

---

ANNUAL  
REPORT  
2019

---

# HERU

HEALTH ECONOMICS RESEARCH UNIT

Promoting Excellence in Health Economics



---

HERU is supported by the Chief Scientist Office (CSO) of the  
Scottish Government Health & Social Care Directorates (SGHSCD)

---



# contents

---

1.	Welcome from the Director.....	03
2.	2019 Highlights .....	04
3.	Meet the Team .....	06
4.	Our Research .....	09
	Workforce and Organisation of Care.....	10
	Health Behaviour .....	12
	Assessment of Technologies .....	14
	Methods of Benefit Valuation .....	17
5.	Knowledge Transfer .....	20
6.	Enhancing Capacity .....	22
7.	Projects In-Progress and Completed in 2019.....	26
8.	2019 Publications & Presentations .....	36

## contact

---

### Health Economics Research Unit

University of Aberdeen,  
Institute of Applied Health Sciences,  
Polwarth Building, Foresterhill,  
Aberdeen AB25 2ZD

T: +44 (0)1224 437196/437197  
E: [heru@abdn.ac.uk](mailto:heru@abdn.ac.uk)  
[twitter.com/HERU\\_Abdn](https://twitter.com/HERU_Abdn)  
[www.abdn.ac.uk/heru](http://www.abdn.ac.uk/heru)

# Welcome from the Director



## Welcome to the 2019 Annual Report of the Health Economics Research Unit (HERU)

In 2019 we launched Scottish Health Economics (SHE). SHE is a collaboration of health economists from Scotland's universities, NHS and government. The aim of the group is to bring together researchers and users of health economics to explore the development and application of health economics in Scotland. The launch event in October provided a great showcase for health economics in Scotland. We are looking forward to continuing to lead this exciting development.

2019 saw some great successes in grant awards. We led on a number of successful grants including two grants funded by the Health Improvement, Protection and Services Committee of the Chief Scientist Office (CSO): *'Should Scotland provide whole genomic sequencing for diagnosis of rare disorders? A health economic analysis'* and *'Does minimum unit pricing for alcohol have unintended consequences for diet and health? A natural experiment comparing Scotland and England'*. We were also the health economics lead on a number of prestigious National Institute for Health Research (NIHR) funded trials and other grants totalling around £6 million.

Maintaining and strengthening our international collaborations is of key importance. We ran a successful visiting scholar programme attracting two prominent international economists to HERU. Professor Mark Harris from Curtin University in Perth, Australia, and Professor Liam Delaney, a behavioural economist from University College Dublin. We were delighted that Marjon van der Pol was awarded a Visiting Research Scholar award from the University of Melbourne.

Our online MSc in Health Economics for Health Professionals continues to do well with 61 students on the course by the end of 2019. Several students conducted their MSc dissertation over the summer. The wide range of topics reflects the breadth of the course. I very much enjoyed reading about the projects. Our popular Discrete Choice Experiment course ran in both Canada and Aberdeen in 2019 and attracted delegates from many different countries. 2019 was also a good year for our PhD students. Dwayne Boyers, Kevin Momanyi and Gillian Scanlon graduated, and Ben Sakowsky passed his PhD viva with minor changes. Congratulations to all. We warmly welcomed Mélanie Antunes and Huixuan Gao to our cohort of PhD students.

We always explore new ways of engaging with policy makers and practitioners and in 2019 we launched a blog as a way to summarise our research, with a focus on policy implications. We produced a wide variety of blogs in the first year including a short video where I introduce HERU. We welcome any feedback.

Sadly, we said goodbye to Ramses Abul Naga, Nicolas Krucien, Maria Dimitrova, and Alastair Irvine, we wish them all the best. We welcomed two new members of staff: Michael Abbott (a previous intern!) and Charlotte Kennedy, who both recently completed an MSc in Health Economics from the University of York.

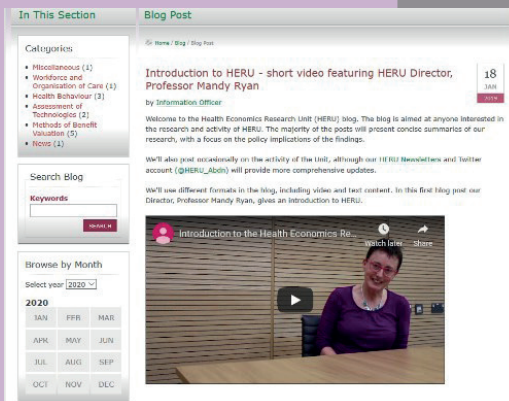
I hope you enjoy reading this report. For more information on our activities visit our website and our blog ([www.abdn.ac.uk/heru/blog/](http://www.abdn.ac.uk/heru/blog/)) and for real time news visit our twitter account [@HERU\\_Abdn](https://twitter.com/HERU_Abdn).



**Professor Mandy Ryan**  
Director

## Launch of 'Scottish Health Economics (SHE)'

The aim of **Scottish Health Economics (SHE)**, a new collaboration of health economists from Scotland's universities, NHS and government, is to bring together researchers and users of health economics to explore the development and application of health economics in Scotland. 'SHE' was officially launched with a one-day conference which focused on **'Showcasing health economics in Scotland: research of international excellence that addresses policy priorities in Scotland and beyond'**.



## NEW HERU Blog...

In January, we launched our new HERU Blog. Our blog is aimed at anyone interested in the research and activity of HERU. The first post was a short video introduction to HERU from our Director, **Mandy Ryan**. Other posts are summaries of our research, with a focus on the policy implications of the findings and we use a variety of different formats – including video, images and text. To view our blog, please visit: [www.abdn.ac.uk/heru/blog/](http://www.abdn.ac.uk/heru/blog/)

## Grant success

Researchers in HERU led several successful grant applicants including two grants funded by the Health Improvement, Protection and Services Committee of the CSO: *Should Scotland provide whole genomic sequencing for diagnosis of rare disorders? A health economic analysis* and *Does minimum unit pricing for alcohol have unintended consequences for diet and health? A natural experiment comparing Scotland and England*. We were also the health economics lead on a number of prestigious NIHR funded trials and other grants totalling around £6 million.

## Duchess of Rothesay visits the University

Her Royal Highness, the Duchess of Rothesay and Pro-Chancellor Professor Iain Torrance, of the University of Aberdeen, visited the University in January for the official installation of Professor George Boyne as Vice-Chancellor and Principal.

While at the university HRH took time to visit the Foresterhill campus and met with the Directors of HERU and the Health Services Research Unit (HSRU) (left). This was a chance to catch up on the work of the units over the last year. In February 2018, the Duchess presented the Queen's Anniversary Prize for Higher and Further Education to the University in recognition of the research of HERU and HSRU.



## MSc Health Economics for Health Professionals

Our MSc/Postgraduate Diploma/Postgraduate Certificate in Health Economics for Health Professionals continues to grow. By the end of 2019 we had 61 students on our course.

## HIS, HERU, HSRU and NMAHP-RU co-sponsored 7th Annual Research Symposium

Our joint annual symposium focused on 'Evidence for value in the era of realistic medicine'.

**Stirling Bryan** was a keynote presenter, talking about 'The rise and rise of patient-orientated research: what implications for Scotland'.

## Café Scientifique

Researchers at HERU have long challenged the clinical approach to valuation, arguing that we should be broadening the valuation space to consider what is important to patients and the public. **Dwayne Boyers**, **Marjon van der Pol** and **Mandy Ryan** led a Café Scientifique event on what benefits should be included when the NHS makes choices about what treatments to fund.



## Plenary at the 11th German Health Economics Association Annual Conference

**Marjon van der Pol** gave the closing plenary at the German Health Economics Association Annual Conference in Augsburg in March 2019. Marjon spoke about the role of time preferences in health behaviours and argued that health economists should embrace both behavioural economics and intervention design to a greater extent.

## International visits

Our successful visiting scholar scheme attracted two prominent economists to HERU. We were delighted to welcome Professor Mark Harris as a Visiting Scholar for three weeks in March. Mark is a John Curtin Distinguished Professor in the School of Economics and Finance at Curtin University.

*L to R: Liam Delaney and Marjon van der Pol*



We also welcomed Professor Liam Delaney in July. Liam is a Professor of Behavioural Economics at University College Dublin and leads the Behavioural Science group in the Geary Institute for Public Policy.

**Marjon van der Pol** was successful in receiving a Visiting Research Scholar award from the University of Melbourne. Her four-week visit to the Melbourne Institute of Applied Economic and Social Research was hosted by Professor Anthony Scott.



*L to R: Paul McNamee and Mark Harris*



*L to R: Marjon van der Pol and Tony Scott*

## Meet the Team

### Academic Staff

**Michael Abbott #**

*Research Assistant*

**Dr Yu Aoki**

*Lecturer*

**Professor Stirling Bryan**

*Professor of Health Economics*

**Dr Dwayne Boyers**

*Research Fellow*

**Dr Huey Chong**

*Research Fellow*

**Dr Ourega-Zoé Ejebu**

*Research Fellow*

**Professor Bob Elliott**

*Emeritus Professor*

**Dr Shelley Farrar**

*Research Fellow, MSc  
Health Economics for Health  
Professionals Co-ordinator*

**Dr Rodolfo Hernández**

*Research Fellow*

**Elisabet Jacobsen**

*Research Fellow*

**Charlotte Kennedy #**

*Research Assistant*

**Mary Kilonzo**

*Research Fellow*

**Dr Daniel Kopasker**

*Research Fellow*

**Dr Attakrit Leckcivilize**

*Research Fellow*

**Dr Luis Loría-Rebolledo**

*Research Fellow*

**Professor Anne Ludbrook**

*Professor of Health Economics*

**Lynda McKenzie**

*Research Fellow*

**Professor Paul McNamee**

*Professor of Health Economics &  
Health Behaviour Theme Leader*

**Dr Blanca Moran**

*Research Fellow*

**Dr Patrícia Norwood**

*Research Fellow*

**Professor Marjon van der Pol**

*Depute Director &  
Director of Teaching*

**Dr Terry Porteous**

*Research Fellow*

**Professor Mandy Ryan**

*Unit Director*

**Dr Graham Scotland**

*Reader & Assessment of  
Technologies Theme Leader*

**Dr Diane Skåtun**

*Senior Research Fellow &  
Workforce & Organisation of Care  
Theme Leader*

**Chris Spoor**

*Lecturer (Scholarship)*

**Dr Verity Watson**

*Senior Research Fellow & Methods  
of Benefit Valuation Theme Leader*

### Support Staff

**David Burns**

*Information Officer*

**Shona Christie**

*Business Manager*

**Alison Findlay**

*Unit Administrator*

**Lesley Innes**

*Unit Secretary*

# denotes new staff in 2019

## NEW Staff to the Unit in 2019

### Research Fellows



**Michael Abbott** joined HERU as a Research Assistant in November 2019. He is currently involved in the creation of a health economic model to assess the cost-effectiveness of whole genomic sequencing for rare disorders.



**Charlotte Kennedy** joined HERU as a Research Assistant under the Assessment of Health Technologies theme. Currently, she is involved in the critical assessment of the economic methods used in the single technology assessment of enzalutamide with ADT for treating metastatic hormone-sensitive prostate cancer.

### Current PhD Students



**Mélanie Antunes#**  
Thesis Title: *'Public and patient preferences for social prescribing'*  
Supervisors: **Verity Watson, Marjon van der Pol** (HERU) Suzanne Robinson and Richard Norman (Curtin, Australia).



**Huixuan Gao#**  
Thesis Title: *'The value and costs of unpaid care for older people in China'*  
Supervisors: **Paul McNamee and Attakrit Leckcivilize** (HERU).

#### Ni Gao

Thesis Title: *'Thriving not surviving following a breast cancer diagnosis: what can time allocation tell us?'*  
Supervisors: **Mandy Ryan, Nicolas Krucien** (HERU), Suzanne Robinson and Richard Norman (University of Curtin, Australia).

#### Divya Mohan

Thesis Title: *'Informing 'realistic medicine': can economic evaluations account for heterogeneity in care preferences?'*  
Supervisors: **Graham Scotland** (HERU), Sebastian Heidenreich (Evidera and HERU) and Craig Ramsay (HSRU).

#### Ruben Sakowsky

Thesis Title: *'Our values or mine? A philosophical and empirical critique of deliberative and stated preference elicitation techniques in health economics'*  
Supervisors: **Mandy Ryan** (HERU) and Vikki Entwistle (National University of Singapore).

#### Emma Tassie

Thesis Title: *'Incorporating broader measures of value into economic evaluation through the use of existing data'*  
Supervisors: **Verity Watson, Graham Scotland** and **Stirling Bryan** (HERU).

#### Uma Thomas

Thesis Title: *'Using insights into time preference and present bias to develop an intervention to improve adherence to exercise'*  
Supervisors: **Marjon van der Pol** (HERU) and Julia Allan (Health Psychology, University of Aberdeen).

#### Xuemin Zhu

Thesis Title: *'The role of the physician's risk and time preferences and personality in clinical decision making'*  
Supervisors: **Marjon van der Pol** (HERU), Anthony Scott (University of Melbourne) and Julia Allan (Health Psychology, University of Aberdeen).

# denotes PhD commenced in 2019







Workforce and  
Organisation of Care



Health Behaviour



Assessment of  
Technologies



Methods of  
Benefit Valuation



# Our Research: Workforce and Organisation of Care

Theme Leader: Dr Diane Skåtun



**Diane Skåtun**  
Theme Leader

The Workforce and Organisation of Care theme aims to further our understanding of individual and organisational behaviour within the healthcare sector. The health service faces continuing pressures on recruiting and retaining its workforce. With increasing demands on the health

service, it is important that the role of the healthcare workforce, as a crucial resource within the healthcare system, is better understood. The theme examines the role of financial and non-financial incentives on both individuals and the organisational structure in which they operate. The theme's research spans all aspects of the health workforce life-cycle; from training decisions at the start of a career through to career-end retirement decisions.

