

# HEB Newsletter

Health Economics at Bristol

Winter 2016, Issue 2



## “Welcome from Will”



Welcome to the keenly anticipated(!) 2<sup>nd</sup> Health Economics at Bristol (HEB) newsletter. A lot has happened in the last 6 months. Our university has announced big plans to open a new £300 million campus as part of the urban regeneration in the centre of Bristol. By August 2017 (which now seems very close!) we will be part of the new merged Bristol Medical School. No doubt this will come with its fair share of transition glitches as we all come to terms with new organisational structures and email footers. However, it

should also break down barriers for groups like HEB which already work across clinical, community and social medicine. From April 2017 Bristol will be home to a new NIHR biomedical research centre which has been awarded £21 million to bring together laboratory and population sciences and patient-based research to design ground-breaking treatments and improve practice. I've now been at the University of Bristol for almost 10 years and change is one of the few constants!

This newsletter covers some of the events of the last 6 months including the annual South West Health Economists meeting, new collaborations with colleagues at the University of Heidelberg and ongoing research projects. It's particularly pleasing to see so many projects being led by early career researchers. Research typically takes a long time, but research groups evolve quite quickly as students arrive, PhDs are awarded and fellowships are attained.

Wishing you all a happy Christmas!

Will Hollingworth, *Director of HEB*

### Inside this issue...

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## Heidelberg collaboration

Joanna Coast, Samantha

Husbands ( [@joclarkecoast](#) )



Sam and Jo

Through the University of Bristol's International Strategic Fund, HEB has been making links with Heidelberg University, in particular the Health Economics and Health Financing (HEHF) group led by Manuela de Allegri. The strategic funding enabled us to hold two separate and very enjoyable meetings, the first in Heidelberg and the second in Bristol. **Joanna Coast** and **Sam Husbands** travelled to Heidelberg in early June, where discussions in the full day meeting focused in part on information provision across the two groups and in part on more substantive issues around the use of qualitative methods in health economics and the development of capability measures in both developed and LMIC settings. The reciprocal visit saw Manuela travelling to Bristol at the end of September, where discussions more quickly shifted towards the possibilities for joint work. We hope to grow this collaboration into the future, and have also been making links with other parts of Heidelberg University, with **Paul Mitchell** from HEB travelling to Heidelberg in September to contribute a session to the Heidelberg Health Economics Summer School.

## Prizes & Awards

### First prize

European Research Council funded research led by **Joanna Coast** was highly successful at the annual Marie Curie Palliative Care Research Conference in October 2016, with the two posters submitted from the EconEndLife programme of work being awarded joint first prize: Dr Cathy Campbell, University of Virginia led on the poster "*Multi-disciplinary research team approach to recruiting patients, close persons and healthcare professionals in hospices*", and Dr Cara Bailey, University of Birmingham led on the poster "*How far can we trust proxy respondents for patients receiving supportive and palliative care who are unable to consent to research?*"

### Research paper of the year

**Will Hollingworth** and John Busby (ex-HEB) assisted in the design and analysis of a study that was awarded a research paper of the year award by the Royal College of General Practitioners. The research, led by Professors Alastair Hay (Bristol) and Chris Butler (Oxford), recruited more than 7,000 acutely unwell children in primary care to look at the prevalence, diagnosis, treatment and outcomes for children with urinary tract infection. The paper concluded improved targeting of antibiotic treatment in children is urgently needed to increase the efficiency of testing and treatment and provide better stewardship of antibiotic use.

# South West Health Economists' Day

Rebecca Kandiyali ( [@kandibex](#) )

In June, members of HEB hosted the health economics groups at Exeter and UWE for our annual SW Health Economists' Day. This was the 6th year that this event has been run and was an excellent opportunity for forging some new links and chatting about common ground!

The day began with a nod to Cilla Black and the 'Blind Date' theme tune for some research speed dating between the Exeter, UWE and Bristol camps. The mainstay of the day – apart from a short foray into the artistry of blog-writing - was a series of presentations with Q&A. Topics were diverse - one linked economics and geography to look at the socioeconomic determinants of health outcomes (Karyn Morrissey, Exeter University @ Truro) another used Mendelian randomisation on genomic cohorts to inform evidence (Padraig Dixon, HEB).

