



WELCOME TO OUR SUMMER 2022 NEWSLETTER

We are pleased to share news of our recent successes and achievements at CHEME. Not least our performance in the recent Research Excellence Framework, where Bangor research was rated in the top 30 in the UK for societal impact. CHEME contributed to the University's UoA3 (subjects allied to health) submission, which indicated that 95% of our research is internationally-excellent or world-leading, and placed us 9th out of 89 institutions in terms of 4* and 3* outputs. Our research portfolio is both methodological and applied, and links closely with policy and education.

In this issue, we highlight research from across both groups within CHEME—our Pharmaceutical Economics, Policy and Prescribing Research (PEPPER) group, and the Public Health and Prevention Economics Research Group (PHERG).

 As always, to keep up-to-date with our news and activities, follow us on Twitter @CHEMEBangor, @HughesDyfrig, @ProfRTEdwards

Professors Dyfrig Hughes & Rhiannon Tudor Edwards, CHEME co-directors

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Developments in teaching and learning

We have partnered with the Intensive Learning Academy (Alphacademy) for the delivery of our taught courses in Public Health Economics and in Pharmacoeconomics. This initiative makes Wales the first country in the world to launch specialised ILAs that will deliver transformation across preventative health, value-based health and care, and innovations in health and social care.

CHEME staff are also involved in a number of teaching initiatives, including the development of a BSc in Pharmacology which includes—as a first in the UK—a module on pharmaceutical economics and policy. Our MSc's by Research (MScRes) in Pharmacoeconomics and in Health Economics continue to attract full and part-time students who wish to learn about the disciplines by conducting research.

Our postgraduate research programme encompasses regular PhDs, and we welcome Dr Dmytro Babelyuk and Dr Vladyslav Kulikov from Ukraine who are studying under the supervision of Professor Rhiannon Tudor Edwards; and the MRC Doctoral Training Programme, as part of the Trials Methodological Research Partnership. The second round of recruitment for the DTP programme will be announced later this year.

Evaluating The Outdoor Partnership's 'Opening Doors to the Outdoors' (ODO) Programme

HCEC research officers, Dr Holly Whitely and Abraham Makanjuola at Bangor University are collaborating with The Outdoor Partnership and Accelerate Wales to evaluate the



impact of the 'Opening Doors to the Outdoors' (ODO) Programme. ODO is a social prescribing programme which works with local GP clusters and Community Mental Health Teams in Gwynedd and Anglesey. The programme will recruit sixty participants to attend one four-hour ODO

session per week for twelve weeks with the aim of improving physical and mental well-being through outdoor activities. Within six North Wales locations, participants will take part in activities such as low-level walking with options for doing other activities such as e-biking, climbing and paddle sports. All activities will be accessible and include time for socialisation (i.e., stop for a picnic and a visit to a café). Participants will be encouraged to connect with each other and develop friendships.

A social return on investment framework will be used to evaluate ODO, by measuring the scale of improved mental and physical wellbeing for every £1 invested in ODO.

The economic costs of perinatal anxiety: The MAP ALLIANCE study

It has been estimated that perinatal mental health problems affect 1 in 5 women and can have a long-term impact on the child. Professor Rhiannon Tudor Edwards, Dr Lorna Tuersley, Dr Llinos Haf Spencer and Kalpa Pisavadia are undertaking an analysis of economic costs of perinatal anxiety and health service as part of the MAP ALLIANCE study. This mixed-methods research study, funded by the NIHR Health Services delivery and Research Programme, is being conducted in England and Scotland, led by Professor Susan Ayers of City, University of London along with co-investigators at the University of Stirling. The analysis will use information obtained from four work packages including self-report surveys at intervals post-natally from women with and without perinatal anxiety and associated disorders. Other work packages will examine primary care records, and involve in-depth qualitative interviews with women experiencing these problems and with health professionals and commissioners. It is hoped that this study will assist NHS commissioners and providers in the design and transformation of services, leading to better care and improved maternal and child outcomes.

The Taxing Twilight: Economeg Iechyd Gogledd Cymru Webinar

Professor Rhiannon Tudor Edwards, co-director of the Centre for Health Economics and Medicines Evaluation (CHEME), was invited to speak at a joint event between Bangor University and the Institute for Welsh Affairs (IWA). Rhiannon's presentation explored what a declining working-age population in North Wales means for future resilience economically, socially and in terms of our health, well-being and well-becoming.

North Wales has a lot to offer in terms of agriculture, employment, a stable learning economy, and as a tourism destination. There are various opportunities for work in hospitality, green energy, and the digital economy. Rhiannon spoke of the importance of promoting resilience for the working-age population now and in the future by supporting infrastructure, training, and further education within these industries.



