
• Does the program result in improvements to the secondary outcomes: quality of life, cognition, mobility and confidence?
• Is the program cost effective?

Falls are common among older adults. It is reported that approximately 60% of residents of aged care facilities fall each year. This is a major cause of morbidity and mortality, and has a significant burden for health care providers and the health system. Among community dwelling older adults exercise appears an effective countermeasure, but data are limited and inconsistent among studies in residents of aged care. This trial has been designed to evaluate if the “SuNBEAm” (Strength and Balance Exercise in Aged care) program reduces falls in residents of aged care facilities.

The SunBEAm trial is a single blinded, two group cluster randomised trial. Three hundred residents living in 20 aged care facilities will be recruited. The intervention involves progressive resistance and balance training under the guidance of a physiotherapist for 6 months and then a facility-guided maintenance training program for 6 months. The control groups receive usual care. The following outcome measures will be collected; number of falls, number of fallers, quality of life, mobility, balance, fear of falling, cognitive wellbeing and cost-effectiveness.

This study addresses a significant shortcoming in aged care research and has the potential to impact on a substantial individual and international healthcare problem. Outcomes will be used to inform care provider and healthcare policy.

This trial is due to finish in 2016

Publications to date:

Funding source
Funding has been received from Domain Principal Group and in-kind support from HUR Health and Fitness (providing resistance training equipment for the intervention group)

CHERE staff
Stephen Goodall

Collaborators
Jennie Hewitt (PhD student), Prof Kathy Refshauge¹, Prof Lindy Clemson¹, Dr Tim Henwood²

¹. University of Sydney
². University of Queensland
Can discrete choice experiments be used to predict uptake of new drugs?

**Key objective:**
To explore whether discrete choice experiments can be used to predict uptake of new drugs?

The Pharmaceutical Benefits Advisory Committee (PBAC) is responsible for evaluating clinical and economic evidence and making recommendations to the Australian Minister for Health and Ageing on whether a drug should be listed on the Pharmaceutical Benefits Scheme (PBS). Forecasts of the financial implications of a new PBS listing are required to ensure that resources are available to fund the new drug and the impact on health budgets will not be overly strenuous. Unfortunately the estimated uptake of new drugs is often based on weak evidence.

The aim of this study was to explore the use of discrete choice experiments (DCEs) to predict uptake of new drugs. A systematic review of currently available DCEs that may be used to predict uptake of new drugs was conducted. 39 DCEs and conjoint analyses covering a broad variety of diseases and treatments were identified and assessed. It was found that there were significant and wide ranging limitations with the design of published DCEs that hindered their ability to be used to predict uptake. For those that were appropriately designed, the predictive capability of these DCEs was assessed by comparing the results to mature prescribing data. The results of this project were presented at the International Health Economics Association 8th World Congress, Toronto, Canada, July 2011. The findings of this project led to further research conducted as part of Bonny Parkinson's PhD.

**Funding source**
Faculty of Business Research Grant

**CHERE staff**
Bonny Parkinson, Richard Norman, Rosalie Viney

**CREST: Cancer Research Economic Support Team**

**Key Objective:** CREST has been established at CHERE to develop resources to assist the Australian Cancer Collaborative Clinical Trials Groups in the incorporation of health and pharmaco-economic analyses into trial protocols, as well as to build capacity within the Trials Groups in health economics. In 2013, CREST was funded to continue until 2016

The core work of CREST includes:

- Meeting with the Cancer Clinical Trials groups and developing workplans with each Group
- Collaborating with the Cancer Australia Quality of Life Office and the Genomic Cancer Clinical Trials Initiative
- Undertaking protocol audits and reviews
- Providing timely and expert advice to the Groups and members
- Delivering Introductory health economics workshops
- Disseminating relevant information and communicating with the Groups, particularly through e-communication
Additional services will be provided, aimed at building capacity in health economics within the groups including network meetings with EOs and trial managers, structured training opportunities enabling clinical researchers to receive intensive training and assistance regarding a specific project and advanced workshops. Standard operating procedures (SOPs) will be developed for topics such as the collection, coding, entry and costing of resource allocation information, developing a clinical trial protocol suitable for an economic evaluation and translation of patient reported outcomes and quality of life to economic outcomes.

**Funding source**
Cancer Australia

**CHERE staff**
Rosalie Viney, Marion Haas, Kees van Gool, Stephen Goodall, Jane Hall, Patsy Kenny, Philip Haywood, Richard Norman, Richard de Abreu Lourenço, Paula Cronin, Changhao Hou

**Clinical trial of rehabilitation after ankle fracture (the EXACT Trial)**

**Key objective**
The aim of the trial is to determine whether a rehabilitation program (involving supervised exercise, gait training, and advice) is more effective and cost-effective than the provision of general advice about exercise after cast immobilisation for ankle fracture.

Ankle fracture is one of the most common injuries of the lower limb. Initial management consists of surgical or conservative orthopaedic treatment and a period of immobilisation. Subsequently, the presence of pain, stiffness, weakness and swelling impairs the performance of everyday activities and results in significant activity limitation and participation restriction.

Rehabilitation programs are often provided to address the health consequences of the fracture and the subsequent immobilisation. There have been no randomised trials of the effectiveness of a comprehensive rehabilitation program after removal of cast immobilisation for ankle fracture.

A randomised controlled trial is being conducted to determine the effects of a rehabilitation program on activity limitation and quality of life. The intervention will be applied to people with ankle fracture initially treated with a period of cast immobilisation. The results of the trial will enable an evidence-based approach to the treatment of ankle fracture.

Data collection has commenced and will be completed in 2013. The trial protocol has been published:


**Funding source**
NHMRC project grant
CHERE staff
Marion Haas

Collaborators
Anne Moseley\(^1\), Rob Herbert\(^1\), Christine Lin\(^1\)

1. The George Institute for International Health

Cost-effectiveness analysis of targeted and population-based screening strategies for Multiple Endocrine Neoplasia Type 2B

Key Objectives

To evaluate the cost-effectiveness of applying different MEN2B genetic screening strategies in Australia to reduce morbidity and early mortality associated with this rare syndrome

Multiple endocrine neoplasia type 2 (MEN2) is an autosomal dominant, inherited disorder resulting in a high lifetime risk of developing medullary thyroid carcinoma (MTC). The MEN2B subtype has a prevalence of \(~1:600,000\) and is associated with aggressive early onset MTC in children that metastasises early and responds poorly to conventional chemotherapy. In 80\% of carriers, MEN2B is associated with a specific phenotype that becomes more obvious with age and includes marfanoid body habitus and joint laxity. Screening for MEN2B is appealing. Firstly, the condition is serious with a well understood natural history; secondly, prophylactic thyroidectomy, if done early enough, is a preventative treatment option for MTC; and finally, there is a reliable screening test that can detect a causative mutation in 98\% of individuals with a MEN2B phenotype.

A decision analytical model was developed to capture the natural progression of MEN2B. The rationale of the model is that MEN2B screening will lead to fewer cases of MTC, which in turn leads to measurable impacts on both mortality and morbidity. The proposed strategies in the model are: 1) Current practice – symptomatic diagnostic testing of MEN2B 2) providing MEN2B genetic screening for every newborn baby (noted as Newborn Testing) and 3) Targeted Mutation Analysis (TMA) testing – genetically screening only those who express Marfanoid habitus and/or features suggestive of a connective tissue disease and thus visit genetic clinics for assessment. These patients will be likely to receive differential diagnosis for Marfan’s syndrome, MEN2B and other disorders.

The interim results suggest that ‘Current Practice (no testing)’ is not free of cost because this strategy incurred the highest cost for cancer treatment that could have been prevented by performing curative surgery, had the RET mutations been detected and that it is dominated by TMA Testing. When comparing TMA Testing with Newborn Testing, the Newborn arm has an incremental cost of $9.94, incremental effectiveness of 0.000001 QALYs and ICER of $1,000,768.8 per extra QALY gained.

This study provides the first comprehensive cost-effectiveness analysis of the different testing strategies for MEN2B in Australia. One of the key findings is that performing MEN2B testing concurrently with assessment for a possible connective tissue disorder at a genetic clinic could yield a cost saving, compared with the current clinical
management of not providing MEN2B testing. Furthermore adding MEN2B to the current Newborn screening is not cost effective compared with TMA testing with the ICER being $1,000,769 per extra QALY. However this could be improved if added to a DNA based screening program in the future, which reduces the cost of MEN2B testing.

Funding source
CREST

CHERE staff
Changhao Hou, Stephen Goodall, Jody Church

Collaborators
Hilda High¹, Kathy Tucker², Anne Turner³, Mary-Louise Freckmann³

¹: Sydney Cancer Genetics
²: Hereditary Cancer Clinic, Prince of Wales Hospital
³: Clinical Genetics, Sydney Children’s Hospital

Developing multi-attribute utility instrument weights for Australia (MAUDcE)

Key objective:
To develop discrete choice experiment (DCE) methods to model and measure community trade offs for health states

The primary aims of this research are:

- To develop discrete choice experiment (DCE) methods to model and measure community trade-offs for health states (‘utility scores’) for use in calculation of quality adjusted life years (QALYs) in economic evaluation; and
- To provide utility weights that can be used in economic evaluation in the Australian context, and that can be compared with utility weights from other countries

This project has involved the collection and analysis of valuation data from an Australian community based sample for two of the most widely used multi-attribute utility instruments used to estimate Quality Adjusted Life Years for economic evaluation. The two instruments are the EQ-5D and the SF-6D. Valuation data for both instruments has been collected using discrete choice experiments, and using time trade-off for the EQ-5D. A secondary aim of the project has been to use these data to explore a range of methodological issues in valuation of health states. To date the following papers have been published:


**Funding source**
NH&MRC Project Grant

**CHERE staff**
Rosalie Viney, Madeleine King, Richard Norman, Paula Cronin, Deborah Street

**Collaborators**
John Brazier¹, Julie Ratcliffe¹

¹. University of Sheffield UK

**Evaluation of NSW Health drug and alcohol consultation liaison services**

**Key Objectives**
To investigate the prevalence of alcohol and other drug related hospital presentations and the effectiveness of enhanced Drug and Alcohol Consultation Liaison services

Drug and alcohol morbidity is common amongst patients presenting at emergency departments yet frequently unidentified. This increases the risk of inappropriate treatment and management of patients. Issues including post operative morbidity and behavioural incidents as well as higher rates of re-presentation, re-admission and re-injury are associated with drug and alcohol related presentations. The aim of this evaluation is to assess the effectiveness and cost-effectiveness of Drug and Alcohol Consultation Liaison (CL) services in NSW. Consultation Liaison (CL) services are a sub-speciality of psychiatry, to provide direct access to specialist services for support, treatment advice and assistance with the management of the condition. In NSW a number of health services have been funded to provide enhanced Drug and Alcohol CL services to reduce the health burden and associated costs that drug and alcohol problems place on the health system.

