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From the Director
Welcome to our fifth annual report, which provides an overview of the many accomplishments that we celebrate at the Health Economics and Health Technology Assessment (HEHTA) Research Group in 2016. This past year, my first in my new role as Director, has been another highly successful and productive year for the team. Among our research and teaching highlights, is our growing international collaborations and public engagement initiatives. I hope you will enjoy reading about our new projects funded by the European Commission on evaluations of complex clinical and population health interventions, and our public engagement exercise on prioritising healthcare funding allocations.

One of the celebrations I would like to highlight, is the promotion of our Deputy Director, Dr Emma McIntosh to full Professor of Health Economics. Dr McIntosh joined HEHTA in 2011, and has been dedicated to shaping HEHTA into a team that produces high-quality work within a supporting and nurturing environment. Over the years, she has undertaken highly impactful research and successfully raised HEHTA’s profile in Health Economics of Public and Population Health. This is a major personal achievement, and a well-deserved recognition of her contribution to HEHTA and the University.

In 2016, we also mark the introduction of an exciting new research theme – ‘Economics of Precision Medicine’. This research theme complements one of the achievements of our College of Medical, Veterinary & Life Sciences in becoming a key player in a Scottish “global centre of excellence” in precision medicine. We are delighted to welcome Professor Neil Hawkins, who joined us as Professor of Health Technology Assessment, to lead this research theme. Professor Hawkins’s research focuses on methodological development of evidence synthesis and decision analytical modelling, and in their application to precision medicine and early stage health technology assessment. We look forward to reporting activities from this research theme next year.
Meet the Team

DIRECTOR

Olivia Wu
Professor of Health Technology Assessment

DEPUTY DIRECTOR

Emma McIntosh
Professor of Health Economics

PROFESSORS

Andrew Briggs
William R. Lindsay Chair in Health Economics

Neil Hawkins
Professor of Health Technology Assessment

READER

Jim Lewsey

LECTURERS

Kathleen Boyd
Hannah Hesselgreaves
Claudia Geue

RESEARCHERS

Camilla Baba
Willings Botha
Janet Bouttell
Nicki Boyer
Manuela Deidda
Eleanor Grieve
Robert Heggie
Nicola McMeekin
Minnie Parmiter
Zahidul Quayyum
Mohsen Rezaeihemami
Jose Antonio Robles Zurita
Caoimhe Ryan
Miranda Trevor
Yiqiao Xin

PHD STUDENTS

Yulia Anopa
Giorgio Ciminata
Tadesse Gebrye
Ciaran Kohli-Lynch
Pattara Leelahaverong
Claire Williams

VISITING RESEARCHERS

Shawn Hsieh
Bruno Salgados Riveros
Carlos Wong
AFFILIATES

Hora Haghpanahan
Peter McMeekin

HONORARY STAFF

Henry Glick
Karen Ritchie
James Robinson

ADMINISTRATORS

Moira Aitken
Caroline Cecil
Jennie Clark
Alieda McKinney
In 2016 we welcomed to the team...

**Manuela Deidda**

Manuela joined HEHTA as a Research Associate, working on two projects. The first one is about the economic evaluation of a complex intervention on sedentary behaviour and physical activity alongside a multinational randomised controlled trial (RCT). The second one concerns economic evaluation of a means-tested voucher directed towards pregnant women and mothers of children under four. Prior to joining HEHTA Manuela held positions in academia (University of Cagliari and University of Bolzano) and in international institutions (European Central Bank and European Commission Joint Research Centre). She has worked in a range of areas, including health technology assessment, public policy evaluation, households’ economics, and telemedicine and telehealth systems.

**Jose Antonio Robles-Zurita**

Jose is working on economic evaluation alongside clinical trials involving treatments and interventions in different cardiovascular diseases, mental health and cancer. He holds a Master’s degree in Economics and Welfare Evaluation and PhD in Economics from Pablo de Olavide University (Spain). José’s PhD thesis focussed on the application of psychology to the analysis of economic decisions in the domain of health. As a PhD student he was also a visiting researcher at Yunus Centre for Social Business and Health at Glasgow Caledonian University and in the Department of Economics at the University of Alicante. Jose has worked in academia and in other public organizations for over eight years combining research and teaching.

**Neil Hawkins**

Neil is our new Professor of Health Technology Assessment (HTA) at HEHTA. He has extensive expertise in HTA, with particular focus on evaluation of early stage technologies, precision medicine, evidence synthesis and decision analytical modelling. Neil will lead a new research theme in HEHTA, ‘Economics of Precision Medicine’, developed to complement the College of Medical, Veterinary and Life Sciences (MVLS) leading position in precision medicine. Previously he was a Reader at the London School of Hygiene and Tropical Medicine, and Vice President leading the global Health Economics practice at ICON plc. He is a regular advisor to pharmaceutical and biotech industries as well as the National Institute of Health and Care Excellence (NICE) Scientific Advice Programme.

**Caoimhe Ryan**

Caoimhe joined HEHTA as a qualitative Research Associate, working primarily on the qualitative post-trial component of the Cancer and Venous Access (CAVA) trial. Caoimhe completed a PhD in Social Psychology at the University of St Andrews, which investigated social identity and representation in grassroots anti-deportation campaigns. Prior to her doctoral training, she worked on two consecutive Chief Scientist Office (CSO) projects at the University of Stirling and the University of Strathclyde investigating psychological factors associated with suicidal behaviour and repeated self-harm. Caoimhe also has an MSc in Social and Cultural Psychology from the London School of Economics.
Visiting Researchers and Affiliates

Carlos Wong
We welcomed Dr Carlos Wong, Research Assistant Professor of the Department of Family Medicine and Primary Care at the University of Hong Kong. Carlos’s research interests are patient-reported outcome measurement including quality of life and health services research, particularly retrospective administrative database research and cost-effectiveness analysis of health care interventions. Carlos spent two months with us, and worked on two research projects, one evaluating the cost-effectiveness analysis of renal replacement therapy among end-stage renal disease patients in Hong Kong, and a second exploring incremental cost effectiveness ratio (ICER) thresholds in decisions to accept emerging health technology in Hong Kong.

Bruno Salgados Riveros
Bruno Riveros is a visiting postgraduate research student from Brazil. He is working on his PhD which focuses on the efficiency of different strategies to treat obesity/overweight. To do this, he is adopting a Scottish Cardiovascular Diseases Policy Model to the Brazilian setting. In parallel, he is developing a conceptual model for other HEHTA projects currently in progress.

