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Welcome to the second annual report of the newly formed Health Economics and Health Technology Assessment (HEHTA) Research Group, part of the Institute of Health & Wellbeing. Our first annual report was produced in time for the launch day of our research group and so it is with great pleasure that we can include a summary of that launch day as part of this report. Close to one hundred people came to our launch event and almost everyone was connected with our research group in some way. Particularly gratifying was that in addition to a large number of collaborators from Glasgow University, we had a high proportion of colleagues and collaborators attend from across the UK. Our thanks go to all of you who attended and helped make our launch event such a success.

As well as all the other activity that I hope you will enjoy reading about in this report, the other key milestone that I would like to highlight this year is the promotion of two, long serving, HEHTA members to full professor. Dr Elisabeth Fenwick joined Glasgow University in 2006 from York University and has been leading our DAMSEL research programme. Dr Olivia Wu has been at Glasgow even longer, but quickly threw her talents behind the fledgling HEHTA research group and led the Evidence Synthesis research programme. Both colleagues were instrumental in helping to form HEHTA as we know it today, and it is a huge personal achievement for them both to be recognised by the University in their endeavours by the award of a personal chair. In particular, Professor Olivia Wu has agreed to take on the role of Deputy Director of the HEHTA, and I invite her to offer a few words of introduction to that role.

"I am very fortunate to be part of a fast-growing and vibrant team of health economics and HTA researchers. As one of the longest serving members of the team, it has been immensely rewarding to witness HEHTA growing from strength to strength. In the past year, we have addressed a variety of research areas ranging from evaluation of drug interventions and medical devices to appraising health policies. Our work will have direct impact on clinical practice and national health policies. It has also been a successful year for our newly launched MSc programme and ongoing short courses. This is a result of every HEHTA team member having actively contributed ideas, taught and/or tutored on these courses.

All this gives me great enthusiasm for my new role as Deputy Director of HEHTA where I hope to explore and innovate new strategies to achieve excellence in all our activities. We already have a great team and together we will continue building our rich portfolio of research, expanding our collaborative network further, and demonstrating the highest standards in our MSc programme and short courses."
Meet the HEHTA team

Nawaraj Bhattarai

Nawaraj joined HEHTA as a Research Assistant in September 2013. He holds an MSc in Health Economics and Financial Management from Jagiellonian University, a Master of Public Health from the University of Sheffield, and a BSc in Public Health from Tribhuvan University.

On completion of his MSc, Nawaraj worked as a public health network research officer at NHS Cambridgeshire, where he was involved carrying out research into the evidence base for provision of health and social care services. Following which, he joined the Department of Primary Care and Public Health Sciences at King’s College London, where he was involved in conducting a systematic review and meta-analysis, contributing to the statistical analyses of the data from a large database, and in designing of a Markov model to estimate the potential long term costs and outcomes of a pragmatic lifestyle intervention in primary care. Currently he is working on developing a cost-effectiveness toolkit for the screening of HBV, HCV and HIV infections in different populations in Europe.

Kathleen Boyd

Kathleen joined the team in 2007, and is currently a Research Fellow in Health Economics. She has a PhD in Health Economics from the University of Glasgow and an MSc in Economics and Health Economics from Sheffield University.

Her research interests are in the areas of early-stage decision analytic modelling, and the designing and undertaking economic evaluations alongside clinical trials.

Currently, Kathleen is working on several research projects undertaking economic evaluations within a variety of healthcare areas such as oncology, child health and smoking cessation interventions. In addition to her research, Kathleen contributes to both undergraduate and postgraduate teaching within the University. She is the co-ordinator of the Health Economics Module for our MSc in HTA.

Nicole Boyer

Nicki joined the HEHTA as a Research Assistant in August 2013. She has a Masters in Public Health from the University of Glasgow and a BSc in Community Health from the University of Illinois at Urbana-Champaign. Prior to undertaking her Masters, Nicki worked as an English Language Assistant for the Chilean Ministry of Education.

Her research interests lie in health promotion, child health and economic evaluation of preventative care interventions.

Currently, Nicki is working on projects in early-stage feasibility and decision modelling, for economic evaluation in areas of child psychology and social and emotional wellbeing, obesity and multi-morbidity.

Andrew Briggs

Andrew holds the William R Lindsay Chair in Health Economics and is the Director of HEHTA. Previously, he held the positions at the University of Oxford’s Health Economics Research Centre (HERC) and at the Centre for Evaluation of Medicines (CEM) at McMaster University and he remains a research associate of both CEM and HERC.

Andrew has expertise in all areas of health economic evaluation. He has published well over 100 articles in the peer-reviewed literature. He has particularly focused on statistical methods for cost-effectiveness analysis, including statistical methods for estimation of parameters for cost-effectiveness models as well as statistical analysis of cost-effectiveness alongside clinical trials. He also has a more general interest in epidemiological methods, in particular the use of prognostic scoring methods for predicting health outcomes and the relationship with heterogeneity in cost-effectiveness.

Andrew recently took a leadership role as co-chair of the Joint Society for Medical Decision Making (SMDM) and International Society for PharamacoEconomics and Outcomes Research (ISPOR) Task Force on Modelling Methods.

The Task Force, which was responsible for producing a set of seven papers covering all aspects of modelling methods applied to medical decision-making and health technology assessment. He is also the author of two successful textbooks, entitled Decision Modelling for Health Economic Evaluation, and Statistical Methods for Cost-Effectiveness Analysis. In addition, Andrew also serves as Editor of the journal Health Economics and is on the editorial board of Value in Health.
Paolo Cortesi

Paolo is a visiting researcher at HEHTA and a PhD candidate in Epidemiology and Biostatistics at the University of Milano-Bicocca. He has a Diploma in Chemistry, a BSc and an MSc in Pharmaceutical Biotechnology from the University of Milan.

Paolo first gained experience in health economics and outcomes research at the Center for Pharmacoeconomics, University of Milan. Since then, he has worked and collaborated with multiple pharmacoeconomics and health technology assessment centres in Italy. He has been involved with national and international projects, including studies of cost of illness, cost-effectiveness, cost-utility, quality of life assessment and preference assessment.

For his PhD, he is involved in the Value Based Medicine in Hepatology (VBMH) project – a project which is funded by the Italian National Health System, with the aim of identifying and assessing new Quality of Care Indicators for the principal liver diseases. While at HEHTA, Paolo is working on developing a cost-effectiveness toolkit for screening of HBV, HCV and HIV infections, and a project on evaluating the value of diagnostic technology in stroke.

Elisabeth Fenwick

Liz is a Professor of Health Economics at HEHTA and leads the Decision Analytic Modelling and Simulation for Evaluation in Health (DAMSEL) research programme. She has previously held posts at the University of York and undertook a postdoctoral fellowship at McMaster University in Canada. She has an MSc and PhD in Health Economics from the University of York and an MSc in Operational Research from Southampton University.

Her research interests centre around the application of decision analytic modelling and simulation methods to health technology assessment, economic evaluation of healthcare technologies, probabilistic decision analytic modelling, Bayesian decision theory and value of information analysis. Liz was a member of the ISPOR Joint Task Force on good research practices in modelling. In addition to her research, Liz contributes to both undergraduate and postgraduate teaching within the University.

She is the programme director and teaches on the MSc in HTA co-ordinating the HTA Principles and Policy, and HTA Practices Modules for our MSc in HTA. Liz is also an Associate Editor for Pharmacoeconomics and Medical Decision Making and is a member of the board for the Society for Medical Decision Making.

Claudia Geue

Claudia is a Research Associate at HEHTA. She first joined the team in December 2008 to undertake her PhD that analysed implications of population ageing and remaining life expectancy on health care expenditure in Scotland. She also holds a first degree in Economics from the University of Potsdam, Germany. Prior to taking up her PhD research position, Claudia has worked as a Research Assistant at the Health Economics Research Unit (HERU) at the University of Aberdeen.

Claudia’s research interests include the application of econometric techniques using linked data to answer research questions of socio-economic and geographical patterning of healthcare utilisation and related expenditure. Since the completion of her PhD, Claudia has worked on a range of projects including the evaluation of the impact of the Alcohol Act on off-trade alcohol sales in Scotland, and another project studying the epidemiology of first alcoholic liver disease hospitalisations, including an analysis of trends over time, readmissions, mortality and economic burden.

Most recently, she has been awarded a 3-year Postdoctoral Fellowship by the Chief Scientist’s Office (CSO) Scotland to investigate the effects of geography and socioeconomic status on health care costs at the end of life.

Lindsay Govan

Lindsay is a Research Associate at HEHTA. She has a first class BSc (Hons) in Statistics and a PhD in Statistics from the University of Glasgow, and has been awarded Graduate Statistician status from the Royal Statistical Society.

Currently, Lindsay holds a Medical Research Council (MRC) Population Health Science Research Fellowship. The aim of this fellowship is to investigate lifetime costs of diabetes and the impact of potential new interventions for the management of the diabetes. This research involves the use of large population datasets through record linkage of national datasets in Scotland. She is developing statistical and health economic models to identify the benefits and costs of different treatments in diabetes management and to estimate the impact of prioritising different groups in terms of health inequalities. Application of the models will be used to guide policy, clinical guidance and decision-making, evaluate interventions, and define research areas.
Additionally, Lindsay has experience of systematic review and meta-analyses of aggregate and individual patient data, and direct, indirect and networked evidence. She has undertaken work in several areas of health research including stroke, hepatitis, cryptorchidism, cancer and obesity.

**Eleanor Grieve**

Eleanor joined HEHTA as a Research Assistant in 2010. Currently, she also has a part-time position at the London School of Hygiene and Tropical Medicine (LSHTM), Department of Global Health and Development as a Research Fellow in Health Economics. Eleanor holds a BA (Hons) in Economics and German from the University of Stirling, a postgraduate diploma in Financial Economics from SOAS, University of London and a Master of Public Health (Merit) from the University of Glasgow. Before joining HEHTA, she held positions with various non-governmental organisations working in international development.

Her research interests include economic evaluation of public health and complex interventions, both trial-based and decision analytic modelling; research in low and middle-income countries. Eleanor currently works on projects assisting in health economic evaluations of public health interventions. She maintains her interest in international development by continuing to do consultancy work in this field.

**Kenny Lawson**

Kenny is a Research Associate at HEHTA, a post which has been jointly funded by the University of Glasgow and the MRC’s Social and Public Health Sciences Unit since 2011. Prior to academia he held a range of posts in the public and private sectors, in the UK and internationally.