A new project began in 2019 that considers the behaviour of individuals undertaking medical training. Medical training is a long-term investment for both trainees and the government. Changes in behaviour in terms of the flow through the training pathway

can have severe implications for workforce planning and service provision. Our research on *'Medical training pathways'* seeks to better understand the movement of medical trainees at a critical point in their training pathway where choices are made in terms of progressing to speciality training. This project undertaken by **Diane Skåtun** and **Attakrit Leckcivilize** focuses on the transition of medical trainees through the training pathway in terms of a time dimension, taking into consideration the outside opportunities that trainees may have. It also considers the movement of trainees to specific specialities.

2019 saw the continuation of research on the project *'What keeps doctors practising? A discrete choice experiment to determine which factors influence doctors' retirement decisions and the relative importance of each influencing factor'*. This project is funded by the University of Aberdeen Development Trust and continues HERU's collaboration with Professor Jen Cleland of the Centre for Healthcare Education Research and Innovation (CHERI) at the University of Aberdeen and **Terry Porteous** (CHERI and HERU) along with **Diane Skåtun**, **Zoé Ejebu** and **Mandy Ryan**.

## Doctors' retirement decisions: should I stay or should I go?

**HERU investigators: Diane Skåtun, Zoé Ejebu, Terry Porteous and Mandy Ryan**

While retirement is a natural stage in a career, early retirement results in an immediate loss of experienced clinicians. This can impact directly on patients through a loss of clinical capacity but also have indirect impact in terms of reduced support and access to an accumulated knowledge-base for remaining colleagues. Recent research has shown that a significant proportion of doctors approaching the end of their career, plan to retire within the next few years. Given these issues, the aims of this study are: to explore the factors that doctors consider as they plan when to retire; to determine the relative importance of those factors; and to establish whether and how doctors might trade-off between them. A better understanding of these issues will inform future interventions that may encourage older doctors to remain for longer in the workforce.

Qualitative, semi-structured face-to-face interviews have been undertaken to explore the factors that doctors consider when deciding whether to retire or stay in the workplace. Key 'stay' and 'go' factors that might prompt a doctor to retire or stay in the workforce were identified as relating to financial concerns, perceived lack of support from management and workload intensity. This data helped develop a quantitative survey instrument (Discrete Choice Experiment) to target doctors aged over 50 years, registered with the General Medical Council in Scotland and either practicing or recently retired in both the primary and secondary care sectors. Survey distribution was facilitated by the British Medical Association. The data will be analysed and reported in 2020.



The theme's research on General Practice as a business organisation is continuing with **Verity Watson**, together with Dr Rainer Schulz (Business School, University of Aberdeen), Dr Heather Dickey (Queen's Management School, Queen's University Belfast), Joan MacLeod (Aberdeen City Health and Social Care Partnership) and Professor Peter Murchie (Academic Primary Care, University of Aberdeen), exploring how business risk affects general practitioners. Research is also continuing in analysing the factors that influence where GPs locate their practice and is testing if practices locate in a way that is consistent with economic location theory.



A new project was completed within 2019 entitled '*Insecure employment and mental health: one pathway in the productivity puzzle*' led by **Daniel Kopasker** with Professor Catia Montagna (Department of Economics, University of Aberdeen) and funded by the Economic and Social Research Council through the Productivity Insights Network. A key pathway by which insecure employment can impact on productivity is through its effect on employee mental health. This research quantified the impact of insecure employment on productivity. It advanced the understanding of insecure employment and productivity by identifying characteristics of the employers which could potentially benefit from reducing insecure employment. The project complements our ongoing research which values the benefits to employees, in terms of health-related quality of life, of limiting exposure to insecure employment.

Research on the role of risk preference applied to the healthcare workforce continued through an ongoing PhD entitled '*The role of the physician's risk and time preferences and personality in clinical decision making*' which is now in the second year with PhD student **Xuemin Zhu**. 2019 saw the experiment stage completed for the project '*Developing economic experiments to understand patient and doctor behaviour*' in relation to the doctor's use of decision aids, with **Verity Watson** and **Marjon van der Pol**, Dr Dean Regier (University of British Columbia) and former HERU PhD student Alastair Irvine, now with Scottish Government.

Nurses form the largest group within the NHS workforce and understanding how they react to monetary incentives in terms of attracting them to jobs is a key challenge for policy makers. A new project in 2019 '*Understanding nurses' workplace valuations*' considers how (nursing) workforce characteristics act as a moderating or magnifying influence on behaviour in the presence of economic incentives.

And finally, the theme was delighted to be involved in the creation of the Health Workforce Special Interest Group within the international Health Economics Association (iHEA). This followed on from the successful 3rd Economics of the Health Workforce Conference, held in conjunction with the iHEA Congress in Basel, co-organised by **Diane Skåtun**. The conference was the third in a series co-organised by HERU and brought together researchers interested in micro-economic studies of the health workforce. Research presented utilised a variety of methods to extend our understanding of the behaviour of the healthcare workforce and how workforce organisation and associated behaviours impacts on patient care. We look forward to maintaining a network of researchers interested in this field within the iHEA Health Workforce Special Interest Group. For further details please see: [www.healtheconomics.org/page/HWSIG#HWSIGConv](http://www.healtheconomics.org/page/HWSIG#HWSIGConv)

Further detail on the theme's research can be found at: [www.abdn.ac.uk/heru/research/worgc/](http://www.abdn.ac.uk/heru/research/worgc/)



# Our Research: Health Behaviour

Theme Leader: Professor Paul McNamee



**Paul McNamee**  
Theme Leader

The Health Behaviour theme aims to enhance understanding of health behaviour (principally alcohol consumption, physical activity and dietary choice) from an economics perspective, and to strengthen the evidence-base relating to interventions that aim to influence behaviour, both in

terms of their design and in terms of evaluation of their effect on costs and outcomes. We also consider wider determinants of health besides health behaviour, such as education and working conditions.



*The first all investigators and patient partners meeting for PACFIND, February 2019, attended by Paul McNamee*

One new large project which started this year was 'Patient-centred Care for Fibromyalgia: New pathway Design (PACFIND)'. This is study funded by Versus Arthritis and aims to improve healthcare services for patients with fibromyalgia. More specifically, the objective is to improve services to enable more timely diagnosis and improved access to effective treatments, ultimately leading to better outcomes for patients and family members. These treatments include supporting people to make changes in health behaviour, such as increasing levels of physical activity. This five year programme of work is being conducted in close collaboration with patient representatives as well as people with fibromyalgia and will establish their preferences for how care is best organised and delivered.

At the end of the year **Patricia Norwood** and **Paul McNamee** began a new Scottish Government funded project, in collaboration with Scotland's Rural College, assessing the importance of prices and promotion on discretionary foods (i.e. snacks such as crisps, biscuits and chocolate confectionary, as well as ice cream, puddings and sugar-sweetened beverages). The project uses existing data from the Kantar World Panel and is also collecting new primary data on consumer preferences, using discrete choice experiments, to inform future Scottish Government policy on the impact of restricting the promotion and marketing of discretionary foods high in fat, sugar and salt.

Research undertaken by **Marjon van der Pol** into time preferences continued. Data collection started on a think aloud study of time preference elicitation. Led by Professor Liam Delaney, a behavioural economist at University College Dublin, this study is examining individuals' decision making processes when completing time preference experiments. The ultimate goal is to develop a more refined time preference measure in order to better inform our understanding of intertemporal behaviours such as health (care) behaviours. Liam Delaney was also a visiting scholar to HERU in the summer. **Charlotte Kennedy**, an MSc student from York (who has since joined HERU), conducted her thesis in HERU on the role of time preference in spousal correlation in smoking. She was supervised by **Marjon van der Pol**, Dr Heather Brown (University of Newcastle) and Dr Gertraud Stadler (Health Psychology, University of Aberdeen). The research found evidence of spousal correlation in both time preference and smoking. It was also found that the female partner's time preference influenced the effect of female smoking on male smoking. This suggests that couple-based interventions that also incorporate the consideration of time preference between partners may be more effective. **Marjon van der Pol** also gave the closing plenary at the German Health Economics Association Annual Conference in Augsburg in March on time preference work with a focus on health behaviours.

Continuing progress was made in our collaborative research programme with the Rowett Institute at the University of Aberdeen. Panel data analysis, using the

Growing Up in Scotland dataset, has been undertaken to examine which parental and household influences can be causally linked to children's discretionary food choices. A particular focus has been on potentially modifiable factors, such as parents' health behaviours. In a different part of the programme, a project using Q-methodology looked at how people think about food choices. This identified four different profiles in terms of attitudes towards nutritional information, which can potentially be used to inform future policy.

The Arthritis Research UK/Versus Arthritis funded 'Walk with ease' project was completed in 2019. This feasibility study was conducted with people experiencing one or more forms of arthritis or other musculoskeletal conditions. The project adapted an existing physical activity walking intervention to a UK setting; conducted a pilot trial to test recruitment, randomisation and adherence to inform the design of a future RCT; and explored the perceptions and experiences of study participants. Our findings have been widely shared with patients, patient representatives and the wider scientific community, and they indicate that the intervention offers important improvements in health and wellbeing, and that a larger trial to establish more definitively the cost-effectiveness of the programme would be acceptable and feasible to conduct within the UK.

The impact of minimum unit pricing (MUP) for alcohol is an area of long-standing research interest within the theme. Going forward, HERU will continue to contribute this area of research through the award of a new grant from the CSO entitled 'Does minimum unit pricing for alcohol have unintended consequences for diet and health? A natural experiment comparing Scotland and England'. The project will commence in April 2020 and run for two years. Additional work on MUP for alcohol is also being conducted in collaboration with the University of Glasgow and NHS Health Scotland through separate NIHR Public Health funding.

Finally, turning to our PhD students, **Uma Thomas** started her recruitment to a randomised controlled trial examining a physical activity intervention that attempts to motivate forward thinking by encouraging individuals to consider their future selves after the consequences of physical inactivity. We were also delighted to welcome **Huixuan Gao** as a new PhD student. Huixuan is assessing 'The value and costs of unpaid care for older people in China' which will include an assessment of the importance of individual and household characteristics in addition to health behaviours in explaining differences in life satisfaction amongst unpaid care providers.

Further detail on the theme's research can be found at: [www.abdn.ac.uk/heru/research/hbi/](http://www.abdn.ac.uk/heru/research/hbi/)

## Minimum unit pricing for alcohol – a natural experiment to assess potential unintended consequences for diet and health

Minimum unit pricing (MUP) for alcohol was introduced in Scotland in May 2018. It is intended to increase the cost of cheap off sales alcohol and reduce the amount of alcohol consumed. However, it is possible that households will spend more on alcohol and this will reduce the amount of money they have to spend on other things. This project, led by **Anne Ludbrook** and **Paul McNamee**, together with other HERU staff including **Lynda McKenzie**, will measure whether household food spending is reduced, the effect that this has on diet quality and the consequences for health.

We will compare the change in food spending in Scotland before and after the introduction of MUP with the North of England, where MUP does not apply. This comparison takes account of any effects which are common to both areas. We will also look at the change in volume and type of food purchased to see if this becomes less healthy as households might buy less fruit and vegetables, for example.

During the project we will also develop interactive events to communicate our work to the public in a non-technical way to allow informed discussion of our plans, gain understanding of how the public view MUP and how it impacts their budget and gauge potential public reaction to the emerging results (e.g. how do the public view different health gains and losses being traded off?).





# Our Research: Assessment of Technologies

Theme Leader: Dr Graham Scotland



**Graham Scotland**  
Theme Leader

The Assessment of Technologies (AoT) theme aims to apply and develop economic evaluation methods to support decision making across the life course of health technologies (Technology Management). Our applied economic evaluations are based on a

combination of evidence synthesis and decision modelling, and analysis of individual patient data collected alongside randomised controlled trials or observational studies. The research theme also recognises the policy emphasis in Scotland and internationally on person-centred care. We reflect this in our sub-theme of research which focuses on *'Broader measurement of value in economic evaluation'*.

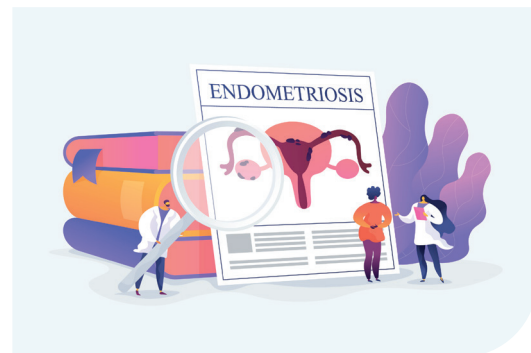
## Technology Management

Researchers in the AoT theme are involved in two new randomised controlled trials funded by the NIHR: the *'REGAL'* study – *'Recurrence of endometriosis: GnRH analogues versus laparoscopic surgery trial'* – will evaluate the clinical and cost-effectiveness of long-term use of GnRH agonists with add-back hormone replacement therapy as an alternative treatment to further laparoscopic surgery for women with recurrent endometriosis; the *'SCRIPT'* study – *'Selective Caries Removal in Permanent Teeth'* – aims to assess the clinical and cost-effectiveness of selective caries removal with complete caries removal in permanent posterior teeth.

