

Assessing value for money in dentistry

The COVID-19 pandemic has had a substantial impact on the delivery of dental care, with the cessation of routine services during the first wave of the pandemic. Nine months on and patient access to dental care continues to be affected, with substantially reduced dental surgery capacity and restrictions on the use of aerosol generating procedures. It is more important than ever to support dental practices with evidence regarding how best to prioritise services towards those at greatest need when services eventually return to normal.

This newsletter describes three dental trials that HERU is involved in. The INTERVAL study evaluated different dental recall intervals and has recently published results. The REFLECT study is currently in its follow up phase and investigates how best to prevent caries, the most common non-communicable disease worldwide, and it is hoped the results will help ease pressures on dental services. The SCRIPT trial is in its start-up phase and will provide evidence about the most effective, cost-effective and patient acceptable way to treat caries when they occur. Together, these NIHR funded studies are a substantial portfolio of inter-related work that will help improve the efficiency of the whole dental caries pathway from prevention to treatment. For more information contact **Dwayne Boyers**, d.boyers@abdn.ac.uk

Risk-based, 6-monthly and 24-monthly dental check-ups for adults: the INTERVAL study

INTERVAL is the first national, multi-centre randomised controlled trial (RCT) in primary dental care to compare the clinical, patient and economic benefit of different dental recall intervals. Standard NHS practice is to have a six-monthly dental check-up, despite NICE guidance recommending individualised risk-based recalls.

The trial recruited 2,372 participants from 51 dental practices across the UK. Participants were randomised to six-monthly or risk-based recalls, with potential for randomisation into a 24-monthly recall interval if patients were deemed suitable by their dental team. The study involved a full health economic evaluation and explored costs and benefits from both a patient and NHS perspective. Inclusion of a discrete choice experiment (DCE) allowed us to elicit general population preferences for recall intervals and trial outcomes and informed a cost-benefit analysis.



The trial shows that the traditional practice of scheduling six-monthly recall appointments for patients, regardless of their risk of developing dental disease, does not improve oral health. For those at lowest risk, extending the recall interval to 24 months could save almost £60 per person in terms of patient and NHS incurred costs with no negative impact on oral health. For those that were not eligible for longer recalls, there was little evidence of a difference in costs between risk-based and six-monthly recalls.

Given that the COVID-19 pandemic has seriously affected patient access to dental care, patients at low risk may take some reassurance that extending recall intervals up to 24 months does not harm oral health. Extending recall intervals for those at low risk may help practices to free up capacity to prioritise check-ups for those patient's at greatest risk once services eventually return to something close to normal.

However, our DCE shows that the general population attach a substantial value to a regular six-monthly check-up and this was the preferred option in the cost-benefit analysis. This study provides a clear example of the importance of presenting different perspectives of evaluation as they can lead to different conclusions. Determining the most appropriate perspective is a normative question that requires a judgement on what should be maximised (dental health, general health or societal welfare).

The INTERVAL study was funded by the NIHR (project number 06/35/99) and involved collaboration between HERU researchers (**Marjon van der Pol** and **Dwayne Boyers**) and colleagues at the Universities of Aberdeen and Dundee. The final project report is available on <http://bit.ly/3n0BZID>.

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)



Dental caries is preventable, yet it is the most common non-communicable disease worldwide. More people now retain their natural teeth into older age than ever before. Dentate older adults have extensive dental restorations due to a lack of fluoride when they were growing up. Combined with an ageing population, this means that dental health needs of older adults are becoming increasingly complex, and managing caries into older age is a growing public health concern. General dental practitioners are increasingly prescribing high-fluoride toothpaste to help prevent caries in the older population, at substantial cost to the NHS, but there is little evidence of the clinical or patient benefit.

REFLECT is a randomised controlled trial that aims to evaluate the effectiveness (need for caries treatment) and cost-benefit of prescribing high-dose (5000 ppm) fluoride toothpaste in addition to usual care, compared to usual care alone in adults, over the age of 50 who are at high risk of caries. The study involves approximately 1200 participants from approximately 60 dental practices in England, Scotland and Northern Ireland followed up for three years.