Kenny’s research interest is focussed on economic evaluations of social and public health interventions, with a view to reducing health inequalities. He is currently working on the economic evaluation of large-scale housing and regeneration interventions (GoWell).

In 2013, Kenny also completed his PhD on the primary prevention of cardiovascular disease.

**Jim Lewsey**

Jim is a Senior Lecturer in Medical Statistics and joined the University of Glasgow in 2007 having previously held posts at LSHTM, the University of Otago, the Eastman Dental Institute-UCL. He has a BSc (Hons) in Statistics and Operational Research from Coventry University and a PhD in Statistics from Glasgow Caledonian University. He was awarded Chartered Statistician status from the Royal Statistical Society in 2010 and Chartered Scientist from the Science Council in 2012.

His personal research interests stem from methodological challenges faced when analysing observational and experimental medical data and have included prognostic model development in the presence of missing data, continuous outcome monitoring of long-term outcomes, modelling dental caries data, and the design of cluster randomised trials. His current methodological interests include competing risks and multi-state survival analysis, and in his applied research is developing a portfolio of alcohol research.

Jim leads the Statistical Analysis of Linked Health Data (SALHDa) programme within HEHTA.

Jim is the current programme director (since December 2013) and teaches on the MSc in HTA. Jim also teaches medical statistics on the Masters in Public Health and intercalated BSc (Med Sc) degrees.

He has a keen interest in how best to teach statistics to medical students and health care researchers and in 2011 hosted the Burwalls Annual Meeting for Teachers of Medical Statistics in Glasgow.

**Emma McIntosh**

Emma joined HEHTA in 2011 as Reader in Health Economics and programme leader on the Economics of Population Health programme. Emma has an MSc in Health Economics and a PhD in Economics. Prior to joining HEHTA, she worked as a Senior Researcher at the University of Oxford’s HERC where she worked on a range of economic evaluations in the areas of Parkinson’s Disease, home visiting, child health and public health interventions.

Emma has previously held posts at the Health Services Research Unit (HSRU) and HERU at the University of Aberdeen, and the Personal Social Services Research Unit (PSSRU) at the University of Kent.

Emma’s methodological interests are in the area of economic evaluation, evaluating public health interventions, stated preference methods and cost benefit analysis more generally. She recently co-authored a book entitled ‘Applied Methods of Cost-Benefit Analysis in Health Care’ as part of Oxford University Press’s Handbooks in Health Economic Evaluation series.
Emma currently holds a Senior Research Fellowship with Parkinson’s UK. The title of the fellowship is ‘The Economics of Parkinson’s: Advancing the scope of costs and benefits’.

In addition, Emma is on the editorial board of ‘The Patient’ Journal and is on the advisory board for projects including ICECAP, GEMSS, Scottish Burden of Disease, Scottish Immunisation Programme Epidemiology & Surveillance Reference Group and Capabilities projects.

**Julian Nam**

Julian is a Research Assistant at the HEHTA. He has an MSc in Health Research Methodology from the Department of Clinical Epidemiology & Biostatistics at McMaster University.

Julian works on various projects involving decision analytic modelling and economic evaluation alongside clinical trials.

**Moira Ritchie**

Moira joined HEHTA as a Research Assistant in May 2013. She has an LL.M. (Medical Pathway) and LL.B. from the University of Liverpool. Moira has previously worked within NHS Greater Glasgow and Clyde in Clinical Effectiveness and latterly as Clinical Research Coordinator in the Department of Interventional Radiology.

Moira is undertaking the pre-trial qualitative research element of the Cancer and Venous Access (CAVA) study, with the aim to explore clinical staff and patient attitudes to venous access devices for chemotherapy delivery.

The study is funded by NIHR HTA and is being run in conjunction with the CRUK Clinical Trials Unit, Beatson West of Scotland Cancer Centre.

**Rebecca Shaw**

Rebecca is a Lecturer in Social Science and joined the University of Glasgow in May 2007. She has previously held research posts at the Universities of York and Strathclyde. She has an MA (Hons) in Sociology with Gender Studies (University of Edinburgh), an MSc in Social Research (University of Edinburgh) and a PhD in Sociology (University of York).

Rebecca’s research focuses on the application of qualitative methods of data collection and analysis (including conversation analysis) to the evaluation of complex public health interventions and to the exploration of healthcare interactions. She leads the Incorporating Perspectives and Experiences programme within HEHTA.

Rebecca contributes to both undergraduate and postgraduate teaching within the University of Glasgow. She teaches on the MSc in HTA, the Masters in Public Health, the intercalated BSc (Med Sci) and contributes to PG training course across the College.

**Olivia Wu**

Olivia is a Professor of Health Technology Assessment at HEHTA. She is the Deputy Director of the Research Group and leads the Evidence Synthesis Research Programme. She has a BSc (Hons) in Pharmacy, MSc in Clinical Pharmacology and PhD in Public Health and Health Economics.

Olivia’s research interest in health technology assessment methodologies focuses on the areas of evidence synthesis (including systematic review and meta-analysis of aggregate and individual patient data; direct, indirect and networked evidence), risk prediction modelling and economic evaluation.

Olivia has undertaken research in a variety of clinical areas including cardiovascular disease, haematology, obstetrics and gynaecology, and rheumatology.

In addition to her research, Olivia serves as members of Technology Appraisal Committee for the National Institute for Health and Care Excellence (NICE) and the Health Service and Population Health Research Committee for the Chief Scientist Office (CSO) Scotland. She is also health economics advisor to the Scottish Intercollegiate Guidelines Network (SIGN).

**Haixiang Xiao**

Haixiang is a visiting scholar from China and holds the position of Associate Professor at the Economics and Trade School of Hunan University. She joined HEHTA in November 2013.

She has a PhD in Applied Economics from Hunan University, China. Her current research interests are health reform of China, health financing, population policy, family structure and elderly health.

**Yiqiao Xin**

Following the completion of her MSc in Health Technology Assessment and Management at the University of Montreal, Yiqiao joined HEHTA in September 2013 as a Research Assistant.

Previously, Yiqiao has also worked in a hospital-based HTA research unit in Canada where she was involved in developing HTA reports, primarily through systematic review of existing evidence, for hospital decision-makers. Her research interests are decision analytic modelling and economic evaluation alongside clinical trials. Currently Yiqiao is working on economic evaluations in the area of Parkinson’s disease.
Interview with Yiqiao Xin, Researcher

Yiqiao Xin is one of our new team members, who joined HEHTA in 2013. Her background is in pharmaceutical science, but has since developed an interest in HTA and health economics. Currently, Yiqiao is primarily working in economic evaluation alongside clinical trials in Parkinson’s Disease, and is also committed to undertaking a PhD in Health Economics.

What attracted you to HEHTA?

Obviously HEHTA is very well known in health economics, but at the same time HEHTA actually has a wide range of experts specialising in different areas of health economics like systematic review and meta-analysis, costing and outcomes research, statistics and qualitative studies. So I think this diversity facilitates the collaborations between the researchers.

Also when I have any questions I know who is the person I should go to and I always get a very satisfactory answer. At the same time I think HEHTA provides a very open-minded, warm environment for people working and studying here.

Another advantage is that, because this is a small group, the senior people care about the growth of the young researchers, like me – they try to spend time with you, even though they are very busy and I think that’s very important. They like to teach you, even if you ask the most basic questions.

Another thing is, I really like the building in Lilybank Gardens! There are three houses with a lot of little rooms and secret passages linking the houses – it just makes me feel less stressed when I’m working. I really like it here.

What skills are you learning that you think will help your future career?

In my future career I want to stay in academia and continue working in health economics, so I think all the experience I’m gaining here will help me in my future career – like Stata, biostatistics, meta-analysis, outcomes research, preference-based measures, modelling, discrete choice experiment I’m currently working on. Although not all of those research methods will be applicable to my research projects in the future, I think knowing how to use them will help me to understand what other people are doing, help me understand current research trends. Also I think building a network of knowledge and skills in my mind will help me build a big picture of health economics, and that’s very important.

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

I think Glasgow is a very functional city, you can always find anything you want. If you like food, you can find a lot of restaurants – Italian, Spanish, Chinese, Malaysian, British – all kinds of food. If you like to listen to music then you can go to the Royal Concert Hall or the SECC for exhibitions, and if you like shopping then I think Buchanan Street will meet your needs. At the weekend you can take a trip to the Highlands or go to the beach – Glasgow is a very good place to work and live – I really like it here!

This interview can also be viewed on our website at www.glasgow.ac.uk/hehta
Honorary Fellows

Karen Facey
Karen Facey is an Honorary Senior Research Fellow at HEHTA. She is a Chartered Statistician, Honorary Member of the Faculty of Public Health and Fellow of the Royal Society of Medicine and works as an evidence-based health policy consultant. She is a Non Executive Director of NHS Health Scotland, a member of Scottish Health Technologies Group and a member of the MHRA Committee on the Safety of Devices. Karen did her first degree at City University and PhD at the University of Reading, specialising in interim analysis of clinical trials. She has worked as a statistician in the pharmaceutical industry and the UK medicines regulatory agency. In the last 12 years she has developed a broader interest in evidence based decision making in health care. In 2000, she established the first national HTA Agency in Scotland, a member of Scottish Health Technologies Group and a member of the MHRA Committee on the Safety of Devices. Karen did her first degree at City University and PhD at the University of Reading, specialising in interim analysis of clinical trials. She has worked as a statistician in the pharmaceutical industry and the UK medicines regulatory agency. In the last 12 years she has developed a broader interest in evidence based decision making in health care. In 2000, she established the first national HTA Agency in Scotland, which set up the Scottish Medicines Consortium. She has been Chair of the HTAi Policy Forum and its Interest Group on Patient/Citizen Involvement in HTA and she chaired the Government committee that resulted in the current funding formula to allocate resources to NHS Scotland Health Boards.

Henry Glick
Henry is a Professor of Medicine in the Division of General Internal Medicine at the University of Pennsylvania. Henry received an MA and PhD in Public Policy Analysis from the University of Pennsylvania. He has more than 20 years of experience in conducting economic assessments of medical interventions, with a specialist interest in economic assessments conducted as part of clinical trials. In addition to his main affiliation, he also associated with the Wharton School, the Centre for Health Incentives, the Leonard Davis Institute of Health Economics and the Centre for Clinical Epidemiology and Biostatistics, at the University of Pennsylvania.