## Recurrence of endometriosis: GnRH analogues versus laparoscopic surgery trial (REGAL)

Endometriosis is a common, painful condition affecting one in ten women of childbearing age. It occurs when cells like those lining the womb grow outside it, causing internal bleeding, scarring and pain. Key-hole surgery (laparoscopy) is commonly used to destroy areas of endometriosis. However, endometriosis returns in up to half of treated women within five years, and there is uncertainty about how best to treat women, particularly those who wish to preserve their fertility. Repeat surgery is invasive, expensive and risky, without guaranteeing a cure. A less invasive treatment is monthly or three-monthly injections with Gonadotrophin Releasing hormone (GnRH) analogues. While effective in reducing pain, this type of hormonal treatment has generally only been used for up to a year because of the risk of side effects (hot flushes and night sweats) and concerns about osteoporosis. However, recent research suggests that giving small doses of hormone replacement therapy (HRT) with GnRH analogues can reduce the risk of side effects. Funded by the National Institute for Health Research (NIHR), this new trial will assess the clinical and cost-effectiveness of long-term GnRH analogues with added HRT compared to conservative key-hole surgery in women who experience recurrence of pain after surgery but who wish to preserve their fertility.

The research team: L. Saraswat, (NHS Grampian & University of Aberdeen), S. Bhattacharya, K. Cooper (Obstetrics & Gynaecology, University of Aberdeen), T. J. Clark (Birmingham Women's NHS Foundation Trust), A. Horne (University of Edinburgh), C. Becker (University of Oxford), E. Saridogan (University College London Hospitals NHS Foundation Trust), G. Jones (Leeds Beckett University), G. Scotland (HERU), G. MacLennan, K. Gillies (Health Services Research Unit (HSRU), University of Aberdeen) and S. Vyas (North Bristol NHS Trust).



## NIHR studies due to report in 2020

- EDNA:** Early Detection of Neovascular Age-related macular degeneration
- EFREEZE:** A randomised controlled trial evaluating the clinical and cost-effectiveness of a policy of freezing all embryos followed by thawed frozen embryo transfer, compared with a policy of fresh embryo transfer in women undergoing in-vitro fertilization
- MASTER:** Male synthetic sling versus Artificial urinary Sphincter Trial for men with urodynamic stress incontinence after prostate surgery: Evaluation by Randomised trial

The long-running 'TISU' trial, comparing extracorporeal shockwave lithotripsy versus ureteroscopic removal as a treatment for ureteric stones, reported to the funder in 2019. Publication of the economic evaluation findings is expected in 2020. The year 2019 also saw publication of the economic evaluation findings from three trials that completed follow-up in recent years: the 'CLASS' trial, comparing different treatment modalities for patients with varicose veins; the 'GOT-IT' trial, assessing the effectiveness of glycerine triturate for retained placenta; and the HEALTH trial, comparing sub-total hysterectomy to endometrial ablation for the treatment of heavy menstrual bleeding. Work also continued on several NIHR funded trials that are due to report to the funder in 2020. These include the 'EDNA', 'EFREEZE', and 'MASTER' trials. Long-term follow-up of the previously reported 'PROSPECT' and 'VUE' trials is also due in 2020.

It has been a busy year with respect to the theme's ongoing involvement in the University of Aberdeen's Technology Assessment Reviews (TAR) contract (see Projects In-Progress and Completed 2019). Researchers from the theme were involved in a large review and economic modelling exercise to evaluate the diagnostic accuracy and cost-effectiveness of

different biomarker tests for assessing the risk of acute kidney injury in critically ill patients who are considered for admission to critical care. The National Institute for Health and Care Excellence (NICE) are expected to publish guidance on this in 2020. AoT researchers have also contributed to four further technology appraisals that commenced in 2019. Further, NICE has published Technology Appraisal guidance on the use of three new technologies in NHS England, for which researchers in the theme critiqued the economic evidence and company submitted economic models.

### Broader Measures of Value

The theme's ongoing interest in methods for incorporating broader measures of value in economic evaluation continued to evolve alongside our applied project work in 2019. One PhD project being carried out alongside our work in the area of endometriosis is exploring methods for measuring and incorporating variation in patient preferences into an economic evaluation of alternative treatment approaches. This will help determine whether economic evaluation can be used to inform the delivery of more person-centred approaches to care that are being advocated by health systems throughout the world.

Further ongoing and new work in the area of dental care is being used to develop methods for embedding the results of discrete choice experiments (DCEs) in trial based economic evaluations. Examples include the recently completed 'INTERVAL' trial which is expected to publish in 2020, and the newly funded 'SCRIPT' trial mentioned above. Funded by the Health Improvement, Protection and Services Committee of the CSO, and in collaboration with the Department of Medical Genetics at the University of Aberdeen and

the Scottish Genomes Partnership (SGP), we began a research project 'Should Scotland provide whole genomic sequencing for diagnosis of rare disorders? A health economic analysis' which also incorporates the results of a DCE into a decision model.

Further detail on the theme's research can be found at [www.abdn.ac.uk/heru/research/assessment-of-technologies/](http://www.abdn.ac.uk/heru/research/assessment-of-technologies/)

## Should Scotland provide whole genomic sequencing for diagnosis of rare disorders? A health economic analysis

**HERU investigators: Mandy Ryan, Lynda McKenzie, Rodolfo Hernández, Michael Abbott**

Taken together, rare disorders are common and affect 6-8% of the Scottish population. Most are severe and life-threatening with a profound impact upon the quality of life and wellbeing of the individual and their family. The typical journey to diagnosis, the 'diagnostic odyssey', can take many years, with numerous hospital visits, costly and invasive tests, several misdiagnoses, and shattered hopes and expectations; many families never receive a diagnosis. As 80% of rare disorders have a genetic origin, increasing access to genetic diagnosis offers a potential solution. Standard genetic testing is limited to examination of DNA from single gene variants to smaller gene panels and is triggered by specialist clinical suspicion. Next generation sequencing (Whole Genome Sequencing (WGS) and Whole Exome Sequencing (WES)) is expected to increase diagnostic yield and enable quicker diagnosis. Potential benefits to patients and families include improved diagnostic yield, reduced length and scope of the diagnostic odyssey, reduced need for clinical attendance and investigative tests, and information for family planning and clinical management. However, little is known about how patients and families value such aspects of comprehensive DNA sequencing. The financial implications are also unclear.

Building on our Scottish Genomes Partnership (SGP) funded work, this study will address the evidence gap around the benefits to service users (patients and families) and assess the resource implications of different genomic testing pathways.

This two-year project in collaboration with Professor Zosia Miedzybrodzka, Dr Lynne Mennie and Caroline Clark (Medical Genetics, University of Aberdeen), and the Scottish Genomes Partnership (SGP).







# Our Research: Methods of Benefit Valuation

Theme Leader: Dr Verity Watson



**Verity Watson**  
Theme Leader

The Methods of Benefit Valuation theme, led by **Verity Watson**, develops, refines and applies *economic* methods for eliciting preferences in the delivery of health and care. Our work aims to understand what people want, and in doing so helps to inform the delivery of person-centred care.

We also undertake methodological research to improve preference elicitation methods.

In recent years, we have developed an exciting new area of research that applies our knowledge of preference elicitation to develop Decision Aid Tools (DATs). These DATs can facilitate shared decision making and help patients make more informed choices. We are developing DATs for treatment decisions for prostate cancer, breast cancer and persistent pain.



Prostate cancer is the most common cancer in men. There is no best treatment and each treatment has its own advantages and disadvantages. In 2019, we received funding from The Urology Foundation to develop a DAT to make this decision easier for men. Our tool will explain the treatment options in a way the patient can understand and then present patients with tasks that ask the patient to choose treatments. These tasks will help men figure out what matters most to them and help men share their views with their health professionals. This two-year research project is a collaboration with the Academic Urology Unit at the University of Aberdeen and Professor Hashim Ahmed (Department of Surgery and Cancer, Imperial College London).

Women diagnosed with breast cancer also face several treatment options, each with advantages and disadvantages. In 2018, we received funding from the

Breast Cancer Institute to explore women's preferences for advanced breast cancer treatment. This research is a collaboration with Edinburgh Health Economics. This year we have used a range of research methods to better understand what is important to patients with metastatic breast cancer when they are choosing treatment. Based on this research we have developed a discrete choice experiment (DCE), which will be administered in 2020. The study will help improve shared decision-making, patient information sheets and decision aids for metastatic breast cancer.

Pharmacists prescribe medications, provide formal self-care support, and undertake medication reviews. In this setting, shared decision making between pharmacists and patients becomes increasingly important to the delivery of person-centred care. Funded by Pharmacy Research UK (PRUK), we are developing a DAT to promote shared decision making for persistent pain in pharmacy setting. During 2019, we interviewed healthcare professionals and people living with persistent pain. We used the interview findings to start to design a DAT together with patient representatives. We will implement this as a feasibility study in pharmacies across Grampian in 2020. We were delighted that **Luis Loría-Rebolledo** joined **Mandy Ryan** in March 2019 as part of the HERU team overseeing this project.

In Scotland, all new parents receive a baby box. This scheme is unique within the UK. There is very little research about the social and cultural impacts of baby boxes. In 2019, we started a new research project to explore what is important to parents in the delivery of the baby box scheme. This project will provide information for future evaluations of the baby box scheme, and public health interventions more generally.

We have a vibrant research culture and PhD students play an important part through their innovative research. In September we welcomed **Mélanie Antunes**. Mélanie's PhD is titled '*Public and patient preferences for social prescribing*'. This research is funded as part of the Aberdeen-Curtin Alliance. Mélanie has two supervisors in HERU (**Verity Watson** and **Marjon van der Pol**) and two supervisors at Curtin University, Australia (Dr Richard Norman and Professor Suzanne Robinson). We were delighted that **Ben Sakowsky** successfully defended his PhD (with minor corrections).



## Valuing baby boxes: what's important to parents?

Baby boxes is a Scottish policy that is unique within the UK. The policy aims to improve health outcomes for babies and provide practical support for new parents in Scotland. While the importance of 'hard' health outcomes such as infant mortality and morbidity is clear, wider societal benefits and cultural changes to parenting may also be important. There has been very little research into the wider social and

cultural impact of baby boxes. Our work, funded by NHS Grampian Endowment, will explore what factors should be considered in future economic evaluations of baby box programmes. More specifically, we will explore what parents' value in the delivery of the baby box. We will analyse media coverage of the introduction of baby boxes within Scotland and online parental discussion forums. We will also carry out a series of focus groups with people attending parent and baby groups within the NHS Grampian area.

We are collaborating with Dr Zoe Skea, Professor Louise Locock and Agata Kostrzewa (Health Services Research Unit (HSRU), University of Aberdeen), Dr Heather Morgan (Institute of Applied Health Sciences, University of Aberdeen) and Dr Mairead Black (Aberdeen Centre for Women's Health Research, University of Aberdeen).

We held our annual three-day DCE course in Aberdeen in November, and also held a DCE course in Banff, Canada earlier in the year, in collaboration with University of Calgary's Professor Deborah Marshall and her team. Our internal seminar series on stated preference methods continued. This seminar series brings together a dedicated group of researchers with interests in stated

preference methods from across the University of Aberdeen. Information on the seminar series is available on our website ([www.abdn.ac.uk/heru/heruevents/statedpref/](http://www.abdn.ac.uk/heru/heruevents/statedpref/)).

Further detail on the theme's research can be found at: [www.abdn.ac.uk/heru/research/methods-of-benefit/](http://www.abdn.ac.uk/heru/research/methods-of-benefit/)

## Our values or mine? A philosophical and empirical critique of deliberative and stated preference elicitation techniques in health economics

**Ben Sakowsky** (PhD student)

Healthcare economics sees the patient not as a citizen, but as a consumer. The question of what the public wants from its healthcare system is thus mainly addressed by presenting a series of self-interested choices. An individual's status as a political agent, with concerns relating to considerations of justice, fairness, and equality, is thus being neglected. This self-interested perspective is also largely oblivious to the collective nature of political decision-making and the deliberative dynamics that emerge from situations in which participants in a political debate must justify and explain their preferences to each other.

This PhD thesis supervised by **Mandy Ryan** and Professor Vikki Entwistle (National University of Singapore) reviewed the current state of health economic preference research with a consideration of how such methods have considered deliberative processes and community/citizens' preferences. The thesis then undertook a philosophical analysis of the normative and epistemological differences between preference research based on the self-interest of individuals, and more deliberative and communitarian approaches. A Citizens' Jury was conducted about the controversial issue of disinvestment in mammography screening. Using deliberative methods this study yields insights into not only the what, but also the why of people's values in this regard, and the potential causes of participants changing their minds.

The thesis argues for the increased utilization of deliberative methods in health economic preference research alongside preference elicitation methods.





## Policy Engagement

In 2019 HERU staff attended and contributed to a number of policy engagement events. Below are some highlights:

### HIS, HERU, HSRU and NMAPH-RU co-sponsored 7th Annual Research Symposium

This annual symposium is jointly organised by Healthcare Improvement Scotland and three CSO funded Units (HERU, Health Services Research Unit and the Nursing, Midwifery and Allied Health Professions Research Unit). The day presents an opportunity to showcase policy relevant work conducted across Scotland, as well as hear from researchers and policy makers from further afield.

This year's symposium focused on the delivery of realistic medicine in Scotland. **Stirling Bryan** was a keynote presenter, talking about *'The rise and rise of patient-orientated research: what implications for Scotland's agenda on realistic medicine and value?'*.

**Dwayne Boyers** and **Elisabet Jacobsen** presented work on cost-effective interventions for the 'management of severe obesity' and **Verity Watson** presented her work concerned with 'evaluating the trade-offs men with localised prostate cancer make between the risks and benefits of treatments'. **Mandy Ryan**, **Patricia Norwood** and **Attakrit Leckcivilize** delivered a workshop on *'Ensuring value for money in a person-centred health care system: how can economics contribute?'*.



*From left to right: Attakrit Leckcivilize, Dwayne Boyers, Elisabet Jacobsen, Patricia Norwood, Marjon van der Pol, Mandy Ryan and Verity Watson*

### NHS Scotland Event

**Paul McNamee**, **Shelley Farrar** and **Mary Kilonzo** attended the annual NHS Scotland Event in May, at the Scottish Event Campus in Glasgow. The event is the leading health event in Scotland and aims to highlight how NHS Scotland and its partners are transforming care, improving quality and securing value and financial sustainability. The HERU exhibition stand proved popular with delegates and gave an opportunity to discuss the research and teaching activities of the Unit, and the contribution that health economics can make to healthcare.

