2022 - 2023
Annual report
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Health and care economics enables us to understand how we can allocate our limited resources to achieve maximum benefit to meet the health and care needs for the people of Wales. This is particularly important in the current health and care landscape which faces unprecedented challenges as we recover from the COVID-19 pandemic and manage the cost-of-living crisis and wider threats such as climate change, alongside the on-going tasks of reducing health and social inequalities.

Welcome to the 2022/23 Health and Care Economics Cymru (HCEC) report!

In our third year, we ‘upped our game’ in positively impacting the health and care research landscape in Wales, the UK and globally. We achieved considerable growth as an infrastructure group, more than doubling our research income compared to the previous year (see page 3). In the last year, we became Welsh principal investigators on five grants and co-investigators on twelve, we strengthened our collaborations (pages 28-30), research outputs (pages 26-27) and public involvement and engagement (pages 16-17) and welcomed new members to the health and care economics community in Wales (page 28).

In this report, we are delighted to showcase our local, national and international activities and our growing impact and contribution to research in Wales and beyond.

The HCEC Co-Directors, Prof. Deb Fitzsimmons and Prof. Rhiannon Tudor Edwards welcoming Prof. Murray Smith at Aberystwyth University to the community of health economists in Wales.
Our 2022/23 key metrics are summarised in the infographic below:

### Health and Care Research Wales infrastructure award to the group
- Direct funding awarded: **£383k**
- Jobs created through direct funding: **6**

#### Grants won during reporting period

<table>
<thead>
<tr>
<th>Grants won</th>
<th>Led by group</th>
<th>Group collaborating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Value</td>
<td>£4.9m</td>
<td>£14.4m</td>
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<tr>
<td>Funding to Wales</td>
<td>£569k</td>
<td>£12.4m</td>
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<tr>
<td>Funding to group</td>
<td>£355k</td>
<td>£1.2m</td>
</tr>
<tr>
<td>Additional jobs created for Wales</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td>Additional jobs created for group</td>
<td>5</td>
<td>5</td>
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### HCEC IS UPPING ITS GAME

In the last year, we more than doubled the overall value of our grants won from £8.4 million in 2021/22 to **£19.3 million in 2022/23**. Group-led awards have increased by more than 10-times from £405,000 in 2021/22 to £4.9 million in 2022/23, with an 80% boost in the value of bids we collaborate on. We significantly grew the amount of funding we brought to Wales (from £5.5 million in 2021/22 to £12.9 million in 2022/23) and to our group (from £902,000 to £1.6 million) and increased the number of additional jobs created. We have maintained our usual high level of outputs and increased the number of publications in high impact journals.
During 2022/23, our vibrant and motivated all-Wales team demonstrated considerable growth in research income, impact and capacity of health economics in Wales. We are proud to showcase our achievements and our vision for the future.

The positive headlines of our increasing contribution and impact in 2022/23 are underpinned by how we demonstrate how HCEC's work matters to the health and care landscape of Wales and the people it serves. In this year’s report, we showcase our best examples of how we led and supported interdisciplinary research efforts and shared our wealth of health economics expertise to advice and support health and care decision-making across Wales and beyond.

Our partnership on a Horizon Europe award, the £4.6 million Invest4Health project aimed to incentivise new ways of financing health promotion and disease prevention, evidences our growing ambition and focus on prevention and well-being (see pages 8–9). We also highlight our long-term all-Wales collaboration programme in vision science to help improve eye services across Wales (pages 10–11). As we continue to advance our work in social care economics, facilitated through our Social Value Hub, we share examples that, alongside people, the concept of place is a growing area of attention in order to tackle health and social inequalities, prevent ill-health and promote well-being.

Compared to our first two years, we considerably increased the amount of our successful awards:

In this report, we share with you our strongest research outputs, with 22 papers in leading peer review journals such as the European Journal of Cancer and the British Journal of Surgery (pages 26–27). Our public involvement and engagement work continues to thrive, with greater emphasis on ensuring we co-produce our research from the outset with our public contributors (pages 16–17).

We hope you'll enjoy reading it.
Health economics is the study of how we use scarce resources to meet the health and social care needs of the population. When resources are limited, we need to make difficult choices on where and how to allocate our resources to get the maximum benefit for the health and well-being of populations. Health economics applies the principles of economic theory and robust frameworks of methods and analyses to provide evidence on the cost-effective use of resources in health and care decision-making.

