

Health Economics Unit

Welcome to the winter 2013 edition of HEUnews!

PhD opportunity!

We are looking for a bright, motivated individual for a 3-year PhD studentship developing approaches to measuring and valuing outcomes in the area of sexually transmitted infections. The appointed student will have scope to direct the work but is likely to focus on the valuation of temporary health states and issues of time preference in the context of chlamydia infection. More info at <http://www.findaphd.com/search/ProjectDetails.aspx?PJID=49951&LID=137>. For informal discussion, contact Tracy Roberts (t.e.roberts@bham.ac.uk).

As this year draws to a close and we look ahead to the seasonal festivities, in this issue we celebrate the contributions of HEUs new up and coming junior staff and doctoral students.

The two featured research projects are led by **Paul Mitchell**, a recently completed doctoral student analysing data on capability and health from the Monash-led Multi-Instrument Comparison project, and **Sam Husbands**, a doctoral student conducting qualitative research around the process of structuring and building models within health economics (see page 2).

Inside, we also celebrate three recent doctoral successes, for **Jesse Kigozi**, **Paul Mitchell** and **Sabina Sanghera**. As well as taking on new research projects in their new staff posts, all are now working hard on developing papers for publication from their doctoral work – keep an eye out for these over the coming months! We also welcome three new staff members to the Unit, one of whom, **Katie Breheny**, will be conducting novel work on methods for the economic evaluation of diagnostic tests (see below).

In capacity building news, we celebrate MSc successes, both graduation and publication. We also highlight a recent paper from Billy Kaambwa and **Emma Frew** which provides



recommendations for increasing health economics capacity. With the clear indication of high quality work from the new members of our Unit, both in teaching and research, we continue to reap the benefits and success of our own capacity building programme!

Season's greetings and Happy New Year!

Tracy Roberts
Head of Unit

What's new in HEU...

HEU is building on its existing experience in the economic evaluation of diagnostic tests and its links with biostatisticians to develop work looking at the methods of assessing the cost effectiveness of diagnostic tests.

With the increasing emphasis on the evaluation of test technologies through NICE and the HTA programme, there is an unmet demand in the NIHR for individuals skilled in the design, analysis and systematic reviewing of test technologies. **Katie Breheny** has joined the HEU on a 2 year NIHR Research Methods Fellowship Programme supervised by **Andrew Sutton** and Jon Deeks. The fellowship will provide Katie with training and hands-on experience across a number of areas including within study economic evaluation of diagnostic tests, and economic modelling alongside primary research and evidence synthesis studies of test and accuracy. This work is part of a wider suite of research that is considering the economic assessment of testing and diagnosis. Existing approaches place strong emphasis on valuing tests in terms of their accuracy. However there are other features of testing that can impact on patients' health, particularly their ability to expedite access to treatment, enhance clinicians' diagnostic confidence, and/or provide more acceptable testing procedures. Tests can be harmful if they lead to an increase in the burden placed on patients without improving diagnoses, and can also be potentially costly without offering additional patient benefits. HEU's work seeks to overcome these issues and provide insights into the methods for assessing cost-effectiveness of current and new testing and diagnostic pathways.



Andrew Sutton and Katie Breheny

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The Multi Instrument Comparison (MIC) Project: Understanding the influence of different conditions on capability wellbeing using the ICECAP-A questionnaire

Paul Mitchell, working alongside fellow HEU staff members **Joanna Coast** and **Hareth Al-Janabi**, is undertaking a number of collaborative studies with the Multi Instrument Comparison (MIC) dataset team at Monash University, Melbourne, Australia. The MIC dataset is the largest of its kind, with data collection using 12 quality of life instruments that aim to capture well-being in terms of health status, subjective well-being and capability. The MIC dataset was collected using a web panel for a general population sample and seven patient groups (arthritis, asthma, cancer, depression, diabetes, hearing loss and heart disease) across six countries (Australia, Canada, Germany, Norway, UK, USA), totalling more than 8,000 participants.