After an al-fresco lunch, (see photo) we were treated to presentations from Jo Coast and Anne Spencer, who gave their own take on the MRC methods areas "Beyond the QALY" and "Spillover effects". There was just one constraint: that presenters should trial the PechaKucha 20x20 format - a presentation format where 20 images are shown over 20 seconds. While demanding on the presenter, PechaKucha went down well with the audience and might surely return for 2017 if Will and Colin pick up the mantle!



"Health Economists in the South West!"

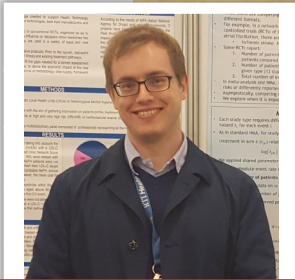
### HEB Research Themes:

- Economics of Health and Care across the Life Course
- Methods for Applied Health Economics
- Efficiency and Equity in Decision Making



## Structural uncertainty & decision-making

Howard Thom ([@howard\\_thom](https://twitter.com/howard_thom))



Howard Thom

Howard gave an invited session at the prestigious Joint Statistical Meeting, the largest annual statistics conference, in Chicago this summer on methods for selecting state structures for Markov models in health economic decision making.

Markov models are used to guide treatment reimbursement decisions and, using value of information analysis, research funding decisions. Model recommendations can be highly dependent on the choice of state structure. In depression modelling, for example, models with two levels of depression severity can give different recommendations to those with three levels. Structural choices are often informally based on clinical opinion or data availability. Howard

and his Leeds and Cambridge collaborators instead compare structures by constraining more complex structures to be equivalent to simpler structures, thus parameterising structural uncertainty. Standard approaches can then be used to choose structures or assess uncertainty, including likelihood methods and probabilistic sensitivity analysis. Howard has applied this approach to models in depression, psoriatic arthritis, and coronary heart disease. His presentation was very well received.



Howard presenting at the Joint Statistical Meeting

## Telehealth to manage long-term conditions

Padraig Dixon

([@PadraigDixon](https://twitter.com/PadraigDixon)),

Sandra Hollinghurst

([@SPhollinghurst](https://twitter.com/SPhollinghurst))



Sandra and Padraig

The economic evaluations alongside trials of telehealth interventions for patients with one of two exemplar long term health conditions: depression or raised CVD risk have been published

Patients with depression reported high levels of satisfaction and acceptability of the telehealth intervention, and on average their depression improved more than those receiving usual care. However, this was not fully reflected in their QALY gain, which meant the intervention was not cost-effective using conventional criteria. In contrast, intervention patients with raised CVD risk controlled their blood pressure and weight better than those in the usual care group but not their cholesterol or smoking and there was no improvement in overall CVD risk. Despite this, quality of life improved more than among those receiving usual care and the intervention was shown to be cost-effective in terms of cost per QALY gained. Long-term modelling of the CVD risk intervention indicated the enduring effect was the key to cost-effectiveness: the longer the effect the stronger the evidence of good value for money.

The analyses have been published and are available here:

Cost-effectiveness for depression: doi: [10.1192/bjpo.bp.116.002907](https://doi.org/10.1192/bjpo.bp.116.002907)

Cost-effectiveness for CVD risk: doi: [10.1136/bmjopen-2016-012352](https://doi.org/10.1136/bmjopen-2016-012352)

Long-term cost-effectiveness for CVD risk: doi: [10.1136/bmjopen-2016-012355](https://doi.org/10.1136/bmjopen-2016-012355)

The work was funded by the NIHR and led by Chris Salisbury

## Cost-effectiveness of Hip implant prostheses

Elsa Marques ([@Wheres\\_Elsa](https://twitter.com/Wheres_Elsa))

For two years a team led by Elsa has been working to determine the effectiveness and cost-effectiveness of prostheses for total hip replacement (THR).