Find out more about what we do and how we can help on our website: https://healthandcareeconomics.cymru/
WHO WE ARE

Health and Care Economics Cymru (HCEC) is an all-Wales collaborative research infrastructure group funded by Welsh Government via Health and Care Research Wales. Our aim is to deliver world-class excellence in health economics research, its methodology and application.

We strive to sustain and grow a community of health economics experts in Wales, with strong collaborations across the health and care sector, that makes a positive difference to health and care research and the people who benefit from it. In this way, we contribute to the generation of high-quality evidence that is crucial to make the best possible decisions to improve health and care outcomes for the people in Wales and beyond.

OUR MISSION

‘To provide world-class health economics expertise (collectively harnessing an agile, integrated all-Wales approach) to enable excellent health and social care research and development in Wales to the benefit of patients, the public and the economy’.

We accomplish our mission through our 5-year objectives to:

1. Achieve a strategic, collaborative all-Wales direction for health economics, aligned to priorities for Wales.
2. Ensure Patient and Public Involvement and Engagement is central to our activities.
3. Provide easy access to health economics support for researchers working within the Health and Care Research Wales infrastructure.
4. Optimise collaboration with the health and care research community in Wales and beyond to ensure we lead and contribute to the generation of the best evidence possible to support decision-making.
5. Provide experienced, needs-based advice and support to decision-making, policy formulation and analysis through targeted support to Welsh committees.
6. Enhance capacity and capability across the health economics community in Wales through developing all-Wales methodological activities with particular focus on prevention and growing social care economics.
7. Increase awareness and engagement in the use and value of health economics research within the health and care community.
THE HCEC TEAM

We are proud to operate an inclusive and collaborative model of working across Wales that draws on a rich and diverse community of health economic expertise. Led by our successful Co-Directorship model across health economic academic units based at Bangor and Swansea Universities, our management board includes several early and mid-career researchers who have delegated responsibilities to lead areas of our activities ensuring continuity of research expertise and leadership in Wales.

OUR HCEC CO-DIRECTORS

Prof. Rhiannon Tudor Edwards (left)
Centre for Health Economics and Medicines Evaluation (CHEmE), Bangor University

Prof. Deb Fitzsimmons (right)
Swansea Centre for Health Economics (SCHE), Swansea University

OUR HCEC ORGANISATION

Advisory Board
Independent Chair: Prof. Steve Morris (University Cambridge)
Independent Co-Chair: Prof. Monica Busse-Morris (Cardiff University)
Karen Harrington (Public contributor), Nathan Davies (Public contributor), Dr Brendan Collins (Welsh Government), Dr Lisa Trigg (Social Care Wales), Prof. Ceri Phillips (Cardiff and Vale UHB/Swansea University), Dr Angela Boland (University of Liverpool), Prof. Rod Taylor (University of Glasgow)

HCEC Management Board

Co-Directors: Prof. Deb Fitzsimmons
Prof. Rhiannon Tudor Edwards

Co-Investigators: Prof. Dyfrig Hughes, Dr Pippa Anderson, Dr Berni Sewell

Project Managers: Jacob Davies, Dr Liv Kosnes (until October 2022)

Administrators: Ann Lawton, Emma Baker, Alicia Evans

HCEC Researchers
(All staff are supported by multiple funders)

Dr Victory Ezeotor, Abraham Makanjuola, Dr Holly Whiteley, Dr Bethany Anthony, Dr Huw Lloyd Williams

Julia Lowin, Dr Yang Zhou, Rebecca Summers, Rhys Pockett, Dr Nad Hartfie, Laura Lynch, (Pim) Kadhawan Doungsong
During 2022/23, our emphasis was on ‘ambition and growth’ with a firm focus on well-being and well-becoming for people and communities across Wales.

**HIGHLIGHTS OF OUR GROWING IMPACT**

**MOBILISING NOVEL FINANCE MODELS FOR HEALTH PROMOTION AND DISEASE PREVENTION**

HCEC is partnering in international collaborative research investigating financing prevention interventions to tackle avoidable ill-health, disability and premature death: the Invest4Health Horizon Europe Project.

What was the question that HCEC could help with?

