



# HEB Newsletter

Health Economics Bristol (HEB)



## Welcome from Will & Jo

Welcome to the HEB Autumn 2020 newsletter. As we enter a second national lockdown, we thought it would be fitting to display another entry from our lockdown photo competition and keep focussing on the good things in life (including cake, flowers and teddy bears!). As with many health economics groups, the start of the academic year has seen a massive effort in redeveloping our teaching materials for online and blended delivery. It has provided us all with new technologies to get to grips with and given us a fresh perspective on how best to communicate the key concepts of health economics in ways that engage students in the room and across the world.

Alongside all this, research continues apace. This issue contains details of recently awarded grants evaluating new technologies for monitoring diabetes and, at the other end of the diffusion curve, de-adoption of procedures that are no longer (or never were) cost-effective. We also report on findings evaluating treatments for prostate cancer and hepatitis C, the impact of deprivation on costs of care following hip fracture and the restructuring of sexual health clinic pathways. Members of HEB are also exploring the impact of COVID-19 on population capability wellbeing and comparing the costs and consequences of mitigation across Europe.

We hope you enjoy reading this issue, stay safe and enjoy the upcoming holiday period.

*Will Hollingworth & Jo Coast*, Co-Directors of HEB

## HEB News — COVID-19 Research



**Howard Thom**, Lecturer in Health Economics, has been awarded funding by the Elizabeth Blackwell Institute to investigate the cost-effectiveness of the UK public health response to COVID-19.

This is in collaboration with **Will Hollingworth** and infectious disease modellers **Josephine Walker** and Peter Vickerman. They intend to compare reported outcomes to modelled “no mitigation” strategies and estimate the healthcare costs and benefits that were saved by government action.

They will compare across European countries and draw conclusions on the success, or otherwise, of the UK’s approach.



**Paul Mitchell, Joanna Coast** and **Samantha Husbands** have been awarded funding from the Worldwide Universities Network special grants scheme: Addressing research needs triggered by the COVID-19 pandemic.

The title of their study is “Capability Wellbeing and COVID-19: general population surveys in the UK, Australia and the Netherlands”. Collaborators on this project include Rachael Morton at the University of Sydney and Mickaël Hilgismann at Maastricht University. Further details on the project can be found on the study website: <https://wun.ac.uk/wun/research/view/capability-wellbeing-and-covid-19-Mitchell>

### New Grant News



**Rebecca Kandiyali** @KandiBex has been awarded an NIHR RfPB grant for FLASH (Implementation of flash glucose monitoring in four paediatric diabetes clinics – before and after study to produce real world evidence of patient benefit).

Flash monitoring is a relatively new method of glucose monitoring that offers an alternative to painful finger prick testing.

In April 2019, NHS England made flash monitors available on prescription to all eligible children and adults in order to remove the postcode lottery. Evidence on clinical outcomes and cost-effectiveness is limited. This study, the first of its kind, aims to provide NHS policy makers with information on the resource implications and costs associated with the introduction of the new technology. This study will also provide evidence on the effectiveness, safety and perceived patient benefit of flash monitors.

### New Grant News

**Leila Rooshenas, Will Hollingworth** and **Tim Jones** and collaborators from members of HEB and collaborators from NHS Bristol North Somerset and South Gloucestershire CCG, the University of Birmingham, and Canterbury Christ Church University have successfully secured funding from the NIHR Health Services and Delivery Research programme to evaluate a national de-adoption initiative being rolled out across the NHS.

The de-adoption initiative, led by NHS England, seeks to stop, or reduce activity and expenditure for ‘low value’ clinical procedures. The grant will investigate how the initiative works in practice and its implications for patients, NHS providers, and commissioners across England.

The work begins in February 2021. Watch this space for project-related progress updates, events, and outputs over the coming 2.5 years.

## HEB Publications

### The ProtecT randomised trial cost-effectiveness analysis comparing active monitoring, surgery, or radiotherapy for prostate cancer



ProtecT is the largest RCT of treatments (active monitoring, surgery, and radiotherapy) for localised prostate cancer in the world (n=1,643). The within-trial cost-effectiveness analysis showed that radiotherapy was the most likely cost-effective option, but as it only had a 58% probability of being cost-effective, it is inconclusive as to which treatment is cost-effective at a median of 10-years follow-up. <https://doi.org/10.1038/s41416-020-0978-4>

Sian Noble & Kirsty Garfield

### Cost and cost-effectiveness of a simplified treatment model with direct-acting antivirals for chronic hepatitis C in Cambodia



In 2016, Médecins Sans Frontières established a screening and treatment clinic for Hepatitis C virus (HCV) in Phnom Penh, Cambodia. Previously, access to treatment for HCV has been limited in low and middle-income countries because of the high cost of drugs and complex treatment protocol.

