



## WELCOME TO OUR WINTER 2022/23 NEWSLETTER

At the Centre for Health Economics and Medicines Evaluation (CHEME), we celebrate diversity in its many forms. We are proud of our international student and staff community, and our increasing research focus on international health.

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).

Some highlights include findings of the NIHR Global Health Research Group on warfarin anticoagulation in patients with cardiovascular disease in Sub-Saharan Africa (War-PATH study), and the Horizon Europe Invest4Health project on mobilising novel finance models for health promotion and disease prevention.



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

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

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## Celebrating 20 years of the AWMSG

The All Wales Medicines Strategy Group (AWMSG) held its twentieth anniversary celebratory event at the Cardiff City football stadium. Speakers included Eluned Morgan, Minister for Health and Social Services, Samantha Roberts and Meindert Boysen from NICE, and Dame June Raine MHRA Chief Executive. As chair of the National Pharmacogenomics Group, Professor Dyfrig Hughes presented on Delivering Precision Medicines Through Pharmacogenomics. The event was closed with a rendition of popular Welsh songs by Only Men Aloud.

CHEME has contributed to the health technology assessment functions of the AWMSG since its very beginnings. Eifiona Wood is the senior health economist researcher within our group leading on assessment reviews.



## RESEARCH

### Costs of adverse drug reactions

Professor Dyfrig Hughes, in collaboration with researchers at the University of Liverpool, has estimated the costs of hospital admissions resulting from harms caused by medicines. A review of 1187 medical admissions to the Liverpool University Hospitals NHS Foundation Trust across a one month period in 2019 found that 16.5% of admissions are caused by, or complicated by, an adverse drug reaction (ADR). The analysis indicated that £1 in every £8 spent on the care of non-elected hospital admissions relate to the management of ADRs. Extrapolated to the NHS in England, this is equivalent to £2.2 billion annually. The scale of the problem suggests that there is still much to be done to improve prescribing.

### The War-PATH study

Warfarin is a commonly used oral anticoagulant with a low therapeutic index. A key objective of the War-PATH study is to engage with health policymakers and commercial providers to develop technologies such as point-of-care testing and make 1mg warfarin tablets available in public healthcare systems. We developed pharmacometric models to simulate the effect of the availability of 1mg tablets on the time in therapeutic range, whether tablets are split and if patients are adherence to daily doses. The simulation study showed that there may be significant benefits associated with introducing 1mg tablets through more precise dosing. Giovanna Culeddu is currently undertaking an economic evaluation of a warfarin 'bundle' (mixed methods approach to improve anticoagulation quality).

## NEWS

### 6<sup>th</sup> Rural Health and Care Wales Conference

Vladyslav Kulikov, Dmytro Babelyuk, and Dr Holly Whiteley attended the 6th Rural Health and Care Wales Conference. The event was held at the Royal Welsh showground in Builth Wells, a Powys town, with Llandrindod Wells nearby voted the happiest place in Wales by Rightmove for three years in a row. During the two days of the conference, attendees listened to presentations from representatives of the three local Health Boards (Hywel Dda, Powys, and Betsi Cadwaladr), presented their posters, and networked with in-person participants. Issues of staffing and education in rural communities received much attention at this year's RHCW.



## Applied Health Economics for Public Health Practice and Research, a collaborative online course by CHEME and the ILA, ALPHA Academy

CHEME and the Applied Learning for Preventative Health Academy (ALPHAcademy) at Bangor University hosted a free two-day course. This short course included presentations on various methods of economic evaluation by internal and external experts and was designed to accompany the textbook Applied Health Economics for Public Health Practice and Research, co-authored by Professor Rhiannon Tudor Edwards and Professor Emma McIntosh.

The course attracted over 150 delegates worldwide from around 60 organisations. This was an interactive course, providing networking opportunities that could lead to future collaborations. It is anticipated that the short course will be run again in the near future.

### Successful 'Invest4Health' Horizon Europe funding bid: financing sustainable health promotion and disease prevention

Professor Rhiannon Tudor Edwards and Dr Holly Whiteley recently contributed to the Health Economics element of a successful Horizon Europe funding bid: 'Invest4Health: Mobilising novel finance models for health promotion and disease prevention'. 'Invest4Health' aims to investigate new ways of incentivising and financing health promotion and disease prevention where the financial benefits to health and other sectors outweigh the initial costs and give a sustainable return on investment – known as Smart Capacitating Investment (SCI). Current challenges to health promotion and disease prevention include increasing pressure for services against a significant backlog of delayed care due to the COVID-19 pandemic and shrinking resources.

'Invest4Health' will bring together stakeholders across healthcare ecosystems to plan and finance health promotion and disease prevention at population, community and individual levels to facilitate a paradigm-shift from hospital-centred to community-based, people-centred and integrated services. This international project will develop and test models, alternative governance mechanisms and tools with decision-and-policy makers and citizen panels that aim to facilitate SCI in health promotion and prevention and deliver the right intervention/service to the right population/group/individual at the right time. Current challenges to health promotion and disease prevention include increasing pressure for services against a significant backlog of delayed care due to the COVID-19 pandemic and shrinking resources. 'Invest4Health' will bring together stakeholders across healthcare ecosystems to plan and finance health promotion and disease prevention at population, community and individual levels to facilitate a paradigm-shift from hospital-centred to community-based, people-centred and integrated services. This international project will develop and test models, alternative governance mechanisms and tools with decision and policy makers and citizen panels that aim to facilitate SCI in health promotion and prevention and deliver the right intervention/service to the right population/group/individual at the right time.

