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## HERC hosts symposium to mark the 60th anniversary of the Hinchliffe Report

On 11 November 2019, HERC held a symposium to mark the 60th anniversary of the Hinchliffe Report – the outcome of the Committee on the Cost of Prescribing, chaired by Sir Henry Hinchliffe.

The report made a series of landmark recommendations, which provided themes for the symposium's four sessions: sustainability of pharmaceutical expenditure, generating and reporting of clinical evidence, training of medical practitioners, and the economics of drug development and marketing.

We heard from fourteen speakers, from a diverse range of organisations including the NHS, the Institute for Fiscal Studies, the Office of Health Economics, and the Universities of Oxford, York, Bournemouth and London. NDPH was represented by Professors Sir Rory Collins, Louise Bowman and Martin Landray in a session on transforming clinical trials within the NHS, and Professor Philip Clarke in a talk on re-imagined value-based incentives for prescribers.

Common themes emerging from the presentations illustrate that many of the issues identified in the report remain with us, but in a changed form. One was the nature of high-cost drugs. The expensive drugs of the 1950s were anti-infectives used in primary care, whereas now they are treatments for cancer and rare diseases, predominantly used in hospitals, and focusing on ever smaller patient populations, with an

associated increase in the cost per patient. Several talks presented frameworks for considering the trade-offs between health gain and stimulating innovation in funding decisions for these new treatments. Reducing R&D costs was another common thread, both to enable more evidence to be generated and as a way to maintain profitability under downward pressure on prices. The symposium considered the advantages of NHS data to streamline trials, the increased role of information technology, and the need for updated regulation.

Finally, the impact of NICE was apparent through all sessions. With the existence of NICE's explicit decision-making process, we discussed a shift from needing to educate clinicians in 'economical prescribing' to the need to understand opportunity cost. We also noted the role of expert bodies such as NICE in evaluating clinical evidence, rather than relying solely on the individual clinician to interpret the 'extravagant sales propaganda' that concerned Hinchliffe.

Recordings of the presentations, and further commentary on the symposium, will be available from the Nuffield Department of Population Health website in the coming months.

For more information:  
<http://blogs.bodleian.ox.ac.uk/science/2019/11/05/60th-anniversary-of-hinchliffe-report/>



The symposium considered the advantages of NHS data to streamline trials, the increased role of information technology, and the need for updated regulation.



# The UK doesn't spend enough on the mental health of young people – we found out why

**Project team:** Stephen Rocks, Apostolos Tsiachristas



In England, two in three young people with a mental health problem do not receive support from specialist services. There are long waits for child and adolescent mental health services (CAMHS) and thresholds for entering care are high. There is a clear disparity between the needs of young people and the resources dedicated to their mental health. Indeed, CAMHS accounts for around 7% of the NHS mental health budget even though children under 18 account for 21% of the population. CAMHS has consequently been called the “Cinderella of the Cinderella” services, with many convinced that it is consistently overlooked. In a recent article in *The Conversation* and a paper in *BMJ Open*, HERC researchers considered why this might be the case.

We identified several reasons why child mental health may lose out to physical health when commissioners make spending decisions. These include rule of rescue (spending tends to go towards immediate, life-threatening cases and away from prevention or early intervention), lack of data (there are no targets for CAMHS nationally, so commissioners have less of an incentive to invest in these services), stigma around mental health, and lobbying for new technologies over treatments that are labour intensive, such as talking therapy.

However, things are improving. NHS England has started to collect new data, introduced a target to increase the number of young people receiving help and allocated extra funding to help local CAMHS to improve accessibility, increase quality of care and improve health outcomes. But a target of 35% of people in need receiving support is alarmingly low and many young people are still waiting too long for help.

Meanwhile, austerity in the UK is known to have hit children and lone parents particularly hard. Many services previously available to young people, such as children's centres, have been cut following substantial reductions in local government budgets. This is expected to result in more young people needing support from specialist services.