Houra Haghpanahan
Houra joined HEHTA in May 2016 as a part-time researcher, to work as an econometrician on a CSO funded study to investigate the impact of tobacco control Mass Media Campaigns on quitting behaviour, smoking prevalence and smoking-related health outcomes applying time series analysis. Houra received a BSc degree and an MSc degree in Economics from Shahid Beheshti University in Iran before completing her PhD in Economics at the University of Leicester in July 2015. Her main research interests are in Health Economics and Applied Econometrics. She joins HEHTA full-time in January 2017.

Ping Hsuan (Shawn) Hsieh
Ping Hsuan (Shawn) Hsieh joined us as a visiting researcher for six months. Shawn has an MSc in Transdisciplinary Long Term Care and a BSc in Pharmacy. During his time with HEHTA, he worked on a research project on screening for hepatitis B and C infections. He also engaged in learning methodological approaches to HTA.

Peter McMeekin
Peter joined HEHTA as a visiting Fellow. After studying economics as an undergraduate, he obtained an MSc in Health Economics from York University, before a PhD in Health Economics from Newcastle University. He has been a co-applicant on several large NIHR grants. His research interests include emergency medicine, transformation and change in the NHS, and decision modelling. Peter is a Fellow of the Higher Education Authority.
…and we said goodbye to

**Minnie Parmiter**
Minnie Parmiter was with HEHTA for just over a year and worked with Eleanor Grieve on economic evaluations within the Global HTA theme.

**Zahidul Quayyum**
Zahid Quayyum was with HEHTA for two years, working on a number of projects including CULPRIT-SHOCK. Zahid is currently at the Blizard Institute, Queen Mary, University of London.

**Miranda Trevor**
Miranda Trevor joined HEHTA in 2014 as a trainee researcher, and has left to commence her medical studies at the University of Newcastle.
PhD Students

Submitted in 2016

Camilla Baba
‘Valuing the health and wellbeing aspects of community empowerment using economic evaluation techniques’
Supervisors: Emma McIntosh, Carol Tannahill (external)

Willings Botha
‘Economics of forestry based health interventions’
Supervisors: Andrew Briggs, Richard Mitchell (external)

Current students

Yulia Anopa
‘Economics of paediatric caries prevention’
Supervisors: Emma McIntosh, Lorna Macpherson (external)

Janet Bouttell
‘Methods of early health technology assessment in precision medicine’
Supervisors: Andrew Briggs, Neil Hawkins

Nicki Boyer
‘Economic Evaluation of population health interventions’
Supervisors: Emma McIntosh, Kathleen Boyd

Giorgio Ciminata
‘Cost-effectiveness of new anticoagulant drugs using real world data within the Scottish population’
Supervisors: Olivia Wu, Claudia Geue, Peter Langhorne (external)

Shadrach Dare
‘A retrospective cohort study of the risk factors for neonatal sepsis and other pregnancy related adverse outcomes in Ghana’
Supervisors: Danny Mackay (external), Jill Pell (external), Hannah Hesselgreaves

Karl Ferguson
‘Diagram based analysis of causal systems for understanding the causes of alcohol problems’
Supervisors: Jim Lewsey, Mark McCann (external), Danny Smith (external)

Ben Fulton
‘Quantitative research of patient preferences and perceptions of precision medicine in Oncology’
Supervisors: Robert Jones (external), Emma McIntosh, James Paul (external)

Tadesse Gebrye
‘Cost-effectiveness analysis and modelling the lifetime costs and benefits of health behaviour interventions on Diabetes (Type 2)’
Supervisors: Emma McIntosh, Kathleen Boyd

Eleanor Grieve
‘A Methodological Approach for Evaluating the Impact of Health Technology Assessment’
Supervisors: Andrew Briggs, Olivia Wu, Hannah Hesselgreaves

Ciaran Kohli-Lynch
‘Primary prevention of cardiovascular disease in disadvantaged populations: a comparison of modelling methods in the UK and the US’
Supervisors: Andrew Briggs, Kathleen Boyd

Pattara Leelahavarong
‘Development and validation of alcohol use disorder prediction model for monitoring and evaluation of alcohol consumption control programmes in Thailand’
Supervisors: Andrew Briggs, Jim Lewsey

Ana Cristina Perez
‘Fatigue and dyspnoea in heart failure: insights from two large randomised clinical trials’
Supervisors: John McMurray (external), Jim Lewsey

Yiqiao Xin
‘Impact of variation of economic evaluation methods on the cost-effectiveness result: a case study of deep brain stimulation (DBS) in Parkinson’s’
Supervisors: Emma McIntosh, Jim Lewsey

Claire Williams
‘Demonstrating the potential of multi-state survival models for enhancing epidemiological and health economic modelling’
Supervisors: Jim Lewsey, Andrew Briggs, Danny Mackay (external)
Reflecting the University of Glasgow strategy: to bring inspiring people together and create a world-class environment for learning and research, empowering staff and students alike to discover and share knowledge that can change the world.
HEHTA investigators are collaborating on several international projects. Here we highlight three European Commission projects.

**SITless: Exercise Referral Schemes enhanced by Self-Management Strategies to battle sedentary behaviour**  
**Funder: European Union, Horizon 2020 Research and Innovation Programme**

The SITless study is a multi-national, multi-centre, three-arm randomised clinical trial aiming to investigate the long-term effects of a complex intervention on sedentary behaviour and physical activity in a community-dwelling older population. The intervention is based on existing exercise referral schemes (ERS) enhanced by a social cognitive group intervention on self-management strategies (SMS). The long-term cost-effectiveness of a joint intervention of ERS and SMS is evaluated against two alternatives - ERS alone and usual care.

The costs of providing ERS enhanced by SMS are identified from national health service and personal social services perspectives alongside potential cost impacts including hospitalisations, accident and emergency visits, and appointments with health professionals. Outcomes include self-reported health related Quality Adjusted Life Years (QALYs) which are obtained using the EQ-5D EuroQol instrument (EQ-5D) as well as the newly developed capabilities measure of outcomes for older people, the ICECAP-O instrument. Country-specific tariffs are also used. The within-trial economic evaluation results are combined with evidence from the literature linking short-term and longer term outcomes to produce a cost-effectiveness decision analytic model, using a Markov model. A detailed sensitivity analysis explores how cost-effectiveness varies within all the realistic ranges of costs and outcomes.

