

# Health Economics Unit

Welcome to the Spring edition of HEUnews!



The Unit's capacity development successes underpin the news in this issue. Staff member, and former graduate of HEU's MSc, Lazaros Andronis successfully defended his NIHR supported PhD recently. This was not the only HEU related PhD success so far this year (see inside). Meanwhile staff member Lavanya Diwakar (another HEU MSc graduate) has just received news of her successful Wellcome Fellowship (below). Inside we celebrate recently published papers from current PhD Students Adrian Gheorghe (also a HEU MSc graduate) and Paul Mitchell (newly appointed to staff), whilst other current PhD students Sabina Sanghera and Sam Husbands are reaping the successes from their own HEU MSc dissertations with a paper and a forthcoming conference presentation respectively (details inside).

Inside, staff member Deirdre O'Brien (yet another HEU MSc graduate!) introduces the model building work she is undertaking in her research on Chronic Obstructive Pulmonary Disease and Rosanna Orlando tells us about her "think-aloud" interviews as part of a Unit research project that will contribute to her PhD. To complement the Unit's focus on capacity development we are delighted to announce that HEU will be repeating the Internship opportunity we offered to undergraduate economics students last year, and hope to continue to introduce bright young students to health economics and engage them in the difficult issues that the health economy

faces. The success of our capacity building is clear and when strong academic health economists are in short supply – we are really delighted to have grown our own!

Tracy Roberts  
Head of Unit

## What's new in HEU...?

**Lavanya Diwakar** has been awarded a Wellcome trust Research Training Fellowship for her project entitled 'Economic Evaluation of Paediatric Allergy Services in the West Midlands'. The fellowship is for three years and during this time, she will be based at the Health Economics Unit and will work towards a PhD under the supervision of **Tracy Roberts**, Carole Cummins and Richard Lilford. She will also be employed as an honorary consultant in Clinical Immunology at the Queen Elizabeth hospital for this duration.

Lavanya passed her MSc in Health Economics and Health Policy run by the Unit in 2010 with honours. She is currently working on the economic analysis of two HTA funded projects. Her fellowship project will involve evaluating the current burden of Paediatric allergy *vis-a-vis* services available in the West Midlands, understanding patient preferences for allergy services in the region and modelling pathways for delivery of service. She is collaborating with clinicians and academics in the West Midlands, London as well as Edinburgh for this project.



Lavanya Diwakar

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## Building Decision Models for Chronic Obstructive Pulmonary Disease (COPD)

COPD is a chronic respiratory disease that causes airflow restrictions that are not fully reversible. There is no cure for COPD but a range of health and public health interventions have been proven to control symptoms, reduce the risk of exacerbations and delay disease progression.

**Deirdre O'Brien** is funded by the National Institute for Health Research (NIHR) to conduct health economic analyses of interventions for screening and treating Chronic Obstructive Pulmonary Disease (COPD). She is currently involved in two Health Technology Appraisals reviewing the effectiveness and cost-effectiveness of Non Invasive Ventilation (NIV) and self-management interventions in patients with COPD. She is also supporting a self-management trial and the BLISS programme of work, which investigates case-finding of COPD and analysis of data from a primary care COPD cohort.

**Sue Jowett** is the lead health economist on these projects.

All of this work involves constructing decision models for cost-effectiveness analysis. The challenges to modelling costs and effects in COPD populations are widely documented. Markov models are the most widely used as this structure permits patients to move between health states linked to lung function decline as well as to experience temporary health states where the risk of exacerbations also changes over time. This structure cannot, however, account for variability linked to individual characteristics and lacks memory to account for how the history of recent exacerbation affects the risk of future exacerbation. For this reason individual sampling and discrete event simulations have been proposed as better alternatives. To contribute to this debate and inform the planned research outlined above, Deirdre is also leading a systematic review of decision models in COPD. Ultimately she hopes this research will lead to a better understanding of the challenges of model building in this area, and contribute to recommendations on best practice.