The chance to intervene early is fleeting. Doing so requires a sea change in funding for young people both from within the NHS and other budgets.

For more information:

<https://theconversation.com/the-uk-doesnt-spend-enough-on-the-mental-health-of-young-people-we-found-out-why-124315>

# Economic burden of stroke across Europe

**Project team:** Ramón Luengo-Fernández, Mara Violato, Paolo Candío, José Leal

In 2017, 1.5 million people were diagnosed with stroke, 9 million were living with stroke and 0.4 million died because of stroke in 32 European countries. This places a cost burden on all sectors of the economy, including health and social care systems, friends and families, and the workplace. In a recent paper in the *European Stroke Journal*, researchers from HERC estimated the economic burden of stroke across Europe in 2017.

We evaluated the cost of stroke for 32 European countries (EU-28, Iceland, Israel, Norway and Switzerland). We estimated overall health and social care costs from expenditure on care in the primary, outpatient, emergency, inpatient and nursing/residential care settings, and pharmaceuticals. Additionally, we estimated the costs of unpaid care provided by relatives or friends of patients, lost earnings due to premature death and costs associated with individuals who temporarily or permanently left employment because of illness. Extensive searches of international databases, ministries of health, national statistics institutes and published literature were undertaken to obtain relevant data. We also made use of individual patient level data using the Survey of Health, Ageing and Retirement in Europe.

We found that stroke cost the 32 European countries under analysis €60 billion, with health care accounting for €27 billion (45%), representing 1.7% of health expenditure. Adding the costs of social care (€5 billion), annual stroke-related care costs were equivalent to €59 per citizen, varying from €11 in Bulgaria to €140 in Finland. Productivity losses cost €12 billion, equally split between early death and lost working days. A total of €1.3 billion hours of informal care were provided to stroke survivors, costing Europe €16 billion.

Our study provides a snapshot of the economic consequences of stroke in Europe. It also strengthens and updates the evidence we have gathered over the last 15 years, indicating that the costs of stroke are rising, partly due to an ageing population.

For more information:

<https://doi.org/10.1177/2396987319883160>



## Spotlight on Sarah Briggs



I moved to HERC in September 2018 to continue my DPhil with Sarah Wordsworth, developing and evaluating risk-based screening approaches for bowel cancer screening. We know bowel cancer screening is clinically effective and cost-effective, however, capacity and resources are limited. Stratifying screening by risk could target scarce resources more effectively.

I am developing a risk model to predict colorectal cancer in the general population using genetic risk (in the form of a polygenic risk score) and non-genetic risk factors. I am using the UK Biobank dataset, which has epidemiological, genetic and healthcare data on 500,000 participants, and it is exciting to be working with such a data-rich resource. I will be evaluating how implementing this risk score by stratifying screening in the English Bowel Cancer Screening Programme would affect outcomes and cost-effectiveness. This work will be based on the Oxford Bowel Cancer Screening Model developed in HERC by Jacqui Murphy and Alastair Gray.

I am also a clinician, and before beginning my DPhil I worked as a Medical Oncology Specialist Registrar in Oxford. Prior to this, I did my Core Medical Training in Oxford and Foundation Training at King's College Hospital in London. I have been active in research since graduating from medical school, with a background in bowel cancer genetics. I have really enjoyed working in HERC so far, with so many skilled colleagues with a similar propensity for coffee drinking, and look forward to the next 18 months.

## Spotlight on Liz Morrell



I joined HERC in February 2018 to work on antimicrobial resistance. We are using discrete choice methods to examine the preferences of both clinicians and the public, in the context of a range of interventions designed to improve stewardship of antibiotics. My studies relate to 'delayed prescribing': a doctor gives you a prescription, but suggests you wait and see, and only collect the antibiotics and start taking

them if you do not improve in a few days. In sore throat, for example, nearly half of antibiotic prescribing is believed to be inappropriate. Because two-thirds of patients who receive a delayed prescription do not actually take any antibiotics, increasing the use of delayed prescriptions could significantly reduce unnecessary antibiotic consumption.