The study also considers the additional challenges related to the evaluation of complex public health interventions of this type as well as to the multi-country nature of the intervention.  
**HEHTA Principal Investigator: Professor Emma McIntosh**

**PATHway: Technology enabled behavioural change as a pathway towards better self-management of CVD**  
**Funder: European Union, Horizon 2020 Research and Innovation Programme**

The PATHway Consortium comprises eight partners from across Europe. PATHway proposes a novel approach to Cardiac Rehabilitation (CR) aimed at empowering patients to more effectively self-manage their Cardiovascular Disease (CVD). The health economic analysis combines and evaluates health outcomes and resource use consequences of the PATHway intervention to determine incremental cost-effectiveness of PATHway compared with usual care. The within-trial analysis focuses on the trial period of six months and an extrapolation of trial results will allow us to determine life time costs and outcomes and long-term cost-effectiveness beyond the trial period.

Resource utilization includes the cost of delivering the programme (either PATHway or usual care, as intervention cost), the health service costs (healthcare costs), the costs falling on the participants (direct non-medical costs) and the productivity effects in terms of patients’ employment (lost productivity). Health-related outcome measures include physical activity and quality of life (EQ-5D EuroQol instrument). A low number of clinical events is anticipated to be observed during the trial period so that parameter estimates will need to be obtained from the epidemiological literature that links changes in exercise capacity with the probability of experiencing adverse clinical events.
Linking changes in exercise capacity and risk profiles to recurrent CVD events and CVD mortality we will estimate the cost per QALY associated with PATHway and identify whether the costs related to PATHway are offset by a reduction in clinical events and related hospitalisations in the long term.

The European Commission review in March 2016 reported very favourable progress in year one. The Commission reported that the consortium is clearly advancing state-of-the-art and providing an example for user-centred design that can be a model for other EU projects.

HEFTA Principal Investigator: Professor Andrew Briggs

CULPRIT-SHOCK: Multivessel versus culprit lesion only percutaneous revascularization in patients with acute myocardial infarction complicated by cardiogenic shock
Funder: European Union, 7th Framework Programme

The CULPRIT-SHOCK Consortium consists of 17 partners from 11 different EU member states as well as Switzerland. Cardiogenic shock complicating acute myocardial infarction (AMI) represents a major European health care concern with mortality rates between 40% and 70%. The clinician is faced with the decision to either intervene only on the culprit lesion acutely responsible for the initiation of cardiogenic shock, or to treat additional lesions considered hemodynamically significant but not acutely triggering the shock cascade as well. The aim of the randomized CULPRIT-SHOCK trial is to compare immediate multivessel Percutaneous Coronary Intervention (PCI) versus culprit lesion only PCI in patients with AMI complicated by cardiogenic shock.

The economic evaluation will compare the two interventions analysed: 1) culprit vessel only PCI with potentially subsequent staged revascularization, and; 2) immediate multi-vessel revascularization by PCI. The economic evaluation comprises both cost-effectiveness analysis (CEA) and cost-utility analysis (CUA). The CEA will use the outcome measures of 30-day mortality and renal failure. QALYs will be used for the CUA. The within-trial analysis will provide estimates of cost per life saved at 30-day and in one year, and estimates of health-related quality of life. The long-term analysis will combine within-trial information and evidence from the literature to populate the pre-trial model that will allow us to compute incremental QALYs. The modelling-based analysis will provide expected costs and health outcomes, and incremental cost-effectiveness ratio over the lifetime for the cohort of patients included in the trial. The economic evaluation will include health systems and societal perspectives, such as intervention costs, medication, and productivity loss. The cost-effectiveness analysis will be from the perspective of each country’s national health services.

Upon completion, CULPRIT-SHOCK will be the largest randomized controlled clinical trial in patients with cardiogenic shock ever conducted and will inform patients, health care providers, and decision-makers about which percutaneous revascularization strategy is most effective.

HEFTA Principal Investigator: Professor Andrew Briggs
Create a world-class environment for learning and research

Across the world, governments are increasingly establishing HTA programmes and agencies. Therefore there is an increasing need to train HTA practitioners to inform the decision making process. In response to this, HEHTA developed a postgraduate programme and our MSc in HTA ran for the first time in 2013.

Two years ago we developed our programme to be delivered as online distance learning (ODL) to increase our global reach and to offer flexibility to those who want to remain in their employment but would like to up-skill at the same time. Our postgraduate taught courses provide a solid grounding in all the major disciplines within the field of HTA. This is unique within Scotland, and is one of few such programmes worldwide. Our team are world-class experts in their fields, and are active not only in research and teaching, but also in HTA decision-making at a national level (e.g. through NICE and Scottish Health Technologies Group at Healthcare Improvement Scotland).

Our teaching is research-led. The courses have been developed to reflect the latest academic research and up-to-date challenges in HTA decision-making. Students gain a comprehensive understanding and hands-on experience of the interconnected disciplines that are core to HTA. These include health economics, statistics, evidence synthesis, modelling and patient-reported outcome measures. In academic year 2016-17 we have 17 students.

**MSc HTA**: requires a total of 180 credits to be completed over the course of the degree.
60 credits from 3 core courses, 60 credits from optional courses, 60 credit from a research project.

**PgDip HTA**: requires a total of 120 credits to be completed over the course of the degree.
60 credits from 3 core courses, 60 credits from optional courses.

**PgCert HTA**: requires a total of 60 credits to be completed over the course of the degree.
60 credits from 3 core courses.

**Core courses (20 credits each)**
- HTA: policy and principles
- Statistical Methods for HTA and evidence based medicine
- Health Economics for HTA

**Optional courses (credits)**
- Decision analytic modelling methods for economic evaluation* (20)
- Outcome measurement and valuation for HTA (10)
- Qualitative research methods in HTA (10)
- HTA in a global context (20)
- Survival analysis for HTA (10)
- Foundations of decision analytic modelling for HTA (10)
- Evidence synthesis (20)
- Analysis of linked health data (20)

*This course is only available as a face-to-face course in Glasgow.

‘Great online course, that makes you feel like you are actually in a classroom rather than on your own.’

‘I was sceptical about online learning at first, but it has exceeded my expectations by encouraging participation and providing a vast and useful range of course materials, including recorded lectures.’