Neil Hawkins
Neil is a Reader in HTA at the LSHTM. He was previously Vice President leading the global Health Economics practice at ICON PLC. He has gained Master’s Degrees in Health Economics (York) and Applied Statistics (Sheffield Hallam) and a BSc and PhD in Pharmacology. Neil is also an Honorary Professor at the University of Glasgow and a Chartered Statistician (Royal Statistical Society, UK). Neil has experience in the academic, research-based pharmaceutical, and consultancy sectors. Over the last ten years, Neil has focused on health technology assessment, specializing in evidence synthesis and decision-analytic modelling. Neil has recently published articles discussing methods for indirect comparisons, cost-effectiveness modelling, value based pricing and the placebo effect. He is also interested in the appraisal of technologies in the veterinary sector. Previously he contributed to pure pharmacologica and applied clinical and epidemiological research. Neil has recently published articles discussing methods for indirect comparisons, cost-effectiveness modelling, value based pricing and the placebo effect. He is also interested in the appraisal of technologies in the veterinary sector. Previously he contributed to pure pharmacologica and applied clinical and epidemiological research.

Karen Ritchie
Karen Ritchie has a BSc from University of Glasgow and undertook her PhD at the MRC Toxicology Unit, Surrey. She worked in lab based cancer research before developing a career in health services research including undertaking a Masters in Public Health. Following research posts at the University of Glasgow and the MRC Institute of Hearing Research she joined the NHS in 2002 to manage a team of health services researchers in the synthesis of evidence to support a range of activities including production of health technology assessments. Karen currently leads the Knowledge and Information Unit within Healthcare Improvement Scotland which provides information, research and knowledge management support across the organisation and develops standards and indicators to support healthcare improvement. Karen is a member of the NICE Accreditation Advisory Committee.
PhD Students

Awarded in 2013

**Louise Craig** – ‘The impact of implementing a complex intervention in stroke’
Supervisors: Olivia Wu, Peter Langhorne (external)

**Aileen Murphy** – ‘An investigation of uncertainty in economic evaluations in Ireland’
Supervisors: Elisabeth Fenwick, Andrew Briggs

**Kenny Lawson** – ‘The Scottish cardiovascular primary prevention model: economic evaluation of primary prevention interventions’
Supervisors: Andrew Briggs, Elisabeth Fenwick

**Sarah Holiday** – ‘Interaction between people and services in the Fifth Wave of public health.’
Supervisor: Rebecca Shaw, Phil Hanlon (external)

**Pattara Leelahavarong** – ‘Development of surrogate indicators for alcohol prevention and control programmes in Thailand’
Supervisors: Andrew Briggs, Jim Lewsey

**Norah Palmateer** – ‘Epidemiological methods to assess and monitor the effectiveness of Hepatitis C prevention initiatives in Scotland’.
Supervisors: Olivia Wu, David Goldberg (external), Sharon Hutchinson (external)

**Ana Cristina Perez** – ‘Symptoms, signs, quality of life and hospital admission in heart failure’
Supervisors: Jim Lewsey, John McMurray (external)

**Noppcha Singweratham** – ‘Cost-effectiveness analysis of a disease management programme for Type 2 Diabetes Mellitus in Thailand’
Supervisor: Andrew Briggs

**Kanchana Srisawat** – ‘Identifying on-genetic risk factors for Bipolar disorder’
Supervisors: Jim Lewsey, Danny Smith (external)

**Zia Ul Haq** – ‘Trends in Body Mass Index and its health implications’
Supervisors: Elisabeth Fenwick, Jill Pell (external), Danny Mackay (external)

**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)

Current Students

**Yasmin Al-Gindan** – ‘Derivation and validation of simple equations to predict total muscle mass and fat mass from simple anthropometric and demographic data’
Supervisors: Lindsay Govan, Mike Lean (external), Catherine Hankey (external)

**Sultan Al-Suhaim** – ‘The use of evidence based pharmacotherapy for cardiovascular disease in Scotland’
Supervisors: Jim Lewsey, John McMurray (external)

**Yulia Anopa** – ‘Economic evaluation of Childsmile’
Supervisors: Emma McIntosh, Lorna McPherson (external)

**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)

**Jim Crabb** – ‘Mental health issues and primary health care worker training in Malawi’
Supervisors: Rebecca Shaw, Jacqueline Atkinson (external)

**Efe Egharevba** – ‘Opportunity or exploitation: clinical research in developing countries’
Supervisors: Rebecca Shaw, Jacqueline Atkinson (external)

**Tadesse Gebrye** – ‘Cost-effectiveness analysis and modelling the lifetime costs and benefits of health behaviour interventions on Diabetes (Type 2)’
Supervisors: Emma McIntosh, Elisabeth Fenwick
Interview
With Camilla Baba, PhD Student

My name is Camilla Baba. I am one of the PhD students at HEHTA, and I’m working in collaboration with the Glasgow Centre for Population Health and the Medical Research Council.

What attracted you to undertake your PhD at Glasgow University?

I previously did some research for my Masters which was in Town Planning at the University of Newcastle on the health legacy of Glasgow’s upcoming Commonwealth Games, so I have a real interest in the field of complex interventions, the population health interventions and people’s experiences of real life and the changes that undergo in their environment. I wanted to move away from pure qualitative research to develop my skills in new areas and something that had come to my attention was this economics of population health – in the current economic climate, what is the cost-effectiveness of these large scale interventions that are undertaken?

What skills are you learning that you think will help your future career?

I’ve been encouraged to attend courses to build up my skills in basic economics, because I was new to health economics as a field when I came, and to develop those statistical techniques that I required. In addition to that, my supervision team at the University are always keen to help me find ways that I can attend different conferences or go on courses, for example, there’s one in London that I should be going to soon and they have really encouraged me to get not only my research out there, but also to become exposed to all the different sort of fields that are available to me should I want to continue my career in health economics.

Do you feel you have received the support required to develop your skills?

The Department has provided me with the perfect supportive environment. When I have a problem, there’s always someone there. The level of expertise that’s available at my disposal within the Institute combined with the friendly and inviting environment they have definitely shown me, has been one of those things that I feel HEHTA is incredibly strong in and something that I would encourage all students to really take advantage of when they are based here in the Department.

Professionally, I feel that the University of Glasgow has incredibly varied interests; it’s always a really top-rated University. The amount of collaboration that is undertaken between the different departments within the University is overwhelming and incredibly fascinating as someone who is working there, there’s always new things going on and opportunities to network and to raise your own awareness of different aspects of research that have been undertaken, not only in your field but outwith it as well.

Do you enjoy Glasgow as a place to live and study?

I feel that HEHTA is an incredibly strong learning environment for students either undertaking the Masters here or trying to start their career, undertaking a PhD for example. I feel that the calibre of expertise that is within the Department is really high, and also it is a very supportive environment and a very friendly environment, and somewhere that I feel I have really flourished and has really piqued my interest in staying in health economics and continuing my career.

This interview can also be viewed on our website at www.glasgow.ac.uk/hehta
Health Economics and Health Technology Assessment (HEHTA) Research Group was formally launched on 12 March. Close to 100 invited guests attended the launch event and enjoyed presentations from speakers representing the whole spectrum of health technology assessment. Our Director, Andrew Briggs opened the event with a welcome speech and our research theme leaders introduced our six research themes:

- Economic evaluation alongside clinical trials #EEACT (led by Andrew Briggs)
- Evidence synthesis #ES (led by Olivia Wu)
- Economics of population health #EPH (led by Emma McIntosh)
- Statistical analysis of linked health data #SALHDa (led by Jim Lewsey)
- Decision analytical modelling and simulation for evaluation in health #DAMSEL (led by Elisabeth Fenwick)
- Incorporating perspectives and experiences #IPE (led by Rebecca Shaw)

During this event, we also announced the introduction of our new MSc programme in Health Technology Assessment, which has been designed to provide relevant methodological training in the health technology assessment. Our guest speakers – Professor Mark Sculpher, University of York spoke about the relevance of HTA for policy in the UK and Dr Karen Ritchie, Health Improvement Scotland reflected on the need for postgraduate training in this area.

Other guest speakers spoke about their experiences of collaborating with HEHTA:

- ‘Incorporating patients’ perspectives into HTA’, Professor Karen Facey
- ‘Added value of cost-effectiveness analysis for clinical trial proposals’, Professor Colin Berry
- ‘The challenges of evaluating the impact of Keep Well at a population level’, Dr Colin Fischbacher
- ‘Cost-effectiveness models: works of fantasy or reality’, Dr Neil Hawkins
- ‘The role of economic evaluation within the THRIVE & SEED population health trials’, Dr Marion Henderson
- ‘The importance of decision modelling for HTA: Assessing the value of PET/CT for pre-operative staging of colorectal cancer’, Dr Fay Crawford
January
Professor Marjon van der Pol, Chair of Health Economics, University of Aberdeen kicked off our Glasgow Health Economics Seminar Series (GhESS) seminar series with a talk on “The Glasgow Effect”.

March
The launch of the HEHTA Research Group.

April
The ‘Systematic review and meta-analysis’ and ‘Introduction to Stata’ CPD short courses were held and attracted a variety of participants from within and out with the UK.

Dr Arthur Attema, Health Economist, Erasmus University (Rotterdam) was our guest speaker at the GhESS seminar – “A measurement of preferences for quality of life under prospect theory”

May
Jim Lewsey was interviewed by the BBC ‘Reporting Scotland’ and also Radio Scotland’s Drive Time to discuss the findings of his research in ‘Monitoring and evaluating Scotland’s alcohol strategy’.

June
This was a particularly busy month for our Director. Andrew was invited to give a plenary talk on ‘How Governments should handle expensive new technologies’ as part of a one-day symposium on Medical Device and Health Technology Assessment that was organised by the Hong Kong Productivity Council.

Participants at the HKPC symposium included academics, government officials and industry leaders.

Andrew was also invited to co-chair the Bill and Melinda Gates Foundation (BMGF) Workshop in Seattle. This workshop was organised by NICE International in collaboration with the BMGF. The aim of the workshop was to explore the possibility of establishing a Reference Case for economic evaluations sponsored by BMGF as a way of improving the consistency, comparability and reporting of the evaluations of BMGF funded projects. Participants included representatives from World Bank, WHO, USAID, DFID, UNICEF and the Rockefeller Foundation. Following the workshop, a draft Reference Case was developed by NICE International in collaboration with University of Glasgow, University of York, LSHTM, and the Health Intervention and Technology Assessment Programme (HiTAP) in Thailand.