I am also part of a small team developing a new MSc, in Precision Cancer Medicine. It is a two-year part-time distance-learning course, and aims to provide future leaders in this field with the multi-disciplinary skills needed to deliver the promise of precision medicine for cancer care. The course is designed to be studied alongside the student's professional work, and will appeal to clinical academics, scientists and clinicians currently working in this field. We will welcome our first cohort of students in October 2020, so the year ahead will be an exciting time as we recruit academic and administrative staff to run the course, and work with our team of Module Leads who are developing the course's content and teaching materials.

Prior to joining HERC, I was part of a policy research group in the Radcliffe Department of Medicine, working on patient access to cancer drugs. Before returning to academia, I worked in the consumer healthcare industry, and then as a freelance researcher in parallel with a gloriously extended childcare break - which also gave me the opportunity to run a nursery, teach music, and spend a lot more time outside.

## DPhil (PhD) projects for admission in 2020

**Cardiovascular disease incidence and progression in middle age: what can machine learning and AI techniques add?** – supervised by Borislava Mihaylova and Thomas Lukasiewicz (Department of Computer Science)

**Measuring global health inequalities** – supervised by Philip Clarke and Laurence Roope

**Quality of life of informal carers of people with dementia** – supervised by Ramón Luengo-Fernández, Filipa Landeiro and Chris Butler (Nuffield Department of Clinical Neurosciences)

**Self-management in people with multi-morbidity** – supervised by Apostolos Tsiachristas and Michele Peters (Health Services Research Unit)

**Using patient-level data to model long-term trajectories of renal function decline** – supervised by Iryna Schlackow, Borislava Mihaylova, Will Herrington (Nuffield Department of Population Health) and Richard Haynes (MRC Population Health Research Unit)

**Optimising the long term care of people with coeliac disease in the UK NHS using patient-level data** – supervised by Mara Violato, Thomas Fanshawe (Nuffield Department of Primary Care Health Sciences) and Joe West (University of Nottingham)

For more information on these projects, and to apply, please visit:

<https://www.herc.ox.ac.uk/about/study-with-us>

## HERC Seminars

**Convenor: Matthew Little**

HERC runs a series of seminars with invited speakers from the health economics community who talk on a wide range of applied and methodological topics.

In September, **Huajie Jin**, Senior Health Economist, King's College London, visited HERC to present his work on: *Using whole disease modelling to evaluate all key interventions for schizophrenia*.

In October, **Krystal Lau**, Imperial College London, was invited to HERC to present her work on: *Social Norms and Free-Riding in Influenza Vaccine Decisions: An Online Experiment*.

In November, **Matthew Quaife**, London School of Hygiene & Tropical Medicine, presented his work on: *Sex, risk, and preferences: Using stated preference data to model behaviour in HIV prevention*.

Details of forthcoming talks can be found on the HERC website: <http://www.herc.ox.ac.uk>. To be added to our mailing list for future seminars, email us at [herc@ndph.ox.ac.uk](mailto:herc@ndph.ox.ac.uk)

## Presentations by members of HERC

**Centre for Health Policy Seminar Series, University of Melbourne**  
Melbourne, Australia, August 2019  
**James Buchanan**  
*Evaluating the outcomes associated with genomic sequencing: current evidence and next steps*

**Murdoch Children's Research Institute Functional Genomics Seminar, University of Melbourne**  
Melbourne, Australia, August 2019  
**James Buchanan**  
*Translating genomic tests into clinical practice: is the health economics evidence base there yet?*

**Centre for Advanced Studies in Biomedical Innovation Law Annual Symposium 2019**  
Cambridge, September 2019  
**Laurence Roope and Koen Pouwels**  
*Legal Innovation to Support the Development of Antimicrobial Drugs*