The first study from this collaboration is looking at the differences in relative impacts of the seven patient groups in terms of the effect on health status, as captured by the EQ-5D-5L, and capability, as captured by the ICECAP-A (www.birmingham.ac.uk/icecap). Both questionnaires are recently developed and while they both include the same number of questions (five), the questionnaires aim to capture different characteristics of individual well-being.

The second study utilising the MIC dataset is focusing on patients with depression in this dataset and the validity of the ICECAP-A measure for these patients. This will be the first assessment of the validity of any of the ICECAP measures in a mental health condition. Individuals with depression in this dataset have also completed two condition specific questionnaires (DASS21 and the Kessler Depression Scale), alongside the other generic measures of quality of life included in MIC, and provided other socio-demographic data. Together these will enable a number of aspects of validity to be assessed.

Other planned research projects with the MIC dataset include the validation of the German translation of the ICECAP-A, and there are also plans for Paul to develop themes from his PhD research, by looking at quantitative approaches for defining sufficient capability thresholds. For information on the MIC project more generally, visit <http://www.aqol.com.au>.

A qualitative analysis of the model building process

Decision-analytic models are now a standard element of health care funding decisions internationally and yet a number of studies have highlighted errors in the structures of published and policy informing models. These structural errors could potentially lead to poor cost-effectiveness recommendations and the inefficient use of finite health care resources. If all modellers were to pay attention to best practice modelling guidance it may prevent such errors being made in future models.



Sam Husbands

For her doctoral research project **Sam Husbands** (supervisors, **Joanna Coast**, **Sue Jowett**, **Pelham Barton**), is aiming to develop best practice guidance to assist modellers in the process of building the structure of a decision-analytic model. This is through observation and discussion with modelling and clinical experts. The first stage of Sam's empirical work has involved in-depth interviews with modellers to gain insight into the current processes that are used in model development and opinion on which aspects of the process are insufficient and may require further guidance. Modellers interviewed have been from academic institutions, consultancy firms and pharmaceutical companies. Sam has also recently returned from a trip to Vancouver funded through the Universitas 21 scheme. From here Sam conducted interviews with modellers in Canada. Early interview analysis has indicated that the design of the model structure and communication between modellers and clinicians, to ensure that it represents the health and cost events that occur within a disease, can be particularly problematic.

The next stage of empirical work will involve case studies with teams of modellers and clinicians to explore the modelling process further, particularly the areas where modellers have cited issues and suggested the need for guidance. The case studies will use observation and interviews to help to determine best practice for each stage of model development. This will be documented into process guidance which can help a modeller to overcome issues and avoid errors in the development of their model.

Seminar Series

The Health Economics Unit runs a monthly seminar series at which speakers from around the UK and Europe present their work.

Dates and speakers for the forthcoming monthly seminars are as follows:

Thursday 23rd January 2014

Hazel Squires

(SchARR, University of Sheffield)

Title: A methodological framework for developing the structure of Public Health economic models.

Thursday 20th February 2014

Matt Stevenson

(SchARR, University of Sheffield)

Title: Discrete Event Simulation (101 and Beyond)

Thursday 20th March 2014

Rachael Morton

(HERC, University of Oxford)

Title: To dialyse or not? Physician preferences for the treatment of elderly patients with end-stage kidney disease: A discrete choice experiment.

Thursday 10th April 2014

Adriana Castelli

(CHE, University of York)

If you would like to attend any of these seminars or would like to contribute, please contact us via our email address.

Pelham's Pen

An economist, a mathematician and a physicist were each given a barometer and asked to use it to find the height of a particular tall building.

The physicist measured the atmospheric pressure at ground level and on the roof, took the difference in millimetres of mercury, and then multiplied by the ratio of the densities of mercury and air.