‘This course provided a good introduction to survival analysis for HTA, allowing for both a theoretical and practical understanding of the topic.’

‘I’ve found the learning experience to be convenient and flexible. It suits me to participate at a time, and for a duration, that fits my professional and personal schedule too.’

‘I appreciate having so many resources at hand, being able to replay lectures as and when needed to aid understanding and retention.’

‘...a lecture room that goes wherever you want.’
Discover and share knowledge that can change the world - through innovative engagement

HEHTA has been promoting its headline making research and engaging in public discussions and activities demonstrating the impact of health economic research on daily lives and health.

Explorathon
HEHTA was selected to host a research station at Glasgow Science Centre. The event was part of European Researchers’ Night, held simultaneously across Europe on the last Friday in September funded by the European Commission under the Marie Sklodowska-Curie actions programme.

The HEHTA station entitled ‘The Health Minister’s Dilemma’, invited the public to become decision makers in a trade-off task involving a budget and options for funding. Researchers also demonstrated examples of health measurement tools and discovered how the public define quality of life and health, through contributions to a display of value of health definitions.

The Health Minister’s Dilemma stand

Festival of Social Sciences
Promoting our portfolio of work on alcohol interventions and outcomes, the HEHTA team and collaborators from NHS Scotland (Mark Robinson and Matthiis Heydtmann) hosted a stand at Glasgow’s famous Barras Market as part of the Economic and Social Research Council (ESRC) nationwide funded Festival of Social Sciences. Members of the public were invited to spend a hypothetical pot of money on three out of four interventions to reduce alcohol consumption or change drinking behaviour.

Alcohol interventions- the public decides

Public Health Research Workshop – exploring physical activity for health and fun
Emma McIntosh and Manuela Deidda participated in the Public Health Research Workshop, ‘Exploring physical activity for health and fun’, at the National Football Stadium of Scotland Hampden Park, UK. The event, run by the EU Directorate-General Research and Innovation, invited five ongoing European Union FP7 and Horizon 2020 research projects on health enhancing physical activity to share their experiences with other stakeholders, to discuss how to enhance physical activity, share best practices and to draw some conclusions and recommendations for policy makers.
Defining what affects Quality of Life
Highlights of 2016

SPRING

We launched our first online CPD course, Health Economics for HTA in April. Sixteen people attended from Spain, Indonesia, and the UK.

At the BMJ Awards, Kathleen Boyd and Emma McIntosh’s paper ‘Bronchiolitis of Infancy Discharge Study (BIDS): a multicentre, parallel-group, double-blind, randomised controlled, equivalence trial with economic evaluation’ was awarded UK Clinical Research Paper of the Year.

We welcomed Neil Hawkins as our new Professor of HTA. Neil will lead on our new theme of Economics of Precision Medicine.

SUMMER

More celebrations as Emma McIntosh was promoted to Professor of Health Economics.

Some HEHTA team members complete the Edinburgh marathon.

AUTUMN

We welcomed visiting researcher Dr Carlos Wong, Research Assistant Professor of the Department of Family Medicine and Primary Care at the University of Hong Kong.

HEHTA participated in the Explorathon event at Glasgow Science Centre (see page 16 for more information).

We welcomed over 80 participants to our Decision Analytic Modelling Course, which included a dinner at the stunning Oran Mor.

Robert Heggie (left), completed the Mont Blanc marathon.

Emma McIntosh completed the Isle of Skye half marathon – what a sporty team!

A big congratulations to Camilla Baba who successfully defended her PhD thesis at her viva.

The NIHR Complex Reviews Support Unit (CRSU) turned one year old. The NIHR CRSU provides timely and appropriate support for the delivery of complex reviews that are funded and/or supported by NIHR.

Jim Lewsey and Jennie Clark attended the Society for Medical Decision Making (SMDM) 16th Biennial European Conference in London to present work on a natural experiment evaluating the Alcohol Act.
Building links with South America, HEHTA welcomed visitors from Brazil to discuss differences in HTA between the two countries. The Brazilian Public Health System has been undergoing major change in the last few years since the creation of the National Committee for Health Technology Incorporation (CONITEC).

As part of our regular Glasgow health Economics Seminar Series (GhESS), Professor John Cairns from LSHTM presented us with an interesting seminar on ‘A novel method for collecting health state information from children’, describing the development of a new tool for collecting data on self-reported health from children.

Professor Philip Clarke, head for the Health Economics Unit at the Centre for Health Policy at University of Melbourne, Australia, presented an excellent GhESS seminar on ‘Economic Evaluation: A Brief History’. It provided a broad overview of the development of economic methods for evaluating public health and medical interventions prior to the 1970s.

The team had great fun at the HEHTA Away Day 2016 trying to escape from The Riddle Rooms and Escape Rooms!

Jim Lewsey reprepresented HEHTA at ISPOR 7th Asia Pacific Conference in Singapore. As well as presenting a paper on ‘Development of an alcohol policy model that predicts life years, QALYs and health care costs accounting for alcohol use disorder identification test’, Jim welcomed many visitors to our stand who were interested in our MSc online CPD courses.

Professor James Robinson from Berkeley Centre for Health Technology, University of California provoked some great discussion during his seminar about differences between US and UK health systems.

WINTER

Professor Nick Hanley from the Department of Geography and Sustainable Development, University of St Andrews gave a fascinating lunchtime seminar at HEHTA on choice modelling.

HEHTA participated in the Festival of Social Sciences at Glasgow’s Barras.

Janet Bouttell was awarded the first distinction on our MSc HTA programme.

Ciaran Kohli-Lynch was awarded the Lee B Lusted student prize for outstanding presentation of research at SMDM for his poster on ‘Signalling Demand: PCSK9 Inhibitors for Statin Intolerant Individuals’.

HEHTA staff were well represented at the Institute of Health and Wellbeing’s Christmas dinner and ceilidh!
Research

Markov modelling being born
HEHTA’s work is centred around eight core and interconnected research themes.

**Analysis of Linked Health Data (ALDA)**
This programme encompasses all research work in HEHTA that is associated with statistical, epidemiological and economic analysis of linked health data sets. Our team has a wealth of expertise and experience in this field – for example data manipulation and identifying cohorts within linked data sets; regression modelling of panel data sets; outcome measurement, costing and developing decision analytic models using linked data sets.