### Public Health England Annual Conference

**Anne Ludbrook** attended the Public Health England Annual Conference and participated in a session on prevention, presenting *'The upstream problem – impatient for results?'*, and taking part in a panel discussion.

## Public Engagement

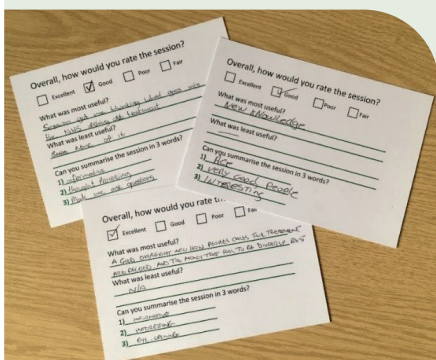
Engaging with the public is of increasing strategic importance for higher education, to strengthen relevance, responsiveness and accountability and to build trust. We have always placed people at the heart of our research and public engagement offers an opportunity to share our research with the public and allow the public to help shape research agendas.



### Public engagement highlights in 2019 include:

(left to right) **Marjon van der Pol, Mandy Ryan and Dwayne Boyers**, led a Café Scientifique event at the Belmont Filmhouse titled 'What should we value in healthcare?'. This looked at how the NHS makes choices about what treatments to fund by weighing costs against benefits. The discussion focused on what benefits should be included – clinical,

wellbeing, or something else – and whether the NHS should pay for treatments that don't improve health but are still valued by the public.



**Zoé Ejebu** (right) took part in Soapbox Science Aberdeen, as part of the May Festival. Soapbox Science is a novel public outreach platform for promoting women scientists and the science they do. Zoé talked about alcohol minimum unit pricing as a policy to help reducing excessive alcohol consumption and alcohol-related problems in Scotland. The presentation also provided a brief overview of the research done in HERU.



**Rodolfo Hernández, Alastair Irvine and Patrícia Norwood** (Left to right) took part in Cell Block Science at HMP Grampian, Peterhead. This Wellcome Trust financed initiative is an innovative project bringing informal science learning into Scottish prisons through researcher visits. The HERU researchers, along with the HMP Grampian education team, held a series of workshops where prisoners took part in discussions on how health economics informs decision making on healthcare financing. The workshops were very well received as can be seen by the feedback forms the prisoners were asked to complete at the end of the sessions.

For details of all our public engagement activities see: <https://www.abdn.ac.uk/heru/engagement/>

One of HERU's priorities is building capacity in health economics. We have a comprehensive strategy in place for both specialist training in health economics and improving economics literacy in health professionals. A detailed overview of our capacity building activities can be found on our website at [www.abdn.ac.uk/heru/courses/](http://www.abdn.ac.uk/heru/courses/)

Capacity building highlights in 2019 include:

### Online MSc/Postgraduate Diploma/Postgraduate Certificate in Health Economics for Health Professionals

Our Post Graduate Certificate in Health Economics was extended to a new MSc in Health Economics for Health Professionals in September 2017. In 2019, eight students conducted their MSc dissertation. The wide range of topics reflects the breadth of the course:

- Beyond the QALY: what matters to female cancer patients?
- Costs and consequences of open-access surveillance compared to standard care in patients treated for colorectal cancer with curative intent?
- Assessment of factors affecting the demand of first line anti-retrovirals in Zimbabwe.
- A cost-minimisation analysis of point of care testing for influenza versus polymerase chain reaction lab testing.
- Cost of hospitalization for acute coronary syndrome in the Philippines.
- Chronic migraine – what's it worth? Using compensating income variation.
- The effects of country of origin, acculturation and gender on obesity in Australian migrant populations.
- Cost-effectiveness analysis of point of care C-reactive protein test intervention to reduce unnecessary anti-biotic prescription in malaria negative patients in Afghanistan.

We welcomed 36 new students in September 2019. In total, 61 students were registered on the course by the end of 2019.

The programme is aimed at health professionals, and other interested students, who would like to improve their understanding of health economics and who are unable to study full-time and/or want to avoid relocating.

No experience of economics is necessary to undertake the course. Further details are available at [www.abdn.ac.uk/heru/courses/pgcert/](http://www.abdn.ac.uk/heru/courses/pgcert/)

### Other MSc dissertation supervision

We welcomed **Charlotte Kennedy**, an MSc student from the University of York, to work on her research dissertation. Charlotte worked with **Marjon van der Pol**, Dr Heather Brown (University of Newcastle) and Dr Gertraud Staudler (Health Psychology, University of Aberdeen) on 'The role of time and risk preferences in spousal correlations in health behaviours' using Household, Income and Labour Dynamics in Australia (HILDA) data. Later in the year Charlotte joined HERU as a staff member. We also supervised students on the Public Health and Global Health Management programmes.

## PhD highlights

Three PhD students graduated in 2019: **Dwayne Boyers**, **Kevin Momanyi** and Gillian Scanlon. **Ben Sakowsky** defended his thesis (with minor corrections) in 2019. We welcomed two new PhD students to HERU in 2019: **Mélanie Antunes** and **Huixuan Gao**. Mélanie began her PhD studies under the Aberdeen–Curtin Alliance PhD Programme. Mélanie will research ‘*Public and patient preferences for social prescribing*’, under the supervision of **Verity Watson** and **Marjon van der Pol** from HERU, and Professor Suzanne Robinson and Dr Richard Norman from Curtin University (Western Australia). Huixuan’s PhD explores the value and costs of unpaid care for older people in China, under the supervision of **Paul McNamee** and **Attakrit Leckcivilize**. Her PhD is funded by a University of Aberdeen Elphinstone Scholarship.

## HERU Internships

During the summer we again welcomed three student interns. Internships are key to stimulating interest in health economics and health economics research amongst economics students. Internships give a taste of health economics research with interns working for six weeks alongside staff and students in HERU. The student interns were Cameron Owens (University of Aberdeen), Jennifer Martin (University of Kent), Jeanne Armand (University of Dundee).

We interviewed our 2019 summer interns in a HERU blog post and asked them about their experience of working in HERU: [www.abdn.ac.uk/heru/blog/heru-internship-experiences-2019/](http://www.abdn.ac.uk/heru/blog/heru-internship-experiences-2019/).

Many of our interns have gone on to pursue a career in health economics. We were delighted to welcome back two previous interns as external seminar speakers in 2019:

- Elizabeth Lemmon, University of Stirling. Variations in domiciliary free personal care across Scottish local authorities.
- Chiara Pastore, University of York. Human capital consequences of missing out on a grammar school education.

## Delivery of two courses in ‘Using Discrete Choice Experiments (DCE) in health economics: theoretical and practical issues’

This three-day course is aimed at individuals interested in preference elicitation and the application of DCEs in health economics. The course includes practical sessions and group work using state-of-practice methods and real-life examples.

### Banff, Canada

In September, we ran the course in Banff, Canada.

The course was delivered by **Mandy Ryan**, **Verity Watson** and **Luis Loría-Rebolledo** in collaboration with Professor Deborah Marshall and her team from the University of Calgary. We had 18 delegates from a range of countries, including Canada, Malaysia, USA and the UK, who provided lively debate and discussion about the application of DCEs in health economics. Our next joint Aberdeen-Calgary DCE course will take place in Banff on 9th to 10th of March 2021. Keep an eye on our website for more details: [www.abdn.ac.uk/heru/courses/workshops/](http://www.abdn.ac.uk/heru/courses/workshops/)



## Aberdeen



In November, we held our annual Aberdeen DCE course, delivered by **Mandy Ryan, Verity Watson** and **Luis Loria-Rebolledo**. As in previous years, the course was fully booked in advance. This year we had 26 delegates from wide-ranging backgrounds, travelling from as far afield as Canada, India, Australia, South Africa and various European nations. This course will be offered again on 11th to 13th November 2020. Further details will be posted on our website when they are available, or email [alison.findlay@abdn.ac.uk](mailto:alison.findlay@abdn.ac.uk) to register an interest in attending – [www.abdn.ac.uk/heru/courses/workshops/annual-dce-workshop/](http://www.abdn.ac.uk/heru/courses/workshops/annual-dce-workshop/)

## Workshops/Courses

An overview of all our current workshops can be found on our website [www.abdn.ac.uk/heru/courses/](http://www.abdn.ac.uk/heru/courses/)



\* Denotes projects started in 2019

## Workforce and Organisation of Care

**Developing economic experiments to understand doctor behaviour**

**Investigators:** Irvine, A., Watson, V., Pol, M. van der (HERU); Regier, D. (University of British Columbia).

**Source of Funding:** Chief Scientist Office (CSO) CORE and University of Aberdeen.

**Enhancing quality in social care through economic analysis (PhD)**

**Investigators:** Momanyi, K. (PhD Student), McNamee, P., Skåtun, D. (HERU).

**Source of Funding:** Scottish Government/ESRC, University of Aberdeen and Chief Scientist Office (CSO) CORE.

**\*Exploring the business organisation of General Practice partnerships**

**Investigators:** Watson, V., (HERU), Schulz, R., Dickey, H. (Queens University Belfast), Murchie P. (Academic Primary Care, University of Aberdeen), Joan MacLeod J. (Aberdeen City Health and Social Care Partnership)

**Source of Funding:** Chief Scientist Office (CSO) CORE.

**Health economic evaluation of the Lothian high demand service**

**Investigators:** Steel, R. (NHS Lothian); McNamee, P., Leckcivilize A. (HERU).

**Source of Funding:** NHS Lothian, University of Aberdeen, and Chief Scientist Office (CSO) CORE.

**\*Insecure employment and mental health: one pathway in the productivity puzzle**

**Investigators:** Kopasker, D. (HERU); Montagne, C. (University of Aberdeen Business School).

**Source of Funding:** Productivity Insights Network funded by Economic and Social Research Council.

**The location choices of general practice in Scotland**

**Investigators:** Watson, V., Leckcivilize, A. (HERU); Schulz, R. (University of Aberdeen Business School); Videau, Y. (Université Paris-Est Créteil).

**Source of Funding:** Chief Scientist Office (CSO) CORE.

**\*Medical training pathways**

**Investigators:** Skåtun, D., Leckcivilize A. (HERU); Cleland, J. (Centre for Healthcare Education Research & Innovation (CHERI)), University of Aberdeen).

**Source of Funding:** Chief Scientist Office (CSO) CORE.



**The role of risk and time preferences and personality in clinical decision making (PhD)**

**Investigators:** Zhu, X. (PhD Student), Pol, M. van der (HERU); Scott, T. (Melbourne University); Allan, J. (Health Psychology, University of Aberdeen).

**Source of Funding:** University of Aberdeen Elphinstone scholarship and University of Aberdeen.

**The role of pay competitiveness and nurse agency staffing**

**Investigators:** Skåtun, D. (HERU); Coombes, J-B. (Aix-Marseille Université).

**Source of Funding:** Chief Scientist Office (CSO) CORE.

**\*Understanding nurses' workplace valuations**

**Investigators:** Skåtun, D., Leckcivilize, A. (HERU).

**Source of Funding:** Chief Scientist Office (CSO) CORE.

**What keeps doctors practising? A discrete choice experiment to determine which factors influence doctors' retirement decisions and the relative importance of each influencing factor**

**Investigators:** Cleland, J. (CHERI, University of Aberdeen); Skåtun, D. (HERU); Porteous, T. (HERU and CHERI, University of Aberdeen); Ejebu, O., Ryan M. (HERU).

**Source of Funding:** University of Aberdeen Development Trust, and Chief Scientist Office (CSO) CORE.

# Projects In-Progress and Completed in 2019

\* Denotes projects started in 2019



## Health Behaviour

### Childhood obesity and academic performance

**Investigators:** Aoki, Y. (HERU).

**Source of Funding:** University of Aberdeen.

### \*Economic modelling: reducing health harms of foods high in fat, sugar or salt

**Investigators:** Revoreda, C. (Scotland's Rural College);

**McNamee, P., Norwood, P.** (HERU).

**Source of Funding:** Scottish Government, Chief Scientist Office (CSO) CORE and University of Aberdeen.

### Food culture and dietary choice

**Investigators:** Morgan, P., Macdiarmid, J.I. (University of Aberdeen Rowett Institute); **Norwood, P., Ludbrook, A.** (HERU).

**Source of Funding:** Scottish Government (Rural and Environment Science and Analytical Services Division RESAS) via University of Aberdeen Rowett Institute and Chief Scientist Office (CSO) CORE.

### Insecure lock-In: the mental health effects of prolonged insecure employment (Elizabeth Russell Career Development Post-Doctoral Fellowship)

**Investigators:** Kopasker, D. (HERU).

**Source of Funding:** Elizabeth Russell Career Development Fellowship.

### Lessening the Impact of Fatigue: Therapies for inflammatory rheumatic diseases (LIFT)

**Investigators:** Basu, N. (NHS Grampian); **McNamee, P.** (HERU); Siebert, S. (NHS Greater Glasgow & Clyde); Wearden, A. (Central Manchester University Hospitals Trust); Kumar, V. (NHS Tayside).

**Source of Funding:** Arthritis Research UK (ARUK) and University of Aberdeen.

### MAintaining MusculOskeleTal Health Study (MAMMOTH)

**Investigators:** MacFarlane, G., Jones, G. (Other Applied Health Sciences, University of Aberdeen); **McNamee, P.** (HERU); Basu, N. (School of Medicine & Dentistry, University of Aberdeen); Artus, M., McBeth, J. (Keele University); Kean, S. (University of Glasgow); Lovell, K., Keeley, P. (University of Manchester); Hannaford, P. (Department of General Practice & Primary Care, University of Aberdeen); Prescott, G. (Medical Statistics Team, University of Aberdeen); Norrie, J. (CHART, University of Aberdeen).