The evaluation uses data from a survey of a sample of patients presenting to eight NSW hospitals to determine the proportion of presentations where drug and alcohol use was a contributing factor and the proportion of patients with a recent substance use problem. This study included seeking consent to access the patient’s medical records, including Medicare data and NSW inpatient, emergency department and Area
Health Service CL data. The results of these surveys will be combined with information about the resources and funding of CL services, as well as any resource savings, such as reduced admissions, to assess the costs and outcomes of CL services. The evaluation will also make use of aggregate data on drug and alcohol presentations in NSW public hospitals to identify any underlying trends in patterns of service.

The evaluation commenced on 1 November 2010. Site visits have been undertaken at participating hospitals and patient surveys have been completed. The evaluation team have applied for and obtained ethics approval to access Medicare and Pharmaceutical Benefits data from Medicare Australia, and NSW Inpatient and Emergency Department data and CL data for consenting participants. Interrupted time series analysis of hospital level EDIS, IIMS and APDC data is complete. Baseline and 6 months post-survey data analysis is complete and 5 progress reports have been submitted to date.

**Funding source**
NSW Department of Health

**CHERE staff**
Rosalie Viney, Rebecca Reeve, Stephanie Knox, Sheena Arora, Patsy Kenny, Kees van Gool, Stephen Goodall

**Collaborators**
Sunara Fernando (CI)¹, Lucy Burns², Elizabeth Conroy², Kerryn Butler², Tim Slade²

1. Mental Health Drug and Alcohol Office (MHDAO), NSW Department of Health  
2. National Drug and Alcohol Research Centre (NDARC), UNSW

**Evaluation of the NSW Get Healthy Service**

**Key Objective**
The aim of this project is to provide a comprehensive formative, process, impact and cost evaluation of the NSW Get Healthy Information & Coaching Service

CHERE is part of a team engaged by NSW Health to evaluate the NSW Get Healthy Information & Coaching Service. CHERE’s role was to oversee the conduct of an economic appraisal of the planning, delivery and outcomes of the service. In 2012, Marion Haas supervised James Scandol in the economic appraisal of the Get Healthy Service. A report has been submitted to the NSW Ministry of Health and a paper submitted to a journal. In 2013, work has focussed on a critical appraisal of economic evaluations of telephone-based lifestyle coaching services.

**Funding source**
NSW Health

**CHERE staff**
Marion Haas

**Collaborators**
Philayrath Phongsavan¹, Adrian Bauman¹, Margaret Allman-Farinelli¹, Liz Eakin², Lesley King¹
IDEAL: Improving Dementia End of life care At Local aged care

Key Objective
The aim of this project is to evaluate whether facilitated case conferencing provides a cost-effective means of improving end of life outcomes in aged care residents with advanced dementia and their families.

Managing advanced dementia in residential aged care (RAC) is a growing challenge. Care for people with advanced dementia requires an evidence-based, multi-disciplinary, palliative approach that is targeted to the illness trajectory and tailored to the needs of each individual and his/her family. Currently, the quality of care in RAC is compromised by a lack of staff awareness and expertise concerning the requirements of dementia palliative care and poor communication between staff, family and health professionals. Residents suffer unnecessary hospitalisations and aggressive treatments, while symptoms often go unmanaged.

Facilitated case conferencing (FCC) is an approach that brings together RAC staff, health professionals and residents' primary decision-makers to discuss the current stage of illness and agree on a person-centred management plan based on evidence-based best practice. FCC has improved outcomes in other palliative settings but evidence is lacking for RAC residents with advanced dementia.

This project will use a phase III cluster randomised controlled trial (RCT) to compare the efficacy and cost-effectiveness of FCC with usual care.

Funding source
NHMRC Project Grant

CHERE staff
Stephen Goodall, Sheena Arora

Collaborators
Meera Agar¹, Lynn Chenoweth², Geoffrey Mitchell³, Elizabeth Beattie⁴, Dimity Pond⁵

1. Flinders University
2. University of Technology Sydney
3. University of Queensland
4. Queensland University of Technology
5. University of Newcastle

Investigating best practice primary care for older Australians with diabetes using record linkage

Key objective
The primary aims of this research project are to:
• investigate processes of primary care provision for older people with diabetes;
• identify the predictors (patient, system, and environment) of provision of primary care (best practice or worse); and
• explore the relationship between primary care (best practice or worse) and measures of health outcomes including quality of life and hospitalisation

In Australia most people access health care through community based primary care settings such as general practice (GP), pharmacy, and allied health. In these settings care may be fragmented due to the range of health professionals involved, mix of private and public funding and practice, number of stakeholders with funding responsibility, and mix of fee-for-service and salaried staff. Because there is no comprehensive source of data on service use in this setting, primary care is underrepresented in health statistics, and there has been limited exploration of processes of care for people with chronic health care needs.

Diabetes is a significant chronic disease that is largely managed in the primary care setting. Research has identified the elements of best practice diabetes management, helped clinicians reach consensus on processes of care for people with diabetes and led to the publication of management guidelines suitable for implementation in primary care settings.

Current initiatives to increase the availability and use of administrative data collections provide important opportunities to explore processes of primary care using record linkage. Record linkage will be used to investigate the relationships between processes of care, costs, and health outcomes among Australians aged 45 years or more to inform policy development relation to primary health care and integration of multidisciplinary care.

Data collection using a secondary survey of participants in the 45 and Up project is complete. Data linkage is underway. Preliminary analysis is underway and a number of papers are in draft.

Publications:

Funding source
NHMRC project grant

CHERE staff
Marion Haas

Collaborators
Elizabeth Comino¹, Mark Harris¹, Louisa Jorm²,⁵, Bin Jalaludin³, Jeff Flack⁴, Kris Rogers⁵

1. Centre for Primary Health Care and Equity
2. Faculty of Medicine, UWS
3. Centre for Research Evidence, Management and Surveillance, SSWAHS
4. Sydney South West Area Health Service
5. Sax Institute
Mandatory public health interventions, loss of consumer choice and economic evaluation: Does the (dollar) value for those in favour, compensate for the loss in consumer choice

Key objective:
To conduct a pilot study to quantify the loss of consumer choice, in dollars. By doing so we aim to estimate the ‘cost’ associated with reduced consumer choice when mandatory health programmes (MHP), in particular preventative interventions, replace voluntary ones

Governments are increasing their focus on mandatory public health programmes following positive economic evaluations of their impact. This project involved reviewing the economic theory behind the loss of consumer choice resulting from MHPs. A literature review was then conducted to identify economic evaluations of MHP, whether they discuss the impact on consumer choice and any methodological limitations. It was found that the impact of MHP on the loss of consumer choice has largely been ignored in economic evaluations and there were significant methodological limitations whenever it was included.

Whether the loss of consumer choice from implementing MHPs can be measured using discrete choice experiments (DCEs) was then explored using the following case studies: fortification of bread making flour, mandatory influenza vaccination, and banning trans-fats. Overall it was found that DCEs can be used to measure the loss of consumer choice and the loss of consumer choice must be estimated for each MHP being evaluated.

Future research into the importance of the loss of consumer choice to the final implementation decision is planned.

A paper has been published in the Journal of Nutrition:


Funding source
Faculty of Business Research Grant

CHERE staff
Bonny Parkinson, Stephen Goodall, Richard Norman, Viktoria Rabovskaja

Medical Services Advisory Committee (MSAC) Applications

Key Objective
External evaluators for MSAC, in collaboration with ASERNIP-S (Australian Safety and Efficacy Register of New Interventions Procedures – Surgical)
The role of MSAC is to provide recommendations to the Australian Minister for Health and Ageing regarding the evidence relating to the safety, effectiveness and cost-effectiveness of health technologies and medical procedures. The recommendations of MSAC are used by the Australian federal government to decide whether public funding via MBS should be granted.

In 2007, ASERNIP-S and CHERE entered a formalised Memorandum of Understanding, outlining a collaborative approach to undertaking health technology assessments for MSAC. ASERNIP-S and CHERE have been working in collaboration for over 7 years, and this experience has allowed streamlined and cohesive approaches to economic assessment to be developed. Since collaborating with ASERNIP-S, we have produced a total of 14 reviews, and 6 submission-based assessments, together for MSAC in what we believe is a successful and positive collaboration.

In 2013, the contract to continue MSAC applications was renewed with the Department of Health and Ageing.