HEB team members (**Elsa, Will Hollingworth, Christopher Fawsitt, Howard Thom & Nicky Welton**) have teamed up with the evidence synthesis group at Bristol; the UK National Joint Registry; and patient representatives to bring the HIPS project to life.

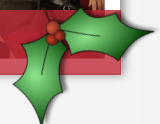
Primary THR is one of the most common elective procedures performed worldwide, with over 300,000 performed annually in the USA and over 80,000 in England and Wales. Different prostheses can impact quality of life after surgery, and the need for major revision hip surgery.

There has been much debate about materials used for prosthetic implants in THR. The HIPS team carried out a systematic review of randomised controlled trials and built a network meta-analysis which found no evidence that newer implants reduce the risk of revision compared to metal-on-polythene cemented implants. We are now busy building an economic model in a collaboration with the Swedish Hip Arthroplasty Register to determine which implant is the most cost-effective for patients undergoing THR.

More results to come in the New Year!



The HIPS team



## Key publications

### Methods for Applied Health Economics

Caldwell, D.M., Ades, A.E., Dias, S., Watkins, S.H., Li, T., Taske, N., **Welton, N.**, Naidoo, B (2016) A threshold analysis assessed the credibility of conclusions from network meta-analysis. *Journal of Clinical Epidemiology* 80: 68-76

**Dixon, P.**, Davey Smith, G., von Hinke, S., Davies, N, M., **Hollingworth, W.** (2016) Estimating Marginal Healthcare Costs Using Genetic Variants as Instrumental Variables: Mendelian Randomization in Economic Evaluation. *Pharmacoeconomics* 34, 11: 1075-1086

Guyot, P., Ades, T., Beasley, M., Lueza, B., Pignon, J, P., **Welton, N** (2016) Extrapolation of survival curves from cancer trials using external information. *Medical Decision Making* DOI: [10.1177/0272989X16670604](https://doi.org/10.1177/0272989X16670604)

Mantopoulos, T., **Mitchell, P.M.**, **Welton, N.J.**, McManus, R., Andronis, L. (2016) Choice of statistical model for cost-effectiveness analysis and covariate adjustment: empirical application of prominent models and assessment of their results. *European Journal of Health Economics* 17, 8: 927-938

**Sanghera, S.**, Frew, E., Gupta, J, K., Kai, J., Roberts, T,E (2016) Sensitivity to scale of willingness-to-pay within the context of menorrhagia. *Health Expectations* DOI: [10.1111/hex.12452](https://doi.org/10.1111/hex.12452)

**Thorn, J.C.**, Turner, E,L., Hounscome, L., Walsh, E., Down, L., Verne, J,E,C,W., Donovan, J,L., Neal, D,E., Hamdy, F,C., Martin, R,M., **Noble, S.M.**, & the CAP trial group (2016) Validating the use of Hospital Episode Statistics data and comparison of costing methodologies for economic evaluation: an end-of-life case study from the Cluster randomised trial of PSA testing for Prostate cancer (CAP). *BMJ Open* DOI: [10.1136/bmjopen-2016-011063](https://doi.org/10.1136/bmjopen-2016-011063)

### Efficiency and Equity in Decision Making

Artz, N., Dixon, S., Wylde, V., **Marques, E.**, Beswick, A,D., Lenguerrand, E., Blom, A,W., Gooberman-Hill, R. (2016) Comparison of group-based outpatient physiotherapy with usual care after total knee replacement: A feasibility study for a randomized controlled trial. DOI: [10.1177/0269215516642503](https://doi.org/10.1177/0269215516642503)

Busby, J., Purdy, S., **Hollingworth, W.** (2016) Opportunities for primary care to reduce hospital admissions: a cross-sectional study of geographical variation. *British Journal of General Practice* DOI: [10.3399/bjgp16X687949](https://doi.org/10.3399/bjgp16X687949)

Goranitis, I., **Coast, J.**, Day, E., Copello, A., Freemantle, N., Frew, E. (2016) Maximizing Health or Sufficient Capability in Economic Evaluation? A Methodological Experiment of Treatment for Drug Addiction. *Medical Decision Making*. Online first DOI: [10.1177/0272989X16678844](https://doi.org/10.1177/0272989X16678844)