The mathematician waited until the sun was shining, stood the barometer near the building, and measured the lengths of the shadows of the building and the barometer. He then multiplied the height of the barometer by the ratio of the lengths of the two shadows.

The economist took the barometer to the owner of the building and said, "If you tell me the height of your building, I will give you this barometer."

Who do you think got the most accurate answer?

The Health Economics Unit welcomes...

Cara Bailey, who joined the HEU in

September, working 2 days per week with

Joanna Coast on the ERC funded project, EconEndLife. Cara is a Lecturer in Nursing in the School of Health and Population Sciences with a clinical background in emergency nursing. Cara's PhD focused on patient, carer and staff experiences of end-of-life care in the Emergency Department. She has been working across a variety of palliative and end-of-life research projects including hospital service redesign as part of NIHR CLAHRC and a Macmillan funded project exploring emergency admissions amongst people with advanced respiratory disease and education interventions to support student nurses caring for the critically ill, dying and bereaved.



Katie Breheny, who joined HEU in September. Katie is undertaking a two year NIHR Research Methods fellowship focusing on developing and applying skills in the economic evaluation of diagnostic testing (see front page).

Katie has a background in Psychology and comes to HEU from Oxford Outcomes, where she started her career as a researcher in patient reported outcomes and health-related quality of life. Katie will be working with **Andrew Sutton** in HEU and Jon Deeks in the Public Health, Epidemiology and Biostatistics Research Group. Katie will also be studying on the MSc Health Economics and Health Policy part time.



Mark Monahan, who joined HEU in November. Mark is currently working with **Sue Jowett** on an economic evaluation on the use of a clinical stopping rule for the cessation of extended anticoagulant therapy for idiopathic venous thromboembolism (VTE) patients. Mark undertook an MSc in Health Economics in NUI Galway, Ireland last year and his MSc dissertation was an econometric analysis on the predictors of positive and negative mental health of NUI Galway undergraduate and postgraduate students.



PhD successes – we are delighted to congratulate...

Jesse Kigozi on the recent successful defence of his PhD thesis, "*The economics of back pain: alternative approaches to productivity cost estimation in economic evaluation of healthcare*". The work focussed on key methodological issues in



measuring productivity loss using the friction cost approach, with low back pain as a case study. Jesse's research was funded as part of our on-going collaboration with Keele University and was supervised by **Pelham Barton, Sue Jowett, Joanna Coast**, and Martyn Lewis from Keele. Jesse plans to do further research in this area.

Paul Mitchell who successfully defended his PhD thesis, "*Exploring the capability approach in model-based economic evaluations*". Paul's thesis established methods for applying the capability approach in an evaluation framework. Specifically, this was done by (i) investigating how a measure of capability well-being, the ICECAP-O, can be incorporated into a health economic model and (ii) establishing the objective of capability evaluations to aid the decision-making process in allocating scarce resources for health. Paul was supervised by **Joanna Coast, Tracy Roberts** and **Pelham Barton** and was funded through a studentship from the School of Health and Population Sciences.



Sabina Sanghera who successfully defended her PhD thesis, "*A comparison of welfarist and extra-welfarist approaches to valuing outcomes in menorrhagia*". In this chronic condition, which has episodic symptoms and affects both health and non-health aspects of life, the use of the alternative extra-welfarist measures, EQ-5D and SF-6D, was explored in an economic evaluation alongside a trial (ECLIPSE). The use of the welfarist willingness-to-pay measure was also assessed and was incorporated into a cost-benefit analysis. The PhD was funded by the NIHR HTA. Sabina was supervised by **Tracy Roberts, Emma Frew** and clinicians, Joe Kai and Janesh Gupta.



Capacity building news

Students graduating from the HEHP MSc in July 2013, with members of staff from HEU.