**International Association for Research in Economic Psychology Conference 2019**  
Dublin, September 2019  
**Francesco Salustri**  
*Experimental research on biomedical research projects*

**Centre for Research on Health and Social Care Management Seminar Series, Bocconi University**  
Milan, Italy, September 2019  
**John Buckell**  
*Weight and Health-Related Quality of Life: Evidence from Randomized Controlled Trials*

**Centre for Globalisation Research, Queen Mary University of London**  
London, October 2019  
**Laurence Roope**  
*When do we die in the long-run? The relative survival of politicians over the 20th Century.*

**16th Portuguese Health Economics Conference**  
Lisbon, Portugal, October 2019  
**Filipa Landeiro**  
*Health-related quality of life in people with pre-dementia or dementia measured with preference based instruments: a meta-analysis*

**Ellen Nuttall Musson**  
*Loneliness in older people: can it be alleviated?*  
*A meta-analysis*

**29th Alzheimer Europe Conference**  
The Hague, the Netherlands, October 2019  
**Filipa Landeiro**  
*Health-related quality of life in people with pre-dementia or dementia*

**3rd Annual Meeting of the Austrian Platform for Personalized Medicine**  
Vienna, Austria, October 2019  
**Apostolos Tsiachristas**  
*Financial incentives for personalised medicine: can we get it right?*

**NHS-R Community Conference**  
Birmingham, November 2019  
**Iryna Schlackow**  
*Health policy model with R*

**Genomics England Research Conference**  
London, November 2019  
**James Buchanan**  
*Generating Health Economic Evidence for Genomic Medicine: Opportunities Arising from the 100,000 Genomes Project*

## Staff News – Welcome to:

**Claire Williams** who joined HERC in August from the University of Bristol. She is working with Bobby Mihaylova and Iryna Schlackow on lifetime risk projections of cardiovascular events and associated healthcare costs for individual patient profiles based on large randomised controlled trials.



**James Aitunkaya** who joined HERC in September from the University of York, and is working with José Leal on economic evaluations in diabetes and psychosis. James is currently working on the *gameChange* trial, evaluating the potential cost-effectiveness of CBT treatment delivered through virtual reality headsets. Later, James will be building on HERC's existing work in diabetes modelling to develop models to support further patient segmentation for diabetes prevention and treatment.



**Murong Yang** who joined HERC in October 2019 as a DPhil student, having been a visiting student at HERC last summer whilst at the University of York. Murong is investigating the relationship between socio-economic factors and child mental health from early childhood to adolescence in the UK. Murong is supervised in HERC by Mara Violato.



**Melvin Obadha** who joined HERC as a DPhil student in October 2019. His research applies multi criteria decision analysis (MCDA) in Health Technology Assessment to support Kenya's efforts in defining an explicit health benefits package and achieving universal health coverage. He is using the discrete choice experiment approach to MCDA. Melvin is supervised in HERC by Apostolos Tsiachristas.

## Farewell to:



**Claire Simons**, who joined HERC in January 2018 to work with Bobby Mihaylova and Iryna Schlackow on the cost-effectiveness analyses of monitoring chronic kidney disease and chronic heart failure in UK primary care. Claire joined this complex project mid-way and contributed very well to its development while successfully completing her PhD at the University of Cambridge. She soldiered alongside the project team through the project's intense final stages and report write-up. Her input to teaching, tutoring, seminars and wider HERC activities has also been immensely valuable. We were very sorry to see Claire leave in August 2019 to join Pharmert International in York as Associate Research Consultant. Claire will be missed by everyone in HERC and we wish her every happiness and success in the future.



**Jung-Seok Lee**, who joined HERC in 2018, following the completion of his DPhil at the University of Oxford, to work on a study exploring the cost-effectiveness of early detection of neutropenia in ovarian cancer patients and on the *gameChange* trial. He has left HERC to return to South Korea and is taking up a position at the International Vaccine Institute. We are sorry to see Jung-Seok leave and wish him lots of success and happiness back in South Korea.