Healthcare systems are challenged by growing demand and increasing pressure on limited resources, exacerbated by a significant backlog of delayed care due to the COVID-19 pandemic. Novel ways of financing health promotion and disease prevention, known as smart capacitating investment (SCI), yield a sustainable return on investment with financial benefits to health and other sectors found to outweigh the initial costs.

The Invest4Health Horizon Europe project, which started in March 2023, will develop and test models, alternative governance mechanisms and tools with decision- and policy-makers and citizen panels that facilitate SCI in health promotion and prevention and deliver the right intervention or service to the right people at the right time.

The study received £4.6 million in funding with £288,353 coming to Wales and HCEC. Its focus is to bring stakeholders across healthcare ecosystems together to plan and finance health promotion and disease prevention at population, community and individual levels in a way that creates a paradigm shift from hospital-centred to community-based, people-centred, and integrated services.
What will we do?
HCEC researchers at the Centre for Health Economics and Medicines Evaluation (CHAME) will contribute to the health economics and reviewing elements of this project. With an interdisciplinary approach, Invest4Health will calibrate and harmonise three main work streams: developing functional prototype models of smart capacitating investment, iterative testing in real-world environments and preparing a social franchising package for large-scale demonstration.

What is the expected impact?
The Invest4Health project will generate concrete outcomes and impacts for further development and uptake of SCI. This will help to relieve pressure on healthcare systems and the way they are financed. It will also promote equitable decision-making to improve the health and well-being of vulnerable groups and support people to be healthier and more resilient during future pandemics and crises. This aligns with the Welsh Government plan for health and social care, 'A Healthier Wales'.

Our Global Recognition in Leading Health Economics Research

We are proud to announce that, in a recent bibliographic study of health economics research from 1975–2022, Prof. Rhiannon Tudor Edwards was identified as one of the top 5 world-leading authors of health economics publications who have been cited in the literature, placing Bangor University in the top 10 most collaborative Higher Education Institutions in health economics.

Our Growing International Profile in Patient Reported Outcomes in Cancer

Prof. Deb Fitzsimmons is last author and originator on the update of the globally recognised European Organisation for Research and Treatment of Cancer (EORTC) manual for Quality of Life (QoL) questionnaire development. She is involved in several methodological and international projects providing Quality of Life measurement expertise and submitted evidence to a recent United States Food and Drug Administration workshop on measuring symptom burden. She holds a QoL liaison role with the EORTC gastro-intestinal groups and is mentoring post-doctoral QoL researchers based at the Universities of Innsbruck, Austria, and Saarbrücken, Germany.
Good Vision for the Future

HCEC’s Collaborations within Ophthalmology and Vision Science Across Wales and the UK

Eye services in Wales struggled to cope with demand even before COVID-19. Many patients waited over two years for an ophthalmology secondary care appointment, and as a result experienced irreversible sight loss. The pressing need to reconfigure these services to improve patient care and outcomes, bring care closer to home and alleviate pressure on hospital services has since been significantly aggravated by the pandemic. It is now more important than ever to invest in interdisciplinary research that provides evidence to support the implementation of more efficient and cost-effective eye services in Wales and beyond.

Over the past decade, and with support from Health and Care Research Wales, HCEC researchers have built expertise, credibility, capacity and networks across Wales to grow a crucial evidence base to support decision-making in ophthalmology. We collaborated with Cardiff University’s School of Optometry and Vision Science, the University of South Wales, Optometry Wales and third-sector organisations. Together, we applied mixed-method approaches to integrate both health and social care expertise to deliver an established programme of research answering important questions for eye services in Wales. The networks and relationships forged during this time, and the evidence generated have already helped to put Welsh ophthalmology research and services at the cutting edge, providing better, more efficiently run eye services for the NHS and the people it serves in Wales.
EVALUATING NEW TREATMENT OPTIONS FOR SERIOUS, RARE COMPLICATIONS OF AMD

Some people with wet age-related macular degeneration (AMD) develop a submacular haemorrhage (SMH), a large clot in the back of their eye which can cause permanent vision loss. HCEC researchers at CHEME will undertake the health economic evaluation alongside the TIGER study to establish if surgery to clear SMH is cost-effective.