**Decision Analytic Modelling and Simulation for Evaluation in Health (DAMSEL)**
This programme encompasses research associated with conducting an evaluation using modelling or simulation methods. Modelling can be used as the whole framework for an evaluation, or as part of a clinical trial-based evaluation to extrapolate intermediate trial endpoints to final health economic outcomes. DAMSEL cuts across and interacts with many of the other themes of HEHTA.

**Evidence Synthesis (ES)**
This programme encompasses all research work associated with combining multiple sources of evidence for clinical and economic evaluations. Alongside the NIHR Complex Reviews Support Unit (CRSU), this programme will explore challenges in combining complex data types and structure, through methodological and applied research.

**Economic Evaluation alongside Clinical Trials (EEACT)**
This programme encompasses all research work associated with conducting an economic appraisal as part of a clinical trial. Although modelling methods may still be required to provide a comprehensive appraisal, the characterising feature is the inclusion of an economic component to the trial and the availability of experimental data on both costs and effects of treatment.

**Global HTA (GHTA)**
This programme critiques HTA in different contexts, exploring variation between high-income countries as well as looking in-depth as to how and why decision making in healthcare may differ amongst low- and middle-income countries (LMICs). The theme draws upon HEHTA’s research from a global perspective, working with major stakeholders and as part of the International Decision Support Initiative.

**Economics of Precision Medicine (EPM)**
This is HEHTA’s newest programme and directly aligns with the College of Medical, Veterinary and Life Sciences (MVLS) role as one of the six regional centres of excellence created by the Precision Medicine Catapult. The EPM programme focuses on understanding of the ‘strata’ of responses and the genetics of the diseases, and effective and cost-effective forms of treatment for different patient groups, methodologically unpinned by subgroup analyses. HEHTA is hosting an MRC funded research project investigating the use of fully bayesian methods to increase the reliability of subgroup selection. In addition, we are investigating the implications of precision medicine for study design and technology pricing.

**Economics of Population Health (EPH)**
This programme is concerned with the development of methods and related empirical work associated with the economic evaluation of population health interventions, including those that may be delivered outside conventional health services. The theme is particularly interested in the evaluation of ‘up-stream’ influences, such as early life experiences, the social and economic conditions in which people live and environmental exposures affect wellbeing.

**Incorporating Perspectives and Experiences (IPE)**
This programme aims to promote and develop the application of qualitative methodologies to HTA. Qualitative research is useful for investigating stakeholder behaviours and contextual aspects of evaluations and HTA. Research in this programme focuses on the development and application of qualitative methodologies to conceptual modelling, trial recruitment and design, developing measures, evidence synthesis, and process evaluation. The theme offers a toolkit to support work across HEHTA’s other themes.
## Projects awarded in 2016

<table>
<thead>
<tr>
<th>Projects</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>Funder</th>
<th>Research Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension of Follow-Up for High Risk Stage II Patients (additional 3 years) and Stage III Patients (up to year 3 follow-up) in the SCOT study.</td>
<td>2016-2018</td>
<td>294,839</td>
<td>NIHR</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>A woman-centred, tailored SMS-delivered multi-component intervention for weight loss and maintenance of weight loss in the postpartum period: intervention adaptation and pilot RCT</td>
<td>2016-2018</td>
<td>40,500</td>
<td>NIHR</td>
<td>EPH</td>
</tr>
<tr>
<td>Evaluation of legislation to reduce the drink drive limit in Scotland: a natural experiment</td>
<td>2016-2018</td>
<td>75,000</td>
<td>NIHR</td>
<td>ALDA, EPH</td>
</tr>
<tr>
<td>Evaluating graduated progress towards indoor smoke free prison facilities in Scotland</td>
<td>2016-2019</td>
<td>437,175</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Associations of blood biomarkers with cardiovascular disease and related cardiometabolic outcomes and risk prediction in the clinical setting: UK biobank</td>
<td>2016-2019</td>
<td>75,000</td>
<td>CHSS</td>
<td>ALDA</td>
</tr>
<tr>
<td>Support to develop and deploy UAV technology for health commodity delivery</td>
<td>2016-2017</td>
<td>141,361</td>
<td>Bill and Melinda Gates Foundation</td>
<td>GHTA</td>
</tr>
<tr>
<td>Improved metrics to assess impacts of coastal aquaculture farming on community well-being and nutritional status across farmed sea-food value chains in saline floodplains of Bangladesh</td>
<td>2016-2018</td>
<td>247,368</td>
<td>IMMANA</td>
<td>GHTA</td>
</tr>
</tbody>
</table>
## Ongoing projects

<table>
<thead>
<tr>
<th>Projects</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>Funder</th>
<th>Research Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow molecular pathology Node (GMP)</td>
<td>2015-2018</td>
<td>3,481,464</td>
<td>MRC</td>
<td>DAMSEL, EPM</td>
</tr>
<tr>
<td>Early signs monitoring to prevent relapse and promote wellbeing , engagement and recovery in schizophrenia</td>
<td>2015-2018</td>
<td>406,505</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Cardiac biomarkers and the prediction of CVD in Scotland</td>
<td>2015-2018</td>
<td>362,412</td>
<td>CSO</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>AIM (Ankle Injury Management) The AIM Trial is a pragmatic, multi-centre, individually randomised controlled equivalence study with parallel prospective economic evaluation comparing Close Contact Casting technique (CCC) to Open Reduction and Internal Fixation (ORIF)</td>
<td>2009-2017</td>
<td>70,000</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Barrett’s Oesophagus Surveillance versus endoscopy at need Study (BOSS): protocol and analysis plan for a multicentre randomized controlled trial</td>
<td>2009-2022</td>
<td>103,382</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>A prospective randomised trial of myomectomy versus uterine artery embolisation (UAE) for women with uterine fibroids who wish to retain or improve their fertility (FEMME)</td>
<td>2011-2018</td>
<td>359,804</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Surgical Obesity Treatment Study (SCOTS) SurgiCal Obesity Treatment Study. A longitudinal cohort study of bariatric surgery across Scotland following all patients undergoing bariatric surgery in Scotland for a mean of 10 years. Outcomes will include mortality, diabetes incidence, diabetes complications, weight change, surgical complications, quality of life and fractures</td>
<td>2012-2026</td>
<td>2,036,689</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Woods in and around towns (WIAT) tackles the barriers people face to visiting and benefitting from woodlands regularly. The programme focuses on the location, accessibility and management of urban woodlands, to encourage more use from local people.</td>
<td>2012-2017</td>
<td>162,085</td>
<td>NIHR</td>
<td>EPH</td>
</tr>
<tr>
<td>Social and Emotional Education Development</td>
<td>2012-2017</td>
<td>805,527</td>
<td>NIHR</td>
<td>EPH</td>
</tr>
</tbody>
</table>
### Ongoing projects continued