**Stephen Rocks** left HERC in October to pursue the next step in his career. His work here focused on the evaluation of Child and Mental Health Services in England and has resulted in several publications. It was great to have Stephen around and we wish him the very best in his next endeavour.



**Winnie Mei** joined HERC three years ago from a previous post in the China Kadoorie Biobank group at the Clinical Trial Service Unit. At HERC, she worked with Bobby Mihaylova on an economic evaluation of the effectiveness of Anacetrapib for cardiovascular disease prevention in the REVEAL study, and on the use of Magnetic Resonance Imaging in the assessment of chronic liver disease. Her contribution to these projects and to many other activities in HERC has been greatly appreciated. We were sorry to see Winnie leave in October: she will be missed by everyone in HERC and leaves with our very best wishes for the future. Fortunately, Winnie is moving just along the corridor to work on the ACST-2 Trial, which HERC is also involved in, so we fully expect to continue seeing and working with her in the future.

## Congratulations to:



**Sarah Wordsworth** on being appointed Professor of Health Economics and Genomics. Professor Wordsworth has made major contributions to the health economics of genomics, costing methodology and more recently, in using economic approaches to tackling antibiotic resistance globally (including a recent paper that was published in the journal *Science*).



**Mara Violato**, who was promoted to Grade 9 in September 2019.



**Paolo Candio**, who successfully defended his PhD thesis titled "Economic evaluation of universal programmes to promote healthy behaviours: challenges and possible solutions with an application to physical activity" at the University of Leeds in August.