**Source of Funding:** Arthritis Research UK (ARUK) and University of Aberdeen.

### Mental health and the PATH to midlife

**Investigators:** Butterworth, P., Antsey, K., Cherbiun, N., McKerin, R., Burns, R., Leach, L. (Australian National University); Slade, T. (University of South Wales); **McNamee, P.** (HERU).

**Source of Funding:** Australian Government National Health and Medical Research Council and University of Aberdeen.

### Modelling purchasing behaviour for alcohol

**Investigators:** Ludbrook, A., McKenzie, L., Ejebu, O. (HERU).

**Source of Funding:** Chief Scientist Office (CSO) CORE and University of Aberdeen.

### \*Patient-centred Care for Fibromyalgia: New pathway Design (PACFIND)

**Investigators:** **McNamee, P.** (HERU); MacFarlane, G., Jones, G., Basu, N., Martin, K., MacLennan, S., Lolock, L., Hollick, R., Murchie, P. (Other Applied Health Sciences, University of Aberdeen); Black, C. (Aberdeen Centre for Health Data Science).

**Source of Funding:** Versus Arthritis and University of Aberdeen.

### A randomised control trial to assess the impact of a lifestyle intervention in women attending NHS breast screening clinics (ACTWELL)

**Investigators:** Anderson, A. (University of Dundee); Treweek, S. (HSRU, University of Aberdeen); Mutrie, N., McAdam, C. (University of Edinburgh); Craigie, A. (Centre for Public Health Nutrition Research); O'Carroll, R., Stead, M. (University of Stirling); Macaskill, J. (Ninewells Hospital); **McNamee, P.** (HERU), Neilson, A. (University of Edinburgh); Sataar, N. (University of Glasgow).

**Source of Funding:** National Institute for Health Research (NIHR), Public Health Research (PHR) Programme and University of Aberdeen.



**Retirement, health behaviour, health and wellbeing**

**Investigators:** **McNamee, P., Leckcivilize, A.** (HERU).

**Source of Funding:** Chief Scientist Office (CSO) CORE and University of Aberdeen.

**Time preferences and health behaviours**

**Investigator:** **Pol, M. van der** (HERU).

**Source of Funding:** University of Aberdeen.

**Using insights into time preference and present bias to develop an intervention to improve adherence to exercise (PhD)**

**Investigators:** **Thomas, U.** (PhD Student), **Pol, M. van der** (HERU); Allan, J. (Health Psychology, University of Aberdeen).

**Source of Funding:** Institute of Applied Health Sciences (IAHS), University of Aberdeen.

**\*The value and costs of unpaid care for older people in China (PhD)**

**Investigators:** **Gao, H.** (PhD Student), **McNamee, P., Leckcivilize, A.** (HERU).

**Source of Funding:** University of Aberdeen Elphinstone scholarship, Chief Scientist Office (CSO) CORE and University of Aberdeen.

# Projects In-Progress and Completed in 2019

\* Denotes projects started in 2019



## Assessment of Technologies

**Adjustable anchored Single-Incision Mini-Slings versus standard tension-free mid-urethral slings in the surgical management of female stress urinary incontinence; a pragmatic multicentre non-inferiority randomised controlled trial (SIMS Trial)**

**Investigators:** Abdel-Fattah, M., N'Dow, J. (Other Applied Health Sciences, University of Aberdeen); Assassa, R. (Mid-Yorkshire Hospitals NHS Trust); **Kilonzo, M.** (HERU); MacLennan, G., McCormack, K., Norrie, J. (Health Services Research Unit (HSRU), University of Aberdeen); Wardle, J. (Continence Foundation).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and University of Aberdeen.

**British Society for Rheumatology Biologics Register in Ankylosing Spondylitis (BSRBR-AS)**

**Investigators:** Macfarlane, G., Jones, G. (Other Applied Health Sciences, University of Aberdeen); **McNamee, P.** (HERU); Hyrich, K., Watson, K., Lunt, M., Symmons, D. (Arthritis Research UK Epidemiology Unit, University of Manchester); Sturrock, R. (Centre for Rheumatic Diseases, University of Glasgow); Kay, L. (Freeman Hospital, Newcastle).

**Source of Funding:** British Society for Rheumatology and University of Aberdeen.

**CATHETER II Study: randomised controlled trial comparing the clinical and cost-effectiveness of various washout policies versus no washout policy in preventing catheter associated complications in adults living with long-term catheters**

**Investigators:** Abdel-Fattah, M., N'Dow, J., Murchie, P., MacLennan, S., Myint, P., Omar, I. (Institute of Applied Health Sciences, University of Aberdeen); **Scotland G., Kilonzo, M.** (HERU); MacLennan, G. (Health Services Research Unit (HSRU), University of Aberdeen).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme, Chief Scientist Office (CSO) CORE and University of Aberdeen.

**The clinical and cost-effectiveness of surgical interventions for stones in the lower pole calyces of the kidney (PUrE RCT)**

**Investigators:** McClinton, S. (NHS Grampian & University of Aberdeen); Lam, T. (University of Aberdeen); Wiseman, O. (Addenbrooke's NHS Trust); Smith, D. (University College London Hospital); Turney, B. (John Radcliffe Hospital NHS Trust); Pickard, R. (Freeman Hospital & University of Newcastle); Thomas, R., MacLennan, G., Norrie, J., MacLennan, S., Starr, K., Clark, C.T. (Health Services Research Unit, (HSRU), University of Aberdeen)); **Hernández, R.** (HERU); Anson, K. (St George's Healthcare NHS Trust).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and University of Aberdeen.

**Does oral sodium bicarbonate therapy improve function and quality of life in older patients with chronic kidney disease and low-grade acidosis? A randomised controlled trial**

**Investigators:** Witham, M. (University of Dundee); Avenell, A. (Health Services Research Unit, (HSRU), University of Aberdeen); Soiza, R. (School of Medicine & Dentistry, University of Aberdeen); **McNamee, P.** (HERU).

**Source of Funding:** National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme and University of Aberdeen.



**Early Detection of Neovascular Age-related macular degeneration (EDNA)**

**Investigators:** Chakravarthy, U., Hogg, R. (Queen's University Belfast); Ramsay, C., Banister, K., Cook, J., Azuara-Blanco, A. (Health Services Research Unit, (HSRU), University of Aberdeen); **Scotland, G.** (HERU/HSRU); Sivaprasad, S. (Moorfields Eye Hospital NHS Foundation Trust); Heimann, H. (Royal Liverpool & Broadgreen University Hospitals NHS Trust).  
**Source of Funding:** National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme and Chief Scientist Office (CSO) CORE.

**\*Effects and safety of testosterone in men with low testosterone levels: an evidence synthesis and economic evaluation (Testosterone Effects and Safety) Consortium (TESTES)**

**Investigators:** Jayasena, C. (Imperial College of Science, Technology and Medicine); **Hernández, R.** (HERU); Dhilo, W. (Imperial College London); Wu, F. (University of Manchester); Bhattacharya, S., Gillies, K., Brazzelli, M., Aucott, L. (University of Aberdeen); Quinton, R. (Freeman Hospital); Oliver, N. (Imperial College London).  
**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and University of Aberdeen.

**External validity of DCEs: a case study of dental care (PhD)**

**Investigators:** **Boyers, D.** (PhD Student), **Pol, M. van der, Watson, V.** (HERU).  
**Source of Funding:** Chief Scientist Office (CSO) CORE and University of Aberdeen.

**Incorporating preference heterogeneity in economic evaluation: informing "realistic medicine" (PhD)**

**Investigators:** **Mohan, D.** (PhD Student, HERU), **Scotland, G.** (HERU/HSRU); Ramsay, C. (Health Services Research Unit, (HSRU), University of Aberdeen); Heidenreich, S. (Evidera).  
**Source of Funding:** University of Aberdeen Development Trust and Chief Scientist Office (CSO) CORE.

**Lowering Events in Non-proliferative retinopathy in Scotland (LENS)**

**Investigators:** Preiss, D. (University of Oxford); Logue, J. (University of Glasgow); Armitage, J. (University of Oxford); Olson, J. (NHS Grampian); **Scotland, G.** (HERU/HSRU); Sattar, N. (University of Glasgow); Leese, G., Colhoun, H. (University of Dundee).  
**Source of Funding:** National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme and Chief Scientist Office (CSO) CORE.

**Male synthetic sling versus Artificial urinary Sphincter Trial for men with urodynamic stress incontinence after prostate surgery: Evaluation by Randomised trial (MASTER)**

**Investigators:** Abrams, P. (North Bristol NHS Trust); Drake, M. (University of Bristol); Glazener, C., Norrie, J., Ramsay, C., Boachie, C., McCormack, K., McPherson, G., McDonald, A. (Health Services Research Unit, (HSRU), University of Aberdeen); Pickard, R. (University of Newcastle upon Tyne); **Kilonzo, M.** (HERU); Cotterill, N. (University of Bristol).  
**Source of Funding:** National Institute for Health Research, Health Technology Assessment (HTA) Programme and University of Aberdeen.

**Oral iron, Intravenous iron or discontinuation of therapy for older adults with treatment-unresponsive iron deficiency anaemia – a pilot randomised controlled trial**

**Investigators:** Myint, P. (Other Applied Health Sciences, University of Aberdeen); **McNamee, P.** (HERU); Witham, M., Hands, K. (Ninewells Hospital Dundee); Lee, A. (Medical Statistics, University of Aberdeen).  
**Source of Funding:** The Scottish Government – Chief Scientist Office (CSO) and University of Aberdeen.

**A randomised controlled trial comparing the clinical effectiveness and cost-effectiveness of laparoscopic cholecystectomy compared with observation/conservative management for preventing recurrent symptoms and complications in adults with uncomplicated symptomatic gallstones (C-Gall)**

**Investigators:** Ahmed, I. (NHS Grampian); Ramsay, C., Norrie, J., Gillies, K., Avenell, A., Brazzelli, M. (Health Services Research Unit, (HSRU), University of Aberdeen); **Hernández, R.** (HERU); Murchie, P. (Other Applied Health Sciences, University of Aberdeen).  
**Source of Funding:** Department of Health – National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and University of Aberdeen.

**A randomised controlled trial: Evaluate the clinical and cost-effectiveness of prescribing high concentration Fluoride toothpaste in preventing and treating dental Caries in high-risk older adults (REFLeCt trial)**

**Investigators:** Tickle, M. (University of Manchester); **Boyers, D.** (HERU); Walsh, T., Worthington, H., Glenny, A-M., Pretty, I., Birch, S. (University of Manchester); Clarkson, J. (University of Dundee).  
**Source of Funding:** National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme.

**A randomised controlled trial evaluating the clinical and cost-effectiveness of a policy of freezing all embryos followed by thawed frozen embryo transfer, compared with a policy of fresh embryo transfer in women undergoing in-vitro fertilization (E-FREEZE)**

**Investigators:** Mahashwari, A. (NHS Grampian); Macklon, N. (University of Southampton); Khalaf, Y. (Guy's and St Thomas's Hospital); Lavery, S. (Hammersmith Hospital); Child, T., Juszczak, E., Hardy, P., Kurinczuk, J. (University of Oxford); Rajkohwa, M. (Birmingham's Women's Hospital); Coomarasamy, A. (University of Birmingham); Cutting, R. (University of Sheffield); Brison, D. (Central Manchester University Hospital NHS Trust); Troup, S. (Liverpool Women's Hospital); Lewis-Jones, C. (Infertility Network, UK); Raine-Fenning, N. (University of Nottingham); Bhattacharya, S. (Other Applied Health Sciences, University of Aberdeen); **Scotland, G.** (HERU/HSRU).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and Chief Scientist Office (CSO) CORE.

**\*Recurrence of endometriosis: GnRH analogues versus laparoscopic surgery trial (REGAL)**

**Investigators:** Saraswat, L. (NHS Grampian & University of Aberdeen); **Scotland G.** (HERU); MacLennan, G., Gillies, K. (Health Services Research Unit, (HSRU), University of Aberdeen); Bhattacharya, S. (Other Applied Health Sciences, University of Aberdeen).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and Chief Scientist Office (CSO) CORE.

**Reducing Asthma Attacks in Children using Exhaled Nitric Oxide as a biomarker to inform treatment strategy – a randomised controlled trial (RAACENO)**

**Investigators:** Norrie, J., Morgan, H. (Health Services Research Unit, (HSRU), University of Aberdeen); Fielding, S., Price, D. (Other Applied Health Sciences, University of Aberdeen); **Scotland, G.** (HERU/HSRU); Thomas, M. (University of Southampton); Gaillard, E. (University of Leicester).

**Source of Funding:** National Institute for Health Research (NIHR)/Medical Research Council (MRC), Efficacy & Mechanism Evaluation Programme and Chief Scientist Office (CSO) CORE.

**\*Should Scotland provide whole genomic sequencing for diagnosis of rare disorders: a health economic analysis**

**Investigators:** Ryan, M., McKenzie, L., Hernández, R., Abbott, M. (HERU); Miedzybrodzka, Z., Mennie, L., Clark, C. (Medical Genetics, University of Aberdeen); Heidenreich, S. (Evidera).


**Source of Funding:** Health Improvement, protection and Services, Chief Scientist Office (CSO), University of Aberdeen and Chief Scientist Office (CSO) CORE.

**Technology Assessment Reviews (TARs) contract (2016–2022)**

**Investigators:** Ramsay, C., Campbell, M., Brazzelli, M., Cummins, E. (Health Services Research Unit, (HSRU), University of Aberdeen); **Scotland, G.** (HERU/HSRU).