**MSAC Applications since 2007-(in collaboration with ASERNIP-S)**

- Application 1106 Endoscopic argon plasma coagulation therapy (Complete)
- Application 1109 Deep brain stimulation for dystonia and essential tremor (Complete)
- Application 1113 Endovenous laser treatment for varicose veins (to be presented to the (Complete)
- Application 1115 Sacral nerve stimulation for urinary incontinence (Complete)
- Application 1123 Computer-aided total knee arthroplasty (Complete)
- Application 1129 Second Generation Contrast Agents for Use in Patients with Suboptimal Echocardiograms (Complete)
- Application 1137 Middle ear implant for sensorineural, conductive and mixed hearing losses (Complete)
- Application 1140 Matrix-induced Autologous Chondrocyte Implantation (MACI) and Autologous Chondrocyte Implantation (ACI) (Complete)
- Application 1143 Radiofrequency Ablation in Barrett's Oesophagus with Dysplasia (Complete)
- Application 1145 Artificial intervertebral disc replacement in patients with cervical degenerative disc disease. (Complete)
- Review 1090.1 Review of MSAC Assessment 1090 - Artificial Intervertebral Disc Replacement (Complete)
- Review 1054.1 Review of MSAC Assessment 1054 - Hyperbaric Oxygen Treatment (HBOT) of two indications, late soft tissue radiation injury and radio necrosis and hypoxic problem wounds in non-diabetic patients (Complete)
- Application 1150 Insertion of colonic stents (Complete)
- Application 1150 Insertion of colonic stents (Complete)

**Funding source**
Australian Department of Health and Ageing

**CHERE staff**
Stephen Goodall, Richard Norman, Jenny Houltram, Jody Church, Paula Cronin
Modelling the impact of speech and language impairment on educational performance and emotional wellbeing: A study of The Longitudinal Study of Australian Children

Key objective
To model the impact of speech and language impairment on educational performance and emotional wellbeing of Australian children aged 4-5 years using the Longitudinal Study of Australian Children (LSAC)

The prevalence of speech and language impairment in 4-5 yr olds could be as high 20%. Primary speech and language impairment is more prevalent than autism (about 0.7%) and about the same as asthma (14-16%) and childhood obesity (about 20%).

Increasing evidence suggests that there are both short and long term effects of childhood speech impairment. The impact of speech impairment may include loss of potential in occupational and educational domains and reduced quality of life.

To date there are few if any studies that have addressed the economic impact of speech impairment in Australian Children. The purpose of this work is to build economic models that are capable of estimating impacts of early intervention of speech impairment in children in Australia.

The first stage of econometric modelling is now complete. Multilevel models for change provided clear evidence that speech and language status in early childhood predicted differences in literacy and numeracy achievements at age 10. Children with the most severe impairment have the worst literacy and numeracy outcomes. For some children improvements in speech and language status over time can be effective in reducing the literacy and numeracy risk associated with speech and language disorders. However, for other ‘at risk’ children this relationship is less clear.

These results provide a framework from which to measure the long term impacts of SLI as well as the potential impact of effective intervention.

In the second stage of the modelling, we will generate a decision analytical model that looks at the costs and benefits associated with early intervention. The findings of this study will serve to be an important contribution in influencing health policy and decision making in this area.

Funding Source
University of Technology Sydney, Faculty of Business Grant

CHERE staff
Paula Cronin, Rebecca, Reeve, Stephen Goodall

The Out-and-About Trial: Improving the quality of life by increasing outdoor journeys after stroke

Key objective
To determine the effectiveness and cost-effectiveness of implementation of a
program designed to increasing outdoor journeys in patients following a stroke

The out-and-about trial is a multi-site project using a two-group cluster randomised controlled trial design. The study will be conducted in Sydney and has been funded under the NHMRC Project Grant Scheme.

The Primary aim is to determine the efficacy of an implementation program to change team behaviour. We hypothesise that by providing an implementation training program to experimental teams, their practice will improve and people with stroke will benefit by getting out more often, and travelling further.

A paper has been published in the International Journal of Stroke:


Funding source
NHMRC

CHERE staff
Stephen Goodall

Collaborators
Annie McCluskey¹, Louise Ada¹, Sandy Middleton², Patrick Kelly¹

1. University of Sydney
2. Australian Catholic University

Person-centred environment and care for residents with dementia: A cost-effective way of improving quality of life and quality of care?

Key objective
The aims of this study are to determine the separate and combined effects of providing person-centred care (PCC) and modifying the physical dementia care environment (person-centred environment design (PCE) on the QOL and Quality of Care (QOC) of aged care residents with dementia and to undertake an economic evaluation off PCC and PCE

The study commenced in February, 2009 after a four month training period for all research staff, which was conducted in four unrelated dementia care units in Sydney, NSW from 1 August 2008. To recruit suitable dementia care sites 79 dementia care units located in 79 separate aged care homes within a 300 km radius of Sydney, NSW, were screened for inclusion with the PCECAT by Research Assistants 1, 2 and the EAT assessment tools by Research Assistant 3, under supervision of three of the CIs. The 40 homes with the lowest scores on PCECAT (care quality) and EAT (environment quality) and therefore, able to most benefit from the study interventions, were deemed eligible for inclusion. The 40 eligible dementia care units were randomly allocated into the 4 Intervention arms, Person-Centred Care (PCC), Person Centred Environment
(PCE), PCC and PCE in combination, and Usual Care and Environment (UC, UE). To help ensure comparability of the intervention and usual care sites with respect to baseline characteristics, sites were matched according to the following criteria: geographical location, size of care unit, profit/not for profit status, and dementia/non-dementia specific orientation. Research Assistants 4, 5, 6 and 7 administered the baseline and outcome data for stage 1 (Pre-Test), which concluded in December 2009. Post-Test data collection for all measures commenced in January 2010 and was completed in 2011. Data analysis is complete and a number of papers are submitted or in preparation.

**Publications**

**Funding source**
NHMRC Dementia project grant

**CHERE staff**
Marion Haas, Richard Norman, Patsy Kenny

**Collaborators**
Lynn Chenoweth¹, Jane Stein-Parbury¹, Laurel Hixson¹, Ian Forbes², Richard Fleming², Madeleine King³, Georgina Luscombe³, Henry Brodaty⁴

1. Faculty of Nursing Midwifery and Health, UTS  
2. Faculty of Design, Building and Architecture, UTS  
3. University of Sydney  
4. UNSW

**Pharmaceutical Benefits Advisory Committee (PBAC)**

**Key objective**
To provide high quality, accurate and independent critiques of pharmaceutical submissions for the Pharmaceutical Benefit Advisory Committee

The Pharmaceutical Benefits Advisory Committee (PBAC) is an independent statutory body established to make recommendations and give advice to the Minister about which drugs should listed on the Pharmaceutical Benefits Scheme. PBAC makes recommendations based on the effectiveness and cost-effectiveness of new drugs.

In 2009, CHERE won a competitive tender to become an independent evaluator for PBAC. This was renewed in 2012 for a further 4 years after another tender process. CHERE evaluates and prepares high quality commentaries on a number of major submissions each year. The evaluations involve analysis and review of complex clinical and economic data, including modelled analyses. The work is cyclical and has to be completed within a tight, strictly adhered to timeframe corresponding to each PBAC meeting, which are held every four months.
**Probiotic Prophylaxis of Spinal Cord Injury Urinary Tract-Infection TherapeUtic-Trial (ProSCIUTTU)**

**Key objective**
To determine the effectiveness and cost-effectiveness of prophylaxis probiotics to reduce urinary tract infections in patients with spinal cord injury

People with spinal cord injury (SCI) are commonly colonized with multiresistant organism (MRO) as a result of recurrent urinary, chest and/or wound infections. MRO occur due to over-exposure to antibiotics during treatment of infections. Presence of MRO in SCI patients makes conventional treatment difficult if further infections develop as treatment usually requires prolonged hospitalization and use of more expensive drugs. MRO spreads easily to other patients within the hospital, requiring extra infection control precautions. Furthermore, transmission of MRO to patients already immunocompromised increases mortality and morbidity.

Probiotic agents are bacterial cultures similar to that found in yogurts. Certain strains of probiotic bacteria have been shown to be possibly effective in treating MRO in other patient populations. We do not know from these studies whether this potential treatment will work for people with SCI. ProSCIUTTU is a randomized controlled trial in 372 people with SCI which commences in mid 2010 and will run for a period of 3 years. The trial hypothesis is that Probiotics may prevent urinary tract infections in people with SCI. Unlike antibiotics, Probiotics do not cause development of further antibiotic resistance.

Trial recruitment ceased in August 2013. Analysis will begin after patient follow-up data are collected.

**Funding source**
NHMRC

**CHERE staff**
Stephen Goodall

**Collaborators**
Bonne Lee¹, Judy Simpson²

1. University of NSW
2. University of Sydney
Using clinical and economic evidence to inform local decision making in cancer care (EM-CAP)

This NHMRC Health Services Research Program grant is a collaboration between CHERE and researchers at UNSW and consists of a number of projects, three of which involve CHERE.

Key Objective
The outcome of this program is to produce and disseminate evidence about the cost effective use of cancer medicines in clinical practice. Freely available economic models in a readily accessible form integrated into local circumstances will allow decision makers, clinicians and patients to better determine suitable cancer treatments. Inherent in our implementation plan is the development of skilled academics, clinicians and policy makers who can continue our activities in the future.

Developing an economic model of the costs of administering chemotherapy
One of the key objectives of the EM-CAP Program is to develop a model to estimate the resource use associated with the administration of chemotherapy. A Masters of Pharmacy student from the University of Utrecht (Johan de Raad) undertook this work and it has been extended by Dr Philip Haywood.

Developing an Economic Model for Treatment Side-effects
A second key objective for the EM-CAP program is to develop a model to estimate the resource use associated with managing chemotherapy side effects which is independent of the medicine under consideration. This project formed Alison Pearce’s PhD Program. Alison has completed her PhD and is currently amending her thesis in line with the examiners’ comments. One paper has been revised and resubmitted and further papers are in draft.