A DCE will be used to assess how patients and the general population value high dose fluoride toothpaste, and associated outcomes. A decision analysis model will describe the care pathway and the longer-term costs and benefits of preventing caries progression. DCE results will be integrated into the decision model by assigning willingness-to-pay (WTP) tariffs to model health states, enabling us to conduct a cost-benefit analysis. The study provides a unique methodological opportunity to compare the results of cost-effectiveness, cost-utility and cost-benefit analyses in a single study.

The trial team are busy engaging with dental practices and patients involved in the study to better understand how the pandemic has impacted on the provision of dental care and access to dental prescriptions. The findings from this work will be integrated into our final analyses.

The REFLECT study is funded by NIHR. HERU researchers (**Dwayne Boyers** and **Elisabet Jacobsen**) are working closely in collaboration with colleagues at the Universities of Aberdeen, Manchester, Dundee. Further details are available from the published <http://bit.ly/2JPbjfh>. The results of the study are expected to be available in 2023.

Selective Caries Removal In Permanent Teeth (SCRIPT)

REFLECT will help us to better understand how to prevent caries, but we still do not know how best to treat them when they occur. Most UK adults experience caries during their lives and 85% report that they have at least one restoration (filling). Having a restoration requires removal of diseased tooth tissues (caries) before placing a restoration to reconstruct the tooth. Current practice at UK dentists for treating deep carious lesions is usually complete, or near complete caries removal. In 2019/20, NHS England performed approximately 3 million permanent restorations. However, there is no evidence to support how much caries should be removed or what the benefit / risk trade-offs are between selective (removing some caries) and complete (all caries) removal.



SCRIPT is a pragmatic multi-centre two-arm patient randomised controlled trial in primary dental care in England and Scotland. We will recruit over 600 participants aged 12 and above, with deep carious lesions and follow them up for three years. The project will include a DCE to determine general population preferences for treatments and for the benefit / risk trade-offs associated with each intervention. We will build a decision model to determine which treatment provides the best long-term value for money. The model will be structured alongside the DCE to ensure that modelled health states capture clinical outcomes that are meaningful to patients.

The SCRIPT and REFLECT studies offer an exciting opportunity to build an economic evaluation care pathway from prevention through to treatment that can report clinical and patient meaningful outcomes. The projects will represent substantial progress towards developing a full disease model in caries prevention and treatment that can be used to address multiple economic evaluation questions and improve the efficiency of the treatment pathway in future.

The SCRIPT study involves HERU researchers (**Elisabet Jacobsen, Dwayne Boyers and Marjon van der Pol**) in collaboration with colleagues at the Universities of Aberdeen, Dundee and Sheffield. SCRIPT is funded by NIHR (project number: 17/127/07) and is currently in its start-up phase. Study results are expected to be available in 2024.

Recent HERU Blogs...

In October, we issued two blog posts to mark breast cancer awareness month. The first looked at our research into patient preferences for the treatment of secondary breast cancer. The other post looked at a recently completed study into the ActWELL programme which aims to encourage lifestyle changes to reduce the risk of breast cancer.



Other recent blog posts have included a feature on the 'Lives and livelihood' project on public preferences for government responses during a pandemic. The data collection for this project is almost complete and we hope the results can be presented early in 2021. The blog post has been updated with details of a protocol published in the BMJ Open journal. We also posted on the results of the BiCARB study. The study found no effect from sodium bicarbonate in older patients with chronic kidney disease and mild acidosis.

Our last post of the year highlights work on the staff Market Forces Factor used to calculate public sector resource allocations in England and Wales. The research highlighted the effects of the financial crash of 2008 on data used to make policy decisions. It is proposed that the COVID-19 pandemic presents a similar challenge to evidence-based decision-making.

You can catch up on all our Blog posts at: <https://www.abdn.ac.uk/heru/blog/>

EuHEA PhD Student & Supervisor Early Career Researcher Conference

Uma Thomas and Marjon van der Pol participated in the virtual EuHEA PhD Student and Early Career Researcher Conference in September organised by Erasmus University Rotterdam. Uma presented her PhD paper "A Time Preference Intervention to increase Physical Activity" and received excellent feedback from the discussant and audience. Marjon discussed Kirsty Garfield's (University of Bristol) paper on the development of a brief, generic, modular resource-use measure using cognitive interviews with patients. The online conference was very well organised and managed to retain the spirit of this excellent conference. Many thanks to the organisers.