The annual HEHTA away day was held in June. All members of the team participated in a writing workshop, run by professional writers – Stuart Delves and Jamie Jauncey.

Professor Friedrich Breyer, Chair of Economics and Social Policy, Universität Konstanz was our guest speaker for the GhESS seminar – ‘Health care expenditure and longevity: is there a Eubie Blake Effect?’.

July
Claudia Geue was awarded a 3-year CSO Health Service and Health of Public Research Postdoctoral Fellowship to investigate the effects of geography and socioeconomic status on healthcare costs at the end of life.

September
We welcomed our first intake of home and international MSc HTA students to the University.

October
Olivia Wu was invited to deliver a seminar on ‘HTA decision-making in the UK’ to pharmacists at the National Guard Hospital, Riyadh.

Our first two-day Foundation Level ‘Decision analytical modelling’ short course was introduced. This was immediately followed by our popular Advanced Level ‘Decision Analytical Modelling’ three-day short course. We welcomed record number of participants to Glasgow this year.

Professor Steven Birch, Chair in Health Economics, University of Manchester and McMaster University came to visit and gave a special seminar on ‘Social inequalities in health: what can health economics offer’.

November
Olivia Wu was invited by the National Health Insurance Administration, Taiwan to talk about HTA decision-making in Scotland at the International Symposium on HTA and its role in the decision making process in Taipei.

Our short course – ‘Economic evaluation alongside clinical trials’ was attended by participants from academia, industry and HTA agencies.
Research Projects Completed in 2013

Assets and resilience: an economic perspective

There is increasing policy and academic interest in asset-based approaches as a means to develop and deliver interventions for improving health and reducing health inequalities. Interest extends from policymakers, academics, practitioners and think-tanks. Asset-based approaches are characterised where end-users are directly engaged in the development and delivery of services. The rationale is to foster a ‘do with’ culture; and that by utilising the knowledge, skills and experiences of recipients, services will be then be more appropriate, effective and sustainable.

It is contended that asset-based approaches are required to address the enduring problem of health inequalities, which is a particular feature in Scotland.

Following a comprehensive review of the academic and grey literature to date, there is no evidence relating the cost-effectiveness of assets based approaches. There were no formal economic evaluations of asset-based approaches identified. Overall, there is a lack of evidence regarding the outcomes generated from taking asset-based approaches, and little attention has been paid to the cost impact such as appropriate units of analysis, treatment of capital costs, volunteering costs (e.g. opportunity cost of time) and the aggregation of potential multi-sectoral costs.

Further, there is little explicit consideration of the appropriate time period that outcomes and costs are intended to be realised and the application of appropriate discount rates, given that outcomes realised in the short term are valued more highly than those realised in the longer time. Based on these findings, it is evident that there is a need to undertake economic evaluation to demonstrate the value for money of such asset-based approaches. This is especially the case with many current projects citing uncertainties regarding sustainable funding becoming more apparent in the current fiscal climate.

HEHTA PI: Emma McIntosh. Funder GCPH. Research theme #EPH
Autism and reactive attachment disorder symptoms in the Scottish population – prevalence and health system costs

Autism Spectrum Disorder (ASD) and Reactive Attachment Disorder (RAD) both affect social functioning in children but differ in important ways: ASD is strongly genetically determined while RAD is believed to be caused by maltreatment. Both disorders place a significant burden on individuals and their families, but no exploration of the overlap between ASD and RAD has previously been performed in a population context. We investigated the patterning of ASD and RAD symptoms in the general population and associations with socio-demographic factors.

In addition, we look at the association of these conditions with health service resource use and costs.

Using well validated parent-report questionnaires, we examined the prevalence of ASD and RAD in a representative general population sample of over 3,300 children aged 5-6 years of age. We investigated a range of socio-demographic factors and their associations with these symptoms. Contacts with the health service was based on self-report as part of the questionnaire. Standard reference costs were applied to health service contacts.

In all, 4.2% of children in this population had symptoms suggestive of ASD and 4.6% had symptoms suggestive of RAD. 1.8% had symptoms suggestive of both. High symptom scores for ASD were associated with male gender, (younger) age of mother at birth and being in a single parent family, while high symptom scores for RAD were associated with (younger) age of mother at birth, being in a single parent family and the number of accidents reported. Both conditions predicted increased health service costs.

HEHTA PI: Andrew Briggs. Funder: CSO Scotland. Research theme #EPH

Cryotherapy for prostate cancer (CROP)

Funded by CRUK, this Glasgow University led trial examined the use of cryotherapy as an adjunct to deferred androgen therapy (ADT) for men with localised radiation-resistant prostate cancer. The trial ended in 2013, stopping early due to patients declining randomisation, instead opting for cryotherapy as a preferred treatment. The accompanying economic evaluation built a pre-trial model of potential cost-effectiveness of cryotherapy compared to ADT. The pre-trial Markov model found cryotherapy to be a dominant treatment strategy compared to upfront ADT (costing less over a patient’s lifetime with improvements in QALYs) and should therefore be considered as a viable treatment option for RRPC patients.

HEHTA PI: Andrew Briggs (contact Kathleen Boyd). Funder: CRUK. Research theme #EEACT

DUKE – Team HF

TEAM-HF was a US NIH grant in collaboration with Duke University, NC, to develop a web-based tool to evaluate potential cost-effectiveness of disease management programmes in heart failure. Heart failure disease management programs have the potential to influence downstream medical resource use and quality-adjusted survival. Because extrapolation is challenging, a consistent and valid approach for projecting longer-term outcomes associated with various programs would be valuable. As part of the project we developed the Tools for Economic Analysis of Patient Management Interventions in Heart Failure (TEAM-HF) Cost Effectiveness Analysis (CEA) Model, a web-based simulation tool designed to integrate data on demographic, clinical and laboratory characteristics, use of evidence-based medications and costs to generate predicted outcomes. Survival projections are based on a modified version of the Seattle Heart Failure Model (SHFM). Projections of resource use and quality of life were modelled using relationships with time-varying SHFM scores. Designed for flexibility, the model can be used to evaluate a parallel-group or single cohort study design as well as a hypothetical program. Simulations comprise 10,000 pairs of virtual cohorts, which are used to generate estimates of resource use, costs, (quality-adjusted) survival and incremental cost-effectiveness ratios based on inputs provided by the user.

In validation testing, we found that the model demonstrated acceptable internal and external validity in replicating resource use, costs and survival estimates from three clinical trials. We also evaluated the cost-effectiveness of a hypothetical disease management program across three scenarios to demonstrate how the model can be useful in designing a program.

The TEAM-HF CEA Model provides the research and provider communities with a tool that can be used to conduct long-term cost-effectiveness analyses of disease management programs in heart failure. The tool will be made available on the web shortly, and a manuscript describing the tool is about to be submitted to a peer-reviewed journal.

HEHTA PI: Andrew Briggs. Funder: NIH. Research theme #EEACT

Evaluation of the New Orleans Intervention Project for Infant Mental Health (BEST)

This study investigates the New Orleans Intervention Model (NIM) for maltreated children in the Scottish context. The NIM provides intensive assessment and treatment for families of maltreated preschool children in foster care, with recommendations to court about adoption, or permanent return to birth families. An economic model will be built and populated with data from the trial to assess cost-effectiveness using the ITSEA measure of child mental health. The aim of the economics component is to explore whether the NIM is likely to be cost-effective in Glasgow and, if so, what design parameters are required for the definitive Phase III trial.

HEHTA PI: Kathleen Boyd. Funder: NSPCC and CSO Scotland. Research theme #EEACT
Football Fans in Training (FFIT)  
a randomized controlled trial of  
a gender-sensitive weight loss  
and healthy living programme  
delivered to men aged 35-65 by  
Scottish Premier League football  
clubs

Funded by the NIHR Public Health Research Programme this study assessed the effectiveness and cost-effectiveness of a group-based, weight loss and healthy living programme. FFIT was specifically designed to engage men who are often reluctant to join existing weight loss programmes. The positive findings of within trial economic evaluation of FFIT were published in the Lancet in January. The Cardiovascular Disease Model for Scotland was used to link short term outcomes from the RCT to potential longer term impacts on health. The full report is currently under review with the NIHR and plans are underway for journal publication of the longer-term analysis.

HEHTA PI: Elisabeth Fenwick. Funder: NIHR. Research theme #DAMSEL

Patient penumbra-based selection for intravenous thrombolysis in ischemic stroke: the potential value of new diagnostic technology

Better selection of patients for recombinant tissue plasminogen activator (rt-PA) treatment may improve clinical outcomes. Our colleagues at the University of Glasgow is currently developing a tool – a penumbral-based MRI selection with oxygen carrier, to better identify patients who are most likely to benefit from rt-PA treatment. In the absence of existing Phase III trial data, the CSO Scotland funded a pre-trial economic model to evaluate the potential cost-effectiveness and the value of further investment in developing such a tool.

A decision tree model estimated the 90-day costs and outcomes associated with penumbral-based MRI selection, with and without an oxygen carrier, and CT-based selection for a patient presenting with acute ischemic stroke. The analysis was performed for the time windows of ≤3 and 3-6 hours from the onset of the ischemic stroke to the treatment. Cost-effectiveness was expressed as incremental cost per quality-adjusted life years gained. Expected value of perfect information analysis was also conducted to estimate the value of further research in refining the existing evidence base.

HEHTA PI: Andrew Briggs/Olivia Wu. Funder: CSO Scotland. Research theme #DAMSEL

Incentives for smoking cessation in pregnancy (CPIT)

The Smoking cessation in pregnancy trial was funded by a consortium including CSO, GCPH and Greater Glasgow Health Board. A Phase II RCT examined the use of financial incentives to encourage pregnant mothers to stop smoking during their pregnancy, with an economic evaluation undertaken alongside to determine the potential cost-effectiveness of financial incentives in this population. Women were randomised to receive usual cessation support +/- financial incentives of up to £400 vouchers, contingent on smoking cessation. The primary outcome was cotinine validated quit at 34-38 weeks gestation. Trial data fed into a lifetime Markov model to compare the usual support and incentive intervention in terms of quitters, quality of life, survival and cost impacts. The incremental cost per quitter at 34-38 weeks pregnant was £1127. The lifetime model resulted in an incremental cost of £17 (95% CI: -£93, £107) and a gain of 0.04 QALYs (95% CI: -0.058, 0.145), giving an ICER of £482/QALY, well below the NICE threshold of £20,000/QALY. However, probabilistic sensitivity analysis indicated uncertainty in these results, particularly regarding postnatal relapse. The expected value of perfect information from a UK wide perspective was £30 million (at a willingness to pay of £30,000/QALY), so given current uncertainty, additional research is potentially worthwhile.