Elements of Care Study
This study, using primary data collected in hospitals in metropolitan and rural areas of NSW aims to identify the individual care elements involved in administering specific chemotherapy treatment protocols and estimate the costs associated with each care element and determine where these costs are borne. Analysis of these data is ongoing and a descriptive paper is in draft.

Publications
Health Review, vol. in press.

Funding source
NHMRC Health Services Research Program Grant

CHERE staff
Marion Haas, Kees Van Gool, Jane Hall, Alison Pearce (PhD student), Rosalie Viney, Philip Haywood

Collaborators
Robyn Ward¹, Margaret Faedo¹, Sallie-Anne Pearson², Carole Harris¹ (PhD student)

1. Lowy Cancer Institute, UNSW, NSW Cancer Institute, SESI Area Health Service
2. School of Pharmacy, University of Sydney
Quantitative evaluation of health policy

Australia has to improve health system performance if it is to meet the growing demands on health services. Financing the health system and the incentives generated for how health services are used is a key concern. The evidence base for future health system reform builds on the experience gained analysis and evaluation of recent health policy initiatives. This research focuses on the use of econometric methods to evaluate policy and thus to encourage more efficiency, better safety, higher quality and better results for consumers.

Current projects within this research theme:

Achievements in, and barriers to health reform

Key objective
The purpose is to monitor the implementation of Australia’s current health reforms through surveys of clinicians, managers and opinion leaders to identify achievements and perceived barriers to implementation

The Commonwealth government, with agreement from the States and Territories, has been introducing a package of reforms to Australia’s health system over the past two years. The reforms comprise a number of key elements including changes to the way public hospitals are funded and measures to strengthen accountability; they are intended to improve health outcomes and ensure the sustainability of the health system. An understanding of what is happening throughout the system, in state health authorities, in regional agencies, at the local level, and at the clinical interface can provide a rapid review of how implementation is progressing, and can identify issues and barriers that need addressing as further reform is effected.

The first phase of this research involved an online survey of members of the Australian Healthcare and Hospitals Association which includes managers and other decision makers from within commonwealth and state bureaucracies, local health authorities, hospitals, community health services, and other relevant agencies. The survey collected data on respondents’ attitudes and views about the reforms, including the need for reform, the expected impact of the reform strategies and potential barriers to their implementation. It was conducted at the end of 2011 and represents respondents’ views at the early stages of the reform process. The study found that, among those involved in implementing the changes, there are perceptions of barriers to be overcome in implementing the reform agenda and there is an expectation that further reform will be needed.

Publications

Funding source
UTS Partnership Grant

CHERE staff
Jane Hall, Patsy Kenny
Adolescents and young adults with a life threatening illness: Preferences for support services

Key objective
To investigate the preferences and trade-offs for support services in a group of adolescents and young adults with a life threatening illness

Life-threatening illnesses in young people are traumatic for patients and their families. Support services can help patients and families deal with various non-medical impacts of diagnosis, disease and treatment. The aim of this study was to determine which types of support are most valued by adolescents and young adults (AYA) with cancer or blood disorders and their families.

A discrete choice experiment (DCE) was performed. Separate experiments were conducted with AYA and their guardians. Types of support included in the experiment were: assistance returning to school/work; emotional support for the patient and/or family; financial support; spiritual support; and cultural support.

Completed surveys were returned by 83/88 AYA and 78/79 guardians. AYA preferred emotional support for themselves (either by counsellors and/or peers), emotional support for their family, financial support and assistance returning to school/work over services relating to cultural and spiritual needs. Covariate analysis indicated female AYA were more likely than males to prefer emotional support, while males were more likely to prefer assistance returning to work/school and to have an aversion for cultural needs.

Guardians preferred emotional support for their dependants and assistance returning to school/work. To a lesser extent, they valued financial and emotional support for themselves. Like AYA, they were indifferent about services relating to cultural and spiritual needs.

Providing the types of support services that people prefer should maximise effectiveness. Results from this DCE can inform evidence-based health policy decision making about the types of support services provided for AYA and their families.

This study was presented at the COSA 39th Annual Scientific Meeting and IPOS 14th World Congress of Psycho-Oncology in November 2012. The following paper has been published in Health Policy:

**Goodall, S.,** King, M.T., Ewing, J.E., Smith, N.F. & **Kenny, P.M.** 2012, 'Preferences for support services among adolescents and young adults with cancer or a blood disorder: A discrete choice experiment', Health Policy, vol. 107, no. 2-3, pp. 304-311

**Funding source**
CHERE
Choice experiments for complex choices: the case of contraceptives

Key objective:
To use choice experiments to investigate the interaction of women's and general practitioners' preferences with regard to contraceptive choices

The range and complexity of contraceptive choices introduced over the past 5 years pose a significant challenge for GPs to provide information and recommendations to women, in the limited consultation time available. No detailed data are available about the factors which will influence a woman’s choice of method or the way GPs will deal with these issues.

This research will quantify the trade-offs that women make in assessing different contraceptive alternatives, provides information about how they will choose under different circumstances, and seeks to predict uptake of new products. These data are necessary to inform GPs in providing appropriate advice and recommendations to women.

The data collection has been completed for this study:

728 women participated in 2 choice experiments.

162 GPs completed 2 choice experiments.

Publications:


promotion on women's preferences for prescribed contraceptive products', *Social Science & Medicine*, vol. 83, pp. 70-80.


The scope of the project was extended in 2010 with support from a UTS Faculty of Business Research Grant. The Faculty funding resulted in the development of code for estimating the Generalized Multinomial Logit model in Stata© software in collaboration with Dr Arne Hole from Sheffield University, UK.

The Stata gml code is publicly available at: [http://www.shef.ac.uk/economics/people/hole/stata.html](http://www.shef.ac.uk/economics/people/hole/stata.html)

**Funding source**
ARC Linkage Grant
Linkage partners: Family Planning NSW, Janssen-Cilag Pty Ltd, Schering Pty Ltd and Organon Pty Ltd.

**CHERE staff**
Rosalie Viney, Marion Haas, Stephanie Knox

**Collaborators**
Denzil Fiebig¹, Edith Weisberg², Deborah Bateson², Deborah Street³, Leonie Burgess³.

1. School of Economics, UNSW
2. Family Planning NSW
3. Faculty of Science, UTS

**Combining Health Economics and Econometrics for Technology Assessment in Health: the CHEETAH project**

**Key objective**
The key objective of this grant is to build capacity in health technology assessment in Australia, particularly in the application of econometrics methods to modelling of costs and outcomes of health care interventions and health care utilisation, to inform resource allocation and reimbursement decisions.

The specific focus of the program of research is towards:
1. Incorporating the most relevant patient outcomes in HTA, allowing for heterogeneity in preferences;  
2. Characterising and evaluating the uncertainty inherent in HTA due to inadequate evidence; and  
3. Monitoring diffusion, effectiveness and cost effectiveness of technology in real-world settings and providing information that will allow for appropriate disinvestment in ineffective technologies.
During 2012 the focus of the program of research has been on designing research projects and analysing administrative, survey and panel data from a variety of sources. The PhD training program within CHERE continues successfully; CHEETAH partially supported 3 students during 2012. Richard Norman has been successful in completing his PhD and Bonny Parkinson (commenced 2011) and Jody Church (commenced 2012) continue their research. Two members of staff partially supported by CHEETAH (Richard Norman and Julia Langton) submitted applications for an NHMRC Early Career Fellowship. Nine projects are underway or completed. Two papers have been published, four are in preparation or submitted for review and four conference papers have been presented.

**Funding Source**

NHMRC Capacity Building Grant in Health Services Research

**CHERE staff**

Rosalie Viney, Marion Haas, Kees van Gool, Rebecca Reeve, Yuanyuan Gu

**Collaborators**

Sallie Pearson1, Preeyaporn Srasuebkul

1. School of Pharmacy, University of Sydney

**Estimating utility of health: Some methodological issues**

**Key Objectives**

To develop and apply novel methods for modelling quality of life valuation using advanced econometric techniques. The strength of these techniques lies in their flexibility, in that the data informs the structure of findings, rather than being pre-defined by the analyst.

Cost-effectiveness analysis of alternative healthcare interventions relies on having a measure of effectiveness, and many regard the quality adjusted life year (QALY) to be the current gold standard. In order to compute QALYs, we require a suitable system for describing a person’s health state, and a utility measure to value the quality of life associated with each possible state. There are a number of different health state descriptive systems, and the most commonly used one is the EQ-5D, under which health is decomposed into five dimensions and each dimension has three levels, resulting in a total of 243 (35) health states. We take a sample from these states and ask selected respondents from a target population to value these health states (thus providing something called utility scores). A regression model is then estimated and used to predict the utilities of all other health states.

In the last twenty years a large number of studies have been carried out to identify the best methodology on how to collect the EQ-5D valuation data. In contrast, there are very few studies on how to use these data to estimate utilities. In general the EQ-5D utility score is skewed, censored, hierarchical and noncontinuous. However, these features have been largely ignored by the existing economic valuation studies and very often a normal distribution assumption is adopted for the ease of estimation. This oversimplification is very likely to cause biased utility estimates and thus inaccurate cost-effectiveness analysis. Consequently, policy makers would make their decisions based on a fragile ground.
This project intends to fill in the gap and aims to identify and develop appropriate statistical tools that can accommodate the special features associated with the EQ-5D data. Moreover, we will use these better methods to analyse the Australian EQ-5D data collected through an NHMRC project conducted by the Centre for Health Economics Research and Evaluation (CHERE), and provide more accurate utility estimates to Australian health economists and policy makers.

In 2013 papers were presented at the Fourth Australasian Workshop on Econometrics and Health Economics and at the 3rd International Choice Modelling Conference.