Virtual external seminar

We miss the face-to-face presentations of our external seminar series and look forward to them beginning again, we hope, in 2021. Meanwhile though, the online environment gives an opportunity to invite people from around the globe to present their work.

In October, we welcomed Associate Professor Richard Norman of Curtin University in Perth, Australia, to deliver an online seminar. His presentation on 'Using DCEs to value health for economic evaluation: state of play and future challenges', was a great success.

Staff News...

Retirement of Professor Anne Ludbrook



Anne has worked at the University for 37 years, joining HERU as a Research Fellow in 1983. She was appointed as Deputy Director in 1984 and served as Director from 1987 to 1990. She also directed the HERU consultancy service in the 1990s and was a research theme leader in the area of health behaviour for many years. In 2006, Anne was awarded a Personal Chair in Health Economics at the University of Aberdeen. Anne has contributed enormously to the success of HERU, and the health of the population of Scotland and beyond. She will be missed, but we're delighted she will continue to contribute to HERU, with Emeritus status at the University.

Anne retired officially on 30th September and is very much looking forward to spending more time on various creative projects, volunteer and church activities plus travelling (COVID restrictions permitting!) with her husband.

Research Assistant Michael Abbott signs up for a PhD



Michael Abbott enrolled as a PhD student at HERU in September. Supervised by **Mandy Ryan** and **Rodolfo Hernández**, his PhD aims to build on the existing CSO-funded project, evaluating genomic sequencing for the diagnosis of rare conditions. Michael aims to assess public vs patient preferences for genome-wide sequencing using two Discrete Choice Experiments, and assess the policy impact of these two perspectives on the measurement and valuation of health outcomes.

In September we said farewell to... Dr Ourega-Zoé Ejebu, Dr Ruben Sakowsky and Dr Terry Porteous. We hope to have an opportunity to work with Terry again soon, drawing on her qualitative research skills to help develop DCEs. Zoé has joined the University of Southampton as a Research Fellow in the Health Workforce and Systems research group, and Ben has moved back to Germany to work as a Research Associate at the Institute for Ethics and History of Medicine in the University Medical Centre in Göttingen. We wish them all the best for the future!

New Funding

Diane Skatun and **Verity Watson**, along with L Locock, and Z Skea (Health Services Research Unit, University of Aberdeen), P Wilson (Centre for Rural Health, Other Applied Health Sciences, University of Aberdeen), P. Murchie, and R Hollock (Other Applied Health Sciences, University of Aberdeen) were recently awarded a Research Grant from The Scottish Government, Chief Scientist Office (CSO), entitled 'Enhancing Recruitment and retention of rural doctors in Scotland: A mixed-method Study'. Funding awarded is £294,187 and will be completed in 24 months.

Lucy Firth (University of Liverpool) and colleagues including **Verity Watson**, were recently awarded a research grant from UKRI Covid Call from the Economic and Social Research Council (ESRC). Over a 10-month period, this project will be 'Exploring remote working practices for patient public involvement and engagement in health and social care research – responding to Covid-19 and rising health inequalities'

Forthcoming online course...

We offer flexible online learning opportunities in health economics.

Our short course in *Health Economics* is offered via the University's On-Demand Learning programme. It runs for 11 weeks and the next start date is January 2021. More details of the course and information on how to sign up are available at:

<https://on.abdn.ac.uk/courses/health-economics/>

Discrete Choice Experiment course for 2021

Due to the COVID-19 restrictions we unfortunately had to cancel our discrete choice experiments course that was scheduled to take place in March 2021 in Banff, Canada. The course will now take place in March 2022, dates still to be finalised.

However, we are planning to run the course 'face-to-face' in Aberdeen from 29th September to 1st October 2021. Registration details for the 'Using Discrete Choice Experiments in health economics' course will be advertised when available. Please direct any enquiries to **Alison Findlay** (alison.findlay@abdn.ac.uk)

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