Deirdre O'Brien

## 'Think-aloud' interviews in a hospice setting

As part of the EconEndLife ERC funded research within HEU, **Rosanna Orlando** is carrying out think-aloud research with patients receiving care through Marie Curie Hospice, West Midlands. The task involves individuals who are receiving care through the hospice "thinking-aloud" as they complete three short questionnaires (17 questions in total), and then participating in a short interview. The three questionnaires measure health (EQ-5D), capability wellbeing (ICECAP-A) and supportive care (ICECAP-SCM), and the data are recorded and transcribed before analysis.

The think-aloud technique enables researchers to explore the validity of different questions in evaluating patient's quality of life at the end of life, and provides information about how each of the three questionnaires are understood by individuals at this stage in their life. Participants are being recruited through the hospice from the community service, day hospice and in-patient settings. The study involves close collaboration with the research officer at the hospice, Rachel Perry, who identifies eligible participants. For some patients who are receiving supportive care, completing such questionnaires is emotionally difficult or just physically not possible; an important element of the study, therefore, is that patients are also given the option to consent to proxy completers (close persons and health professionals) taking part.

Obtaining better understanding of how these different individuals respond to each of the questionnaires, and where and why responses differ, will be an important part of the analysis of these data and will be extremely valuable in advising on methods for future economic evaluations of interventions at the end of life.



Rosanna Orlando

## Seminar Series

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

**Thursday 18<sup>th</sup> April 2013**

**Richard Brooks**

(EuroQol Group)

**'Reflections on the EuroQol instrument (EQ-5D) after 25 years.'**

**Thursday 16<sup>th</sup> May 2013**

**Richard Smith (LSHTM)**

**Thursday 20<sup>th</sup> June 2013**

**Manuel Gomes (LSHTM)**

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

## Pelham's Pen

The optimist says that the glass is half full.

The pessimist says that the glass is half empty.

The accountant says that the glass is twice the required capacity.

The economist says that market forces will cause the glass to be superseded by a glass of the correct capacity.



## Research news...

**Paul Mitchell** has recently had a paper from his PhD work published in *Medical Decision Making*. The title is "Predicting the ICECAP-O capability index from the WOMAC Osteoarthritis Index: Is mapping onto capability from condition-specific health status questionnaires feasible?"

This study sought to find whether capability attributes on the ICECAP-O could be predicted from a condition-specific questionnaire. Given that the ICECAP-O questions do not explicitly mention health, it was important to ascertain whether changes in health status were being picked up by the broader capability wellbeing measure. It was found that the majority of the ICECAP-O attributes (excluding attachment) could be predicted from the categories of pain, stiffness and physical function on the WOMAC questionnaire for Osteoarthritis



patients. This is an encouraging development for researchers who are interested in using the ICECAP measures for health interventions.

**Lazaros Andronis** was

invited as a panel speaker in this year's Warwick Economics Summit. The summit, which is organised and run by economics students, was held at the University of Warwick over the weekend of 15<sup>th</sup> to 17<sup>th</sup> of February.

Lazaros took part in a panel on Health Economics and had the opportunity to engage in a discussion with students and panellists around economic aspects relevant to the provision of health care. Topics discussed included the possible impact of proposed health care reforms, the feasibility of containing costs through improving the system's efficiency, and the contribution of economics in addressing issues related to the supply of and demand for health care services.

Lazaros noticed a vibrant and knowledgeable audience of students signalling an increasing interest in health economics.



## Two members of staff are presenting at the 7<sup>th</sup> IMA conference on Quantitative Modelling in the Management of Health and Social Care in London...

**Sam Husbands** will be presenting a poster entitled "Systematic review: What guidance currently exists for the process of decision-analytic model building?"

The poster outlines the results of Sam's MSc dissertation, which was supervised by **Joanna Coast** and **Lazaros Andronis**. The research highlights a need for the development of in-depth, step-by-step guidance for the modeller on the process of building the structure of a model. This is something that Sam will look to do within her PhD.