Together with patients and service users and Liverpool St. Paul’s Eye Unit, we will create and maintain an online, open-access repository of Vision Related Quality of Life measures. Furthermore, this collaboration will enable the development of research infrastructure capacity in health economics, so we can continue to grow our existing strong working relationships in the area of ophthalmology.

MOVING EYE SERVICES TO THE COMMUNITY

Traditionally, monitoring and referral of glaucoma and AMD is undertaken in hospital, with long waiting times that reduce patient quality of life and vision outcomes. Funded by Health and Care Research Wales, HCEC researchers at SCHE used discrete event simulation models to evaluate the cost-effectiveness and impact on patients of alternative care models where patient monitoring is moved to primary care and high street optometrists who can decide whether to refer a patient to hospital eye services or treat them in the community. According to our results, moving hospital eye services to the community saves money with no negative impact on patient outcomes. Waiting times for patients in the primary care setting are substantially lower than for hospital services and fewer people are added to the ophthalmology waiting lists when community pathways are in place. Therefore, this service provides both value for money and helps to reduce secondary care burden. Our results are now being shared with decision-makers across Wales to support evidence-based service planning as the contract reform for optometry services in Wales is being rolled out.
UPDATES ON OUR WORK PACKAGES

Our objectives (see page 6) are supported by four work packages and five cross-cutting themes:

1. **COLLABORATION**
   - Optimise collaboration with health and social care researchers through an all-Wales health economics community of expertise.
   - **Cross-Cutting Theme:** Engage with Welsh Government infrastructure

2. **INVolVEMENT**
   - Patient and Public Involvement and Engagement.
   - **Cross-Cutting Theme:** Communications and knowledge transfer

3a. **SUPPORT**
   - Delivery of health economics advice and support to health and social care organisations against Welsh Government priorities and needs.
   - **Cross-Cutting Theme:** Social care, third sector and the public sector

3b. **CONTRIBUTION**
   - Contributing health economics expertise to decision-making and policy formulation.
   - **Cross-Cutting Theme:** Commercial engagement and collaboration

4. **GROWTH**
   - Building capacity and capability in methodological and applied health economics research to position HCEC across the health economics community.
   - **Cross-Cutting Theme:** Impact

We thank all members of our HCEC team for their contribution, dedication and enthusiasm in delivering our work packages. We truly appreciate their support and collegiality towards each other, the Co-Directors and the wider community. They ensure HCEC has remained resilient to all the challenges over the past few years and can now grow and engage with new opportunities. Special thanks also to all our collaborators with whom we have had the privilege to work in the past year.
The following case studies showcase the increase in impact HCEC achieved in each of our work packages during 2022/23.

The last year has been successful for HCEC and we ensure we have a proven approach and pathway to continue to provide return on investment now and in the future.

We are indebted for the continued support from our public contributors and our Advisory Board who productively scrutinise our activities to ensure we are delivering world-class research in our field and showing a clear trajectory of progress with our ambitions.

We thank Health and Care Research Wales for their investment and support to us as an infrastructure group.

We also thank all of you, our valued stakeholders across the wider health and care community. We are excited for the opportunities ahead as we commit our next two years and beyond to supporting Health and Care Research Wales in their plan for improving health and care research in Wales.

Thank you!
The ODO programme is an excellent example of the value of social prescribing. It is expected that participants will experience improved mental well-being, physical fitness, and employability skills. They may also benefit from improved relationships with loved ones due to improved mental well-being, and improved community cohesion. Furthermore, social prescribing can help reduce the demand on the scarce resources of the health and social care system.

Promoting exercise in nature to improve mental health and wellbeing - a social return on investment study

What was the question that HCEC could help with?
According to Public Health Wales, 30% of adults in Wales spend less than half an hour a week being active. The NHS in Wales spent £35 million treating preventable diseases caused by physical inactivity in 2015 and 28% of people in Wales reported severe mental health problems during the COVID-19 pandemic. People who suffer from long-term mental health issues have a shorter life expectancy, often due to a sedentary lifestyle and neglect of their physical health. Greater physical activity leads to increased well-being and quality of life and reduced depressive symptoms, anxiety, and stress. The Outdoor Partnership’s ‘Opening Doors to the Outdoors’ (ODO) Programme consists of twelve sessions of low-level walking or climbing in nature. ODO aims to increase activity levels of people in North Wales suffering from poor mental health, helping them build motivation, confidence, self-esteem, physical fitness, and quality of life in a supportive environment.

