Welcome... from Gurdeep Sagoo

Happy New Year and welcome to our first newsletter of 2020. We are delighted to share with you the news that the School of Medicine, within which AUHE sits, has achieved a Gold award in the Athena SWAN Charter. Not only is this the first Gold award for the University of Leeds but we are also the first medical school nationally to achieve this level of award.

This award recognises all the work that has been undertaken since 2012 to demonstrate significant and sustained progression and achievement in promoting gender equality across the entire School. This has included over 230 members of staff across the School with significant representation from AUHE in the Institute Self Assessment Teams, the School Steering Group and the Equality and Inclusion Committees.

In AUHE we are proud of our involvement to date and continue to be avid supporters of this agenda. However, we recognise there is still have much work to do to ensure we continue to provide opportunity for a diverse workforce, culture and embed appropriate behaviours across all aspects of equality and inclusivity, not just gender. So, well done to everyone, but let’s continue working towards a better future for all.

Gurdeep Sagoo
Co-Lead, Leeds Institute of Health Sciences Athena SWAN Self Assessment Team, School of Medicine Steering Group Member, and Lecturer in Health Economics

UK-China Health and Economy Partnership

Chris Bojke attended the opening meeting of The 2019 UK-China Health and Economy Partnership in Beijing on 27th October. The partnership between world-class universities in the UK and China, overseen by the British Council, aims to create measurable benefits for Chinese patients and the economy by generating new health economics expertise via a series of collaborations that generates research-led technical advice that supports the reform of Chinese HTA processes and builds in-country capacity in health economics. The partnership involves collaboration from the health economics units of Leeds, Sheffield, Bournemouth and York and three Chinese universities Zhejiang University, Fudan University and Shandong University. The Leeds partnership will build on existing strong relationships between Leeds and Zhejiang University and will deliver a workshop in March 2020 at Zhejiang University on the ‘Health Economics of Screening and Diagnostic Testing in China and the UK’ to be delivered by AUHE economists Chris Bojke, Ruben Mujica-Mota and Alison Smith.

During the visit Chris also visited Zhejiang University and met with members of the office of global engagement, the new Dean of the School of Public Health and the Director of Health Economics in the University School of Medicine, Professor Hengjin Dong, who by coincidence is a former student at Leeds. Whilst at the university Chris presented his work on the importance of incorporating heterogeneity in survival models as a Xinglin Forum Presentation.

Chris was also part of the panel for a roundtable discussion on the Meaning of Value-based Healthcare at the 2nd China HTA Conference in Beijing. The panel was chaired by Professor Xie Feng of McMaster University and included Professor Lou Garrison, Professor Andrea Manca and Dr Cynthia Iglesi- as. Topics raised included the purpose of value frameworks, their consideration of opportunity cost, the role of structured deliberation, the role of qualitative data and pros and cons of MCDA.
WELCOME BACK TO: ROBERTA LONGO

The AUHE wishes a warm welcome back to Roberta after her 9-month maternity leave during which she enjoyed time with her baby, Luca.

Since she returned, Roberta has re-joined the group led by Hemant Pandit (Leeds Institute of Rheumatic and Musculoskeletal Medicine), who has been awarded £2 million from NIHR Health Technology Assessment Programme to conduct a non-inferiority trial for the treatment of knee osteoarthritis. She also continues her role as co-investigator on two other HTA programmes on diabetic foot ulcers (MIDFUT and CODIF2).

Roberta has also re-joined ATLANTIS, a national study that is investigating amitriptyline as a second-line treatment for people with irritable bowel syndrome in primary care, and ISCOMAT which studies medicines management for patients with heart failure across a range of health organisations involved in their care.

Roberta is also Health Economics Lead for the Research and Design Service (RDS) at Leeds and as an institute representative on the Faculty Equality and Inclusion committee. An exciting new opportunity coming up for her is future involvement with Athena Swan.

WELCOME TO: RACHAEL JABLONSKI

Rachael is a Specialty Trainee in Restorative Dentistry. She went out of programme in October 2019 to start her PhD and is funded by a NIHR Doctoral Fellowship.

Her research project IMPRESSeD aims to improve facial prosthesis construction for patients with a missing facial part through the development of a digital manufacturing workflow. The fellowship will include a systematic review, laboratory assessment of digital workflows, feasibility cross-over randomised controlled trial and early health technology assessment.

Rachael will be supervised by Professor Chris Bojke along with colleagues from the School of Dentistry (Professor Brian Nattress, Professor Sue Pavitt and Dr Andrew Keeling).

PHD SUCCESS: PAOLO CANDIO

Congratulations to Paolo for passing his PhD viva with minor corrections. Paolo developed his PhD in Health Economics on the methodological challenges in economic evaluation of universal programmes to promote healthy behaviours.

Paolo was supervised by David Meads and Andrew Hill (University of Leeds), and Karen Bloor and Laura Bojke (University of York).