HEHTA PI: Andrew Briggs (contact Kathleen Boyd). Funder: SEHD. Research theme #EEACT
Monitoring and Evaluating Scotland’s Alcohol Strategy: the impact of the Alcohol Act on off-trade alcohol sales in Scotland

The Alcohol Act was introduced in 2011 as part of Scotland’s strategy to reduce its alcohol consumption. It imposed a ban on quantity discounts and restrictions on the display of alcohol in supermarkets and other off-trade retailers. To explore whether the Alcohol Act was associated with changes in off-trade alcohol sales, the research team analysed a range of data on weekly sales, income, alcohol price and on-trade alcohol sales, using English and Welsh data as a comparison. The team found that the introduction of the Alcohol Act reduced off-trade alcohol sales in Scotland over the subsequent year by 2.6%, which was largely driven by a significant 4% drop in the sale of wine. Jim Lewsey (co-author of the report) appeared on BBC ‘Reporting Scotland’ and also on Radio Scotland’s Drive Time to discuss these findings.

HEHTA PI: Jim Lewsey (researcher Claudia Geue). Funder: SEHD. Research theme #SALHDa

Parkinson’s Outcome project

Long term levodopa therapy and the related fluctuating plasma concentrations are associated with between-dose periods of ‘off time’ resulting in substantial variation in symptoms and functioning throughout the day in People with Parkinson’s (PwP).

PwP across UK, France, Spain and Italy completed an online survey to explore: (1) the impact of ‘off time’ on health related quality of life (HRQL) (2) the impact of ‘off time’ on functioning and ability to undertake usual activities (3) value of ‘off time’ relative to other factors associated with Parkinson’s through a stated preference discrete choice experiment (SPDCE). 305 PwP completed the online survey. Overall mean quality of life (utility) score was significantly lower for ‘off time’ (0.37) than ‘on time’ (0.60). All attributes within the SPDCE were significant predictors of treatment choice, although increased duration of ‘on time’ (per hour per day: Odds Ratio (OR) 1.40) and predictability of ‘off time’ to within 30 minutes (OR 1.42) were valued most highly.

‘Off time’ and it’s predictability is highly valued by PwP. Due to substantial diurnal variation of Parkinson’s symptoms standard PRO assessments may not adequately capture the impact of ‘off time’ on HRQL and participation in daily activities.

HEHTA PI: Emma McIntosh. Funder: Oxford Outcomes. Research theme #ES #EEACT

Port-a-cath and Hickman line devices for chemotherapy delivery

Centrally inserted external catheters such as Hickman lines and totally implantable ports such as port-a-caths are devices commonly used in the delivery of chemotherapy to cancer patients. However, infection and mechanical problems plague any long-term venous access device, which can lead to interruption of treatment, increased morbidity and the need for premature device removal and replacement. Currently, there is a lack of evidence-based guidance to support the choice between these devices.

Recognising the need for a definitive randomised controlled trial (RCT) to evaluate the clinical and cost effectiveness of these devices, CSO Scotland funded a pilot study to provide preliminary data on clinical outcomes, quality of life and healthcare resource use to inform the design of a definitive future RCT. A pre-trial economic model was also undertaken, taking into account the data from the pilot study and existing literature, to determine the potential cost-effectiveness and value of future information.

Patients were randomised to Hickman lines (n = 74) and Port-a-caths (n = 26). Overall, 47% of Hickman patients suffered one or more complication compared to 27% of Port patients. In the Hickman arm, 32% (17/53) of device removal were due to a complication compared to 9% in the Port arm (1/11). The device-specific questionnaire data has indicated favourable results for the Port arm for 12 of the 16 questions asked.

The Port arm was associated with significantly lower costs (£364 vs £2099) and lower rate of complications (14 events in 7 patients vs 50 events in 35 patients), but fewer quality adjusted life years (QALYs; 0.60 vs 0.61) than the Hickman arm. However, this difference in QALYs is very small. The findings of the cost-effectiveness analysis were highly sensitive to estimates of health utility values. Based on the findings of this pilot study, a definitive trial comparing external catheters and implantable ports is now on way. The Cancer And Venous Access (CAVA) trial is funded by NIHR HTA, and is due to complete in December 2018.

HEHTA PI: Olivia Wu. Funder: CSO Scotland. Research theme #ES #EEACT
<table>
<thead>
<tr>
<th>Project title</th>
<th>Funder</th>
<th>Duration</th>
<th>Total Project Value (£)</th>
<th>HEFTA’s Share of Total Project (£)</th>
<th>HEFTA Pls</th>
<th>Research Themes</th>
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<tr>
<td>Short course oncology therapy (SCOT)</td>
<td>MRC</td>
<td>2006-2015</td>
<td>2,767,214</td>
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<td>Randomised control trial of surveillance and no surveillance for patients with Barrett's oesophagus - Barrett's Oesophagus Surveillance Study (BOSS)</td>
<td>NIHR HTA</td>
<td>2009-2022</td>
<td>1,710,981</td>
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<td>Comparison of close contact cast technique to open surgical reduction and internal fixation in the treatment of unstable ankle fractures</td>
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<td>2,157,847</td>
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<td>Long-term effects of statin treatment in elderly people (PROSPER)</td>
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<td>Incentives for smoking cessation in pregnancy (CIPT)</td>
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<td>Football Fans in Training (FFIT): a randomized controlled trial of the efficacy of action of gabapentin for the management of chronic pelvic pain in women (GAPP)</td>
<td>NIHR</td>
<td>2011-2013</td>
<td>852,434</td>
<td>58,878</td>
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<td>The economics of Parkinson's disease</td>
<td>Parkinson's Disease Society</td>
<td>2011-2014</td>
<td>189,286</td>
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<td>Randomised trial of treating Fibroids with either Embolisation or MyoMectomy to measure the Effect on quality of life (FEMME)</td>
<td>NIHR HTA</td>
<td>2011-2018</td>
<td>1,497,842</td>
<td>77,308</td>
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<td>A pilot randomised controlled trial of the efficacy of action of gabapentin for the management of chronic pelvic pain in women (GAPP)</td>
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<td>212,529</td>
<td>40,977</td>
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<td>Estimating cost-effectiveness for screening strategies for HBV, HCV and HIV in different populations in Europe</td>
<td>ECDC</td>
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<td>Bronchiolitis of infancy discharge study (BIDS)</td>
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<td>566,242</td>
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<td>Biomarkers for cardiovascular disease (MASCARA)</td>
<td>European Commission</td>
<td>2011-2015</td>
<td>863,536</td>
<td>103,190</td>
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<td>Delivering shared decision-making strategies for facilitating patient involvement in neurology clinics</td>
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<td>210,067</td>
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<td>Surgical obesity treatment study (SCOTS)</td>
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<td>A Parallel group Randomised Open Blinded Evaluation of Acceptance and Commitment Therapy for Depression After Psychosis: A Pilot Trial (ADAPT)</td>
<td>CSO</td>
<td>2012-2015</td>
<td>224,935</td>
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<td>A cluster randomised controlled trial evaluation and cost-effectiveness analysis of the Roots of Empathy schools-based programme in improving emotional and social wellbeing outcomes among 8-9 year olds in Northern Ireland</td>
<td>NIHR</td>
<td>2012-2015</td>
<td>716,249</td>
<td>98,685</td>
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<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>HTA</td>
<td>2012-2016</td>
<td>1,207,488</td>
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<td>DALLAS Evaluation and Networking</td>
<td>TSB</td>
<td>2012-2015</td>
<td>438,330</td>
<td>35,028</td>
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<td>How effective is the Forestry Commission Scotland’s woodland improvement programme - Woods In and Around Towns (WIAT) - at improving psychological wellbeing in deprived communities?</td>
<td>NIHR</td>
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<td>948,024</td>
<td>48,625</td>
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<td>Social and emotional education development (SEED)</td>
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<td>Autism and reactive attachment disorders symptoms in the Scottish population</td>
<td>SEHD</td>
<td>2012-2013</td>
<td>49,966</td>
<td>19,335</td>
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<td>New Orleans Project (BEST)</td>
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<td>2012-2014</td>
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<td>Costs and complications of diabetes</td>
<td>MRC</td>
<td>2012-2015</td>
<td>325,048</td>
<td>313,359</td>
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<td>Oral versus intravenous Antibiotics (OVIVA) for Bone and Joint Infection</td>
<td>NIHR</td>
<td>2012-2014</td>
<td>976,642</td>
<td>66,837</td>
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<td>E-Health informatics research centres (E-HIRCs)</td>
<td>MRC</td>
<td>2012-2017</td>
<td>1,073,113</td>
<td>78,555</td>
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<td>Fractional Flow Reserve</td>
<td>BHF</td>
<td>2012-2014</td>
<td>223,194</td>
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<td>Evaluating Keep Well outcomes</td>
<td>NHS Health Scotland</td>
<td>2012-2014</td>
<td>92,568</td>
<td>86,735</td>
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<td>Early CDT lung test study (ECLS)</td>
<td>Oncimmune Ltd</td>
<td>2012-2016</td>
<td>331,194</td>
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<td>A randomised, double-blind placebo controlled trial of the effectiveness of low dose oral theophylline as an adjunct to inhaled corticosteroids in preventing exacerbations of chronic obstructive pulmonary disease. (TWICS)</td>
<td>NIHR</td>
<td>2012-2017</td>
<td>2,118,845</td>
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<td>A very early rehabilitation trial after stroke (AVERT): a phase 3, multicentre, randomised controlled trial</td>
<td>NIHR HTA</td>
<td>2012-2015</td>
<td>420,756</td>
<td>46,119</td>
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<td>EEACT</td>
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<td>Three-arm randomised control trial for mothers indentified as vulnerable in pregnancy and their babies who are at high risk of maltreatment (THRIVE)</td>
<td>NIHR</td>
<td>2013-2018</td>
<td>1,929,015</td>
<td>132,759</td>
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<td>Scottish alcoholic liver disease evaluation of epidemiology of costs of first and subsequent hospitalisations (SCALE)</td>
<td>CSO</td>
<td>2013-2015</td>
<td>154,289</td>
<td>154,289</td>
<td>JL</td>
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<td>Assets and resilience: an economic perspective</td>
<td>GCPH</td>
<td>2013</td>
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<td>19,000</td>
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<td>Cancer And Venous Access (CAVA) a randomised controlled trial with associated qualitative research of long term venous access devices for the delivery of chemotherapy: Implantable venous access ports versus tunnelled central lines versus peripheral inserted central catheters.</td>
<td>NIHR HTA</td>
<td>2013-2018</td>
<td>1,031,483</td>
<td>413,559</td>
<td>RS OW</td>
<td>ES EACT</td>
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<td>Cost-effectiveness of using an oxygen carrier during the MRI procedure</td>
<td>CSO</td>
<td>2013</td>
<td>19,949</td>
<td>19,949</td>
<td>AB OW</td>
<td>DAMSEL ES</td>
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<td>A randomised controlled trial of the effectiveness of PDSAFE to prevent falls among people with Parkinson’s disease (PD SAFE)</td>
<td>Parkinsons UK</td>
<td>2013-2017</td>
<td>1,877,990</td>
<td>79,215</td>
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<td>Evaluation of Health in Pregnancy Grants Scotland</td>
<td>NIHR</td>
<td>2013-2015</td>
<td>50,000</td>
<td>50,000</td>
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<td>EPH SALHDa</td>
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<td>A randomised multicenter clinical trial to compare two revascularization strategies (CULPRIT-SHOCK)</td>
<td>EC</td>
<td>2013-2017</td>
<td>301,170</td>
<td>174,647</td>
<td>AB</td>
<td>EEACT</td>
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</tbody>
</table>
New Projects