<table>
<thead>
<tr>
<th>Projects</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>Funder</th>
<th>Research Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-Arm Randomised Control Trial for Mothers Identified as Vulnerable in Pregnancy and their Babies who are at high risk of maltreatment</td>
<td>2013-2018</td>
<td>1,066,243</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>BEAT-IT: A randomised controlled trial comparing a behavioural activation treatment for depression in adults with learning disabilities with an attention control.</td>
<td>2012-2017</td>
<td>783,006</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>Cost-effectiveness of Theophyllin for the treatment of COPD / (TWICS)</td>
<td>2012-2017</td>
<td>783,006</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>E-Health Informatics Research Centres (E-HIRCs) - Farr Studentship</td>
<td>2012-2017</td>
<td>1,073,113</td>
<td>MRC</td>
<td>ES, DAMSEL</td>
</tr>
<tr>
<td>A Randomised Controlled Trial of the Effectiveness of PDSA F E to prevent Falls among People with Parkinson’s Disease.</td>
<td>2013-2017</td>
<td>79,215</td>
<td>Parkinsons UK</td>
<td>EEACT</td>
</tr>
<tr>
<td>Cancer and Venous Access (CAVA) randomised controlled trial of long-term venous access devices for the delivery of chemotherapy: ports versus tunnelled central lines versus percutaneous inserted central catheters</td>
<td>2013-2018</td>
<td>1,031,483</td>
<td>NIHR</td>
<td>ES, IPE, DAMSEL</td>
</tr>
<tr>
<td>ADScANC: A Randomised Phase II study of Accelerated, Dose escalated, Sequential Chemo-radiotherapy in Non Small Cell Lung Cancer</td>
<td>2015-2021</td>
<td>28,431</td>
<td>CTAAC</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>CULPRIT SHOCK - Multivessel versus culprit lesion only percutaneous revascularization in patients with acute myocardial infarction complicated by cardiogenic shock.</td>
<td>2013-2017</td>
<td>301,170</td>
<td>European Commission</td>
<td>EEACT</td>
</tr>
<tr>
<td>Effectiveness of a physical activity loyalty card for sustainable behaviour change</td>
<td>2014-2018</td>
<td>49,427</td>
<td>NIHR</td>
<td>EPH</td>
</tr>
<tr>
<td>Early CDT Lung Test study</td>
<td>2012-2019</td>
<td>331,194</td>
<td>Oncimune Ltd</td>
<td>EEACT</td>
</tr>
<tr>
<td>Oral Versus Intravenous Antibiotics (OVIVA)</td>
<td>2012-2017</td>
<td>66,837</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
</tbody>
</table>
## Ongoing projects continued

<table>
<thead>
<tr>
<th>Projects</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>Funder</th>
<th>Research Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>A randomised Phase 2 Trial of standard versus dose escalated radiotherapy in the treatment of pain in malignant pleural mesothelioma</td>
<td>2014-2017</td>
<td>130,312</td>
<td>Beatson Cancer Charity</td>
<td>EEAECT</td>
</tr>
<tr>
<td>Helpmedoit!’ a web, app and text based intervention to facilitate social support to achieve and maintain health related change in physical activity and dietary behaviour</td>
<td>2015-2017</td>
<td>526,866</td>
<td>NIHR</td>
<td>EPH, EEAECT</td>
</tr>
<tr>
<td>Quantitative Fibronectin to help Decision making in women with symptoms of Preterm Labour – The QUIDS study</td>
<td>2015-2018</td>
<td>59,726</td>
<td>NIHR</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>A pilot evaluation of an intelligent liver diagnostic pathway</td>
<td>2015-2017</td>
<td>66,926</td>
<td>CSO</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>Reducing sedentary behaviour among older adults – The SITLESS Project</td>
<td>2015-2019</td>
<td>228,818</td>
<td>European Commission</td>
<td>EEAECT, EPH</td>
</tr>
<tr>
<td>Technology enabled behavioural change as a pathway towards better self-management of CVD (PATHway)</td>
<td>2015-2018</td>
<td>209,927</td>
<td>European Commission</td>
<td>DAMSEL, EEAECT</td>
</tr>
<tr>
<td>CRSU Complex reviews support unit</td>
<td>2015-2020</td>
<td>2,000,000</td>
<td>NIHR</td>
<td>ES</td>
</tr>
<tr>
<td>The Football Fans in Training follow up RCT</td>
<td>2015-2017</td>
<td>341,619</td>
<td>NIHR</td>
<td>EEAECT, DAMSEL, EPH</td>
</tr>
<tr>
<td>Evaluation of the New Orleans Intervention model – BEST</td>
<td>2016-2020</td>
<td>2,751,519</td>
<td>NIHR</td>
<td>EEAECT, EPH</td>
</tr>
</tbody>
</table>
## Projects completed in 2016

