

Using (behavioural) economics to inform intervention design



The discipline of economics can make an important contribution to the *design* as well as the *evaluation* of interventions. Economics is a behavioural science concerned with understanding and predicting behaviour, and can be used to enhance the design of interventions, including those aimed at changing individuals' health behaviours. Behavioural economics, which incorporates insights from psychology into economics, has provided us with important additional insights into what influences individuals' behaviours, such as present bias (the enhanced significance people attach to outcomes that occur now) and loss aversion (the higher value people attach to losses compared to gains). This has informed interventions and nudges, for example, how to nudge people to take the stairs rather than escalators by changing the choice architecture and the introduction of pension and auto enrolment.



Two new projects in HERU aim to use insights from (behavioural) economics to enhance intervention design.

- **Uma Thomas** has recently started a PhD in HERU which will develop physical activity interventions drawing on insights from the time preference literature. This literature has shown that people who are more present oriented are less likely to engage in physical activity. A small previous study in the United States of America used these insights to develop an intervention which made people more aware of the short term and long term outcomes of physical activity and, as people tend to forget the long term outcomes, encouraged them to set intermediate goals. We will develop this by also drawing on the concept of commitment devices to reduce present bias.
- **Marjon van der Pol** and **Hannah Collacott** recently commenced a project which aims to develop weight loss interventions for obese men by drawing on the concepts of loss aversion and the endowment effect (people placing more value on things they own) in incentive design. This project is funded by the National Institute for Health Research and led by Professor Hoddinott and Dr Dombrowski at the University of Stirling.

We are always looking for further opportunities to contribute to intervention development.

For more information, please contact **Marjon van der Pol** (m.vanderpol@abdn.ac.uk).

PhD project: Enhancing the quality of social care through economic analysis

Kevin Momanyi, a PhD student at HERU, presented his research at a recent PhD Health & Social Care Symposium held at the Farr Institute, University of Edinburgh, and organised by Health & Social Care Analysis division of the Scottish Government. The event was attended by senior policy-makers, including the Deputy Chief Medical Officer of the Scottish Government. Following the presentation, it was observed that the study will provide much needed information required by the newly formed health & social care integrated boards through enabling the development of more accurate financial forecasts.

The PhD project is seeking to strengthen the evidence base regarding two quality improvement initiatives in home care, more specifically, the provision of *reablement* and *telecare*. Reablement has been defined as 'services for people with poor physical or mental health to help them accommodate their illness by learning or re-learning the skills necessary for daily living'. Telecare involves the use of devices to monitor individuals' health and safety, and provide response when needed, and could complement or substitute for home care. Few robust economic studies have been undertaken on these initiatives. In particular, there is no evidence from routine data (i.e. large scale non-experimental data) regarding their impact on service use outcomes, such as prevention of emergency, non-elective hospital admissions or delaying entry to care homes. This PhD study seeks to fill this research gap using existing administrative hospital, social care and prescribing data to inform policy and practice.

For more information, please contact **Kevin Momanyi** (r01kom15@abdn.ac.uk) or **Paul McNamee** (p.mcnamee@abdn.ac.uk).

Can Anticipatory Care Plans reduce unplanned hospital admissions?

Reducing 'avoidable unscheduled attendances and admissions to hospital' is recognized as one of the eight key areas of improvement in NHS Scotland's *Shifting the Balance of Care Improvement Framework*. The Improvement Framework identifies a variety of approaches to achieve shifts in the balance of care, two elements of which include the identification of patients who are most at risk of hospital admission and the development of patient care plans. Such care plans are built on the understanding that a substantial proportion of individuals who arrive in A&E Departments, or have other forms of unplanned hospital admissions, do not require, or want, acute hospital care. The suggestion is that it may be possible to reduce acute care costs by providing alternative approaches to acute care. Furthermore, a small number of individuals account for a large proportion of such hospital admissions (often termed "high demand" patients).