Culprit Shock

The Culprit Shock study is a pan-European randomised multicenter clinical trial to compare two revascularization strategies: immediate multivessel revascularization by percutaneous coronary intervention (PCI) to culprit lesion only PCI with staged non-culprit lesion revascularization in patients with cardiogenic shock complicating acute myocardial infarction presenting with multivessel disease.

The economic component of the study is to develop a cost-effectiveness model based on data from the trial from a European perspective and present final analyses from the overall European and also individual national perspectives. The project will begin by developing a pre-trial model to summarise current knowledge relating to the two procedures. This model will be updated when the trial information becomes available. From a methodological perspective, the formal consideration and development of a model prior to the data being generated is rarely undertaken and so this analysis will become a demonstration project for how cost-effectiveness analysis in clinical trials should be undertaken.

HEHTA PI: Andrew Briggs. Research themes #EEACT and #DAMSEL

The theophyllin with inhaled corticosteroid study (TWICS)

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease characterised by progressive airflow limitation. It affects approximately 3 million people in the UK, is the fifth leading cause of death in the UK and costs the NHS approximately £1 billion annually. Exacerbations of COPD account for 60% of NHS COPD costs and are associated with an accelerated rate of lung function decline, reduced physical activity, reduced quality of life, increased mortality and increased risk of comorbidities such as acute myocardial infarction and stroke.

This study is a pragmatic randomised, double-blind, placebo-controlled, multicentre clinical trial. Participants will be recruited through primary and secondary care initially in seven UK locations, although this will likely increase to meet recruitment targets.

The aim of the study is to determine the clinical effectiveness and cost-effectiveness of adding low dose theophylline (Uniphyllin MR 200mg once or twice daily (od or bd) to inhaled corticosteroid (ICS) therapy in patients with COPD and a history of exacerbations treated with antibiotic and/or ICS. The economic analysis will be presented as cost-per-exacerbation avoided during the observed one year follow-up of the trial. An economic model will be developed to extend the analysis beyond the one-year follow-up and to estimate the cost-per-QALY of treatment.

HEHTA PI: Andrew Briggs. Research themes #EEACT and #DAMSEL

Early CDT-Lung Test

Lung cancer is the most common cause of cancer related death worldwide. The majority of cases are detected at a late stage when prognosis is poor. The EarlyCDT®-Lung Test detects autoantibodies to abnormal cell surface proteins in the earliest stages of the disease which may allow tumour detection at an earlier stage thus altering prognosis.

The ECLS study is a randomised controlled trial of 10,000 participants in areas of Scotland within the lowest quintile of deprivation. Adults aged 50 to 75 who are at high risk (≥2% over the next 24 months) of lung cancer are eligible to participate. The intervention is the EarlyCDT®-Lung Test followed by X-ray and CT in those with a positive result. The comparator is standard clinical practice.

The study will determine the EarlyCDT®-Lung Test’s clinical effectiveness in terms of case identification and its potential suitability for a large-scale, accredited screening service for early lung cancer detection. The study will also assess the potential harms arising from false positive or false negative results, as well as the potential benefits to patients of true negative lung test results. A cost-effectiveness model of lung cancer screening based on the results of the EarlyCDT Lung Test study will be developed.

HEHTA PI: Andrew Briggs. Research themes #EEACT and #DAMSEL

Scottish Alcoholic Liver Disease Evaluation of epidemiology and costs of first and subsequent hospital admissions (SCALE)

The SCALE project seeks to identify first (incident) ALD hospitalisations in Scotland. Using this cohort of patients, trends over time, readmissions, mortality and economic burden will be analysed taking into account different subgroups (sex, age, socio-economic deprivation, geographical regions, comorbidities). These analyses will lead to better understanding of the current and future burden of ALD, and will provide a framework for evaluating the cost-effectiveness of future alcohol interventions.

HEHTA PI: Jim Lewsey. Research themes #EEACT and #DAMSEL
A randomised controlled trial of the effectiveness of PDSAFE to prevent falls among people with Parkinson’s disease

PDSAFE is a multi-centre, single-blinded, randomised, controlled trial to compare (i) PDSAFE (a novel personalised treatment based on the latest published research evidence and our extensive experience of managing the movement and stability problems of People with Parkinson’s Disease) and routine care with (ii) provision of a Parkinson’s information DVD and fall education booklet and routine care, for People with Parkinson’s Disease (PwPD) to participate in a novel personalised intervention (PDSAFE) as a supplement to usual healthcare management.

In addition, the study seeks to answer the following questions:

1. Do fallers with PD who undertake PDSAFE with usual care fall less than those who do not undertake the treatment programme during months 1-6 after randomisation?
2. Do fallers with PD who undertake PDSAFE with usual care fall less than those who do not undertake the treatment programme during months 7-12 after randomisation?
3. Is the intervention cost effective?
4. Do fallers with PD who undertake PDSAFE have better balance, mobility and quality of life and lower fracture rate than those who do not?

HEHTA PI: Emma McIntosh. Research themes #EEACT

Trial of Healthy Relationship Initiatives for the Very Early-years (THRIVE)

THRIVE is a three-Arm Randomised Controlled Trial for Mothers Identified as Vulnerable in Pregnancy and their Babies who are at High Risk of Maltreatment. The aim of the THRIVE trial is to rigorously evaluate Enhanced Triple P for Baby (ETPB) and Mellow Bumps (MB). The economic evaluation alongside the THRIVE trial will incorporate available trial linked data, project cost and outcome data from baseline, 6 months, 18 months and up to 30 months follow up.

The cost-effectiveness of THRIVE will be assessed by comparing the additional costs associated with each of the interventions to the outcomes achieved in the study and those achievable in the longer term. Based on the availability of routine data, longer term outcomes will be assessed by linking the short term outcomes identified in the study to potential longer term impacts on health and wellbeing for both mother and child via trail extrapolation methods including economic modelling techniques. However, given the well-recognised limited nature of this exercise in terms of assumptions required to link intermediate costs and outcomes to long term economic costs and outcomes, relationships identified from the literature will also be used to guide and strengthen modelling scenarios and form the basis of a more robust, evidence-based long term modelling exercise.

This long term modelling exercise will contain a base case scenario and incorporate a significant number of sensitivity analyses to allow for the likely variation around long term costs and outcomes.

HEHTA PI: Elisabeth Fenwick, Emma McIntosh. Research themes #EEACT and #DAMSEL

Social and Emotional Education and Development (SEED)

Formal cost utility analysis studies have traditionally not been included as part of major evaluations of primary school based interventions to promote mental and physical health.

Within the SEED trial, data are being collected on the costs associated with the provision of the interventions including staff time and consumables as well as the costs incurred by parents such as travel and child care. The CHU9D has recently been developed and validated specifically for use in children aged 7-11 and will be used to generate a measure of utility change in each arm of the study.

The final part of our analysis will involve utilising information from the literature and other studies to project the outcomes observed within the trial to determine the potential longer term impacts on health and wellbeing resulting from the intervention within a decision analytic model.

HEHTA PI: Elisabeth Fenwick, Emma McIntosh. Research themes #EEACT and #DAMSEL

A cluster randomised controlled trial evaluation and cost-effectiveness analysis of the Roots of Empathy (ROE) schools-based programme in improving emotional and social wellbeing outcomes among 8-9 year olds in Northern Ireland

Roots of Empathy (ROE) is a universal, classroom-based social and emotional competence promotion programme aimed at primary school pupils (www.rootsofempathy.org). Its primary goals are to: increase children’s knowledge about infant development and effective parenting practices; develop children’s social and emotional understanding; and promote prosocial behaviours and decrease aggressive behaviours. This study aims to evaluate whether ROE is effective in improving these outcomes for children aged 8-9 years. 60 schools will be recruited to take part in the evaluation and will be randomly allocated to the intervention or control group. All children will complete carefully chosen measures of social, emotional and behavioural development before the programme starts and at the end of the programme. Teacher ratings and direct observations will also be obtained. Data will also be gathered at 6, 12, 18 and 24 months following the end of the programme to determine any longer term benefits.
A cost-effectiveness analysis will be undertaken alongside the trial to compare the costs and outcomes associated with ROE to those associated with usual education at two time-points. The initial analysis will be based on the costs and outcomes measured within the study period, while the second analysis will project the likely longer term impacts associated with ROE. Both analyses will be conducted from a public sector perspective incorporating costs on NHS, personal social services, educational services and the judicial system. In addition, a sensitivity analysis will be undertaken to explore the potential importance of any personal costs to the family. For the initial within study analysis, the outcome measures used will be (a) changes in the average SDQ conduct problems subscale scores; and (b) a within study measure of QALYs determined from CHU 9D. The longer term analysis will employ a decision model, populated with reference to the literature, to link short term study outcomes to longer term impacts on health and wellbeing.