<table>
<thead>
<tr>
<th>Projects</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>Funder</th>
<th>Research Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms, quality of life and place of care study</td>
<td>2015-201</td>
<td>91,981</td>
<td>BHF</td>
<td>DAMSEL</td>
</tr>
<tr>
<td>Web based physiotherapy for people with multiple sclerosis</td>
<td>2014-2016</td>
<td>670,689</td>
<td>Multiple Sclerosis Society</td>
<td>DAMSEL, EEACT</td>
</tr>
<tr>
<td>Pragmatic Ischaemic Thrombectomy Evaluation (PISTE) trial: A randomised controlled trial of mechanical thrombectomy in acute ischaemic stroke</td>
<td>2015-2016</td>
<td>926,979</td>
<td>NIHR</td>
<td>DAMSEL, ES</td>
</tr>
<tr>
<td>Evaluation of the links worker programme in deep end general practices in Glasgow</td>
<td>2014-2016</td>
<td>300,000</td>
<td>NHS Health Scotland</td>
<td>EPH</td>
</tr>
<tr>
<td>The effect of geography and socioeconomic status on health care costs at the end of life: implications for resource allocation and expenditure projections in Scotland</td>
<td>2014-2016</td>
<td>167,340</td>
<td>CSO</td>
<td>ALDA</td>
</tr>
<tr>
<td>Reducing alcohol consumption in Obese Men - Development and Feasibility Testing of a Complex Community-based Intervention.</td>
<td>2014-2016</td>
<td>4,690</td>
<td>NIHR</td>
<td>EEACT</td>
</tr>
<tr>
<td>A very early rehabilitation trial after stroke. A phase 3 multi-care randomised controlled trial (AVERT)</td>
<td>2013-2016</td>
<td>451,885</td>
<td>NIHR</td>
<td>ES, EEACT</td>
</tr>
<tr>
<td>Selling Stroke Services in an International context</td>
<td>2014-2016</td>
<td>47,758</td>
<td>CHSS</td>
<td>ES</td>
</tr>
</tbody>
</table>
The NIHR Complex Reviews Support Unit (CRSU), a collaboration between the University of Glasgow, the University of Leicester and London School of Hygiene and Tropical Medicine, is led by Professor Olivia Wu. CRSU is funded by NIHR (Project number 14/178/29) to support and encourage successful delivery of complex reviews of importance to the UK NHS, whilst building capacity and capability within the research community through the support given.

During 2016, the Unit has undertaken a programme of events to reach out to the NIHR research community and in particular the Cochrane Organisation. Two successful workshops were held at The Cochrane UK and Ireland Symposium 2016 in Birmingham in March; ‘Methodological Challenges in Complex Reviews’ and ‘The NIHR Systematic Reviews Programme: Opportunities for Greater Impact’. A further two workshop submissions were accepted for the Cochrane UK and Ireland Symposium 2017. In addition, at the invitation of the Cochrane Dementia and Cognitive Improvement Group (CDCIG), CRSU ran a workshop on accumulating evidence, sequential synthesis and the challenge of multiplicity in September, which was very well received.

CRSU was pleased to participate in the Cochrane Colloquium 2016, in Korea in October, where Dr Hilary Thomson represented the group at the poster presentation session.

In addition to supporting individual Cochrane Review Groups, including Dementia and Cognitive Improvement Group, Gynaecological, Neuro-oncological and Orphan Cancers Group, Heart Group and Airways Group, the Unit has worked closely on supporting eight full applications to the NIHR Cochrane Programme Grants Scheme.

The first of a series of Seminars with Cutting Edge Methods, ‘Aggregating evidence about the positive and negative effects of treatments using a computational model of argument’, was held at the University of Leicester in March 2016.

Overall, CRSU has had a challenging and fulfilling year, building a successful working relationship with the NIHR research community in supporting the UK NHS to deliver clinically- and cost-effective services that are evidence-based. For further information on CRSU see our website at www.nihrcrsu.org

Moira Aitken, CRSU Project Manager
A Researcher’s Perspective
**Caoimhe Ryan talks about working at HEHTA**

**Tell us a little about your background**

My background is in psychology. As an undergraduate I studied psychology at University College Dublin. I earned my MSc in social and cultural psychology at the London School of Economics, after which I worked for a number of years in health psychology research at the University of Stirling and later the University of Strathclyde. I eventually returned to study and last year graduated from the University of St Andrews with a PhD in social psychology.

**What attracted you to HEHTA?**

I was interested in stepping out of psychology to work in a multidisciplinary context and gain experience in applied research. I was particularly drawn to HEHTA’s ‘Incorporating Patient Perspectives and Experiences’ research theme. Within this theme, my current work is part of an RCT that aims to evaluate the clinical- and cost-effectiveness of venous access devices. My role is to support this evaluation with a qualitative investigation of patient and clinician experiences with these devices. I see a lot of value in approaches to health technology assessment that incorporate subjective experiences of health interventions.

**What aspects of the work you do at HEHTA do you think will help your future career?**

Working as part of a large-scale multi-site RCT has been very instructive. I’ve learned a lot about how trials are managed and coordinated, about the issues trials face, about the roles of trial managers, clinical researchers, stakeholders, and patients, and about what it takes to run a successful trial. In particular, I think that understanding the ways in which qualitative research can contribute to such trials add real value will be helpful in my future career.

**Do you enjoy Glasgow as a place to live and work?**

I’ve lived in Glasgow for many years – even throughout my studies at St Andrews University – and I feel very at home here. To me, Glasgow feels very down to earth, open, and progressive. It’s a lively and interesting city, and an easy place to live. For anyone who enjoys the outdoors, Glasgow is ideal. There’s a plethora of great parks dotted around the city, the beautiful Campsie Fells are right on your doorstep, and Loch Lomond and the Trossachs are a stone’s throw beyond that.
Teaching and Supervision
Teaching

MSc HTA programme

**HTA: Policy and Principles**
Jim Lewsey  
Hannah Hesselgreaves  
Olivia Wu  
Nicki Boyer  
Emma McIntosh  
Zahid Quayyum  
Kathleen Boyd  
Nicola McMeekin  
Eleanor Grieve  
Yiqiao Xin

**Health Economics for HTA**
Kathleen Boyd  
Claudia Geue  
Jim Lewsey  
Emma McIntosh  
Nicola McMeekin  
Eleanor Grieve

**Outcome Measurement and Valuation for HTA**
Emma McIntosh  
Yiqiao Xin  
Eleanor Grieve

**Qualitative Methods in HTA**
Hannah Hesselgreaves

**Decision Analytic Modelling Methods**
Andrew Briggs  
Olivia Wu  
Kathleen Boyd  
Neil Hawkins

Throughout 2016 HEHTA staff also contributed to teaching on numerous other programmes including the Masters in Public Health, MBChB, MSc Human Nutrition, MSc Global Mental Health, MSc Cancer Studies, MSc Global Health and Management (University of Aberdeen).