- **\*DAR: The ARCHITECT and Alinity urine NGAL assays, urine NephroCheck test, and urine and plasma BioPorto NGAL tests to help assess the risk of acute kidney injury for people who are being considered for admission to critical care**
- **\*Enzalutamide with androgen deprivation therapy for treating metastatic hormone-sensitive prostate cancer (Single Technology Assessment)**
- **Enzalutamide for treating non-metastatic hormone-relapsed prostate cancer (Single Technology Assessment)**
- **Fast Track Appraisal: Risankizumab for treating moderate-to-severe plaque psoriasis**
- **Inotersen for treating hereditary transthyretin-related amyloidosis. (Highly Specialised Technology)**
- **Lanadelumab for preventing recurrent attacks of hereditary angioedema (Single Technology Assessment)**
- **\*Lorlatinib for previously treated ALK-positive advanced non-small-cell lung cancer (Single Technology Assessment)**
- **\*TYRX Absorbable antibacterial envelope for preventing infection from cardiac implantable electronic devices (Single Technology Assessment)**

**Source of Funding:** National Institute for Health Research, Health Technology Assessment (HTA) Programme and Chief Scientist Office (CSO) CORE.



**The UK Resuscitative Endovascular Balloon Occlusion of the Aorta (UK-REBOA)**

**Investigator:** Jansen, J., Campbell, M., MacLennan, G. (Health Services Research Unit, (HSRU), University of Aberdeen);

**Boyers, D.** (HERU); Brohi, K. (Queen Mary University); Morrison, J. (NHS Greater Glasgow & Clyde); Lendrum, R. (NHS Lothian); Harris, T. (Barts Health NHS Trust); Tai, N. (Royal London Hospital); Moran, C. (Nottingham University NHS Trust); Midwinter, M. (Royal Centre for Defence Medicine); Lecky, F. (University of Sheffield).

**Source of Funding:** National Institute for Health Research (NIHR), Health Technology Assessment (HTA) Programme and University of Aberdeen.

**Using existing data to incorporate broader measures of benefit in economic evaluation (PhD)**

**Investigators:** Tassie, E. (PhD Student), Watson, V. (HERU), Scotland, G. (HERU/HSRU), Bryan, S. (HERU/University of British Columbia).

**Source of Funding:** Institute of Applied Health Science (IAHS), University of Aberdeen and Chief Scientist Office (CSO) CORE.

**Vault or Uterine prolapse surgery Evaluation: two parallel randomised controlled trials of surgical options for upper compartment (uterine or vault) pelvic organ prolapse (VUE)**

**Investigators:** Glazener, C., Breeman, S., McPherson, G., McDonald, A., Norrie, J., Elders, A. (Health Services Research Unit, (HSRU), University of Aberdeen); Montgomery, I.B.G. (Aberdeen); Hagen, S. (Glasgow Caledonian University); Smith, A.R.B. (St. Mary's Hospital Manchester); Freeman, R.M. (Plymouth Hospital NHS Trust); Bain, C., Cooper, K. (NHS Grampian); Kilonzo, M. (HERU).

**Source of Funding:** National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme and University of Aberdeen.

# Projects In-Progress and Completed in 2019

\* Denotes projects started in 2019



## Methods of Benefit Valuation

### Attributes aggregation in multi-attribute choice: Need we worry?

**Investigators:** Ryan, M., Genie, M. (HERU); Krucien, N. (Evidera).

**Source of Funding:** University of Aberdeen and Chief Scientist Office (CSO) CORE.

### Choice certainty and deliberative thinking in discrete choice experiments. A theoretical and empirical investigation

**Investigators:** Watson, V. (HERU); Regier, D. (British Columbia Cancer Research Agency and University of British Columbia); Sicsic, J. (Paris Descartes University Institute of Technology).

**Source of Funding:** Chief Scientist Office (CSO) CORE, Peter Wall Institute of Advanced Studies, University of British Columbia, People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013).

### Do participants understand health economics surveys?

**Investigators:** Pearce, A. (University of Technology Sydney);

**Watson, V.** (HERU); Mulhearn, B., Viney, R. (CHERE).

**Source of Funding:** University of Technology Sydney (UTS) and Chief Scientist Office (CSO) CORE.

### How do individuals respond to DCEs? Alternatives to utility maximisation

**Investigators:** Watson, V., Ryan, M. (HERU); Krucien, N. (Evidera).

**Source of Funding:** Scottish Government, Chief Scientist Office (CSO) CORE & University of Aberdeen.

### Improving the patient-pharmacist interaction: A new approach to help patients make informed decisions

**Investigators:** Ryan, M., Porteous, T., Loria-Rebolledo, L. (HERU); Bond, C. (Centre for Academic Primary Care, University of Aberdeen); Adam, R., Murchie, P. (Other Applied Health Sciences, University of Aberdeen); Krucien, N. (Evidera).

**Source of Funding:** Pharmacy Research UK and Chief Scientist Office (CSO) CORE.

### \*Metastatic prostate cancer men's Attitudes towards Treatment of the local Tumour and metastasis Evaluative Research (MATTER)

**Investigators:** Watson, V. (HERU); Connor, M., Ahmed, H. (Imperial College London).

**Source of Funding:** Imperial College London and Chief Scientist Office (CSO) CORE.

### Our values or mine? A philosophical and empirical critique of deliberative and stated preference elicitation techniques in health economics (PhD)

**Investigators:** Sakowsky, R. (PhD Student), Ryan, M. (HERU); Entwistle, V. (Health Services Research Unit, (HSRU), University of Aberdeen).

**Source of Funding:** Gavin Mooney PhD Studentship (via University of Aberdeen Development Trust) and the University of Sydney and Chief Scientist Office (CSO) CORE.

### \*Public and patient preferences for social prescribing (PhD)

**Investigators:** Antunes, M. (PhD Student), Pol, M. van der, Watson, V. (HERU); Norman, R., Robinson, S. (Curtin University).

**Source of Funding:** University of Aberdeen and Curtin University.

### \*Putting men's preferences at the centre of the doctor-patient relationship: the prostate cancer treatment preferences (PARTNER) test

**Investigators:** Watson, V. (HERU); MacLennan, S., N'Dow, J. (Academic Urology Unit); Ahmed, H. (Imperial College London); Krucien, N. (Evidera).

**Source of Funding:** The Urology Foundation and Chief Scientist Office (CSO) CORE.





**\*Reducing land degradation and carbon loss from Ethiopia's solid to strengthen livelihoods and resilience (RALENTIR)**

**Investigators:** Phimister, E. (Business School, University of Aberdeen); **Watson, V.** (HERU); Smith, J.U., Hallett, P. (Institute of Biological and Environmental Science, University of Aberdeen); Mekuria, W., Haile, A., Tekle, A. (Nile Basin & East Africa Office, International Water Management Institute); Ameda, T.T., Lemma Argaw, T. (Hawassa University); Byg, A. (James Hutton Institute); Edo., G. (Southern Agricultural Research Institute); Fischer, A. (Swedish University of Agricultural Science).

**Source of Funding:** Global Challenges Research Fund, Economic and Social Research Council and Chief Scientist Office (CSO) CORE.

**Supporting shared decision making in advanced breast cancer: what matters to patients in an era of personalised care**

**Investigators:** Hall, P. (University of Edinburgh); **Ryan, M.** (HERU); Gray, E., University of Edinburgh; O'Hare, S-M. (Edinburgh Breast Unit) and Krucien, N. (Evidera).

**Source of Funding:** Breast Cancer Institute and Chief Scientist Office (CSO) CORE.

**Thriving not surviving following a breast cancer diagnosis: what can time allocation tell us? (PhD)**

**Investigators:** **Gao, N.** (PhD Student), **Ryan, M.** (HERU); Norman, R., Robinson, S. (Curtin University, Western Australia); Krucien, N. (Evidera).

**Source of Funding:** NHS Grampian (NHSG) via University of Aberdeen Development Trust, Chief Scientist Office (CSO) CORE and University of Aberdeen.

**To pay or not to pay? The impact of the price attribute in choice experiments**

**Investigators:** **Ryan, M., Genie, M.** (HERU); Krucien, N. (Evidera).

**Source of Funding:** University of Aberdeen and Chief Scientist Office (CSO) CORE.

**\*Valuing baby boxes: what's important to parents?**

**Investigators:** Skea, Z., Locock, L. (Health Services Research Unit, (HSRU), University of Aberdeen); **Ryan, M.** (HERU); Morgan, H. (Institute of Applied Health Sciences, University of Aberdeen); Black, M. (Aberdeen Centre for Women's Health Research, University of Aberdeen).

**Source of Funding:** NHS Grampian Endowments and Chief Scientist Office (CSO) CORE.

**Valuing whole genome sequencing to improve diagnosis of rare disorders: a health economic perspective**

**Investigators:** **Ryan, M., McKenzie, L., Heidenreich, S., Moran, B.** (HERU); Miedzybrodzka, Z., Mennie, L. (Applied Medicine, University of Aberdeen); Aitman, T. (University of Edinburgh).

**Source of Funding:** Scottish Genomics Partnership and Chief Scientist Office (CSO) CORE.

**What can eye tracking tell us about decision-making heuristics in discrete choice experiments?**

**Investigators:** **Ryan, M.** (HERU); Hermens, F. (University of Lincoln); Krucien, N. (Evidera).

**Source of Funding:** University of Aberdeen and Chief Scientist Office (CSO) CORE.

**Willingness to pay for relief from diseases and symptoms**

**Investigators:** Laufey, T. (University of Iceland); **McNamee, P.** (HERU).

**Source of Funding:** The Icelandic Research Fund 2018 and the University of Aberdeen.

## 2019 Publications

### Refereed Journals

- Adel Halmai, L., Neilson, A.R. and **Kilonzo, M.** (2019) 'Economic evaluation of interventions for the treatment of asthma in children: a systematic review', *Pediatric Allergy and Immunology*, [Epub ahead of print].
- Bassford, C.R., Griffiths, F., Svantesson, M., **Ryan, M., Krucien, N.**, Dale, J., Rees, S., Rees, K., Ignatowicz, A., Parsons, H., Flowers, N., Fritz, Z., Perkins, G., Quinton, S., Symons, S., White, C., Huang, H., Turner, J., Brooke, M., McCreedy, A., Blake, C. and Slowther, A. (2019) 'Developing an intervention around referral and admissions to intensive care: a mixed-methods study', *Health Services and Delivery Research*, 7(39).
- Bassford, C.R., **Krucien, N., Ryan, M.**, Griffiths, F.E., Svantesson, M., Fritz, Z., Perkins, G.D., Quinton, S. and Slowther, A.-M. (2019) 'U.K. intensivists' preferences for patient admission to ICU: evidence from a choice experiment', *Critical Care Medicine*, 47(11), 1522-1530.
- Brittenden, J., Cooper, D., **Dimitrova, M., Scotland, G.**, Cotton, S.C., Elders, A., MacLennan, G., Ramsay, C.R., Norrie, J., Burr, J.M., Campbell, B., Bachoo, P., Chetter, I., Gough, M., Earnshaw, J., Lees, T., Scott, J., Baker, S.A., Tassie, E., Francis, J. and Campbell, M.K. (2019) 'Five-year outcomes of a randomized trial of treatments for varicose veins', *New England Journal of Medicine*, 381(10), 912-922.
- Cerroni, S., **Watson, V.**, Kalentakakis, D. and Macdiarmid, J.I. (2019) 'Value-elicitation and value-formation properties of discrete choice experiment and experimental auctions', *European Review of Agricultural Economics*, 46(1), 3-27.
- Cooper, K., Breeman, S., Scott, N.W., **Scotland, G., Hernández, R.**, Clark, T.J., Hawe, J., Hawthorn, R., Phillips, K., Wileman, S., McCormack, K., Norrie, J. and Bhattacharya, S. (2019) 'Laparoscopic supracervical hysterectomy compared with second-generation endometrial ablation for heavy menstrual bleeding: the HEALTH RCT', *Health Technology Assessment*, 23(53).
- Cooper, K., Breeman, S., Scott, N.W., **Scotland, G.**, Clark, J., Hawe, J., Hawthorn, R., Phillips, K., MacLennan, G., Wileman, S., McCormack, K., **Hernández, R.**, Norrie, J. and Bhattacharya, S. (2019) 'Laparoscopic supracervical hysterectomy versus endometrial ablation for women with heavy menstrual bleeding (HEALTH): a parallel-group, open-label, randomised controlled trial', *The Lancet*, 394(10207), 1425-1436.
- Denison, F.C., Carruthers, K.F., Hudson, J., McPherson, G., **Chua, G.N.**, Peace, M., Brewin, J., Hallowell, N., **Scotland, G.**, Lawton, J., Norrie, J. and Norman, J.E. (2019) 'Nitroglycerin for treatment of retained placenta: a randomised, placebo-controlled, multicentre, double-blind trial in the UK', *PLoS Medicine*, 16(12), e1003001.
- Ejebu, O.**, Whybrow, S., **McKenzie, L.**, Dowler, E., Garcia, A.L., **Ludbrook, A.**, Barton, K.L., Wrieden, W.L. and Douglas, F. (2019) 'What can secondary data tell us about household food insecurity in a high-income country context?', *International Journal of Environmental Research and Public Health*, 16(1), 82.
- Grubb, N.R., Elder, D., Broadhurst, P., Reoch, A., **Tassie, E.** and Neilson, A. (2019) 'Atrial fibrillation case finding in over 65s with cardiovascular risk factors: results of initial Scottish clinical experience', *International Journal of Cardiology*, 288(August), 94-99.
- Hagen, S., McClurg, D., Bugge, C., Hay-Smith, J., Dean, S.G., Elders, A., Glazener, C., Abdel-fattah, M., Agur, W.I., Booth, J., Guerrero, K., Norrie, J., **Kilonzo, M.**, McPherson, G., McDonald, A., Stratton, S., Sergenson, N., Grant, A. and Wilson, L. (2019) 'Effectiveness and cost-effectiveness of basic versus biofeedback-mediated intensive pelvic floor muscle training for female stress or mixed urinary incontinence: protocol for the OPAL randomised trial', *BMJ Open*, 9(2), e024153.
- Honda, A., **Krucien, N., Ryan, M.**, Diouf, I.S.N., Salla, M., Nagai, M. and Fujita, N. (2019) 'For more than money: willingness of health professionals to stay in remote Senegal', *Human Resources for Health*, 17(1), 28.
- Irvine, A., Pol, M. van der** and Phimister, E. (2019) 'A comparison of professional and private time preferences of General Practitioners', *Social Science & Medicine*, 222, 256-264.
- Jones, G.T., Macfarlane, G.J., Walker-Bone, K., Burton, K., Heine, P., McCabe, C., **McNamee, P.**, McConnachie, A., Zhang, R., Whibley, D., Palmer, K. and Coggon, D. (2019) 'Maintained physical activity and physiotherapy in the management of distal arm pain: a randomised controlled trial', *RMD Open*, 5(1), e000810.