**Pelham Barton** will be giving an oral presentation entitled "Adapting a national policy model to local contexts: the case of transient ischaemic attack". Co-authors include **Cristina Peñaloza** and **Sue Jowett**. The presentation is based on the work we are doing as part of the Birmingham and Black Country CLAHRC (Collaborations for Leadership in Applied Health Research and



Care) on optimising the management of stroke and TIA. Pelham will be talking about the challenges in adapting an existing model to the local context.

## Capacity building news...

**Congratulations** to three students supervised from within the Unit who have successfully been awarded their doctorates during the winter months.

January saw staff member **Lazaros Andronis** (supervised by **Pelham Barton**, Cindy Billingham) taking his viva and obtaining his PhD from his NIHR Doctoral Research Fellowship on *Analytic approaches for informing research funding decisions: an exploration of their role and value using case studies of cancer clinical trials*. February brought vivas for two more students: MD student Gemma Malin (supervised by Khalid Khan, **Tracy Roberts**, Katie Morris), and PhD student Jerome Wulff (supervised by Milica Bucknall, Danielle van der Windt, **Sue Jowett**). Gemma is currently a Registrar in Obstetrics and Gynaecology at Nottingham University and has been awarded her MD for a thesis on *The diagnostic/prognostic value of neonatal findings for predicting childhood and adult morbidity: systematic reviews, meta-analysis and decision analytic modelling*. Jerome was based at Keele University's Arthritis Research UK Primary Care Centre with which HEU has a formal link and was awarded his PhD for research on *Modelling clinical outcomes and cost-effectiveness of primary care interventions for osteoarthritis using prediction and decision models*. Many congratulations to all our new Doctors.

### MSc HEHP Graduation December 2012



## MSc Health Economics & Health Policy and associated short courses.

The MSc HEHP is 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. The course explores 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 provides a programme of carefully developed modules, with the following modules 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
- Statistics / Econometrics

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](mailto:healthconomics@contacts.bham.ac.uk)

## Summer Internships 2013

We will shortly be recruiting a second cohort of summer interns to the Health Economics Unit. The key motivation for these internships is to present undergraduate economics students with the opportunity to observe and experience working life in an academic health economics department with the intention of stimulating interest in a career in health economics. The internships will last for four weeks during June and July, and comprise the opportunity to experience research in a variety of projects, alongside attendance at seminars and other research events.

Last year we recruited five very capable and motivated students, all of whom completed their internships. The students primarily assisted on projects related to the family impact of meningitis and antibiotic resistance. The students variously reviewed and summarised scientific evidence and entered and analysed survey data. Some got an unexpected bonus when Usain Bolt came to train a few hundred metres away on campus! The first cohort of interns are now applying for further studies and jobs – we wish them all well in their further studies and work.

## Selected recent publications

Gheorghe A, **Roberts T**, Ives J, Fletcher B, Calvert M. Centre Selection for Clinical Trials and the Generalisability of Results: A Mixed Methods Study. *PLoS One*, 2013, DOI: 10.1371/journal.pone.0056560

**Mitchell PM, Roberts TE, Barton PM, Pollard BS, Coast J.** "Predicting the ICECAP-O Capability Index from the WOMAC Osteoarthritis Index: Is Mapping onto Capability from Condition-Specific Health Status Questionnaires Feasible?" *Medical Decision Making*, 2013, DOI:10.1177/0272989X12475092.

Salisbury C, Montgomery AA, Hollinghurst S, Hopper C, Bishop A, Franchini A, Kaur S, **Coast J**, Hall J, Grove S, Foster NE. A pragmatic randomised controlled trial of the effectiveness and cost-effectiveness of 'PhysioDirect' telephone assessment and advice services for patients with musculoskeletal problems. *BMJ*, 2013, DOI: 10.1136/bmj.f43

**Sanghera S, Orlando R, Roberts TE.** Economic evaluations and diagnostic testing: An illustrative case study approach. *International journal of technology assessment in health care*, 2013, DOI: 10.1017/0266462312000682

Smith RD, **Coast J.** The true cost of antimicrobial resistance. *BMJ*, 2013, DOI: 10.1136/bmj.f1493