Supervision

Claudia Geue and Mohsen Rezaiehemami supervised MPH student Naomi Ferguson  
Project title: ‘Cost-effectiveness of treating Hepatitis C in Seychelles’

Olivia Wu and Yiqiao Xin supervised MPH student Jenny Harbour  
Project title: ‘Comparative effectiveness of interventions for alcoholic liver disease: a systematic review and network meta-analysis’

Kathleen Boyd and Nicola McMeekin supervised MSc HTA student Evidence Nyamadzawo  
Project title: ‘Mindfulness based cognitive behavioural therapy decision model’

Janet Bouttell and Neil Hawkins supervised MSc HTA student Dmitry Ponomarev  
Project title: ‘Impact of potential biomarker in ovarian cancer’
Continuing Professional Development
Online distance learning

In 2016, HEHTA launched some of its MSc modules as online CPD courses for the first time:

- Health Economics for HTA
- HTA: policy and principles
- Outcome measurement and valuation for HTA
- Qualitative research methods in HTA

Health practitioners and researchers from all over the world were able to benefit from our first-class teaching material and gain expert training in a variety of new skills at a fraction of the cost of attending a face-to-face course. Participants connect with fellow students and tutors through our virtual learning environment where they have access to many different learning resources including recorded lectures, videos and interactive quizzes. Teaching is research-led and the courses have been developed to reflect the latest academic research and up-to-date challenges in HTA decision-making.

The modules comprise lectures and accompanying practical exercises. The courses place great emphasis on support and interaction. Each week the academic lead will direct and observe the forum discussion and respond to participant questions about the course content. The online course has the added benefit of being flexible around participants’ schedules, making it an ideal way to upskill.

Face-to-face

Decision Analytic Modelling Methods for Economic Evaluation

First run in 2007 this course has proved extremely popular, with numbers increasing year-on-year. The course has two levels: a two-day foundation level course followed by a three-day advanced level course.

The foundations course is aimed at health economists and health professionals with experience of health economics, who wish to develop skills and knowledge in decision analysis for purposes of cost effectiveness analysis. The advanced course is aimed at those with experience of health economics who wish to learn about recent methodological developments in cost-effectiveness analysis.

In 2016 we had 39 participants on our Foundations course and 63 on the Advanced course.

‘Best course in health economics modelling out there! Excellent teachers, tutors, material and experience’

‘Very useful course, would recommend it to everyone interested in gaining advanced knowledge in economic modelling.’

‘The most useful health economics course I have attended!’

‘Excellent thorough introduction to HEOR’

‘...gives you a great overview about different modelling techniques’

‘Top notch course on economic modelling’

‘The course was very well organised, with really helpful administration staff. It was led by highly qualified lecturers.’

‘Great online course, that makes you feel like you are actually in a classroom rather than on your own.’


Eleanor Grieve, ‘Evaluation the impact of HTA and ‘better decision-making’ on health outcomes’, Centre for Health Economics seminars 2016, York, UK, 3 March 2016

Andrew Briggs, ‘The economics of testing and diagnosis in cancer: quantifying the value of information’, HORG Seminar Series, Memorial Sloan Kettering Cancer Centre, New York, USA, 4 March 2016


Hannah Hesselgreaves, CAVA Trial qualitative research, Port Course, University of Glasgow, 7 April 2016


Emma McIntosh, ‘The Economics of Prevention’, Public Health Annual Research and Practice Conference 2016, Belfast, UK, 8 June 2016


Yiqiao Xin, Jim Lewsey and Emma McIntosh, ‘Broadening the evaluative scope of quality of life in Parkinson’s: Testing the construct validity of the ICECAP-O instrument’, 20th International congress of Parkinson’s disease and movement disorders, Berlin, Germany, 20 June 2016


Yiqiao Xin, ‘Testing the construct validity of the ICECAP-O instrument in Parkinson’s and exploring its relationship with the EQ-5D-3L and the Parkinson’s specific quality of life questionnaire the PDQ-39’, HESG 2016, Gran Canaria, 23 June 2016


Camilla Baba, ‘Valuing Community Empowerment in an Urban Regeneration Context as an alternative pathway to health gains: a Discrete Choice Experiment’ Public Health PhD symposium, John Moore University, Liverpool, UK, 7 July 2016


Jim Lewsey, ‘Development of an alcohol policy model that predicts life years, QALYs, and health care costs accounting for alcohol use disorder’, ISPOR 7th Asia-Pacific Conference, Singapore, 5 September 2016


Olivia Wu, ‘How NICE appraisal supports the rational access to new and expensive medication’, 45th ESCP Symposium on Clinical Pharmacy, Oslo, Norway, 3 October 2016


Andrew Briggs ‘Understanding Survival Modelling with Application to HTA’, ISPOR Europe 2016, Vienna, Austria, 30 October 2016


Claudia Geue, ‘Health Economics in End of Life Care’, ICAMs – Institute of Cardiovascular and Medical Sciences, Glasgow, UK 3 November 2016

Jose Robles-Zurita, ‘Randomness beliefs and decisions on risky medical treatments’, MDX Experimental/Behavioral Seminar Series, Department of Economics at Middlesex University London, 9 November 2016

Andrew Briggs, 'Health Technology Assessment’, Biogen, Copenhagen, Denmark, 28 November 2016

Membership of Expert Bodies
Andrew Briggs
Editor, Health Economics
Associate Editor, Value in Health
Trial Steering Committee: NOSH
Trial Steering Committee: DISCHARGE

Eleanor Grieve
Member of ESRC Global Challenges Research Fund Peer Review Group

Emma McIntosh
Member of Editorial Board for BMC Medical Research Methodology
Advisory Board Member, CSO National Burden of Disease, Injuries and risk Factors
Advisory Board Member, Scottish Immunisation Programme - Epidemiology & Surveillance Reference Group
Advisory Board Member, Multiple Sclerosis Trust: Generating Evidence in MS Services
Advisory Board Member, Evaluation of the impact of tobacco control mass media campaigns on quitting behaviour, smoking prevalence and smoking-related health outcomes
Board Member, Glasgow Centre for Population Health
Data monitoring Committee 2011-2015: NIHR Paces Trial
National Health Economists Interest Group

Jim Lewsey
Chartered Statistician, Royal Statistical Society
Chartered Scientist, The Science Council
Member of Evidence Review Committee for Scottish Health Technologies Group/Healthcare Improvement Scotland

Kathleen Boyd
Advisory Board Member, Beatson West of Scotland Cancer Care Clinical Trials Unit : In-house Trials Advisory Board

Neil Hawkins
Member of Medical Section Committee of the Royal Statistical Society

Olivia Wu
Member of the NIHR Systematic Reviews Programme Advisory Group
Member of the NIHR HTA Evidence Synthesis Board
Member of the National Institute of Health and Care Excellence Technology Appraisal Committee