Katikireddi, S.V., Beeston, C., Millard, A., Forsyth, R., Deluca, P., Drummond, C., Eadie, D., Graham, L., Hilton, S., **Ludbrook, A.**, McCartney, G., Phillips, T., Stead, M., Ford, A., Bond, L. and Leyland, A.H. (2019) 'Evaluating possible intended and unintended consequences of the implementation of alcohol minimum unit pricing (MUP) in Scotland: a natural experiment protocol', *BMJ Open*, 9(6), e028482.

**Kopasker, D.**, Kwiatkowski, A., Matin, R.N., Harwood, C.A., Ismail, F., Lear, J.T., Thomson, J., Hasan, Z., Wali, G.N., Milligan, A., Crawford, L., Ahmed, I., Duffy, H., Proby, C.M. and Allanson, P.F. (2019) 'Patient preferences for topical treatment of actinic keratoses: a discrete-choice experiment', *British Journal of Dermatology*, 180(4), 902-909.

**Krucien, N.**, Pelletier-Fleury, N. and Gafni, A. (2019) 'Measuring public preferences for health outcomes and expenditures in a context of healthcare resource re-allocation', *PharmacoEconomics*, 37(3), 407-417.

**Krucien, N.**, Sicsic, J. and **Ryan, M.** (2019) 'For better or worse? Investigating the validity of best-worst discrete choice experiments in health', *Health Economics*, 28(4), 572-586.

**Loría-Rebolledo, L.**, **Watson, V.**, Kiso, T. and Phimister, E. (2019) 'Investigating users' preferences for Low Emission Buses: experiences from Europe's largest hydrogen bus fleet', *Journal of Choice Modelling*, 32, 100169.

**Ludbrook, A.** (2019) 'Fiscal measures to promote healthier choices: an economic perspective on price-based interventions', *Public Health*, 169(April 2019), 180-187.

Maheshwari, A., Bhattacharya, S., Bowler, U., Brison, D., Child, T., Cole, C., Coomarasamy, A., Cutting, R., Harbottle, S., Hardy, P., Juszczak, E., Khalaf, Y., Kurinczuk, J.J., Lavery, S., Lewis-Jones, C., Macklon, N., Raine-Fenning, N.J., Rajkohwa, M., **Scotland, G.** and Troup, S. (2019) 'Study protocol: E-freeze – freezing of embryos in assisted conception: a randomised controlled trial evaluating the clinical and cost effectiveness of a policy of freezing embryos followed by thawed frozen embryo transfer compared with a policy of fresh embryo transfer, in women undergoing in vitro fertilisation', *Reproductive Health*, 16(1), 81.

Martin, K.R., Bachmair, E.M., Aucott, L., Dures, E., Emsley, R., Gray, S.R., Hewlett, S., Kumar, V., Lovell, K., Macfarlane, G.J., MacLennan, G., **McNamee, P.**, Norrie, J., Paul, L., Ralston, S., Siebert, S., Wearden, A., White, P.D. and Basu, N. (2019) 'Protocol for a multicentre randomised controlled parallel-group trial to compare the effectiveness of remotely delivered cognitive-behavioural and graded exercise interventions with usual care alone to lessen the impact of fatigue in inflammatory rheumatic diseases (LIFT)', *BMJ Open*, 9(1), e026793.

**McNamee, P.** and Mendolia, S. (2019) 'Changes in health-related quality of life: a compensating income variation approach', *Applied Economics*, 51(6), 639-650.

Milders, M., Bell, S., Lorimer, A., Jackson, H. and **McNamee, P.** (2019) 'Improving access to a multi-component intervention for caregivers and people with dementia', *Dementia*, 18(1), 347-359.

**Neilson, A.R.**, Jones, G.T., Macfarlane, G.J., Walker-Bone, K., Burton, K., Heine, P.J., McCabe, C.S., McConnachie, A., Palmer, K.T., Coggon, D. and **McNamee, P.** (2019) 'Cost-utility of maintained physical activity and physiotherapy in the management of distal arm pain: an economic evaluation of data from a randomized controlled trial', *Family Practice*, 36(2), 179-186.

**Norwood, P.**, Correia, I., Veiga, P. and **Watson, V.** (2019) 'Patients' experiences and preferences for primary care delivery: a focus group analysis', *Primary Health Care Research and Development*, 20, e106.

Pearce, A.M., Mulhern, B.J., **Watson, V.** and Viney, R.C. (2019) 'How are debriefing questions used in health discrete choice experiments? An online survey', *Value in Health*, [Epub ahead of print].

**Pol, M. van der**, Olajide, D., Dusheiko, M., **Elliott, R.F.**, Guthrie, B., Jorm, L. and Leyland, A.H. (2019) 'The impact of quality and accessibility of primary care on emergency admissions for a range of chronic ambulatory care sensitive conditions (ACSCs) in Scotland: longitudinal analysis', *BMC Family Practice*, 20(1), 32.

**Pol, M. van der**, Scott, A. and **Irvine, A.** (2019) 'The migration of UK trained GPs to Australia: does risk attitude matter?', *Health Policy*, 123(11), 1093-1099.



Radley, A., **Pol, M. van der** and Dillon, J.F. (2019) 'Application of a discrete choice experiment approach to support the design of a hepatitis C testing service in primary care', *International Journal on Drug Policy*, 65, 1-7.

Regier, D.A., Sicsic, J. and **Watson, V.** (2019) 'Choice certainty and deliberative thinking in discrete choice experiments. A theoretical and empirical investigation', *Journal of Economic Behavior & Organization*, 164, 235-255.

**Ryan, M.**, Mentzakis, E., Matheson, C. and Bond, C. (2019) 'Survey modes comparison in contingent valuation: internet panels and mail surveys', *Health Economics*, [Epub ahead of print].

Tickle, M., Ricketts, D.J.N., Duncan, A., O'Malley, L., Donaldson, P.M., Clarkson, J.E., Black, M., **Boyers, D.**, Donaldson, M., Floate, R., Forrest, M.M., Fraser, A., Glenny, A.M., Goulao, B., McDonald, A., Ramsay, C.R., Ross, C., Walsh, T., Worthington, H.V., Young, L., Bonetti, D.L., Gouick, J., Mitchell, F.E., Macpherson, L.E., Lin, Y.L., Pretty, I.A. and Birch, S. (2019) 'Protocol for a Randomised controlled trial to Evaluate the effectiveness and cost benefit of prescribing high dose Fluoride toothpaste in preventing and treating dental Caries in high-risk older adults (REFLECT trial)', *BMC Oral Health*, 19(1), 88.

Turner, S., Cotton, S.C., Emele, C.D., Thomas, R., Fielding, S., Gaillard, E.A., de Jongste, J.C., Morgan, H., **Neilson, A.R.**, Norrie, J., Pijnenburg, M., Price, D. and Thomas, M. (2019) 'Reducing Asthma Attacks in Children using Exhaled Nitric Oxide as a biomarker to inform treatment strategy: a randomised trial (RAACENO)', *Trials*, 20(1), 573.

**Watson, V.**, Dibben, C., Cox, M., Atherton, I., Sutton, M. and **Ryan, M.** (2019) 'Testing the expert based weights used in the UK's Index of Multiple Deprivation (IMD) against three preference-based methods', *Social Indicators Research*, 144(3), 1055-1074.

**Watson, V.**, **Porteous, T.**, Bolt, T. and **Ryan, M.** (2019) 'Mode and frame matter: assessing the impact of survey mode and sample frame in choice experiments', *Medical Decision Making*, 39(7), 827-841.

Witham, M.D., Price, R.J.G., Band, M.M., Hannah, M.S., Fulton, R.L., Clarke, C.L., Donnan, P.T., **McNamee, P.**, Cvorov, V. and Soiza, R.L. (2019) 'Effect of vitamin K2 on postural sway in older people who fall: a randomized controlled trial', *Journal of the American Geriatrics Society*, 67(10), 2102-2107.

## Reports

Dasgupta, R., Cameron, S., Aucott, L., MacLennan, G., **Kilonzo, M.**, Lam, T., Thomas, R., Norrie, J., McDonald, A., Anson, K., N'Dow, J., Burgess, N., Clark, C., Keeley, F., MacLennan, S., Starr, K. and McClinton, S. (2019) *A multicentre randomised controlled trial of shockwave lithotripsy, as first treatment option, compared with direct progression to ureteroscopic treatment, for ureteric stones (TISU trial). Final project report to National Institute for Health Research (NIHR) Health Technology Assessment Programme (Project Number 10/137/01).*

Hagen, S., Bugge, C., Dean, S.G., Elders, A., Hay-Smith, J., **Kilonzo, M.**, McClurg, D., Abdel-Fattah, M., Agur, W.I., Andreis, F., Booth, J., **Dimitrova, M.**, Gillespie, N., Glazener, C., Grant, A., Guerrero, K., Henderson, L., Kovandzic, M., McDonald, A., Norrie, J., Sergenson, N., Stratton, S., Taylor, A. and Williams, L.R. (2019) *Basic versus biofeedback-mediated intensive pelvic floor muscle training for women with urinary incontinence: the OPAL RCT. Final project report to National Institute for Health Research (NIHR) Health Technology Assessment Programme (Project Number 11/71/03).*

**Hernández, R.**, Robertson, C., Scott, N., **Scotland, G.**, Booth, C., Manson, P., Broadhurst, P. and Brazzelli, M. (2019) *TYRX Absorbable Antibacterial Envelope for preventing infection from cardiac implantable electronic devices*, (NICE Technology Appraisal Guidance – GID-TA10370), Aberdeen Health Technology Assessment Group.

Imamura, M., Cooper, D., **Hernández, R.**, Ormerod, T., **Scotland, G.** and Brazzelli, M. (2019) *Risankizumab for treating moderate-to-severe plaque psoriasis*. A fast track appraisal, (NICE Technology Appraisal Guidance – TA596), Aberdeen Health Technology Assessment Group.

**Kopasker, D.** and Montagna, C. (2019) *Insecure employment and mental health: one pathway in the productivity puzzle*, Small Project Report, Sheffield PIN – Productivity Insights Network, University of Sheffield.

Robertson, C., Fielding, S., Walker, A., Kopasker, D., Vadiveloo, T., Manson, P., Price, G., Brazzelli, M. and **Scotland, G.** (2019) *Lorlatinib for previously treated ALK-positive advanced non-small-cell lung cancer*, (NICE Technology Appraisal Guidance – GID-TA10317), Aberdeen Health Technology Assessment Group.

**Ryan, M.**, **McKenzie, L.**, Mennie, L. and Miedzybrodzka, Z. (2019) *Valuing whole genome sequencing to improve diagnosis of rare disorders: a health economic perspective. Report to Scottish Genomics Partnership.*



Scottish Science Advisory Council (**Ryan, M.** was a member of the Writing Group) (2019) *Informing the future of genomic medicine in Scotland*, Edinburgh: SSAC.

## Other Publications

**Kopasker, D.**, Montagna, C. and Bender, K.A. (2019) Insecure lock-in: the mental health effects of anticipating insecure employment, *Discussion Papers in Economics and Finance*, 19:7.

**McNamee, P.**, Mendolia, S. and Yerokhin, O. (2019) Social media extensive use and emotional and behavioural outcomes in adolescence: evidence from British longitudinal data. *IZA Discussion Paper No. 12834*, Bonn, Germany: Institute of Labor Economics (IZA).

## 2019 Presentations

### Invited Presentations

**Pol, M. van der** (2019) 'Health economics as a behavioural science: individual preference parameters and health', *German Health Economics Association (DGGÖ) Annual Conference*, University of Augsburg, Augsburg, Germany, 18-19 March 2019.

### Conference Presentations

**Boyers, D.** and **Pol, M. van der** (2019) 'INTERVAL (Investigation of NICE Technologies for Enabling Risk-Variable-Adjusted-Length) dental recalls trial: results and discussion. Cost-effectiveness results', International Association for Dental Research (IADR) *General Session*, Vancouver Convention Centre, Vancouver, Canada, 19-22 June 2019.

**Boyers, D.**, **Pol, M. van der** and **Watson, V.** (2019) 'External validity of Discrete Choice Experiments in dental care – the impact of ex-ante hypothetical bias correction methods', *Health Economists' Study Group (HESG) Summer Meeting 2019*, University of East Anglia, Norwich, England, 3-5 July 2019.

Bullen, A., Hall, P., **Ryan, M.**, Gray, E., Ennis, H. and McIntyre, M. (2019) 'Supporting shared decision making in advanced breast cancer: what matters in an era of personalised care?', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.

Cleland, J., Porteous, T., Skåtun, D., Ejebu, O. and Ryan, M. (2019) 'Should I stay, or should I go? A discrete choice experiment to understand doctors' retirement decisions', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.

**Ejebu, O.**, **Aoki, Y.**, **Norwood, P.** and **Ludbrook, A.** (2019) 'Longitudinal analysis of parents' influence on children discretionary food choices', European Health Economics Association (EuHEA) *Student-Supervisor Conference*, Católica Business School Porto, Portugal, 4-6 September 2019.