In 2014, NHS Lothian initiated a service to identify and manage 'high demand' patients by implementing a system of Anticipatory Care Plans (ACPs) amongst those at high risk of future hospital admission. This study will estimate the costs and cost savings of this system by undertaking a comparative before-and-after study of hospital admissions, together with estimation of the additional staffing costs involved in running the system. Results will be available towards the end of this year.

For more information, please contact **Paul McNamee** (p.mcnamee@abdn.ac.uk) or **Cristina Sechel** (cristina.sechel@abdn.ac.uk).

HERU/HSRU joint exhibit at the NHS Scotland Event

Glasgow, June 14/15 2016

The theme for this year's event was 'Leading transformational change for health and social care'. Over 1700 delegates attended over the two days including senior figures in the Scottish Government; health and social care leaders in health boards, councils and the third sector and frontline staff from across NHS Scotland. Being part of the event was a great opportunity to network and showcase the work that health economics can do to support the continuing change and improvement taking place within NHS Scotland.

We were delighted with the engagement the healthcare community showed in understanding more about how health economics can aid decision-making and what health economics can do for them. There was particular interest in our Post-Graduate Certificate in Health Economics (Distance Learning) and our involvement with the Health Economics Network Scotland (HENS) Workshop on 'Identifying, appraising and applying health economics evidence for public health'.

It was also lovely to meet old friends who had undertaken our distance learning course in the past and we encourage those with an interest in understanding more about what health economics can do to look at our 'Teaching and Training' pages on our website <http://www.abdn.ac.uk/heru/courses/>



First left: **Diane Skåtun** (HERU) providing information on HERU to an interested delegate.

Centre: HERU and HSRU joint exhibit at the NHS Scotland event with **Aileen Neilson** (HERU) and **Graeme MacLennan** (HSRU) liaising with delegates, including **Dr Catherine Calderwood** (Chief Medical Officer Scotland)

HERU Staff Profile...

Aileen Neilson, Research Fellow, Assessment of Technologies (AoT) theme

Aileen started her career in health economics 25 years ago as a research assistant on a clinical trial evaluating the cost-effectiveness of introducing a mass population bowel screening programme in the UK NHS setting (Nottingham University). Having enjoyed a variety of academic, consultancy, and NHS roles in the UK, and other European countries, she returned to her native Scotland and joined HERU as a research fellow in October 2013.

Aileen supports Institute of Applied Health Services (IAHS) related research conducting economic evaluations to address questions of immediate policy or practical relevance for NHS decision-makers. She also pursues methodological research to strengthen the application of economic evaluation methods. Aileen's current projects include an economic evaluation assessing and modelling the impact of HPV 16/18 immunisation on the performance of current cervical screening in Scotland and a model based cost-effectiveness analysis of opportunistic screening for identifying (undetected) atrial fibrillation (AF) in primary care in Scotland.

Aileen contributes to the HERU Expert Workshop we deliver to the Health Economics Network Scotland (HENS) on economic evidence for public health <http://www.abdn.ac.uk/heru/courses/workshops/hens-workshop/>.

Outside work, Aileen enjoys the great outdoors. She is a keen hiker, runner and cyclist and is always planning that next challenge or racing event, often found in the beautiful environs of Scotland!





New Staff and PhD Students

Hannah Collacott joined HERU in April 2016 as a research assistant working within Health Behaviours and Inequality. Hannah holds an MSc in Economics and Health Economics from the University of Sheffield and an MA in Economics from the University of Dundee. Her MSc thesis explored the relationship between maternal employment and the probability of childhood obesity. Hannah is currently involved in a project looking at how best to engage obese men in incentive interventions for weight loss, using a discrete choice experiment.



Luis Enrique Loria Rebolledo is pursuing a PhD in Economics under the joint supervision of Dr. Takahiko Kiso and Professor Euan Phimister from the Economics Department in the Business School, and Dr. Verity Watson from HERU. His research aims to *investigate willingness to pay for low emission public transportation using stated preference methods*. As part of his thesis he is using a discrete choice experiment to assess the value of reducing emissions from diesel engine powered buses in Aberdeen. He is particularly interested in emissions that cause climate change (greenhouse gases) and pollutants linked to health issues (nitrogen dioxides and particulate matter). Luis obtained a BSc in Civil Engineering from the Instituto Tecnológico y de Estudios Superiores de Monterrey (Mexico). He then worked in the environmental sector before completing an MSc in Environmental Economics from the University of York.