Rhiannon recommended the following ways to promote resilience:

- Recognise the impact of rising fuel costs on the rural population and improve transport so that people can commute to work
- Create opportunities for businesses in North Wales
- Promote university education or industry training for young people
- Promote green energy such as local energy schemes
- Support local planning, for example, Cwmni Bro Ffestiniog is leading economic regeneration locally in the Blaenau Ffestiniog area. They are pioneering a way of creating an environmental, economic, social, cultural and educational future for their local community
- Welcome refugees who will enhance our economy and enrich our culture

New blog series from CHEME Bangor University: [Health Economics of Well-becoming](https://cheme.bangor.ac.uk/researcher-blog)

Applying a well-becoming lens through the life-course through all the health economics studies we do at the Public Health Economics Research Group here at CHEME—we have launched a new blog, accessible via: <https://cheme.bangor.ac.uk/researcher-blog>

GENEGUT

Professor Dyfrig Hughes is collaborating with partners across Europe on the €5.44m GENEGUT project as part of the Horizon 2021 programme. This project is led from University College Cork, and aims to develop a first-in-class oral RNA-based therapy, for the treatment of ileal Crohn's disease. The success of mRNA COVID-19 vaccines demonstrated the potential of RNA-based therapies; the challenge within this project is to extend this revolutionary therapeutic modality to non-communicable diseases where RNA delivery has not been achieved. The Pharmaceutical Economics, Policy and Prescribing Research group at CHEME will be undertaking early economic evaluations, establishing a value-based price, and determining potential budgetary impact of a new RNA-based treatment.



CARiAD project

Huw Lloyd-Williams has started work on evaluating the CARiAD intervention alongside Dr Marlise Poolman and Professor Dyfrig Hughes. This intervention concerns CARer ADministration of as-needed subcutaneous medication for common breakthrough symptoms in people wishing to die at home. The project will combine data from routine care and from the CARiAD pilot study within a decision analytic model to estimate its cost-effectiveness.



RENAL-HF Personalising renal function monitoring and interventions in people living with heart failure

People with heart failure are at risk of renal deterioration. This is potentially preventable through regular renal function monitoring and optimisation of drug dose/choice. However, healthcare professionals lack evidence-based guidance on how frequently to monitor renal function and on the best way to adjust drug dose/choice for each patient. The NIHR-funded (£2.5m) RENAL-HF project, led from the University of Liverpool, aims to develop such guidance using an algorithm to predict changes in renal function; co-create the clinical pathway for implementing personalised renal function monitoring and interventions; and to assess the clinical- and cost-effectiveness of a new algorithm-guided clinical pathway.

Pharmacogenomics

Pharmacogenomics is concerned with how people's genetic attributes affect their likely response to medicines. Professor Dyfrig Hughes, Dr Catrin Plumpton and Dr Emily Holmes have led a programme of research concerning the economics of testing for pharmacogenes implicated in adverse drug reactions and therapeutic outcomes. These have included evaluations of single gene tests for *HLA-B*57:01* (abacavir), *CYP2C9* and *VKORC1* (warfarin), *CYP2C19* (clopidogrel), *UGT1A1* (irinotecan), *HLA-B*58:01* (allopurinol), *DPYD* (fluoropyrimidines) and *HLA-A*31:01* (carbamazepine). This research led to the development and application of methods for estimating the cost-effectiveness of multi-gene panels.

Drs Catrin Plumpton, Blanca Gray and Pippa Anderson are working on projects to estimate the cost-effectiveness of a pharmacogenetic panel test, and to assess and develop methods for making informed decisions about the prioritisation and commissioning of genomic tests. These projects are funded by Genomics Partnership Wales and by the Welsh Health Specialised Services Committee.



Professor Dyfrig Hughes was appointed to chair the National Pharmacogenomics Group, tasked by the Chief Pharmaceutical Officer for Wales to introduce a Pharmacogenomics service for NHS Wales. He also co-chairs the Pharmacogenomics Test Evaluation Working Group for NHS England and NHS Improvement, to determine which pharmacogenomic tests are to be commissioned by the NHS via their inclusion in the Genomics Test Directory.

Congratulations

Congratulations to Dr Lucy Bryning who was awarded her PhD in Health Economics at CHEME. She held a Tenovus studentship and was supervised by Professor Rhiannon Tudor Edwards and Professor Rebecca Crane.

Also to Dr Emily Holmes who was selected to participate in the Aurora Leadership Programme, and in the Welsh Crucible programme of personal, professional and leadership development for the future research leaders of Wales.

ABOUT PEOPLE

Jacob Davies

Jacob joined CHEME as a Research Project Support Officer in January after working in the Welsh Government's Technical Advisory Cell. Jacob is conducting his MScRes in Health Economics under the supervision of Professor Rhiannon Tudor Edwards, focusing on the elective care backlog in Wales resulting from the COVID-19 pandemic.



Rachel Granger

Rachel has joined CHEME as a Research Project Support Officer and has an interest in non-pharmacological approaches to managing long-term physical and mental health and chronic health conditions.



Rhys Beynon

Rhys joined CHEME in April. Rhys is a consultant cardiologist working in Stoke with an interest in genomic medicine. He is conducting a part-time MScRes under the supervision of Professor Dyfrig Hughes, focusing on CYP2C19 testing in patients with cardiovascular disease.



Blanca Gray

Blanca joined CHEME as a Research Project Support Officer in June. Blanca is participating in the economics and commissioning of gene-based diagnostics and therapies and supporting economic evaluations in paediatric clinical trials. Blanca previously worked as a Research Fellow at the University of Aberdeen in the Health Economics Research Unit (HERU).



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RECENT PUBLICATIONS

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