What are we doing?
Sponsored by Accelerate Wales and part-funded by the European Regional Development Fund, HCEC researchers at CHEME used social return on investment (SROI) methodology to determine the range of SROI ratios for the ODO programme. Participants completed questionnaires on health service resource use, weekly physical activity, and mental well-being and attended semi-structured interviews to capture the full impact of the ODO intervention in their lives. The ODO intervention aligns with priority four of the Welsh Government’s Together for Mental Health Action Plan for 2019-2022, which seeks to improve the quality and range of therapies available to people in Wales.
**Supporting people affected by genetic and non-memory led dementias - the GNMLD-TALK study**

**What was the question that HCEC could help with?**
Rarer dementias affect around 115,000 people in the UK (including 59,000 people with dementia, 45,000 carers and 11,000 at genetic risk of rare dementias). With these dementias mostly affecting people under 65 years, there is considerable impact on carers and substantial anxiety of developing dementia and passing it onto their children in those with genetic risk of dementias. While patients are spread around the country, the National Institute for Health Research (NIHR) identified that areas of high prevalence are areas with a low volume of research activity. One such area is the South-West Wales region.

**What will we do?**
In collaboration with University College London (UCL), the North Wales Organisation for Randomised Trials in Health (NWORTH) and the Centre for Ageing and Dementia Research (CADR), HCEC researchers at SCHE led the design of a core work package for an NIHR programme grant which will address the costs and consequences of blended in-person/digital interventions for people with one of five under-researched genetic or non-memory led types of dementia. The programme was awarded in June 2022 (total £1.9 million over 60 months), bringing £212,000 to Wales and £99,000 to HCEC. It adds a fourth NIHR programme grant to our current portfolio with Welsh health economists making a significant contribution to the award of a major grant from a highly competitive UK funding scheme. The GNMLD-TALK award (NIHR 203680) is registered on the NIHR portfolio.

**How the work links to Welsh Government policy**
This programme will support Dementia policy and practice in Wales. In the Dementia Action Plan for Wales 2018-2022 and the All Wales Dementia Care Standards, Welsh Government set out to develop a consistent pathway to enable people to get a timely diagnosis along with the care and support they need.

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Dr Katherine Cullen, HCEC Researcher

I am the programme health economist, which helps me grow my own portfolio of work. I also obtained an honorary research fellow position at University College London to formalise links with HCEC/SCHE and we are currently preparing the first output, a rapid review of the literature.

The project will produce the first evidence of the effectiveness and cost-effectiveness of digital interventions and talking therapies for delaying non-memory led dementia onset. It has the potential to improve patient and carer outcomes and will contribute to future guidelines and services to support this under-served population.
WORK PACKAGE 2: PATIENT AND PUBLIC INVOLVEMENT AND ENGAGEMENT

Based on the notion of 'no research about me without me', Patient and Public Involvement and Engagement (PPIE) has become integral to health and care research and is a prerequisite to successful research funding. HCEC continues to grow a successful PPIE strategy. Our aim is to keep learning from multiple and diverse patient and public perspectives, so our research becomes even more relevant to the lives and experiences of people who use care and support services in Wales.

Nurturing our Patient and Public Involvement Group

During 2022/23, our HCEC PPIE leads continued to engage with the HCEC Patient and Public Involvement Group (PIG/Cadw mi gei). The PIG/Cadw mi gei group adheres to the UK National Standards for PPIE and meets four times a year on Zoom, with plans to hold the autumn meeting face-to-face. During these meetings, we showcase health economics research at Bangor and Swansea Universities. This provides HCEC researchers, early career researchers and PhD students with an opportunity to seek public engagement in their developing projects and enables members of the public to become involved in exciting research projects.

Thank you!

Once again, we wish to thank Mrs Karen Harrington and Mr Nathan Davies, our public members of the HCEC Advisory Board for using their experience of the health and social care settings to guide our activities and provide a crucial public voice. We would also like to thank all members of our PIG/Cadw mi gei group who, with their diverse backgrounds, bring their own invaluable experiences, knowledge and insights to the development of our research.
Embedding PPIE into the design of health economic evaluations

Working with patients and their carers to develop a resource use measure for diabetic foot ulcers - the REDUCE trial

What was the question that HCEC could help with?
Diabetic foot ulcers were estimated to cost the NHS almost £1 billion in 2014/15. The NIHR Reducing the Impact of Diabetic Foot Ulcers (REDUCE) trial evaluates an intervention enabling patients with diabetes to monitor changes in their feet, maintain safe levels of physical activity, seek early access to medical help and manage their mood.

