



# Health Economics Unit

Welcome to the Winter 2017 edition of HEUnews!

Whilst we are troubled at home with the recent dumps of snow, digging out snow boots, crampons and thermal vests, our research thoughts are with more serious issues elsewhere. We are very proud to be finishing the year having secured involvement in two NIHR funded Units for Research on Global Health (see below). The research units will make a real impact upon the lives of patients in low and middle income countries, as well as presenting HEU staff with both fresh challenges and the opportunity for some interesting and varied international travel!

The research focus (page 2) is closer to home, specifically relating to children in the West Midlands. Hugh McLeod and Iszara Blake explore the feasibility of collecting data on health related quality of life in children as part of a wider study to prevent clinical deterioration (RAPID). Meanwhile Emma Frew and Katie Breheny present the Daily Mile Trial which aims to promote initiatives to prevent childhood obesity.

#### Inside this issue:

Welcome message	1
What's new in HEU...	
Contact us	
Research	2
Have you heard...	3
Staff news	
Pelham's pen	
Capacity building news	4
Recent publications	

On page 3, we are delighted to pay tribute to our former students: James Avoka Asamani's MSc dissertation work has had a significant impact in his home country of Ghana; we welcome former PhD student Magda Aguiar to our team and congratulate Dr Maria Cristina Peñaloza on being awarded her PhD. Perhaps most importantly, we would like to wish all our friends, colleagues and collaborators a very 'warm' and pleasant Christmas, and a happy and successful New Year.



Tracy Roberts,  
Head of Unit

## What's new in HEU?

### HEU's contribution to research units established with NIHR funding for research on global health.

HEU's **Tracy Roberts** and **Mark Monahan** are providing health economics input as part of the NIHR Global Health Research initiative on Global Surgery, led by the University of Birmingham's Professors Dion Morton and Peter Brocklehurst. Surgery remains under-prioritised in low and middle countries (LMICs) and where surgery is available patients are three times more likely to die after operation than in high-income countries. The global research platform facilitated by this prestigious NIHR funding will start to address these challenges, with research priorities identified by patients and clinicians from LMICs.

Mark and Tracy attended their first international project meeting in Johannesburg during November. The meeting was an opportunity to promote health economics ideas, develop new networks and identify priorities and opportunities for future research.

HEU's **Sue Jowett** is contributing health economics input as part of the NIHR Global Health Research Group on global COPD in primary care; a £2m initiative being co-directed by the University of Birmingham's Dr Rachel Jordan and Professor Peymané Adab. Research proposals are currently being developed with Brazil, China, Georgia and Macedonia to explore issues such as smoking cessation, and strategies for the diagnosis and management of COPD.



## RAPID

RAPID (Real-Time Adaptive and Predictive Indicator of Deterioration) is a feasibility study of an innovative early warning system to detect and allow early response to clinical deterioration. A patient-specific algorithm draws upon wirelessly collected data on heart and breathing rate and oxygen levels, to generate a real-time signal of clinical deterioration. The initiative aims to avoid harm and death associated with unrecognised clinical deterioration. The study is funded by the Department of Health and Wellcome Trust Challenge Fund and led by Dr Heather Duncan at Birmingham Children's Hospital (BCH) NHS Foundation Trust.

Looking ahead to future economic evaluation of RAPID, **Iszara Blake** and **Hugh McLeod** – along with three research nurses at BCH – are undertaking a 'think aloud' study to explore the feasibility of collecting data on health-related quality of life, using the CHU9D and PedsQL questionnaires, as reported by patients' parents. The think aloud study will provide new insight into how parents of children on BCH's cardiac wards respond to questions about health-related quality of life, and the appropriateness of using these instruments in an acute hospital setting.



The 'think aloud' team from left to right: Iszara Blake, Sugrah Sultan, Heather Duncan, Alex MacDonald, Hugh McLeod (Jenna Spry not pictured)

## The Birmingham Daily Mile Cluster Randomised Controlled Trial

Childhood obesity is a significant problem, with 23.9% of reception and 40.2% of year 6 children in Birmingham being classed as overweight or obese according to 2015/2016 National Child Measurement Programme data. Not only does childhood obesity have implications for their immediate and long-term health and wellbeing, it is also financially burdensome for the health system. With local authority public health budgets being cut year after year, it is increasingly important to identify low-cost and simple interventions that can contribute to tackling this complex issue.

The Daily Mile is an initiative developed in Stirling, Scotland that involves children doing an additional 15 minutes of physical activity integrated randomly into the school day. It was recommended in the UK Government's Childhood Obesity Strategy and worldwide over 3,000 schools are currently implementing the Daily Mile. However, evidence of its positive impact on children's weight status, wellbeing and academic attainment is only anecdotal.