**Funding source**
UTS Faculty of Business Grant

**CHERE staff**
Yuanyuan Gu, Richard Norman, Rosalie Viney

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**Research Excellence Finance in Economics Primary Health Care (REFinE-PHC)**

**Key objective**
The key objective of this grant is to investigate how primary health care policies affect the use and costs of health care, the quality of care, patients’ health outcomes and whether patients’ experiences are improved

The four themes that the research undertaken by the CRE are:
- 1. Overall financing and organization of PHC in Australia, including trends
- 2. Consumers’ perspectives of quality of care in PHC
- 3. Evaluating policy initiatives to understand the influence of incentives on consumers’ and providers’ behaviour
- 4. Investigating the interface between PHC and hospital care- specifically the concept of ambulatory sensitive admissions

Each theme will be underpinned with a literature review which will aim to elucidate what is known about the topic, the strength of evidence available, its applicability to the Australian context and the gaps in research evidence. The identified gaps will be assessed for their “researchability” in terms of research questions, available data and policy relevance.

The main focus in 2012 (the first six months of the grant) is to establish the CRE; both in terms of research activity and its other goals of capacity building and knowledge transfer. This includes staff and student recruitment, establishing the Advisory Board and developing the mechanisms for communication, principally the website and the annual scientific meeting. To this end we have employed two part time research officers to commence the literature reviews and have commenced recruitment for additional staff. We have established the Advisory Board. The projects commenced are:

1. Recent history of primary care policies in Australia. There have been many changes in Australian primary care, in terms of both policies and incentives. As a research team, we need an easy reference in sufficient detail to support our research planning. This project will catalogue the introduction of different incentives, the policy context within which they were introduced and their implementation, over the last twenty years. This will provide background information for refining new, policy-relevant research
questions. It will be updated annually over the life of the CRE. As part of this, we will also analyse the trends in MBS primary care items over last twenty years, by State and Territory.

2. Relationship between access to and quality of primary care and use of emergency departments. The Commonwealth Fund Surveys provide repeated cross-sectional data on emergency departments use, patient characteristics and a range of indicators of quality of primary care services, including accessibility, availability of after hours care, financial barriers and more. We will identify trends over time, and relate these to developments in policy to support access to primary care. Further, the international aspect of the Surveys allows us to undertake cross-country comparisons with nations with both similar and radically different approaches to primary care.

**Funding Source**
Australian Primary Health Care Research Institute

**CHERE staff**
Jane Hall, Marion Haas, Stephanie Knox, Stephen Goodall, Kees van Gool

**Collaborators**
Philip Davies, Ian McRae, Denzil Fiebig, Tim Usherwood, Jessica Greene

1. University of Queensland
2. Australian National University
3. University of NSW
4. University of Sydney
5. University of Washington, USA

The impact of care-giving on the health of informal carers: Change over time and association with stressors and resources

**Key Objective**
To investigate the impact of care-giving on the mental and physical health of informal carers.

Informal carers represent approximately 13% of the Australian population and this is likely to increase as the population ages. Health is an important factor in the capacity of informal carers to continue providing care and research has shown that informal carers (or some groups of informal carers) have worse mental and physical health than similar non-carers. However, it is possible that some of these differences relate to the health of carers before they become carers.

This study uses data from the Household Income and Labour Dynamics in Australia (HILDA) survey to examine the mental and physical health of informal carers, measured as health related quality of life (HRQOL) using the SF-36 Health Survey. HRQOL was investigated in terms of differences between carers and non-carers, and changes from prior to the commencement of care-giving, in order to identify if there are changes that are likely to be the consequence of care-giving. We also investigated the extent to which changes varied according to the duration of care-giving, the amount of care provided, socio-economic status, perceived social support and the competing demands of family and work.
The study found that the physical and mental health impacts differed among carers; many carers reported positive change, while others reported a substantial negative change. The combination of high levels of caregiving with workforce participation increased the risk of negative physical and mental health effects. The results were presented at the HSRAANZ 2011 conference and a journal paper is currently under review.

**Funding source**

NH&MRC Project Grant

**CHERE staff**

Patsy Kenny, Jane Hall

**Collaborators**

Madeleine King¹

¹. School of Psychology, University of Sydney

**Extended Medicare Safety Net: Review of Capping Arrangements**

**Key objective:**
To measure the impact of capping Medicare Safety Net benefits on provider fees and out-of-pocket costs

The Medicare Safety Net was introduced in 2004 to provide additional financial assistance to households who incurred high out of pocket costs through their Medicare related service use. Our 2009 Review of the Safety Net showed that despite its small overall expenditure in relation to the overall Medicare program, the Safety Net represents a fundamental change in Australia’s public insurance arrangements. The Review found strong evidence that provider charges increased significantly due to the Safety Net, particularly amongst obstetricians and providers of assisted reproductive services.

Following our 2009 review of the Medicare Safety Net, the Australian Government reformed the program by placing caps on the amount of Medicare Safety Net benefits payable for a small number of Medicare items. Our 2011 Review of Safety Net Caps examined the impact of the policy change on provider fees, OOP costs and service utilisation. We found evidence to suggest that there have been some falls in provider fees in 2010, and these are most evident amongst capped items. However, the decline in Medicare benefits has been greater which has meant that OOP costs have increased for most capped services. The 2011 review showed that there are numerous opportunities for providers to shift billing practices in order to avoid caps, thereby creating incentives that may not be aligned with providing the most efficient care. The 2011 Review was tabled in both Houses of Parliament and is available here.
Funding source
Department of Health and Ageing

CHERE staff
Kees Van Gool, Elizabeth Savage, Meliyanni Johar, Stephanie Knox, Rosalie Viney

Collaborators
Glenn Jones
1. Macquarie University

The training and job decisions of nurses: An integrated approach using panel surveys and dynamic discrete choice experiments

Key objective:
To develop models that describe the training and job decisions of nurses and to identify factors which reduce retention in nursing so that health system and health workplace reform can be designed from a robust evidence base

Nursing shortages are already common in Australia, Europe and North America, and affect not only the capacity to keep health facilities open, but also the quality of care provided. This project analyses the factors that influence the recruitment and retention of nurses in educational programs and the workforce, and generally in their career choices. It investigates aspects of job satisfaction and stress, and how these change with on the job experience and lifestyle.

We have recruited a cohort of over 700 undergraduate nursing students during their education and are following their transition into the nursing workforce. The early working years are a time when nurses are particularly vulnerable to dropping out of nursing, so understanding what factors precipitate their exit will help design policies for retention.

Nursing students and graduates have been recruited from the University of Technology Sydney and the University of New England, so our cohort encompasses nurses from both urban and rural backgrounds. Recruitment commenced in 2008 and has continued until 2012.

Participants are asked to complete annual online surveys containing two parts: a questionnaire about their actual experiences, decisions and level of satisfaction, and a discrete choice experiment (DCE) to elicit their preferences for jobs with different characteristics. The first wave of data collection closed at the end of 2012 while the second wave will close in 2013; the third and fourth waves are continuing.

To date, analyses using Wave one data have resulted in several papers and conference presentations. Already we have shown how preferences for jobs differ according to the respondent’s stage in the BN program and clinical experience. We have also identified students’ concerns about their preparation for work and have investigated differences between different discrete choice methods for preference elicitation.
Publications


Funding source
ARC Discovery Grant

CHERE staff
Jane Hall, Patsy Kenny

Collaborators
Denise Doiron¹, Deborah Street², Kathleen Milton-Wildey³, Glenda Parmenter⁴

1. School of Economics, UNSW
2. School of Mathematical Sciences, UTS
3. Faculty of Health, UTS
4. School of Health University of New England

What factors drive the gap between Aboriginal and non-Aboriginal diabetes rates and related health outcomes in NSW? Pilot study

Key Objectives
To investigate the risk factors for diabetes and associated complications within the Aboriginal population of NSW. To inform policy and practice regarding appropriate resource allocation to help reduce diabetes rates for Aboriginal people

Diabetes mellitus is a National Health Priority Area which affects all Australians but is of particular significance to Aboriginal people. Diabetes and its complications impact on quality of life and contribute to early death. Aboriginal people in NSW are three times as likely as non-Aboriginal people to be diabetic. By determining the key drivers of the gap between Aboriginal and non-Aboriginal diabetes rates, the research results will assist health service providers and policy makers to better direct resources towards appropriate interventions to prevent and manage diabetes in Aboriginal communities in
This study uses National Health Survey and National Aboriginal and Torres Strait Islander Health Survey data to estimate differences in diabetes rates and risk/prevention factors between Aboriginal and non-Aboriginal people in non-remote NSW. This is followed by logistic regression analyses of the risk factors for diabetes, to determine which factors have the largest impact on diabetes in the Aboriginal population. Together the two parts provide evidence of the key drivers of the diabetes gap.

The pilot study was completed in 2012 and the results indicate that improved nutrition and exercise and capacity to access and act upon health care information are required to close the gap. Current policy directions focussing on improved nutrition and exercise, awareness and engagement with primary care resources appear to be appropriately targeted; however, further research is required to determine whether the methods to achieve these targets are effective. The results have been presented at the 2012 AHES Conference, the 2013 iHEA World Congress on Health Economics and accepted for presentation at the upcoming 2013 World Diabetes Congress. A paper is currently under review by the Australian and New Zealand Journal of Public Health.

The results of the pilot study provide a foundation for future research using 45 and up study data with linkage to Hospital Admissions, MBS and PBS data. This extension using data linkage is required to evaluate the efficacy of specific methods to achieve policy targets to reduce diabetes incidence. Similarly, for patients with diabetes, analysis of the utilisation of health services (including uptake of MBS items such as an annual cycle of care and HbAlc testing) and the impact on diabetes complications will indicate where resources should be allocated to improve diabetes management and reduce diabetes related health complications for Aboriginal people with diabetes.