**Farrar, S.** and Christie, L. (2019) 'Using e-activities to enhance on-line learning in health economics', *International Health Economics Association (iHEA) 2019 Congress: New Heights in Health Economics*, University of Basel, Basel, Switzerland, 13-17 July 2019.

**Gao, N.**, **Ryan, M.**, Harris, M., **Krucien, N.**, Norman, R. and Robinson, S. (2019) 'Work or leisure: do time use patterns impact wellbeing among women living with a breast cancer diagnosis?', *41st International Association for Time Use Research Conference*, Washington DC, USA, 10-12 July 2019.

**Jacobsen, E.** and **Boyers, D.** on behalf of the REBALANCE study team (2019) 'Review of Behaviour And Lifestyle interventions for severe obesity: AN evidenCE synthesis', *7th Annual Research Symposium: Evidence for Value in an Era of Realistic Medicine*, COSLA Conference Centre, Edinburgh, 25 April 2019.

**Jacobsen, E.** and **Boyers, D.** (2019) 'The probabilistic incorporation of structural uncertainty in models', *HTAi Annual Meeting 2019*, Cologne, Germany, 15-19 June 2019.

**Jacobsen, E.**, **Boyers, D.**, Durham, J., Riley, P., Glenny, A.M., Petersen, H., Davies, S., Robertson, C. and Worthington, H. (2019) 'Cost-effectiveness of oral splints for TMD', *International Association for Dental Research (IADR) General Session*, Vancouver Convention Centre, Vancouver, Canada, 19-22 June 2019.



**Kopasker, D.**, Islam, K., Gibson, J., Lau, Y.-S., Sutton, M., Askildsen, J.E., Bond, C. and **Elliott, R.F.** (2019) 'Skill mix and patient outcomes: a multi-country analysis of heart disease and breast cancer patients', *Health Economists' Study Group (HESG) Winter 2019 Meeting*, Centre for Health Economics (CHE), University of York, York, England, 7–9 January 2019.

**Kopasker, D.**, Islam, K., Gibson, J., Lau, Y.-S., Sutton, M., Askildsen, J.E., Bond, C. and **Elliott, R.F.** (2019) 'Skill mix and patient outcomes: a multi-country analysis of heart disease and breast cancer patients', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.

**Krucien, N.** and **Ryan, M.** (2019) 'To pay or not to pay? Investigating the impact of a fake monetary attribute on stated preferences', *International Health Economics Association (iHEA) 2019 Congress: New Heights in Health Economics*, University of Basel, Basel, Switzerland, 13–17 July 2019.

**Ludbrook, A.** (2019) 'The upstream problem – impatient for results?', *Public Health England Annual Conference 2019*, University of Warwick, England, 10–11 September 2019.

Martin, K.R., Stelfox, K., Morrison, Z.J., **McNamee, P.**, Smith, T.O. on behalf of the Walk with Ease Research Study Team (2019) 'The more I go out and the more I walk it eases up, the pain: a mixed-methods approach to exploring participants' pain symptoms and their experience of the Walk With Ease programme', *Scottish Pain Research Community Annual Scientific Meeting*, West Park Conference Centre, Dundee, 29 March 2019.

**McNamee, P.** (2019) 'Bang for the buck: a guide to health economics analysis for digital health', *Keystone Symposia. Digital Health: From Science to Application*, Keystone, Colorado, USA, 21–25 January 2019.

Pelissier, A., Peyron, C. and **Krucien, N.** (2019) 'It is written in our genes! What we would like to know? Understanding the demand for genetic testing using a discrete choice experiment to assess the French populations' preferences', *International Health Economics Association (iHEA) 2019 Congress: New Heights in Health Economics*, University of Basel, Basel, Switzerland, 13–17 July 2019.

**Pol, M. van der** (2019) 'Capacity building in health economics', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.

**Ryan, M.**, **Loría-Rebolledo, L.**, **Porteous, T.**, Bond, C., Adams, R., Murchie, P., Krucien, N. and Cardy, A. (2019) 'Developing a decision aid tool for chronic pain at the pharmacy level', *Royal Pharmaceutical Society. Health Literacy: What You Need to Know and How to Improve it*, Aberdeen, 7 February 2019.

**Skåtun, D.** (2019) 'Recruitment and retention of the health workforce', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.

Sohn, K., **McNamee, P.** and Harris, M. (2019) 'Does screening and diagnosis affect health outcomes? Evidence from a national hypertension programme', *Nordic Health Economists' Study Group Meeting*, University of Iceland, Reykjavik, Iceland, 21–23 August 2019.

Tickle, M., Ling-Lin, Y., Floate, R., Duncan, A., Donaldson, P., Ross, C., MacPherson, L., Glenny, A.M., O'Malley, L., Worthington, H., Clarkson, J., Ramsay, C., Bonetti, D., **Boyers, D.**, Ricket, D., Pretty, I., Walsh, T., Black, M., Donald, L., Gouick, J. and Mitchell, F. (2019) 'REFLECT RCT: Prescribing high-dose fluoride toothpaste to high-risk older adults', *International Association for Dental Research (IADR) General Session*, Vancouver Convention Centre, Vancouver, Canada, 19–22 June 2019.

**Watson, V.**, Antunes, M., Schulz, R. and Videau, Y. (2019) 'Do General Practitioners in Scotland locate their businesses in line with economic models of spatial competition?', *International Health Economics Association (iHEA) 2019 Congress: New Heights in Health Economics*, University of Basel, Basel, Switzerland, 13–17 July 2019.

**Watson, V.** (2019) 'Personalising Realistic Medicine: what can health economics contribute?', *Scottish Health Economics. Showcasing Health Economics in Scotland: Research of International Excellence That Addresses Policy Priorities in Scotland and Beyond*, Discovery Point, Dundee, 3 October 2019.



**Watson, V.** and **Krucien, N.** (2019) 'The influence of emotions on patients' treatment decisions: evidence from prostate cancer', *International Health Economics Association (iHEA) 2019 Congress: New Heights in Health Economics*, University of Basel, Basel, Switzerland, 13–17 July 2019.

**Watson, V.**, McCarten, N., **Krucien, N.**, Abu, V., Ikenwilo, D., Emberton, M. and Ahmed, H.U. (2019) 'Evaluating the trade-offs men with localised prostate cancer make between the risks and benefits of treatments: the COMPARE study', *7th Annual Research Symposium: Evidence for Value in an Era of Realistic Medicine*, COSLA Conference Centre, Edinburgh, 25 April 2019.

Witham, M.D., Price, R.J.G., Band, M.M., Hannah, M.S., Fulton, R.L., Clarke, C.L., Donnan, P.T., **McNamee, P.**, Cvorov, V. and Soiza, R.L. (2019) 'Effect of vitamin K2 on postural sway in older people who fall: a randomized controlled trial', *British Geriatrics Society Spring Meeting 2019*, Royal Welsh College of Music and Drama, Cardiff, Wales, 10–12 April 2019.

**Zhu, X.**, Scott, A., Allan, J. and **Pol, M. van der** (2019) 'The stability of physicians' risk attitudes', *Health Economists' Study Group (HESG) Summer Meeting 2019*, University of East Anglia, Norwich, England, 3–5 July 2019.

Zhu, X., Scott, A., Allan, J. and **Pol, M. van der** (2019) 'The stability of physicians' risk attitudes', *European Health Economics Association (EuHEA) Student-Supervisor Conference*, Católica Business School Porto, Portugal, 4–6 September 2019.

## Other Presentations

**Boyers, D.**, **Pol, M. van der** and **Ryan, M.** (2019) 'What should we value in healthcare?' (Public Engagement), Cafe Scientifique Belmont Filmhouse, Aberdeen, 20 October 2019.

**Ejebu, O.** (2019) 'Health economics: the caring side of economics' (Public Engagement), *Soapbox Science Aberdeen, May Festival*, University of Aberdeen, Aberdeen, 25 May 2019.

**Norwood, P.** (2019) 'Introduction to economics and how markets work' (Public Engagement), *Schools Talk*, Dunecht Primary School, Aberdeenshire, 18 February 2019.

**Norwood, P.** (2019) 'Health economics and health care decisions' (Public Engagement), *Schools Talk*, Dunecht Primary School, Aberdeenshire, 25 February 2019.

**Norwood, P.**, **Irvine, A.** and **Hernández, R.** (2019) 'How health economics informs decision making on healthcare financing' (Public Engagement), *Cell Block Science*, HMP Grampian, Peterhead, 30 May 2019.

## Poster Presentations

**Boyers, D.**, Retat, L., **Jacobsen, E.**, Avenell, A., Corbould, E., Webber, L., De Bruin, M., Robertson, C., Aceves-Martins, M., Cooper, D. and the REBALANCE Study Team (2019) 'Cost-effectiveness of interventions for the management of severe obesity (findings from the REBALANCE study)', *Public Health Research and Science Conference*, University of Manchester, 9–10 April 2019.

Chua, G.N., **Ryan, M.**, Bond, C., **Porteous, T.**, Adam, R., Murchie, P. and **Krucien, N.** (2019) 'Promoting shared decision making in patient-pharmacist interactions: a systematic review of decision aid tools and discrete choice experiments in chronic pain management', *Royal Pharmaceutical Society Science and Research Summit*, County Hall, London, 8 February 2019.

Retat, L., **Boyers, D.**, **Jacobsen, E.**, Corbould, E., Webber, L. and Avenell, A. (2019) 'The cost-effectiveness of Very Low Calorie Diets for severe obesity: modelling study in the UK', *26th European Congress on Obesity*, Scottish Event Campus, Glasgow, 28 April–1 May 2019.

Riley, P., Glenny, A.M., Worthington, H., **Jacobsen, E.**, Robertson, C., Durham, J., Davies, S., Petersen, H. and **Boyers, D.** (2019) 'Oral splints For TMD or bruxism: a systematic review', *International Association for Dental Research (IADR) General Session*, Vancouver Convention Centre, Vancouver, Canada, 19–22 June 2019.

## Seminar Presentations

Marshall, D., **Ryan, M.**, **Watson, V.** and **Loría-Rebolledo, L.** (2019) 'Discrete choice experiments in health economics: what can they do for you?', *Network of Alberta Health Economists (NOAHE) Health Economics and Technology Assessment Rounds*, Edmonton, Alberta, Canada, 12 September 2019.

**Pol, M. van der** (2019) 'Time preferences for health', Melbourne Institute Seminar Series, University of Melbourne, Australia, 21 November 2019.



**Ryan, M.** (2019) 'Valuation in health economics: reflections of a UK health economist...and patient', *O'Brien Institute for Public Health Seminar Series/Department of Community Health Sciences (CHS) Seminar Series*, University of Calgary, Calgary, Canada, 6 September 2019.

**Ryan, M.** (2019) 'Valuation in health economics: reflections of a UK health economist...and patient', *Open Lecture*, Centre for Health Economics, University of York, York, England, 5 December 2019.

**Ryan, M., Loria-Rebolledo, L., Porteous, T., Bond, C., Adams, R., Murchie, P., Krucien, N.** and Cardy, A. (2019) 'Developing a digital decision aid tool for persistent pain: findings from qualitative research', *Complex Regional Pain Syndrome (CRPS) UK Seminar*, Stirling Court Hotel, Stirling, 15 June 2019.

**Ryan, M., Loria-Rebolledo, L., Porteous, T., Bond, C., Adams, R., Murchie, P., Krucien, N.** and Cardy, A. (2019) 'Developing a digital decision aid tool for persistent pain: findings from qualitative research', *Network of Alberta Health Economists (NOAHE) Health Economics and Technology Assessment Rounds*, Edmonton, Alberta, Canada, 12 September 2019.

## Workshop Presentations

**Pol, M. van der** (2019) 'Optimising the design of financial incentives for health behaviours using (behavioural) economics', *Behavioural Science Workshop: Health and Behaviour*, University of Stirling, Stirling, 27 September 2019.

**Ryan, M., Leckcivilize, A.** and **Norwood, P.** (2019) 'Ensuring value for money in a person centred health care system: how can economics contribute?', *7th Annual Research Symposium: Evidence for Value in an Era of Realistic Medicine*, COSLA Conference Centre, Edinburgh, 25 April 2019.

**Ryan, M., Marshall, D., Watson, V.** and **Loria-Rebolledo, L.** (2019) 'Using discrete choice experiments in health economics: theoretical and practical issues', *Discrete Choice Experiment Course*, Banff Conference Centre, Alberta, Canada, 8–11 September 2019.

**Ryan, M., Watson, V.** and **Loria, L.E.** (2019) Using discrete choice experiments in health economics, *HERU Discrete Choice Experiment Course*, Aberdeen, 13–15 November 2019.

**Watson, V.** (2019) Using discrete choice experiments to value health and health care. Review of current state of art, *ENVECHO VIII European Workshop on Discrete Choice Experiments*, Department of Business Administration, University of Verona, Italy, 30 September–1 October 2019.





# HERU

HEALTH ECONOMICS RESEARCH UNIT

---

The Health Economics Research Unit (HERU) was established at the University of Aberdeen in 1977. The Unit is part of the Institute of Applied Health Sciences (IAHS) in the School of Medicine, Medical Sciences and Nutrition within the College of Life Sciences and Medicine.

Core funding for the Unit comes from the **Chief Scientist Office (CSO)**, part of the **Scottish Government Health and Social Care Directorates** and the **University of Aberdeen**. HERU is one of two CSO-funded research units based within the IAHS. Our sister unit is the Health Services Research Unit (HSRU).

The CSO remit for the Health Economics Research Unit requires HERU to “develop and encourage the application of appropriate economic methods to improve health and healthcare in Scotland” and is pursued through four Research Themes. More specifically, our aim is to:

- Research economic approaches to health and healthcare at standards of international excellence.
- Develop and apply economic techniques to improve healthcare and population health in Scotland.
- Make available to the health service a body of expertise in health economics.
- Build and sustain capacity in the economics of health.