## University of York: MSc Health Economics Student Placements 2022

CHEME was pleased to host Libby Rhodes on her University of York MSc Health Economics Student Placement in 2022. Libby worked with Emily, Catrin and Dyfrig on a Patient-Focused Benefit-Risk Assessment of New versus Standard Anti-Seizure Medication (ASM), weighting new clinical evidence from the NIHR SANAD II trial using patient preferences derived from a discrete choice experiment (DCE).

## Bangor University Antimicrobial Resistance Interest Group: Engagement Project

Dr Emily Holmes and Professor Dyfrig Hughes, on behalf of Bangor University Antimicrobial Resistance (AMR) Research Interest Group, received the Bangor University Innovation and Impact Award to encourage engagement in AMR research. Antimicrobial resistance (AMR) is a global challenge to human and animal health requiring an interdisciplinary approach to research. The Aim of the Bangor University AMR Interest Group is to advance interdisciplinary research, within the theme of AMR, and to promote the use of this research in policy and practice. Funding will support engagement activities that will encourage new collaborations, strengthen existing partnerships, and ensure research with impact.

## Welsh Crucible

Dr Emily Holmes, Senior Research Fellow in Pharmacoeconomics, recently participated in the Welsh Crucible—an award-winning programme of personal, professional and leadership development for the future research leaders of Wales. Now in its tenth year, the programme facilitates and promotes research-inspired innovation and cross-disciplinary collaboration in Wales. Each year, thirty researchers from across Wales are selected to participate in a series of residential workshops or 'skills labs' where they explore how they can benefit from working with researchers in other disciplines, how their research can have greater impact, and how they can build international research careers in Wales.

## Supporting People Living with a Rare Dementia Conference

The Dementia Services Development Centre (DSDC) Wales Research Centre organised and delivered yet another fantastic event for people living with dementia, their carers and health and care professionals. Fifty-two CPD certificates were issued following the event. Delegates reported being more informed about rare dementias and the support available following the research and lived experience presentations. Professor Rhiannon Tudor Edwards and Dr Victory Ezeofor gave presentations on the economics of rare dementia and the methodological challenges of undertaking economic evaluation and the need for a wider perspective on the identification, measurement and valuation of costs and outcomes to a range of stakeholders including informal carers.



## Away Days

Members of both the PHERG and PEPPER research groups took time off to recharge and focus on plans and ideas for the year ahead. Taking advantage of favourable weather, the groups visited Ogwen, and walked a costal path to Penmon—two beautiful locations.



## Conferences

**Clinical Pharmacology Colloquium** - Dr Catrin Plumpton presented on the "Cost-effectiveness of pharmacogenetic testing in Wales" at the July meeting, and Yankier Pijeira Perez presented on "Evidence following NICE only in/with research recommendations" at the January meeting hosted at Bangor.

**International Clinical Trials Methodology Conference** - Dr Catrin Plumpton was a member of the education committee for the 2022 conference, and attended the meeting in Harrogate in October.

**Wales Eye Care Conference 2022** - Dr Ned Hartfield and Professor Rhiannon Tudor Edwards produced a video and received excellent feedback from the audience of the work undertaken. Dafydd Eckley from the North Wales Society of the Blind spoke after the video reiterating the importance of the work and the impact it has had in regard to access to counselling services for people experiencing visually impairment. Forty-seven people have benefited from the counselling service so far. The report will be available shortly.

## ABOUT PEOPLE

### Laura Lynch

Laura studied her BA in Health and Social Care followed by a Masters in Sociology at Bangor University.

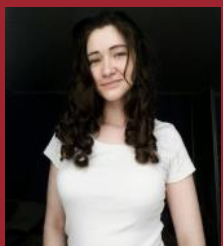


### (Pim) Kodchawan Doungsong

Kodchawan has joined CHEME as a Research Project Support officer. Pim is a pharmacist and recently completed her Master's degree in Public Health and Health Promotion. She is interested in medical and health science.

### Mohammed Albustami

Mohammed has joined CHEME as a Research Officer in Health Economics and has an interest to contribute to applied economic evaluations of health technologies and health behaviour interventions for the purpose of informing policy and practice, and to pursue methodological developments in this area of research.



### Kristina Rachynska

Kristina has recently joined CHEME as a Research Project Support Officer. She is currently assisting Dr Holly Whiteley with the KiVa anti-bullying project.

### Non Davies

Non Davies has joined CHEME as an MScRes student, under the supervision of Professor Dyfrig Hughes. Her Masters is funded by KESS2 East and is in partnership with the Wrexham-based digital health company 'Aparito'.



## RECENT PUBLICATIONS

Dima AL, Allemann SS, Dunbar-Jacob J, Hughes DA, Vrijens B, Wilson IB. Methodological considerations on estimating medication adherence from self-report, electronic monitoring and electronic healthcare databases using the TEOS framework. *Br J Clin Pharmacol*. 2022 May 2. doi: 10.1111/bcp.15375.

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Gillespie D, Couzens Z, de Bruin M, Hughes DA, Jones A, Ma R, Williams A, Wood F, Blee K, Bradshaw HS, Drayton R, Knapper C, Hood K. PrEP Use, Sexual Behaviour, and PrEP Adherence Among Men who have Sex with Men Living in Wales Prior to and During the COVID-19 Pandemic. *AIDS Behav*. 2022 Aug;26(8):2746-2757.

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