**HEHTA PI: Elisabeth Fenwick, Emma McIntosh. Research themes #EEACT and #DAMSEL**

**A very early rehabilitation trial after stroke (AVERT): a phase 3, multicentre, randomised controlled trial**

AVERT is a large phase III multicentre, single-blind, controlled, parallel group trial in acute stroke patients (within 24 hours of onset) who are admitted to a stroke unit. Participants are randomised to receive very early mobilisation (VEM) plus usual care or usual care alone. The trial is led by the University of Melbourne, an international multicentre design was chosen so that participants could be recruited from a wider population and the AVERT intervention could be tested in a range of clinical settings.

The primary outcome of this study is the proportion of patients dead or disabled (Modified Rankin Scale (mRS) score 3-5) at 3 months post stroke. An economic evaluation will be undertaken alongside the clinical trial, from the perspective of the UK NHS and personal social services. In addition to the clinical data, resource use data will be collected during the trial; unit costs will be obtained from routinely collected data and literature. Health utility values will be estimated using an algorithm to translate the modified Rankin scale (mRS) into EQ-5D utility values. Cost-effectiveness will be expressed as incremental cost per quality adjusted life year gained. Appropriate sensitivity analyses including probabilistic sensitivity analysis will also be carried out. The global target recruitment is 2104 by late 2014.

**HEHTA PI: Olivia Wu. Research themes #EEACT and #DAMSEL**

**Cancer And Venous Access (CAVA) a randomised controlled trial with associated qualitative research of long term venous access devices for the delivery of chemotherapy**

CAVA is a randomised controlled trial incorporating pre and post trial qualitative research. Prior to the trial commencing, qualitative research will be undertaken to explore the attitudes of clinical staff and patients towards the three venous access devices, to facilitate recruitment to the study. On completion of the trial, qualitative work will be carried out to assess patient and staff acceptability of the three devices. In addition, an economic evaluation will be carried out to evaluate the cost-effectiveness of the three devices. The randomised, controlled trial is of 3 central venous access devices for the delivery of systemic intravenous chemotherapy; subcutaneously tunnelled central lines (Hickman), peripherally inserted central catheters (PICC) and implanted port (Port).

There will be 4 randomisation options for each eligible patient: Hickman vs PICC, Hickman vs Port, PICC v Port and Hickman vs PICC vs Port.

**HEHTA PIs: Emma McIntosh. Research themes #EPH and #EEACT**

**Economic Evaluation of Scotland’s Childsmile Programme**

Oral health is an integral part of general health and is essential for well-being of individuals. Dental caries (tooth decay) is one of the most common diseases of childhood: impacting on quality of life through pain, infection, diet, and loss of sleep; caries can lead to time lost from school for children and time off work for parents/carers. Caries can be effectively prevented and controlled giving rise to substantial improvements in quality of life and child morbidity. Notwithstanding the above, oral health preventative programmes in population health rarely receive the same level of attention as medical care among policy makers with regard to the cost-effective allocation of scarce health care resources. The Scottish Government and NHS Scotland are at the forefront of child oral health improvement and they have been funding the Childsmile programme since 2006. Childsmile is a Scotland-wide programme, led by the Glasgow Dental School, designed to improve the oral health of children and reduce social inequalities both in dental health and access to dental services. An economic evaluation of the Childsmile programme is underway.

**HEHTA PIs: Olivia Wu, Rebecca Shaw. Research themes #ES, #EEACT and #IPE**
The MSc in HTA at Glasgow is designed for the 21st Century HTA practitioner. The programme involves an innovative curriculum designed around core competencies and skills providing a strong vocational training in HTA. The programme has a strong vocational aspect and adheres to the requirements of the wider HTA workforce; students are therefore well equipped to return to their workplace after completion of the programme, or to find employment within the wider HTA arena. This programme is of particular interest to people wishing to develop their career by acquiring skills in evidence-based healthcare and health technology assessment.

In this inaugural year of the MSc HTA (academic year 2013/14) we have two full-time students and six part-time students. The midway student evaluation of the courses ‘HTA Policy and Principles’ and ‘HTA Practices’ was very good. In the former, students liked the breadth of topics, found the lectures interesting and engaging, and valued the reference lists and recommended reading. In the latter, students mentioned that it was pitched at the correct level, found the topics interesting, and enjoyed learning more about some of the topics introduced in HTA Policy and Principles course. In the first Staff/Student meeting the student representative reported that the students have been very positive about the programme and have found the staff to be very approachable. It was also mentioned that an extra session on referencing would have been appreciated and the teaching faculty hope to incorporate this into next year’s programme.

### Core courses
- Health technology assessment: policy and principles
- Introduction to statistical methods
- Introduction to epidemiology

### Optional courses
(three to be taken)
- Decision analytic modelling for HTA
- Economic evaluation
- Further epidemiology and statistics
- Health economics
- Qualitative research methods for HTA
- Managing Healthcare organisations

For more details:
www.glasgow.ac.uk/hta
Interview
With Stefan Morton, MSc
Student

Stefan Morton is one of the first cohort of students on our new MSc programme. We asked him to tell us about his experience of the first year.

My name is Stefan Morton, I live in South Lanarkshire and I work at present in the NHS Greater Glasgow and Clyde. I’ve been studying the Masters course in Health Technology Assessment now for a year.

What attracted you to the MSc HTA at the University of Glasgow?

The factors that attracted me to the course, the Masters in HTA – there were a few of them. My work was giving me the opportunity to study a Masters. I work for the NHS in Greater Glasgow and Clyde, so it was a good opportunity from them to help me expand my career. For me it was about looking at my future, looking at how I could progress from here. Originally I trained as a podiatrist, but I’m working inside Infection Control at the moment. So I was really looking for something that could bridge the gap and help me with both sides of my career, and obviously in the future if I change career, whether it be within the public or the private sector, I was looking for something that could help enhance that.

What skills are you learning that you think will help your future career?

So far a lot of the course has been around objective reviews of new technologies for the NHS and for health care as a whole, so it directly applies to the work I’m doing at the moment and it also applies to my previous career in podiatry as well. But it’s a whole list of factors that will be useful, and again I can see myself outside the public sector actually using the skills.

The work I’m doing involves bringing in a lot of new technologies, we’re looking at things like hospital-associated infections, and there is a lot of new technologies associated with that. It can be hard sometimes trying to take the views of people into account when you’re looking at how effective something can be. So obviously this course is about objectively reviewing new technologies, and it means you can bring in something that you know is going to be effective rather than bringing it in and then having to evaluate it once it’s there; it’s actually evaluating it before it becomes practice.

Do you enjoy Glasgow as a place to live and study?

Glasgow’s a great place to live and study! It’s a very vibrant place, it’s a place that I think people don’t always get to know the history of. As a student especially it gives you a lot of scope to see a different side of Glasgow.

Would you recommend this course to other students?

I would absolutely recommend this course to others to take on. It’s been a year so far and I have thoroughly enjoyed it and I know from reports from my fellow students that they’ve all thoroughly enjoyed it as well. It can be quite intensive, there is a lot of learning to take place in it, but that’s with any University course, especially a Masters. The camaraderie between the students has been very good, so far – we’re a small group within the University as a whole, but we find that quite useful.

This interview can also be viewed on our website at www.glasgow.ac.uk/hehta
In addition to the MSc in HTA, HEHTA members are also involved in a variety of teaching activities, including postgraduate and undergraduate teaching, and continuing professional development short courses.

### Masters in Public Health Modules

- **Health Economics**
  - Kathleen Boyd*, Claudia Geue, Eleanor Grieve, Emma McIntosh
- **Introduction to Statistical Methods**
  - Jim Lewsey*
- **Further Epidemiology and Statistics**
  - Jim Lewsey, Claudia Geue
- **Qualitative Research Methods**
  - Rebecca Shaw*
- **Economic Evaluation**
  - Elisabeth Fenwick*
- **Research Methods**
  - Olivia Wu
- **Psychosocial Approaches to Public Health**
  - Rebecca Shaw

### MSc in Primary Care Lectures

- **Funding Primary Care**
  - Claudia Geue

### MSc in Human Nutrition Lectures

- **Economic Evaluation of Weight Management**
  - Eleanor Grieve

### MSc in Global Health Lectures

- **Research Methodology**
  - Eleanor Grieve

### BSc in Medical Science

- **Lecture**

- **Research Methodology**
  - Lindsay Govan
- **Principles of Health Economics**
  - Emma McIntosh
- **MVLS Research Training Programme**
  - Jim Lewsey

*Also module co-ordinators
<table>
<thead>
<tr>
<th>Student</th>
<th>Project</th>
<th>Degree</th>
<th>Supervisor</th>
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<tbody>
<tr>
<td>Chalida Khemvaranan</td>
<td>Cost-effectiveness of robotic surgery and laparoscopic in cervical cancer</td>
<td>MSc HTA</td>
<td>Jim Lewsey</td>
</tr>
<tr>
<td>Panida Yoopetch</td>
<td>Cost-effectiveness of single-agent LHRH agonists in the treatment of metastatic prostate cancer from a Thai perspective</td>
<td>MSc HTA</td>
<td>Jim Lewsey, Kathleen Boyd</td>
</tr>
<tr>
<td>Artidtaya Charoensukkasem</td>
<td>Investigating the association between alcohol sales and alcohol-related mortality in Scotland</td>
<td>MPH</td>
<td>Claudia Geue, Jim Lewsey</td>
</tr>
<tr>
<td>Lucie Giles</td>
<td>Developing a model to project alcohol-related mortality in Scotland</td>
<td>MPH</td>
<td>Claudia Geue</td>
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<tr>
<td>Steven Henderson</td>
<td>A systematic review of economic evaluations of bio- and genomic markers in the prediction and management of cardiovascular disease</td>
<td>MPH</td>
<td>Kathleen Boyd</td>
</tr>
<tr>
<td>Daniel Muvengei</td>
<td>Changes in HbA1c and other risk factors over time in the Scottish Type 1 and Type 2 diabetes populations in 2005-2011</td>
<td>MPH</td>
<td>Lindsay Govan, Kathleen Boyd</td>
</tr>
<tr>
<td>Septiara Putri</td>
<td>Systematic Review of Invasive versus Non-invasive Approach for Non-ST Elevation Acute Coronary Syndrome (NSTE-ACS) in Patients with Prior Coronary Artery Bypass Graft (CABG)</td>
<td>MPH</td>
<td>Andrew Briggs</td>
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<tr>
<td>John Scott</td>
<td>Systematic review of the Essure micro-insert</td>
<td>MPH</td>
<td>Olivia Wu</td>
</tr>
<tr>
<td>Mengwei Liu</td>
<td>Age and cause of death for patients with major mental illness in Scotland: data from the Scottish Health Survey cohort</td>
<td>MPH</td>
<td>Jim Lewsey, Danny Smith (external)</td>
</tr>
<tr>
<td>Mark Johnston</td>
<td>A study estimating length of stay in hospital for different disease areas</td>
<td>BSc</td>
<td>Claudia Geue</td>
</tr>
<tr>
<td>Serena Miccolis</td>
<td>Statistical analysis to establish the economic burden (costs and utilities) associated with morbid obesity</td>
<td>BSc</td>
<td>Eleanor Grieve</td>
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Systematic Review and Meta-Analysis of Direct, Indirect and Mixed Treatment Evidence

Systematic review and meta-analysis are key inputs to healthcare decision-making. They provide important insight into the comparative effectiveness of health technologies based on a systematic appraisal of evidence. These methods have become an integral part of health technology appraisals in many jurisdictions.