We evaluated the cost and cost-effectiveness of the HCV screening and treatment program, under two different treatment protocols, the first a standard of care based on international treatment guidelines, and the second a simplified version of the protocol with fewer visits compared to standard of care, point of care testing, and task shifting from doctors to nurses.

The simplified protocol allowed for a much larger capacity for patients, and had comparable cure rates compared to the standard of care. Over the lifetime of the cohort, compared to no treatment, the standard of care was cost effective, and the simplified treatment protocol was cost saving. <https://doi.org/10.1111/liv.14550>

Josephine Walker

### How does deprivation influence secondary care costs after hip fracture?



Using routine data from over 200,000 hip fractures **Joel Glynn** and colleagues observed a strong association between deprivation and hospital costs following a hip fracture. Treatment costs in the year following hip fracture were on average £1,120 higher for individuals in the most deprived areas, mostly accounted for by pre-existing health inequalities. <https://doi.org/10.1007/s00198-020-05404-1>

Joel Glynn

### Modelling patient flows and resource use within a sexual health clinic through discrete event simulation to inform service redesign



Enabling asymptomatic patients to self-sample for sexually transmitted infections (STIs) and HIV could reduce waiting times at sexual health clinics, according to modelling by Syed Mohiuddin and colleagues at NIHR ARC West published in BMJ Open.

A discrete-event simulation model was developed to analyse patient flows and resource use within Bristol's Unity Sexual Health Services (SHSs) and identify possible routes for service improvement. This finding could inform the redesign of SHSs across the UK, at a time when demand for HIV and STI testing is rising but local authority budgets for these services are shrinking. <https://doi.org/10.1136/bmjopen-2020-037084>

Syed Mohiuddin

## Further key publications

Denholm, R, **Thom, HHZ, Hollingworth, W** & Payne, R 2020, 'Uptake of direct oral anticoagulants in primary care: an ecological and economic study', *British Journal of General Practice* Open. <https://doi.org/10.3399/bjgpopen20X101033>

**Garfield, Kirsty M ; Noble, Sian** et al. What are the inpatient and day case costs following primary total hip replacement of patients treated for prosthetic joint infection: a matched cohort study using linked data from the National Joint Registry and Hospital Episode Statistics. In: *BMC Medicine*. 2020.

Hironaka, T, Giles, M, Goda, T & **Thom, HHZ** 2020, 'Multilevel Monte Carlo estimation of the expected value of sample information', *SIAM/ASA Journal on Uncertainty Quantification*.

**Keeney, E, Mohiuddin, SG, Zienius, K, Ben-Shlomo, Y, Cookson, M, Grant, R, Hamilton, W, Weller, D, Brennan, P & Hollingworth, W** 2020, 'Economic Evaluation of GPs' Direct Access to Computed Tomography for Identification of Brain Tumours: DACT for Brain Tumours: An economic evaluation', *European Journal of Cancer Care*.

Lewis, AL, Young, G, Selman, LE, Rice, C, Clement, C, Ochieng, CA, Abrams, PH, Blair, PS, Chapple, C, Glazener, C, Horwood, JP, McGrath, J, **Noble, SM**, Taylor, G, Lane, JA & Drake, MJ 2020, 'Urodynamics tests for the diagnosis and management of bladder outlet obstruction in men: the UPSTREAM non-inferiority RCT', *Health Technology Assessment*, vol. 24, no. 42. <https://doi.org/10.3310/hta24420>

Luyt, K, Jary, SL, Lea, CL, Young, GJ, Odd, DE, Miller, HE, Kmita, G, Williams, C, Blair, PS, **Hollingworth, W**, et al. AG 2020, 'Drainage, Irrigation And Fibrinolytic Therapy (Drift) For Post-Haemorrhagic Ventricular Dilatation: 10-Year Follow-Up Of A Randomised Controlled Trial', *Archives of Disease in Childhood: Fetal and Neonatal Edition*. <https://doi.org/10.1136/archdischild-2019-318231>

**Mitchell, PM, Coast, J, Myring, G**, et al. G 2020, 'Exploring the costs, consequences and efficiency of three types of palliative care day services in the UK: a pragmatic before-and-after descriptive cohort study', *BMC Palliative Care*, vol. 19, 119 (2020). <https://doi.org/10.1186/s12904-020-00624-y>

**Mohiuddin, S, Gardiner, R, Crofts, M, Muir, P, Steer, J, Turner, J, Wheeler, H, Hollingworth, W & Horner, PJ** 2020, 'Modelling patient flows and resource use within a sexual health clinic through discrete event simulation to inform service redesign', *BMJ Open*, vol. 10, no. 7, e037084. <https://doi.org/10.1136/bmjopen-2020-037084>

**Noble, SM**, et al. JA 2020, 'The Cost-Effectiveness of Transurethral resection of the prostate versus Thulium laser transurethral vaporessection of the prostate in the UNBLOCS randomised controlled trial for benign prostatic obstruction', *BJU International*. <https://doi.org/10.1111/bju.15138>