**Funding source**
UTS Business School Research Grant

**CHERE staff**
Rebecca Reeve, Jody Church, Marion Haas, Rosalie Viney

**Aboriginal Reference Group**
Wylie Bradford¹, Debra Fernando²

1. Macquarie University
2. Sax Institute
Publications 2013

Refereed Journal Articles


Hewitt, J., Refshauge, K., Goodall, S., Henwood, T. & Clemson, L. 2013, 'Falls prevention research in Residential Aged Care is itself tripped up by medical clearance issues', *Australasian Journal on Ageing*, vol. in press.


Liew, D., De Abreu Lourenco, R., Adena, M., Chim, L. & Aylward, P. 2013, 'Cost-effectiveness of 12-month treatment with Ticagrelor compared to Clopidogrel in the management of acute coronary syndromes', *Clinical Therapeutics*, vol. in press. View/Download from: [Publisher's site](#).


Norman, R., Church, J., Van den Berg, B. & Goodall, S. 2013, 'Australian health-related quality of life population norms derived from the SF-6D', *Australian & New Zealand Journal of Public Health*, vol. 37, no. 1, pp. 17-23. View/Download from: [Publisher's site](#).


View/Download from: Publisher's site


**Parkinson, B.T., Goodall, S. & Norman, R.** 2013, 'Measuring the loss of consumer choice in mandatory health programs using discrete choice experiments', *Applied Health Economics and Health Policy*, vol. 11, no. 2, pp. 139-150.

View/Download from: Publisher's site


View/Download from: Publisher's site


**Van Gool, K., Norman, R., Hall, J.P., Massie, J. & Delatycki, M.** 2013, 'Understanding the costs of care for cystic fibrosis: an analysis by age and health state', *Value in
View/Download from: Publisher's site


Conference Presentations


Church, J., Reeve, R.D., Goodall, S. & Haas, M.R. 2013, 'Deconstructing the positive feedback loop between depression and obesity: can stressful life events be used as an instrument?', iHEA 9th World Congress on Health Economics, Sydney, July 2013.


Norman, R., Viney, R.C., Street, D., Cronin, P.A. & Ratcliffe, J. 2013, 'Using choice experiments to explore preferences for health profiles with different survival durations: experience from Australia', *iHEA 9th World Congress on Health Economics*, Sydney, July 2013.


Viney, R.C. 2013, 'Theory, data, analysis and a snag on the barbie: How health economics has contributed to health policy in Australia [plenary]', iHEA 9th World Congress on Health Economics, Sydney, July 2013.

**Industry Engagement**

CHERE is strongly engaged with health policy makers, health care agencies, and clinicians to facilitate the use of research findings in the development of health policy and practice. This involves a range of activities. There are two research programs developed and implemented in partnership with policy makers and practitioners. There are a series of directly commissioned projects. These may produce situations where research will directly influence policy but for the most part the way that research influences policy will be diffuse. One contribution of research to policy is through engaging with policy making, through participation in policy and practice committees. CHERE staff are members of several key Australian policy advisory committees, including the Pharmaceutical Benefits Advisory Committee, the Medical Services Advisory Committee, and the NSW Health NSW Health Resource Distribution Formula Technical Committee.

Participation in significant policy forums and discussions is another way in which research evidence and skills of analysis are brought to decision making and decision makers. CHERE researchers contribute to the two significant international health policy exchanges: the Commonwealth Fund International Program in Health Policy and Practice, including the Harkness Fellowship and the Australian-American Health Policy Fellowship; and the International Network on Health Policy and Reform supported by the Bertelsmann Foundation. Other contributions include providing media commentary, and presentations to particular target audiences.
Education

CHERE’s teaching includes health economics and health services research and planning through short courses and workshops, courses within other programs of study, and specialised programs in health economics and health services research. Enquiries about workshops and short courses should be directed to: rosalie.viney@chere.uts.edu.au

Programs are designed to meet the needs of three main groups:

- **Economists**: we are committed to encouraging the best young economics graduates to work on health-related issues and to enhance their economics skills. Opportunities for postgraduate coursework, for study leading to the award of a PhD, and for post-doctoral programs are available.

- **Non-economists**: specific training in health economics for people engaged in health policy development and implementation, and for those working in areas such as health care planning, management and/or evaluation is provided through short courses and workshops. For further information contact Rosalie Viney.

- **Clinicians**: many health care professionals, particularly those involved in epidemiological and/or health services research, require an understanding of the principles of economics as applied to health and health care. Although some of this understanding may be developed through the general workshops offered, there are also opportunities to incorporate health economics as a subject in post-graduate training in public health, clinical epidemiology and health services research.

Current PhD Students

**Sheena Arora**

**Economic evaluation of an intervention in parents with children who have developmental disabilities.** Developmental disabilities refer to the group of conditions that arise from physical, learning, language or behavioural impairments. These conditions usually occur in the early stages of life when the majority of physical and cognitive development occurs. Common developmental disabilities include attention-deficit/hyperactivity disorder (ADHD), autism spectrum disorders, cerebral palsy, vision impairment, foetal alcohol spectrum disorders, fragile X syndrome and intellectual disabilities.

This PhD is part of a broader National Health and Medical Research Council (NHMRC) funded research program that will investigate the outcomes of a parenting intervention.
designed for families with children aged 2-12 years old that have developmental disabilities (Stepping Stones Triple P).

The objective of the PhD is to conduct an economic evaluation of the Stepping Stones Triple P program. Given the long-term impact of developmental disabilities, the economic evaluation will consider the lifetime accrual of benefits and costs. Key issues that will be addressed by the research will include establishing a and validating a tool to estimate resource utilisation in this population, extrapolating short-term outcomes to the longer-term, measuring and valuing workforce participation of parents, and the measurement of costs and opportunity costs associated with informal care.

Sheena's supervisors are: A/Prof Stephen Goodall, Prof Rosalie Viney and Prof Stewart Einfeld

1. University of Sydney

**Jody Church**

**Economic modelling of obesity interventions**

The general aim of the thesis is to explore the challenges and issues in applying economic evaluation to interventions for obesity. The specific objectives are: 1) provide a background of the existing literature pertaining to the economic modelling of intervention strategies of overweight and obese individuals; 2) undertake a critical appraisal of current economic models of overweight and obesity and highlight the main limitations of these models and techniques used; 3) explore the relationship between body mass index (BMI) and quality of life (QoL) for application in economic evaluation using panel data to ascertain precisely how changes in BMI states lead to changes in QoL; 3) determine what factors persist in affecting one’s quality of life after a change in BMI (for example depression); 4) explore time preferences of overweight and obese individuals and determine intervention characteristic preferences using discrete choice experiments; 5) and finally suggest improvements for economic modelling of obesity interventions that incorporates all of the above findings to provide a better estimate of cost-effectiveness.

Jody’s supervisors are: A/Prof Stephen Goodall, Prof Marion Haas, Dr Rebecca Reeve

**Richard de Abreu Lourenço**

**The use of non-health outcomes and process effects in economic evaluations.**

Cost-utility analyses, with their underlying metric the quality adjusted life year (QALY), have become the predominant form of evaluation in health economics. The use of QALYs, grounded in the extra-welfarist approach, is often charged with being too narrow and incapable of capturing the full suite of benefits that arise to patients and society. There is an emerging interest in non-health outcomes (NHO) that arise to patients as a result of the consumption of health care and being involved in the process of care.
Under current valuation methods, NHO are often excluded from QALY assessments, or measured in such a manner that it is difficult to interpret their contribution to overall value assessments. The result is that outcomes assessment might not reflect the full impact of health care where there are NHO involved. The focus of this PhD is on how those NHO effects can be captured and assessed for use in an economic evaluation. It aims to explore how existing valuation methods from across economics might be applied to assess NHO and how the results of such valuations can be interpreted as inputs into an economic evaluation. Qualitative and quantitative research methods will be used to define the parameters of interest for valuation, and subsequently to evaluate them using stated preference methods. The goal is to derive a means of assessing value in the presence of NHO that reflects the impact of those effects and can be interpreted in the context of an economic evaluation.

Supervisors for this research: Prof Rosalie Viney, Prof Jane Hall, Prof Marion Haas

Dr Philip Haywood
There is a lack of timely economic information at the local level for the treatment of patients with cancer. This lack of information is compounded by the expected increase in the number of cancer pharmaceuticals becoming available for use in treatment. Further increasing the complexity of this problem is the potential for the newer biological pharmaceuticals to have different adverse event profiles than traditional chemotherapy. A final challenge is that, in practice, cancer treatment is often the consideration of sequences of treatments rather than comparing between individual treatment alternatives. A lack of validated and useful information about opportunity costs may lead to health practitioners making sub-optimal choices about treatment. Developing and validating models for economic information in the Australian context at a local level is an important area of research to overcome this deficit.

The major aims of the research are to:
1. Develop models of cost and consequence for sequences of pharmaceuticals used in the treatment of cancer;
2. Populate the models with information gained from available data collections, existing literature and potentially new data collections; and
3. Validate the use of the models for both traditional and newer pharmaceuticals and the associated sequences.

One of the potential challenges with the proposed research approach will be the issue of switching treatment schedules. The explicit modelling of this decision may be important to producing valuable local level economic evaluations. This has been identified in the literature as a major difficulty in using registry data to develop economic information and also reflects one of the key drivers of cost and consequence.