Paolo’s research interests include decision-analytic modelling, behaviour change, economics of health promotion and handling of missing data in cost-effectiveness analysis.

In October 2018, Paolo secured a position as a Researcher at the Health Economic Research Centre at the University of Oxford. Over the last year, he has been working on a project which focuses on the economics of stroke. This study will assess the impact of pioneering stroke interventions on population-level costs and outcomes across 32 countries, namely, the current 28 members of the European Union, as well as Iceland, Norway, Switzerland and Israel.

AUHE SEMINAR AND WORKSHOP: DAVID EPSTEIN

On 9th December 2019, the AUHE welcomed David Epstein from the University of Granada, Spain. David gave a seminar titled “Beyond the cost-effectiveness acceptability curve”, in which he highlighted a confusion that can arise when several treatment options are evaluated and presented using a cost-effectiveness acceptability curve (CEAC). He argued the CEAC provides a partial view about the uncertainty surrounding net benefits, since it only provides information about the probability that particular options have the highest net benefit, without illustrating the variance that can exist in the ranking of probabilities.

David also gave an interactive workshop about rates and probabilities in Markov models, in which he addressed potential differences in formulas that can be applied to derive transition probabilities from rates when having a single risk model or competing risks and other multistate models. Participants used Maxima, a computer algebra system, to calculate forward and backward transition probabilities as part of a 4-state Markov model.

The videos are available on RDS YH.

AUHE Seminars Series

29th January 2020, 10am-11am, Room 9.53 Worsley Building
Visnot Bassi and Joe Selfridge
Leeds Teaching Hospitals NHS
“Counting the cost of care: how do we in LTHT use PLICS”

18th February 2020
Dr Sabina Sanghera
The University of Bristol

31st March 2020
Dr Chiara Calastri
Choice Modelling Centre, University of Leeds

21st April 2020
Dr Koen Pouwels
Health Economics Research Centre, University of Oxford

28th April 2020
Dr Emma Tassie
Health Economics Research Unit, University of Aberdeen

19th May 2020
Dr Beth Shinkins, Dr Sam Frempong, Alison Smith, Pedro Rodrigues and Paola Cocco
AUHE

9th June 2020
Professor Claire Hulme
University of Exeter

AUHE Seminars are open to all.

YouTube videos of search methods for ‘Finding Evidence to Support Your Research Proposal’

Judy Wright (AUHE Senior Information Specialist and NIHR Research Design Service Advisor) has recorded a series of 4 videos in collaboration with Donna Irving (AUHE) and Anthea Sutton (SCHARR).

1. Is your research question novel?
2. Identifying gaps in current research
3. Checking ongoing and published research
4. Research recommendations
AUHE Teaching

In September, Bethany Shinkins ran a one day course on the economic evaluation of diagnostic tests, hosted by the NIHR In Vitro Diagnostics Co-operative. The course was again well-attended by individuals working in a range of settings, including clinicians, academics, data scientists, lab scientists, commissioners, and those working in industry. To date, the course has been targeted at ‘non-health economists’ however, due to demand, we are going to extend the course to 2 days next year to include some more advanced modelling content on the second day. Participants will be able to opt in to attend just one or both days. For further information, please contact b.shinkins@leeds.ac.uk.

In January, over 100 undergraduate economics at the University of Leeds Business School (LUB) had exams for our two AUHE undergraduate health economics modules. These second- and third-year modules are led by Adam Martin (Introduction to Health Economics) and Daniel Howdon (Health Economic Evaluation). Good luck to all students sitting exams!

New Projects

Risk Assessment Tool for Suspected Breast Cancer: an economic evaluation
Breast cancer is the most common cancer in the UK, accounting for 15% of all new cancer cases. GP urgent referrals to breast cancer specialists (the Two Week Wait referral pathway) in England are growing year-on-year. Although large numbers of patients are referred, the vast majority of these patients do not have cancer. This is estimated to cost NHS England over £176 million per year in unnecessary testing and has created a huge bottleneck in breast cancer diagnostic services. This is further exacerbated by the current workforce crisis within breast imaging. PinPoint Data Science Ltd is developing a test to efficiently triage patients referred on the Two Week Wait pathway to ensure that only those with a higher risk of cancer undergo further testing. In collaboration with PinPoint Data Science Ltd, the University of Leeds and Leeds Teaching Hospitals NHS Trust have been awarded funding from Innovate UK to evaluate this technology in patients referred with suspected breast cancer. Samuel Frempong and Bethany Shinkins and will be leading the health economic work package.