We are delighted to report that Elizabeth Goodwin, one of our past MSc students (class of 2010), has recently had a paper based on her MSc dissertation accepted for publication in *Social Science & Medicine*. The paper "Using programme budgeting and marginal analysis (PBMA) to set priorities: Reflections from a qualitative assessment in an English Primary Care Trust" reports the qualitative findings from a review of the implementation of PBMA within NHS Plymouth, an English PCT. It was found that the technical prioritisation method provided staff with focus and structure, and delivered a substantial planned reduction in hospital activity beds. The paper reports that, overall, PBMA was effective in producing priorities for NHS Plymouth. The dissertation was supervised by **Emma Frew**. We are delighted that Elizabeth's work is being published, and as a unit, are keen to encourage as many of our Masters students as possible to publish their work in peer-reviewed journals.

MSc Programmes and associated short courses

HEU run two separate but allied MSc programmes: **MSc Health Economics & Health Policy** and **MSc Health Economics & Econometrics**. Both MSc programmes are ideal for new graduates hoping to pursue a career in health economics or for those currently working in the health care sector who wish to develop skills in health economics. Both programmes explore the key principles and theories upon which health economics is based as well as developing practical skills for the conduct of empirical work. The MSc Health Economics and Econometrics is differentiated primarily by its compulsory modules in Microeconomics and Econometrics in addition to the health economics modules and requires a first degree in Economics. The following modules are shared by both programmes and are also provided as individual short courses:

- Introduction to Health Economics
- Policy and Economics of Health Care Delivery
- Economic Evaluation in Health Care
- Modelling for Health Economics.

To learn more about the MSc or about the short courses visit: <http://www.birmingham.ac.uk/healthconomics>, contact Helen Evans on 0121 414 7694 or email healthconomics@contacts.bham.ac.uk

Billingsley Kaambwa and **Emma Frew** have recently had a paper published in *International Review of Economics Education* (listed in the last HEU news). The paper "Health Economics in the UK: Capacity, constraints and comparisons to US health economists" presents the results of a survey of the demographics, training and professional perceptions of UK health economists with comparisons to US health economists where appropriate. The paper highlights a number of findings and provides recommendations on how the capacity for health economics can be increased within the UK with a focus on the undergraduate curriculum, the availability of Masters studentship funding and methods for attracting more people into the discipline.

Selected recent publications

Al-Janabi H, McCaffrey N, Ratcliffe J, Carer Preferences in Economic Evaluation and Healthcare Decision Making, *The Patient - Patient-Centered Outcomes Research* 2013, DOI: 10.1007/s40271-013-0035-y

Goodwin E, **Frew EJ**, Using programme budgeting and marginal analysis (PBMA) to set priorities: Reflections from a qualitative assessment in an English Primary Care Trust, *Social Science & Medicine*, 2013, DOI: 10.1016/j.socscimed.2013.09.020

Flynn TN, **Coast J**, Peters TJ, Quantifying response shift or adaptation effects in quality of life by synthesising best-worst scaling and discrete choice data, *Journal of Choice Modelling*, 2013, DOI:10.1016/j.jocm.2013.04.004

Horwood J, Sutton E, **Coast J**, Evaluating the Face Validity of the ICECAP-O Capabilities Measure: A "Think Aloud" Study with Hip and Knee Arthroplasty Patients, *Applied Research in Quality of Life*, 2013, DOI: 10.1007/s11482-013-9264-4

Kaambwa B, Bryan S, **Jowett S** et al, Telemonitoring and self-management in the control of hypertension (TASMINH2): a cost-effectiveness analysis, *European Journal of Preventative Cardiology*, 2013, DOI:10.1177/2047487313501886

Oppong R, Mistry H, **Frew E**, Health economics education in undergraduate medical training: introducing the health economics education (HEe) website, *BMC Medical Education*, 2013, DOI: 10.1186/1472-6920-13-126

Sanghera S, **Frew E**, Kai J, Gupta J, **Roberts TE**, An Assessment of Economic Measures used in Menorrhagia: A Systematic Review, *Social Science & Medicine*, 2013, DOI: 10.1016/j.socscimed.2013.09.016