**Hollinghurst, S.**, Banks, J., Bigwood, L., Walter, F,M., Hamilton, W., Peters, T,J. (2016) Using willingness-to-pay to establish patient preferences for cancer testing in primary care. *BMC Medical Informatics and Decision Making* 16: 105

**Hollingworth, W.**, Biswas, M., Maishman, R,L., Dayer, M,J., McDonagh, T., Purdy, S., Reeves, B,C., Rogers, C,A., Williams, R., Pufulete, M. (2016) The healthcare costs of heart failure during the last five years of life: A retrospective cohort study. *International Journal of Cardiology* 224: 132-138

### Economics of Health and Care across the Life Course

Bray, I., **Noble, S.**, Robinson, R., Molloy, L., Tilling, K. (2016) Mode of delivery affected questionnaire response rates in a birth cohort study. *Journal of Clinical Epidemiology* DOI: [http://dx.doi.org/10.1016/j.jclinepi.2016.09.004](https://doi.org/http://dx.doi.org/10.1016/j.jclinepi.2016.09.004)

Canaway A, Al-Janabi H, Kinghorn P, Bailey C, **Coast J.** (2016) Development of a measure to capture the benefits of end of life care to those close to the dying for use in economic evaluation. *Palliative Medicine*. Online first: DOI: [10.1177/0269216316650616](https://doi.org/10.1177/0269216316650616)

**Fawsitt, C.G.**, Bourke, J., Lutomski, J, E., Meaney, S., McElroy, B., Murphy, S., Greene, R, A. (2016) What women want: Exploring pregnant women's preferences for alternative models of maternity care. *Health Policy*. Online first DOI [http://dx.doi.org/10.1016/j.healthpol.2016.10.010](https://doi.org/http://dx.doi.org/10.1016/j.healthpol.2016.10.010)

## Our short course

Sign up to our short course 'Introduction to Economic Evaluation' 15th-17th March 2017

Aimed at clinicians, public health specialists and health care researchers, this 3-day introductory course covers basic principles of health economics and introduces the different approaches used when conducting economic evaluations.

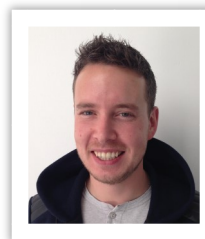
It is taught by an experienced team of health economists at Bristol. Course participants will experience the essentials of designing, performing and appraising economic evaluations through practical exercises. Participants will also have opportunities to discuss current research projects. No previous knowledge is required. Spaces are limited, early booking is advised.

Visit: <http://www.bristol.ac.uk/social-community-medicine/shortcourse/introduction-to-economic-evaluation>

## Affiliate members

HEB is based in the School of Social and Community Medicine. However, expertise on the economics of health and healthcare within the University of Bristol is much broader. We aim to foster more cross-faculty collaborations; Dr Stephanie von Hinke (Dept of Economics) recently presented a HEB seminar exploring how consumers respond to nutrition labels at the supermarket and Professor Gerard van den Berg (Dept. of Economics) will present in 2017

## Staff news:



### Christopher Fawsitt

**New staff member!** ( [@CGFawsitt](https://twitter.com/CGFawsitt) )

Christopher joined HEB as a health economics modeller in 2016 and is currently working on a number of applied projects in the areas of infectious disease modelling and arthroplasty. Christopher's research interests include decision modelling and priority setting. His previous research has focussed on applying these techniques within a maternity care setting in Ireland.

Christopher is working closely with other HEB members including **Dr. Howard Thom, Dr. Nicky Welton, Dr. Elsa Marquez, Prof. Will Hollingworth**, and collaborating with members from the School of Social and Community Medicine, as well as other external institutions.



### Alexandros Chrysos

**New PhD student!** ( [@alchryos](https://twitter.com/alchryos) )

Alexandros joined HEB as a PhD student in October. His PhD title is 'Economic analyses of a novel diagnostic device in endocrine disease'

Alex's supervisors are **Will Hollingworth** and Professor Stafford Lightman