NIHR promotion of good mental health project
AUHE are delighted to be part of an NIHR promotion of good mental health project recently awarded to Prof John Baker of the School of Healthcare at Leeds. The 30 month project entitled ‘Developing a service user centred co-designed patient safety intervention for acute mental health wards: A mixed methods process evaluation’ and starting in Jan 2020, seeks to develop and test a real-time measure of the perceived safety in high-risk acute mental health wards. Acute mental health wards are considered high-risk environments with approximately quarter of a million incidences, including violence and self-harm, occurring in 2016/17. Although measures exist that capture the safety environment such as the Mental Health Safety Thermometer, they are retrospective measures. The objective of the current project is to develop a real-time measure that enables staff to monitor the environment and take effective steps before safety incidents occur. The project adds to the growing portfolio of mental health work, led by Chris Bojke, that the AUHE contributes to, including evaluation that uses quasi-experimental techniques.

AUHE at HESG

Sarah Abraham, Chris Bojke, Adam Martin, Gurdeep Sagoo, and Claire Sloan attended HESG in Newcastle.

Claire Sloan and Chris Bojke had a paper presented on the relationship between patient-staff ratios and rates of incidents in inpatient mental health wards. Using longitudinal data from 9 wards from a single trust over a period of 3 months, they identified different ratios between wards that are not fully explained by observable patient characteristics. They conclude that variations in patient/staff ratios are likely to be endogenous, perhaps because more registered nurses would be systematically allocated to wards where there is an expectation of higher rates of incidences. This finding thus challenges the conclusions of existing literature, including a prominent observational study (Bowers & Crowder 2012) that made a surprising statement that more qualified nurses leads to an increased probability of conflicts and incidents.

Sarah Abraham presented a poster that included results of a study that examined the measurement of health outcomes in children and the use of parent or carer proxies to measure health-related quality of life. The data for the study came from the TIGA-CUB trial that is investigating conduct disorders in 5–11 year olds.

AUHE Visits

Manchester

On 12th September, the University of Manchester (UoM) hosted the second annual Methods for the Economic Evaluation of Diagnostics (MEED) research forum. Organised by Alison Smith (AUHE), Alex Thompson (UoM) and Sean Gavan (UoM), MEED aims to bring together health economists from across the UK to discuss advances in the field of test evaluation. Bethany Shinkins and Paula Cocco, members of the AUHE Test Evaluation Group (TEG), also presented at this event. Details of MEED 2020 will be released shortly in the new year.

Adelaide

In October 2019, Alison Smith spent three weeks visiting researchers in Australia as part of her 3-year NIHR Doctoral Fellowship. As part of her trip, Alison presented to groups based at the University of Sydney and the University of Adelaide, and delivered a plenary session at the Australian Association for Clinical Biochemistry (AACB) 57th Annual Scientific Conference. Alison is working closely with members of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) based in Australia, to improve test evaluation and implementation methodology.

Shandong

In December 2019, Zhuxin Mao presented her work titled “Does EQ5D work in China? Exploring cultural differences in measuring health”, at the School of Health Care, Shandong University.
**AUHE’s Test Evaluation Group:**

**INTEGRATING HEALTH ECONOMICS INTO THE DEVELOPMENT AND EVALUATION PIPELINE FOR MEDICAL TESTS**

The Test Evaluation Group (in collaboration with the NIHR Leeds In Vitro Diagnostics Co-operative) have been busy developing a portfolio of research that explores how economic evaluation methods can improve the development and evaluation pipeline for medical tests. Early economic evaluation is a methodology the team have been promoting for a good few years now, and the MiCs have recently collaborated on a publication for Medical Decision Making which describes their experiences of applying this methodology to diagnostic technologies.

**Paola Cocco** is building on this work by exploring existing methods for developing Target Product Profiles for medical tests and combining these with early economic evaluation to determine the optimal properties of a new infection diagnostic. The goal is that these combined methodologies will provide a mechanism for driving innovation in diagnostics based on clinical unmet need and cost-effectiveness.

**Bethany Shinkins** recently co-authored (with Professor Chris McCabe, IHE) guidance for CADTH on the economic evaluation of treatments with companion diagnostics.

**Pedro Rodrigues** and **Bethany Shinkins** are working on the OPTIMA trial (PI: Professor Rob Stein) in collaboration with Warwick Clinical Trials Unit and Peter Hall (Edinburgh University). This project, funded by the NIHR Health Technology Assessment programme, has recently been highlighted in a *Value in Health* systematic review as an exemplar of using early economic modelling, value of information analysis, and adaptive trial design methodology.

**Alison Smith** is close to submitting her PhD in which she has developed a framework for assessing the impact of test measurement uncertainty on clinical and health-economic outcomes. The latest paper from her PhD, a systematic review of indirect methods for evaluating the impact of measurement uncertainty on clinical outcomes, was recently published in *Clinical Chemistry*.

Finally, **Samuel Frempong** and **Bethany Shinkins** will be working with PinPoint Data Science to evaluate a test which aims to identify who should be referred from primary care for further investigation for breast cancer. See full details on the previous page.