**Noble, SM, Garfield, K, Lane, JA, Metcalfe, C, Davis, M, Walsh, EI, Martin, RM, Turner, EL, Peters, TJ, Thorn, JC, ... & Donovan, JL** 2020, 'The ProtecT randomised trial cost-effectiveness analysis comparing Active Monitoring, Surgery, or Radiotherapy for Prostate Cancer', *British Journal of Cancer*. <https://doi.org/10.1038/s41416-020-0978-4>

Phillippo, DM, Dias, S, Ades, AE & **Welton, NJ** 2020, 'Assessing the performance of population adjustment methods for anchored indirect comparisons: A simulation study', *Statistics in Medicine*. <https://doi.org/10.1002/sim.8759>

**Sanghera, S, Mohiuddin, SG, Coast, J, Garfield, KM, Noble, SM, ... & Donovan, JL** 2020, 'Modelling the lifetime cost-effectiveness of radical prostatectomy, radiotherapy and active monitoring for men with clinically localised prostate cancer from median 10year outcomes in the ProtecT randomised trial', *BMC Cancer*. <<https://rdcu.be/b8dtz>>

Saramago, P, Claxton, K, **Welton, NJ** & Soares, M 2020, 'Bayesian econometric modelling of observational data for cost-effectiveness analysis: Establishing the value of Negative Pressure Wound Therapy in the healing of open surgical wounds', *Journal of the Royal Statistical Society: Series A*.

**Thom, HZ**, Cheng, H-Y & al., E 2020, 'Crizanlizumab and comparators for adults with sickle-cell disease: a systematic review and network meta-analysis', *BMJ Open*, vol. 10, no. 9, e034147. <https://doi.org/10.1136/bmjopen-2019-034147>

**Thorn, JC, Hollingworth, W, Noble, SM & Davies, CF** 2020, 'Content of Health Economics Analysis Plans (HEAPs) for trial-based economic evaluations: expert Delphi consensus survey', *Value in Health*.

**Walker, JG, Mafirakureva, N, Iwamoto, M, Campbell, LS, San Kim, C, Hastings, R, Doussett, J -P, Le Paih, M, Balkan, S, Marquardt, T, Maman, D, Lorec, A, Coast, J & Vickerman, PT** 2020, 'Cost and cost-effectiveness of a simplified treatment model with direct-acting antivirals for chronic hepatitis C in Cambodia', *Liver International*. <https://doi.org/10.1111/liv.14550>

**Walker, JG, Vickerman, PT, Lim, AG, Campbell, LS, Coast, J & Mafirakureva, N** 2020, 'Cost-effectiveness of screening and treatment using direct-acting antivirals for chronic Hepatitis C virus in a primary care setting in Karachi, Pakistan', *Journal of Viral Hepatitis*.

Worthington, JM, Lane, JA, Taylor, HJ, Young, G, **Noble, SM**, ... & Hashim, H 2020, 'Thulium laser transurethral vaporessection versus transurethral resection of the prostate for benign prostatic obstruction: the UNBLOCS RCT', *Health Technology Assessment*, vol. 24, no. 41. <<https://doi.org/10.3310/hta24410>>



## Welcome Yixin

Yixin Xu joined HEB in October. Her PhD, supervised by **Howard Thom, Elsa Marques** and **Nicky Welton**, aims to further advance the methodology of multistate modeling cost-benefit analysis, with specific application to the comparison of implants for total knee replacement surgery.

## Farewell Pdraig

In August, HEB bid farewell to Pdraig Dixon who has joined the Department of Primary Care at the University of Oxford as a senior researcher.

Pdraig joined HEB in 2013 working on projects exploring costs and outcomes across a wide range of conditions from COPD to cataracts. Pdraig's depth of knowledge on econometrics and his willingness to share it to help others will be very much missed. We wish him well in his new role.

## PhD position available

We welcome applications for a PhD studentship on 'Measuring and valuing the broader patient benefits from health and care in economic evaluations'.

The PhD studentship would start in October 2021, supervised jointly by supervisors at the Universities of Bristol and Exeter.

<https://www.findaphd.com/phds/project/health-economics-phd-studentship-measuring-and-valuing-the-broader-patient-benefits-from-health-and-care-in-economic-evaluations/?p123888>

## Economics observatory blog

**Jo Coast** and **Sabina Sanghera** were invited to write a blog for the ESRC funded Economics Observatory website – which has been set up as a repository for current economics knowledge on everything related to COVID-19. Jo and Sabina's blog is about valuing statistical lives and how metrics should be used to inform policy-making in a pandemic.

<https://www.coronavirusandtheeconomy.com/question/valuing-statistical-lives-how-should-such-metrics-inform-pandemic-policy-making>

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