Katie and Emma

**Katie Breheny** and **Emma Frew** from HEU, together with colleagues in the Public Health, Epidemiology and Biostatistics department, are collaborating with Birmingham City Council on the Birmingham Daily Mile cluster randomised controlled trial. The trial is currently underway in 40 Birmingham primary schools. This pragmatic trial will provide much needed real-world evidence of the impact of the Daily Mile on several important outcomes that include body mass index, academic attainment, fitness, quality of life and wellbeing. In addition, an economic evaluation will be conducted to assess the cost-effectiveness of the Daily Mile.

With such global enthusiasm for this accessible and low-cost initiative, it is anticipated that the results of this trial will have significant implications for the Daily Mile and the provision of similar public health interventions in school settings.



# Have you heard...

...about the impact that James Avoka Asamani's MSc Dissertation is having on Health Workforce planning in Ghana?



James Avoka Asamani

James graduated with an MSc in Health Economics and Health Policy (Distinction) in 2016. He was a recipient of the Commonwealth Shared Scholarship from the University of Birmingham and the Commonwealth Scholarship Commission in the UK. He is currently Head of the Planning, Budgeting & Policy Unit of the Human Resource Division of Ghana Health Service.

James' MSc research for his dissertation responded to a stated desire by the Ministry of Health (MoH) in Ghana to improve the responsiveness of its health workforce planning, informed by model based evidence, including budget forecasting. A Markov model was developed, based on country specific data to forecast the number of health facilities needed in Ghana and the associated workforce planning requirements. The work was supervised by Ray Oppong and Pelham Barton.

The model was made available to the MoH and the Public Services Commission (PSC) in May 2017, with both institutions adopting the model as a planning tool. The MoH has since used it to determine the admission quota for all health training institutions for the 2017/2018 academic year. The PSC has also accepted it as basis for establishing staffing ceilings for the Ghana Health Service (GHS).

Minister of Health, Honourable Kwaku Agyemang-Manu (MP), in justifying the model to the Parliament of Ghana on 6<sup>th</sup> October 2017, told MPs that it was the first time that the MoH had undertaken workforce planning "... in such a robust and scientifically based manner ... [and that], it was after these rigorous scientific analyses, that the [admission] quota for 2017 was given to individual [health training] institutions to bring about equity".

## Staff news...

We are delighted to announce that, **Magda Aguiar** has joined HEU staff having been appointed Research Fellow.



Until recently Magda was a full time PhD student in Birmingham carrying out a model based economic analysis of strategies to prevent vitamin D deficiency in the UK population (supervised by **Emma Frew** among others) and has recently submitted her PhD thesis. Magda will continue to work with Emma on research related to economic evaluations of public health interventions.

Congratulations to HEU's **Mark Monahan**, who has recently been appointed as the Research Fellow working within the newly-established £7 million NIHR Global Health Research Unit on Global Surgery (see front page). Under the supervision of **Professor Tracy Roberts**, Mark will be providing health economics input to the four year global surgery programme which aims to establish sustainable international research hubs across a range of low and middle income countries (LMICs). Initially, Mark will be working on an economic evaluation of a multi-country factorial randomised control trial on preventing wound infections following abdominal surgery.



## Pelham's Pen

*A vicar, a doctor and a health economist are playing a round of golf. All goes well for a few holes, but then they catch up with a foursome who seem to be playing very badly and show no interest in letting them through. While they are still deciding whether to confront the group directly, they see the Club Secretary, so talk to him first.*

*The Club Secretary explains that the four golfers ahead of them are all blind ex-firemen who lost their sight when putting out a fire in the clubhouse. In gratitude, the club allows them to play whenever they like.*

*"Oh what a marvellous sacrifice," says the vicar. "I will pray to God to restore their eyesight."*

*The doctor says, "I have a friend who is an eminent ophthalmologist. I will consult him to see if anything can be done medically for these men."*

*The health economist asks "Can't they play at night?"*

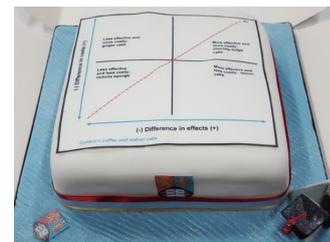


## Congratulations and farewell to our former students and welcome to those who joined us in September!



A big HEU welcome to our new students on the **MSc Health Economics & Health Policy** and **MSc Health Economics & Econometrics** programmes! Our new students have wide and varied academic and professional backgrounds as well as experiences from a range of different healthcare systems. This leads to stimulating and interesting discussions and debates throughout our highly interactive programmes. The first three modules have already taken place and feedback from students has been extremely positive.