Our fifth annual course was held on 17-19 April 2013, and has attracted participants from HTA agencies, governmental bodies, academia and industry, within and out-with the UK. Here are some of the feedback from our participants:

‘Excellent course! Thank you.’
‘...all very friendly, helpful and approachable...’
‘I would highly recommend the course’
‘highly relevant’
‘excellent workshop, very enlightening and thorough’
Economic Evaluation alongside Clinical Trials

This course is a collaboration between HEHTA and researchers at the University of Pennsylvania. The course is designed for individuals undertaking health economic evaluations in academia, consultancies and industry, as well as those involved in the design and analysis of clinical trials (statisticians and health service researchers). The Economic Evaluation in Clinical Trials course first ran in 2009, and was held on 30 October-1 November 2013.

‘great course’
‘absolutely instrumental’
‘practical and hands-on directly relevant’
‘excellent social events’
‘great start to understanding… analysing economic data alongside a clinical trial’

Decision Analytical Modelling Methods for Economic Evaluation

The course is aimed at health economists and those health professionals with experience of health economics who wish to develop skills and knowledge in decision analysis for purposes of cost effectiveness analysis. It is designed for participants who are familiar with the basic principles of economic evaluation who wish to build, interpret and appraise decision models.

First run in 2007 this course has proved extremely popular, with numbers increasing year on year. In response to comments from previous participants, in 2013 we introduced a foundation level course (7-8 October 2013) which ran over two days, followed by the advanced level course (9-11 October 2013).

‘fantastic hands-on approach’
‘very comprehensive’
‘enthusiasm of presenters’
‘good networking opportunity’

Introduction to Stata

Originally offered as an optional short session at the start of our Systematic Review and Meta Analysis course, it was decided in 2011 to run the Introduction to Stata as a one-day course. This has proved very popular, with the majority of participants also attending the Introduction to Stata (16 April 2013). The course is also run in conjunction with our Economic Evaluation alongside Clinical Trials course (29 October 2013).
External Workshops

'Methods for Extrapolation from Clinical Trials Data to Inform Economic Evaluation’, University of Oxford, 22 January 2013
Jim Lewsey

'Economic Evaluation and HET: practice, experience and ramblings’ for Department of Health Management and Health Economics, Faculty of Medicine, University of Oslo (course faculty). May 2013
Elisabeth Fenwick

'Advanced Modelling Methods’ – half day pre-conference course at ISPOR international meeting, 19 May 2013, New Orleans, USA
Andrew Briggs

'Utilisation des modèles de décision pour l’évaluation médico-économique’ for Groupement Interrégional de Recherche Clinique et d’Innovation Sud-Ouest Outre-Mer, Bordeaux, France (course faculty) June 2013
Elisabeth Fenwick

'Decision making with pharmacoeconomic evidence’ 2013 Academy Seminar for the European Association of Clinical Pharmacists, Lisbon, September 2013
Olivia Wu

'Designing a pharmacoeconomic evaluation’ 2013 Academy Seminar for the European Association of Clinical Pharmacists, Lisbon, September 2013
Olivia Wu

'Modelling methods for HTA’ – taught course on modelling methods to Chilean ISPOR chapter, 9-11 September 2013, Chile
Andrew Briggs

'Modelling methods for HTA’ – taught course on modelling methods to Colombian IETS, 16-18 September 2013, Bogota, Columbia
Andrew Briggs

'Modelling survival data for decision analysis’ – half day pre-conference course at SMDM conference, 20 October 2013, Baltimore, USA
Kathleen Boyd, Andrew Briggs, Jim Lewsey

'Value of information analysis : a beginner’s guide’ – half day pre-conference course at SMDM conference, 20 October 2013, Baltimore, USA
Andrew Briggs, Elisabeth Fenwick

'Introduction to statistical methods’ – half day pre-conference course at ISPOR European meeting, 3 November 2013, Dublin, Ireland
Andrew Briggs

'Systematic review and meta-analysis’, International Society for Pharmacoepidemiological Outcomes Research 16th Annual European Congress, Dublin 2013
Neil Hawkins, Olivia Wu

'Systematic review and meta-analysis’ a two day workshop to pharmacists working at local government, Riyadh, Saudi Arabia, 2013
Neil Hawkins, Lindsay Govan, Olivia Wu
Publications

Articles


Book Section


Research Report

Presentations


Baba C, McIntosh E, Tannahill C. Profiling empowerment as an outcome within an economic evaluation framework of urban regeneration programmes. New Solutions for housing and regeneration: communities, ownership and mutuality. The Centre for Housing Research Seminar, University of St Andrews, 4 July 2013

Briggs A. Invited participation in Agency for Health Services Research and Quality workshop on Decision and Simulation Modelling for Health Care, 27 Feb 2013

Briggs A. Probabilistic decision modelling: natural application of statistics or dangerous pseudo science. Invited plenary talk at PSI annual meeting, Glasgow, 13 May 2013


Briggs A. Bill and Melinda Gates Foundation, Methods of Economic Evaluation Project (MEEP). Invited to Chair a two-day workshop on defining a reference case, Seattle, 27-28 June 2013

Briggs A. Transferability of health economic information: models or trials? Presentation at ISPOR South American Conference, Buenos Aires, 14 September 2013

Briggs A. Model Parameter Estimation and Uncertainty Analysis. Presentation at ISPOR South American Conference, Buenos Aires, 15 September 2013

Briggs A. How do we assess the value of renal denervation for severe and resistant hypertension? Invited talk to American Society of Hypertension Workshop on the Detection, Evaluation and Management of Severe and Resistant Hypertension, Bethesda, 10 October 2013

Briggs A. Modelling for decision making in the UK. Invited talk at plenary session at SMDM annual meeting, Baltimore, 22 October 2013

Briggs A. Analysing utility data from clinical trials. Presentation at ISPOR European meeting, Dublin, 5 November 2013

Briggs A. ISPOR webinar as part of the modelling Task Force series, Model Parameter Estimation and Uncertainty Analysis, 20 November 2013

Fenwick E. The use of decision modelling in HTA in the UK. Institute de santé publique d’épidemiologie et de développement, University of Bordeaux, France, June 2013

Govan L. Costs and complications of diabetes in Scotland. Invited talk at the Clinical Epidemiology and Biostatistics Unit, The Royal Children’s Hospital, Melbourne, April 2013

Govan, L. Costs and complications of diabetes in Scotland. Invited talk at the School of Population and Global Health, University of Melbourne, April 2013


McIntosh E. The Economics of Parkinson’s. Scotland’s Brainpower – Parkinson’s UK Research. Scottish Parliament, Holyrood Road, Edinburgh, 6 November 2013


Wu O. Decision making at the Scottish Medicines Consortium. Invited talk at the International Symposium on Health Technology Assessment – HTA’s role in the decision making process, Taipei, November 2013

Wu O. Informing decisions at the National Institute of Health and Care Excellence (NICE) Technology Appraisal Committee. Invited talk at the National Guard Hospital, Riyadh, Saudi Arabia, October 2013

Wu O. Pharmacoeconomics: from Policy to Science’. Invited talk at the 2013 Academy Seminar for the European Association of Clinical Pharmacists, Lisbon, September 2013
### Membership of Expert Bodies

<table>
<thead>
<tr>
<th>Kathleen Boyd</th>
<th>James Lewsey</th>
<th>Rebecca Shaw</th>
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| • Beatson West of Scotland Cancer Care, Clinical Trials Unit: In-house Trials Advisory Board | • Chartered Statistician, Royal Statistical Society  
• Chartered Scientist, The Science Council | • The British Sociological Association  
• The Scottish Ethnomethodology, Discourse, Interaction & Talk Group  
• Affiliated member of the Feminist Conversation Analysis Unit |
| Andrew Briggs | • Editor, Health Economics  
• Editorial Board, Value in Health | Olivia Wu |
| Elisabeth Fenwick | • NICE Programme Development Group on ‘Managing overweight and obesity among children and young people – lifestyle weight management services’  
• Trustee, Board for Society for Medical Decision Making  
• Associate Editor, Medical Decision Making  
• Editorial Board, Pharmacoeconomics | • Technology Appraisal Committee, the National Institute of Health and Care Excellence (NICE)  
• Health Service and Population Health Research Committee, the Scottish Chief Scientist Office  
• Referee Panel for the Health and Medical Research Fund for the Hong Kong SAR Government  
• Editorial Board, Heart |
| Lindsay Govan | • Associate Editor, The Patient Journal  
• Editorial Board, BMC Medical Research Methodology  
• Advisory Board, CSO National Burden of Disease, Injuries and risk Factors (ScotPHO)  
• Advisory Board, Scottish Immunisation Programme (SIP) – Epidemiology & Surveillance Reference Group  
• Advisory Board, Multiple Sclerosis Trust: Generating Evidence in MS Services (GEMSS)  
• Advisory Board, Evaluation of the impact of tobacco control mass media campaigns on quitting behaviour, smoking prevalence and smoking-related health outcomes  
• Data monitoring Committee: NIHR Paces Trial  
• National Health Economists Interest Group: Economics of Population Health |