Philip’s supervisors are: Prof Marion Haas and Prof Rosalie Viney

Bonny Parkinson
Pharmaceutical Policy in Australia: Dealing with Uncertainty. There are increasing demands for the provision of health care to improve survival and quality of life. A dollar spent on one type of health care (e.g. a pharmaceutical, an hour of a clinician’s time, or some medical equipment) is unavailable to spend on another form of health care, or on other public goods such as education or roads, and therefore there is an opportunity cost in terms of forgone benefits. A key plank of pharmaceutical policy in Australia is the use of economic evaluation to ensure that limited health care resources provide the
best value for money. Economic evaluation involves evaluating the incremental effectiveness of a treatment versus an alternative use of funds (often current practice) and comparing it to the incremental cost. In the case of pharmaceuticals, randomised controlled trials (RCTs) are the key source of evidence of efficacy. However RCTs often do not collect all the evidence required and there is a need to translate the data, and synthesise with other forms of evidence, to arrive at a form suitable for decision makers. The process of translating the RCT data introduces uncertainty, and sometimes bias, into the economic evaluation results.

The aim of this thesis is to improve the methods used to assess the cost-effectiveness of pharmaceuticals in theory and in practice by understanding:

- How might economic evaluations use different approaches to translate the same RCT data and arrive at different conclusions?
- How the cost-effectiveness of a treatment may differ in clinical practice compared to that assumed in an economic evaluation based on an RCT?
- How can decision makers better handle uncertainty regarding comparative effectiveness and cost-effectiveness, using data obtained through RCTs or observational studies? and
- How can the uptake of a treatment be more accurately predicted?

Bonny's supervisors are A/Prof Stephen Goodall, Prof Rosalie Viney and Prof Marion Haas.

Ros Pritchard

The cost effectiveness of advanced heart failure management and mechanical circulatory assist therapy

Heart failure is a chronic condition that affects 1.5-2.0% of Australians. It is estimated to cost the economy more than $1 billion annually. For those at the most severe end of the heart failure spectrum, re-hospitalisations are common and costs are compounded by expensive treatment options including transplantation and mechanical circulatory support through the implantation of left ventricular assist devices (LVADs).

The technology is advancing quickly with newer continuous flow devices showing fewer complications and better survival, and the demand for LVAD therapy is likely to rise as the population ages and a significant proportion face the reality of living with advanced heart failure.

No studies have examined cost effectiveness of LVADs in the Australian context, and we know very little about the actual health resource use of patients with advanced heart failure (particularly in the 12 months prior to LVAD implantation). This study will assess the cost effectiveness of LVAD therapy in an Australian health care setting and explore the development of utility measures that will capture the experience of living with an implantable mechanical support device.

The retrospective component will compare the costs generated by patients with LVADs with the costs for those who receive optimum medical management only. The prospective cohort study will capture the journey of patients from first presentation to a quaternary hospital through four possible treatment pathways, using clinical, frailty and utility outcome measures to generate a comprehensive cost effectiveness evaluation of mechanical heart failure therapy.

(Enrolled Faculty of Health, UTS)
Supervisors – A/Prof Stephen Goodall, Trish Davidson, Chris Hayward

Heni Wayhuni
Maternal and infant health in Indonesia. The aim is to examine factors that determine infant health at birth. The research uses the conceptual framework of the infant health production function. Inputs into the infant health production function include mother’s health, education, income, other individual factors, use of prenatal care, access to health care providers, and mother’s participation in community groups. The research aims to extend beyond previous research that uses an infant health production function by considering the impact of mother’s participation in community activities. Heni has given presentations on her research at national and international conferences including AHES and iHEA.

Heni holds a World Bank Scholarship and is in the final stages of her PhD - planning to submit in December 2013. Her supervisors are Prof Jane Hall, Prof Rosalie Viney and Dr Rebecca Reeve.

Courses taught in 2013

Throughout 2013 CHERE staff members were involved in teaching the following courses:

Health Technology Assessment (Subject Number 23787) Spring Semester
Introductory Health Economics (subject number 26703) Autumn Semester
Health Technology Assessment (Subject Number 23787) Autumn Semester
CREST workshop: Understanding Health economics in cancer research was held in May and October

Academic staff

Rosalie Viney is Director of CHERE and Professor of Health Economics at UTS. Rosalie has a PhD in economics from the University of Sydney. Her PhD research focused on the use of discrete choice experiments to value health outcomes and investigate the assumptions underlying Quality Adjusted Life Years (QALYs). She is a member of the Pharmaceutical Benefits Advisory Committee's Economics Sub-Committee.

Jane Hall is the Director of Strategy for the Centre and Professor of Health Economics in the UTS Business School. She was the founding Director of CHERE and held that position until 2012. She is a Fellow of the Academy of Social Sciences in Australia. In 2012 she was recognized with a UTS Vice-Chancellor's Award for Research Excellence in Research Leadership. In 2011 she was awarded the inaugural Professional Award made by the Health Services Research Association of Australia and New Zealand, for her outstanding contributions to research, developing the field and mentoring others. She is currently leading the APHCRI funded Centre of Research Excellence in the finance and economics of primary care. She is actively involved in
policy analysis and critique, and is a regular commentator on health funding and organisational issues in Australia. Jane has represented Australia in many international health policy forums.

She is a member of the Board of the Bureau of Health Information; and a member of the Independent Hospital Pricing Authority. She is the Australian representative of the Harkness Fellowship in Health Policy and Practice; and Director of the Australian-American Health Policy Program. She is an Associate Editor of Health Economics, and of Health Policy.

**Marion Haas** is Professor of Health Economics and a Deputy Director of CHERE. Formerly a physiotherapist, she has a Master of Public Health from the University of Sydney and a Graduate Diploma of Applied Epidemiology. A leading health services researcher in Australia for many years, Marion has extensive policy and research based experience of health services funding and financing in Australia. Her research interests are in the application of economic analysis to policy and practice; planning and evaluating health services; incorporating health economics into health services research, including clinical trials; the application of discrete choice methods to consumer preferences in health; and understanding the impact of health policy on access to, utilisation and costs of health care services. She is currently a chief investigator on a number of major grants, including the APHCRF funded Centre of Research Excellence in the finance and economics of primary care. She is Chair of the Human Research Ethics Committee at UTS. Marion is a founding member and Vice President of the Health Services Research Association of Australia and New Zealand.

**Stephen Goodall** is Associate Professor in Health Economics and a Deputy Director of CHERE. He is also the manager of the economic evaluation research group. This role involves managing a group of health economists, and liaising, negotiating contracts and completing reports with commissioning agencies. His main areas of interest are; economic evaluation of health technologies, public health, primary care, access to health care and equity. He also provides postgraduate lectures on topics aligned with his research (to date: “Introduction to Health Economics” and “Planning and Evaluating Health Services”).

Stephen completed a Master of Health Economics from the University of York. His thesis, an econometric analysis of the HILDA (a large panel) dataset, titled “Is hospital treatment in Australia equitable?” was undertaken at the University of Melbourne. He has a PhD in Vascular Medicine from the University of Leicester, which focussed on health services research.

Prior to joining CHERE Stephen worked for 7 years within clinical development, where he helped design and managed national and international randomised clinical trials. He was also responsible for training and supervising medical colleagues during their research sabbatical. He spent two years in the Pharmaceutical Industry. At the University of Bristol he managed a large multi-centred UK Government sponsored evaluation of access to primary care. His work has led to numerous peer reviewed journal articles and conference presentations, as well as several commissioned reports.

**Kees van Gool** is a health economist and has extensive experience in international, national and regional health policy research. Kees has contributed to and managed a variety of projects including work conducted for the Commonwealth Department of Health and Ageing, MBF and the Senate Community Affairs References Committee.
Currently, he is a chief investigator on an NHMRC health services research program grant investigating the cost-effectiveness of chemotherapy protocols as well as an NHMRC capacity building grant. Kees has a Bachelor of Economics and Arts (ANU) and a Master of Economics (USYD) and is currently undertaking a PhD at the University of Technology Sydney. He is a member of Cancer Australia’s National Research Advisory Group and a regular contributor to the Bertelsmann Foundation’s Health Policy Monitor series. Kees has previously worked at the Organisation for Economic Cooperation and Development (OECD), NSW Health and the Commonwealth Department of Health and Ageing. At the OECD he was responsible for the project on health-related technologies, which focused on evidence-based policy and practice in relation to integrating new technologies into health care systems.

Research staff

Sheena Arora is a Research Fellow at CHERE. She has a background in economics and a Master’s degree in Public Health (specialising in health economics), from the University of Sydney. She has been involved in various public health research projects, including the coordination of a large scale randomised controlled trial for the Centre for Medical Psychology and Evidence Based Decision Making (CEMPED), and most recently, as a project coordinator at the National Drug and Alcohol Research Centre (NDARC). She also has teaching experience, teaching epidemiology to postgraduate students at the University of Sydney.

Jody Church is a Research Fellow (Health Economics) at CHERE. She has an Honours Bachelor degree in Management Economics in Industry and Finance from Guelph University and a Master’s degree in Economics (with an emphasis in Health Economics) from McMaster University. Prior to joining CHERE she worked as a policy analyst in the health department at the Organization for Economic Co-operation and Development (OECD) in Paris, funded through Health Canada. She also gained experience in risk management while working as a business analyst for TELUS Corporation in Canada and in business development when she was nominated for an internship in México by AIESEC and the Canadian International Development Agency. She was also a research assistant for the economics department and a teaching assistant to undergraduate students while studying at McMaster University in Canada.