## Recent Publications

- Barker KL, Newman M, et al. [includes **Leal J, Adhikari A**]. *Exercise or manual physiotherapy compared with a single session of physiotherapy for osteoporotic vertebral fracture: three-arm PROVE RCT*. Health Technol Assess. 2019. 23(44):1-318. doi:10.3310/hta23440
- Becchetti L, **Salustri F**. *The vote with the wallet game. Responsible consumerism as a multiplayer prisoner's dilemma*. Sustainability. 2019. 11(4):1109. doi:10.3390/su11041109
- Becchetti L, **Salustri F**, Scaramozzino P. *Making information on CSR scores salient: A randomized field experiment*. Oxf Bull Econ Stat. 2019. doi:10.1111/obes.12301
- Buchanan J**, Blair E, et al. [includes **Wordsworth S**]. *Do health professionals value genomic testing? A discrete choice experiment in inherited cardiovascular disease*. Eur J Human Genet. 2019. 27:1639-1648. doi:10.1038/s41431-019-0452-z
- Conzo P, **Salustri F**. *A war is forever: The long-run effects of early exposure to World War II on trust*. Eur Econ Rev. 2019. 120:103313. doi:10.1016/j.eurocorev.2019.103313
- Creswell C, **Violato M**, et al. *A randomised controlled trial of treatments of childhood anxiety disorder in the context of maternal anxiety disorder: clinical and cost-effectiveness outcomes*. J Child Psychol Psychiatry. 2019. doi:10.1111/jcpp.13089
- Freeman D, Yu L-M, et al. [includes **Leal J**]. *Automated virtual reality (VR) cognitive therapy for patients with psychosis: study protocol for a single-blind parallel group randomised controlled trial (gameChange)*. BMJ Open. 2019. 9(8):e031606. doi:10.1136/bmjopen-2019-031606
- Garriga-Fuentes C, **Leal J**, et al. *Geographical Variation in Outcomes of Primary Hip and Knee Replacement*. JAMA Netw Open. 2019. 2(10):e1914325. doi:10.1001/jamanetworkopen.2019.14325
- Harris JM, Brierley RC, et al. [includes **Stokes EA, Wordsworth S**]. *A national registry to assess the value of cardiovascular magnetic resonance imaging after primary percutaneous coronary intervention pathway activation: a feasibility cohort study*. Health Serv Deliv Res. 2019. 7(24). doi:10.3310/hsdr07240
- Harvie M, Pegington M, et al. [includes **Wolstenholme J**]. *The effectiveness of home versus community-based weight control programmes initiated soon after breast cancer diagnosis: a randomised controlled trial*. Br J Cancer. 2019. 121:443-454. doi:10.1038/s41416-019-0522-6
- Kadu M, Ehrenberg N, Stein V, **Tsiachristas A**. *Methodological Quality of Economic Evaluations in Integrated Care: Evidence from a Systematic Review*. Int J Integr Care. 2019. 19:17. doi:10.5334/ijic.4675
- Keng MJ, Tsiachristas A**, et al. [includes **Leal J, Gray A, Mihaylova B**]. *Impact of achieving primary care targets in type 2 diabetes on health outcomes and healthcare costs*. Diabetes Obes Metab. 2019. doi:10.1111/dom.13821
- Lee J**, Farlow A. *The threat of climate change to non-dengue-endemic countries: increasing risk of dengue transmission potential using climate and non-climate datasets*. BMC Public Health. 2019. 19(1):934. doi:10.1186/s12889-019-7282-3z
- Lim E, Batchelor T, et al. [includes **Stokes EA, Wordsworth S**]. *Study Protocol for Video assisted thoracoscopic lobectomy versus conventional Open Lobectomy for lung cancer, a UK multi-centre randomised controlled trial with an internal pilot (The VIOLET study)*. BMJ Open. 2019. 9:e029507. doi:10.1136/bmjopen-2019-029507
- Luengo-Fernández R**, Penz E, et al. *Cost-effectiveness of intrapleural use of tissue plasminogen activator and DNase in pleural infection: evidence from the MIST2 randomised controlled trial*. Eur Respir J. 2019. 54(2):1801550. doi:10.1183/13993003.01550-2018
- Luengo-Fernández R, Violato M, Candio P, Leal J**. *Economic burden of stroke across Europe: A population-based cost analysis*. Eur Stroke J. 2019. doi:10.1177/172396987319883160
- Mach F, Baigent C, et al. [includes **Mihaylova B**]. *2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS)*. Eur Heart J. 2019. doi:10.1093/eurheartj/ehz455
- Oke JL, Feakins BG, et al. [includes **Schlackow I, Mihaylova B, Simons C**]. *Statistical models for the deterioration of kidney function in a primary care population: A retrospective database analysis*. F1000Research. 2019. 8:1618. doi:10.12688/f1000research.20229.16
- Pouwels KB**, Muller-Pebody B, et al. *Selection and co-selection of antibiotic resistances among Escherichia coli by antibiotic use in primary care: an ecological analysis*. PLoS One. 2019. 14(6):e0218134. doi:10.1371/journal.pone.0218134
- Restelli U, Bonfanti M, et al. [includes **Gray A**]. *Organisational and financial consequences of the early discharge of patients treated for acute bacterial skin and skin structure infection and osteomyelitis in infectious disease departments in Greece, Italy and Spain: a scenario analysis*. BMJ Open. 2019. 9:e031356. doi:10.1136/bmjopen-2019-031356
- Rocks S**, Fazel M, **Tsiachristas A**. *Variation in spend on young mental health across Clinical Commissioning Groups in England: a cross-sectional observational study*. BMJ Open. 2019. 9(10):e030011. doi:10.1136/bmjopen-2019-030011
- Schwarze K, **Buchanan J**, et al. [includes **Wordsworth S**]. *The complete costs of genome sequencing: a micro-costing study in cancer and rare diseases from a single center in the United Kingdom*. Genet Med. 2019. doi:10.1038/s41436-019-0618-7
- Violato M**, Taylor-Robinson D, et al. [includes **Gray A**]. *Family income and exposure to norovirus in childhood: findings from the UK Millennium Cohort Study*. SSM Popul Health. 2019. doi:10.1016/j.ssmph.2019.100445