**Congratulations** also to those students who graduated from our two MSc programmes on Friday 8<sup>th</sup> December. Of those who braved the snow in order to attend the ceremony in person, we would like to say a special thank you to Louise Proud for very generously bringing in a delicious cake with particularly relevant ICERing.



### Health Economics MSc Programmes and associated short courses

HEU runs two separate but allied MSc programmes: **MSc Health Economics and Health Policy** and **MSc Health Economics and Econometrics**. 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. Selected modules are also accessible as **short courses**, see website for details. For more information visit:

[www.birmingham.ac.uk/healthconomics](http://www.birmingham.ac.uk/healthconomics) or email [healthconomics@contacts.bham.ac.uk](mailto:healthconomics@contacts.bham.ac.uk)

### Congratulations to Dr Maria Cristina Peñaloza!

Cristina was officially awarded her degree of Doctor of Philosophy in absentia on Friday 8<sup>th</sup> December, having successfully defended her thesis at viva on 1<sup>st</sup> September. Cristina's thesis explored the use of best practice guidelines and the effect of alternative model structures on the results of cost effectiveness analyses, with a focus in particular on cardiovascular disease. Her supervisors were **Dr Pelham Barton**, **Dr Sue Jowett** and Dr Andrew Sutton. Cristina is pictured with her lead supervisor, Pelham.



Cristina (far left) with lead supervisor Pelham Barton (far right) and HEU colleagues.

### Selected recent publications

**Al-Janabi H**, Do capability and functioning differ? A study of U.K. survey responses. *Health Economics* 2017. DOI: 10.1002/hec.3586

**Al-Janabi H**, Manca A, Coast J. Predicting carer health effects for use in economic evaluation. *PLoS ONE* 2017. DOI: 10.1371/journal.pone.0184886

**Barton P**, Sheppard JP, Penaloza-Ramos CM, **Jowett S** et al. When has service provision for transient ischaemic attack improved enough? A discrete event simulation economic modelling study, *BMJ Open* 2017, DOI: 10.1136/bmjopen-2017-018189

Coast J, Mitchell P, **Goranitis I**. Ethics and Values in Welfarism and Extra-Welfarism. *Mental Health Economics* 2017. DOI: 10.1007/978-3-319-55266-8\_9

**Goranitis I**, Bellanca L, Daley AJ, Thomas A, Stokes-Lampard H, Roalfe AK, **Jowett S**. Aerobic exercise for vasomotor menopausal symptoms: A cost-utility analysis based on the Active Women trial. *Plos One* 2017. DOI: 10.1371/journal.pone.0184328

Huynh E, Coast J, Rose J, **Kinghorn P**, Flynn T. Values for the ICECAP-Supportive Care Measure (ICECAP-SCM) for use in economic evaluation at end of life. *Social Science & Medicine* 2017. DOI: 10.1016/j.socscimed.2017.07.012

**Jowett S**, **Barton P**, Roalfe A, Fletcher K, Hobbs FDR, McManus RJ, Mant J. Cost-effectiveness analysis of use of a polypill versus usual care or best practice for primary prevention in people at high risk of cardiovascular disease. *PLoS ONE* 2017. DOI: 10.1371/journal.pone.0182625

Luckraz H, Manga N, Senanayake EL, Abdelaziz M, Gopal S, Charman SC, Giri R, **Oppong R**, Andronis L. Cost of treating ventilator-associated pneumonia post cardiac in the Natisurgery ional Health Service: Results from a propensity-matched cohort study. *Journal of the Intensive Care Society* 2017. DOI: 10.1177/1751143717740804

Mitchell PM, **Roberts TE**, **Barton PM**, Coast J. Applications of the Capability Approach in the Health Field: A Literature Review. *Social Indicators Research* 2017. DOI: 10.1007/s11205-016-1356-8

Peñaloza-Ramos MC, **Jowett S**, Sutton AJ, McManus R, **Barton P**. The importance of model structure in the cost-effectiveness analysis of primary care interventions for the management of hypertension. *Value in Health* 2017. DOI: 10.1016/j.jval.2017.03.003

Takundwa R, **Jowett S**, **McLeod H**, Penaloza-Ramos MC. The effects of environmental factors on the efficiency of Clinical Commissioning Groups in England: a data envelopment analysis. *Journal of Medical Systems* 2017. DOI:10.1007/s10916-017-0740-5

Wynne-Jones G, Artus M, Bishop A, Lawton SA, Lewis M, **Jowett S**, **Kigozi J** et al. Effectiveness and costs of a vocational advice service to improve work outcomes in patients with musculoskeletal pain in primary care: A cluster randomised trial (SWAP trial). *Pain* 2017. DOI: 10.1097/j.pain.0000000000001075