Dr Cristina Sechel joined HERU in April 2016. She has a PhD in Economics from The University of York and an MA in Economics from McMaster University (Canada). She is currently involved in an evaluation project for NHS Lothian concerning *the effect of Anticipatory Care Planning on the number of unplanned hospital admissions*, under the Health Behaviour & Inequality theme. Her broader research interests include applied econometrics (particularly non-linear methods and discrete outcome models), applied microeconomics and the use of subjective measures in economics.



Elisabet Jacobsen joined HERU as a research assistant in June 2016. She joined the Assessment of Technologies theme and is currently involved in an economic evaluation comparing *Stapled Haemorrhoidopexy to Traditional Haemorrhoidectomy*, by developing a health economic model alongside the randomised controlled trial. She graduated from the University of Aberdeen in 2014 with a MA (Hons) in Economics and an MSc in Economics of Health in 2015. Her MSc thesis was on *the use of value of information analysis for health care technology decision making, using the case study of the most cost-effective inguinal hernia repair strategy in the UK (comparing open pre-peritoneal mesh repair and laparoscopic hernia repair to Lichtenstein mesh repair)*.



Selection of Presentations.....

In July, HERU staff presented at two international conferences:

4th Meeting of the International Academy of Health Preference Research, 13th July 2016, Hamburg, Germany. This was jointly chaired by **Mandy Ryan** and Elly Stolk, Erasmus University Rotterdam. Presentations by HERU staff were:

- **Nicolas Krucien**, *What group do you belong to? A comparison of bottom-up and top-down clustering techniques.*
- **Gin Nie Chua**, *Do respondents do as they say? Investigating the external validity of discrete choice experiments.*
- **Dwayne Boyers**, *Ex-ante corrections of hypothetical bias in a dental care discrete choice experiments.*

European Health Economics Association (EuHEA) Conference 2016, Universität Hamburg, Germany. Presentations by HERU staff were:

- **Dwayne Boyers**, *Using discrete choice experiments to estimate willingness to pay for dental care.*
- **Gin Nie Chua**, *Do respondents do as they say? A mixed method investigation of the external validity of discrete choice experiments.*
- **Laura Dysart**, *The role of time preference on healthy lifestyle choices in older adults living with chronic health conditions.*
- **Alastair Irvine**, *Professional and private time preferences of Scottish general practitioners.*
- **Nicolas Krucien**, *Does it matter to analyse preferences at the individual level? Evidence from a choice experiment about chronic pain self-management.*
- **Marjon van der Pol**, organised a session entitled 'Time preference in health' which was chaired by Dorte Gyrd-Hansen, COHERE, Department of Business and Economics & Department of Public Health, University of Southern Denmark. At this session Marjon presented 'Can we improve the measurement of time preference to enhance predictive validity of health behaviours?'.





HERU Pedometer Challenge

With more and more research pointing towards the detrimental effects of inactivity, HERU decided to put its money where its mouth is! Between April and May, **20 staff and students** took part in a 4-week walk-at-work challenge that was inspired by the 'Paths for all initiative'. Participants used pedometers to count their steps at work and home with the goal of collectively walking from Aberdeen to London. In the end instead of reaching their goal, they easily surpassed it, walking a total of 5.9 million steps (a little over 3,600KM), the equivalent of travelling from Aberdeen to Malaga, Spain. **Congratulations to all the participants!**

Research Support Awarded.....

Dr David Preiss (University of Oxford), **Graham Scotland** (HERU) and other collaborators successfully secured funding of over £1m from the National Institute for Health Research (NIHR) to conduct 'A randomised controlled clinical trial of fenofibrate added to standard care versus standard care alone to prevent progression of non-proliferative retinopathy in diabetes (LENS: Lowering Events in Non-proliferative retinopathy in Scotland)'. This project will run for 72 months, commencing shortly.