Paula Cronin has a Bachelor of Science and a Master of Public Health. She conducted her Masters thesis at Curtin University in Perth, working with a local Division of General Practice looking at the management of cardiovascular disease and factors that would improve patient outcomes. In the late 1990s Paula moved to the USA where she worked as a Research Associate for the Health Science Centre at the University of Texas. Her research looked at health inequalities in Grade 4 (age 8 – 10 years) children, investigating how school performance, race and socioeconomic factors affected health status. More recently Paula was a research officer with the Australian Paediatric Surveillance Unit at the Children’s Hospital, Westmead. The Unit, which gathers reports from Australian paediatricians, is producing an Australian data base of rare childhood disorders. Paula joined CHERE in June 2006 and her research interests are in the application of discrete choice experiments to value multi-attribute health states for use in economic evaluation and the perception of obesity in NSW. In addition, Paula is working in the Economic Evaluation team on a number of commissioned projects.
Richard de Abreu Lourenço is a Research Fellow, he is currently working as the Project Officer/Coordinator for the Cancer Research Economics Support Team (CREST) and as part of the team on the CRE for the REFINE primary care project. Richard is a very experienced health economist who has spent the last 12 years working in the field of market access and reimbursement for pharmaceuticals and medical devices in Australia. Most recently, this included seven years with Covance, a clinical research organisation, as a Director of Health Economics. This work has involved liaison with multiple stakeholders throughout the treatment development pathway including clinical trialists, clinicians, patients and patient support networks, statisticians and the reimbursement authorities. He has a keen interest in applied economic evaluations, the economics of specialty health areas, patient preference and quality of life, and priority setting. Richard’s primary interest and focus in specialty health has been in the fields of oncology/haematology, across a broad range of indications and clinical settings. Prior to joining Covance, he spent five years as a member of the health economics team at Novartis Pharmaceuticals, and prior to that four years CHERE. He commenced his career as an Economist with the Reserve Bank of Australia. He holds an MEc (Hons) from Sydney University, and a BEc (Hons) from Murdoch University.

Changhao Hou has a Bachelor of Medicine, Bachelor of Surgery (MBBS) from Southern Medical University (China), specialising in Stomatology and a Master of Health Economics from the University of York (UK). His Master’s thesis estimated the marginal effects of patients’ clinical characteristics on healthcare costs longitudinally and identified cost predictors for healthcare costs associated with dementia. At CHERE Changhao is part of the Economic Evaluation team reviewing and conducting evaluations for the Pharmaceutical Advisory Committee (PBAC). Before joining CHERE, Changhao worked in The Affiliated Nanhai Hospital, Southern Medical University as an intern dentist and maxillofacial surgeon from 2009-2010.

Jenny Houltram is a Research Fellow at CHERE. She has a BSc (Hons) with majors in biochemistry, pharmacology and applied mathematics from The University of Adelaide and a diploma in medical statistics and pharmacoepidemiology from The University of Newcastle. Since 2004 Jenny has been working in the field of market access and reimbursement for pharmaceuticals and medical devices in Australia. She spent 17 years with Covance, a clinical research organisation, as a Director of Health Economics. This role included preparation of submissions for health technology agencies, reimbursement analysis and strategies, and economic modelling.

Patsy Kenny is a Senior Research Fellow and joined CHERE in 1990. She worked as a registered nurse before completing the BA in Government and Political Economy at The University of Sydney. Patsy was awarded her Master of Public Health from The University of Sydney in 1998, her treatise investigated patient participation in treatment decisions for breast cancer. Her early research experience comprised the economic evaluation of health care programs involving innovative nursing and midwifery roles as well as the economic evaluation of cancer treatments. More recent research has included health related quality of life (HRQOL) in asthma and lung cancer, preferences of patients and informal carers, nurses’ job preferences and the HRQOL of informal carers. She has experience in the conduct of longitudinal studies and the analysis of repeated measures data, including HRQOL and cost data. She is currently a member of the NSW Population and Health Services Research Ethics Committee.

Chunzhou Mu is a Research Fellow, she has a Masters degree in Economics from Jilin University (China) and is a PhD student (thesis submitted) in Economics from the
University of New South Wales (UNSW). Chunzhou’s PhD thesis analyses the practice location and labour supply decisions of general practitioners in Australia. At CHERE Chunzhou is part of the Research Excellence in the Finance and Economics of Primary Health Care (REFinE-PHC).

**Dr Richard Norman** is a Senior Research Fellow employed at CHERE since 2006. He has been awarded a Chancellor’s Post-Doctoral Fellowship to explore drivers and preferences for quality of life in the Australian population. He has recently completed a PhD investigating the valuation of health gains for use in economic evaluation in health. Prior to that, he completed a Bachelor Degree in Philosophy and Economics in 2003, and a Master of Health Economics in 2004, both from the University of York. His Masters thesis, written at the University of Bergen, investigated the measurement of productivity in Norwegian Hospitals. His areas of interest include applied microeconometrics, quality of life and economic evaluation. Specific topics include population modelling and discrete choice experiments, particularly in utility measurement and equity. A STATA do file to generate Australia EQ-5D weights based on Viney et al. (2011) can be found [here](#).

Prior to joining CHERE, Richard worked in the UK National Health Service developing cost-effectiveness analyses alongside National Institute for Health and Clinical Excellence (NICE) guidelines.

**Bonny Parkinson** is a Research Fellow at CHERE and has considerable experience in economic evaluation of healthcare interventions and technologies, both in Australia and the United Kingdom (UK). She has a Bachelor of Economics with Honours from the Australian National University and a Master of Health Economics from the University of York. Her Masters thesis focused on integrating health economic modelling in the product development cycle of medical devices. She is currently undertaking a Doctor of Philosophy at the University of Technology, Sydney specialising in issues surrounding pharmaceutical policy in Australia. At CHERE she has reviewed and conducted evaluations for Pharmaceutical Benefits Advisory Committee and the Medical Services Advisory Committee. She is a member of the Cancer Research Economics Support Team (CREST) and has provided advice to Cancer Collaborative Clinical Trials Groups on how to incorporate health economic analyses into trial protocols. She has also received a Faculty of Business grant looking at predicting the uptake of pharmaceuticals and supervised a Masters student from the University of York on her thesis looking at estimating the cost-effectiveness of folic acid fortification in Australia. She is currently a reviewer for the Centre for Research and Dissemination at the University of York. In 2012 Bonny was elected a General Councillor of the Australian Health Economics Society (AHES).

**Dr Rebecca Reeve** is a team investigator on CHERE’s NHMRC Capacity Building grant and is program manager of the policy evaluation program of research. She has also worked with the economic evaluation team evaluating submissions put before the Pharmaceutical Benefits Advisory Committee. In association with the Social Policy Research Centre at the University of NSW Wales, she participated in the economic evaluation of the NSW Brighter Futures program. Rebecca is the project manager of the cost-effectiveness component of economic evaluation of Drug and Alcohol Consultation Liaison Services in NSW hospitals. She has also undertaken an econometric analysis of the long term costs of childhood abuse in Australia. Rebecca has received two UTS Faculty of Business grants; (1) as CIA, to investigate the factors underpinning the growing gap between Aboriginal and non-Aboriginal diabetes rates and (2) as CIB, to examine effects of speech impairment on educational and emotional
outcomes of children using the Longitudinal Study of Australian Children. Rebecca teaches in CHERE’s postgraduate unit “Introductory Health Economics” and co-supervises 2 PhD students.

Rebecca has an Honours degree in economics from Macquarie University (2004) and a PhD in Economics from Macquarie University (2010). Rebecca’s PhD thesis investigates the degree and causes of Indigenous poverty in NSW major cities and the efficacy of current policy approaches to improving Indigenous welfare. Her Honours thesis examined the impact of alternative immigration and fertility rates on Australia’s future labour force outcomes. In 2003, Rebecca was a Ronald Henderson Research Foundation intern at the St Vincent de Paul National Council of Australia, where she undertook a research project on the condition of poverty in Australia. Prior to joining CHERE in late 2009, Rebecca was employed at Macquarie University, since 2004, as a tutor and lecturer in microeconomics and econometrics.

Chun Yee Wong has a Master’s degree of Arts in Economics from the University of Toronto, Canada and is a PhD student (thesis submitted) in Economics from the University of New South Wales. Her PhD thesis examines the welfare effects of the implementation of school vouchers in the kindergarten market in Hong Kong. Chun Yee is now part of the of the Research Excellence in the Finance and Economics of Primary Health Care (REFinE-PHC) project team at CHERE.

Administrative staff

Vanessa Nolasco is CHERE’s Finance & Administration Co-ordinator. She is responsible for monitoring and managing the centre’s Finances and Administrative functions. She supervises the centre’s administrative staff and advises the management team primarily on financial issues, as well as working closely with individual researchers regarding their activities. Before joining CHERE, Vanessa worked at a NSW Government services department, Land and Property Information, as an Assistant Management Accountant in the Finance Department, where she was involved with budgeting, pricing and policy.

Liz Chinchen is the Research Manager at CHERE. She holds a Bachelor of Applied Science (Information) and oversees the key research support activities of the Centre. This includes conducting literature searches on a variety of topics, information management and management of CHERE’s reference library. Liz is responsible for the reporting of CHERE’s research activities and outcomes to the Faculty, University and wider community. Liz is also responsible for the management and updating of the CHERE website.

Gretchen Togle is Executive Assistant to the CHERE Management Team. She also provides administrative support in areas of recruitment and liaises with the Human Resources Department. Gretchen likewise provides organisational and secretarial support to the Centre. She is the Program Assistant for the US-based Commonwealth Fund’s Harkness Fellowship Program, which is officially represented in Australia by Jane Hall.

Professional Activities

In 2013 CHERE staff conducted reviews for journals and grant applications:
Journals
Australian Health Review
BMC Health Services Research (x3)
Health and Quality of Life Outcomes
Health Economics (x2)
Health Expectations
Health Policy (x3)
International Journal of Quality in Health Care (x2)
Journal of Health Organisation and Management
Medical Decision Making (x2)
Medical Journal of Australia (x3)
PharmacoEconomics
Quality of Life Research (x3)
Social Science and Medicine
Value in Health (x5)

Grant Applications
NHMRC Project Grants (x2)