What did we do?
Patients are the experts on their own health and an important source of information on the use of healthcare and other resources required for health economic evaluations. However, generic outcome measures do not always capture all the data that is important to a specific patient group. HCEC researchers at SCHE worked with people suffering from diabetic foot ulcers, their carers, and the healthcare professionals treating them to develop a resource use measure for the REDUCE trial that will be able to pick up on the parameters that are important to patients and will result in the best outcomes.

What is the expected impact?
The resource use measure, co-produced with patients and their carers will provide comprehensive data for the health economic evaluation, improving the quality and relevance of our work. The final version is currently being used in the main REDUCE trial and the results will inform the economic evaluation. The measure will be made available to other researchers. The REDUCE award (RP-PG-0618-20001) is registered on the NIHR portfolio.
HCEC has a strong track-record in co-producing research projects and interventions with members of the public. Drs Llinos Haf Spencer, Victory Ezeofor, Huw Lloyd Williams, Prof. Rhiannon Tudor Edwards and Prof. Deb Fitzsimmons have been working alongside Mrs Karen Harrington, Ms Andrea Hughes and Mr Anthony Cope of our HCEC Public Involvement Group to co-produce a dental deprivation bid and conversation piece to investigate the reduction in the number of NHS dentists in Wales which is a real concern for the public. Drs Berni Sewell and Shaun Harris work with Cardiff University, Kingston University and Bridges Self-Management to co-produce and evaluate self-management interventions for patients with long COVID and osteoarthritis.

Social prescribing helps to connect people with activities, groups and services in their community to support them with their social and emotional needs and increase their health and well-being. Mr Abraham Makanjuola, Dr Ned Hartfiel and Prof. Rhiannon Tudor Edwards were part of the Emotion Mind Dynamic (EMD) research team. EMD is a lifestyle coaching programme that supports individuals suffering from anxiety or depression. Overall, lifestyle coaching generated positive social value ratios for both face-to-face and online clients. This mixed-method social return on investment (SROI) study found that for every £1 invested, lifestyle coaching generated social values ranging from £4.12 – £7.08 for face-to-face clients compared with £2.37 – £3.35 for online participants.
NHS Wales and WHSSC must ensure that investment decisions are affordable and offer value for money, are supported by convincing evidence of safety and effectiveness and made using a consistent and transparent process. This can reduce inappropriate variation using evidence-based practices developed with the public, patients and professionals as equal partners through co-production. The framework developed in this project is expected to impact on patient access to genomic services in Wales.

Commissioning of genomic services in Wales

What was the question that HCEC could help with?
Genomics is an area of expansion within NHS Wales. However, we must ensure that resources are used effectively, such that commissioned genomic services are considered in the context of competing priorities. The Welsh Health Specialised Services Committee (WHSSC) required a commissioning model to evaluate genetic tests to replace the historic UK Genetic Testing Network (UKGTN) dossier, and supplement the current NHS Test Directory policy especially for testing/horizon scanning/research tests that sit outside this policy.

What did we do?
WHSSC and the All Wales Medical Genomics Service (AWMGS) commissioned CHEME to develop an evidence-based prioritisation framework for genomic technologies and services. This included reviewing the literature to place research into context, and to understand what approaches to commissioning had been reported previously, a review of the WHSSC prioritisation framework and benchmarking the criteria used by WHSSC against criteria utilised to guide commissioning and development of the new framework. Following consultation with stakeholders, the framework was applied to three case studies of different types of genomic tests and contexts for patient management.

How our work links to Welsh Government policy
The Genomics Delivery Plan for Wales details how advances in the understanding and application of genomics will transform public health strategy and delivery of care in Wales. This is achieved through an appropriate commissioning policy and equitable, evidence-based, high-quality and sustainable genomics services that provide benefits for the people of Wales and value for money to commissioners and the public. This project supports the mechanism by which this can be achieved.

Prof. Dyfrig Hughes, HCEC Co-Investigator
We are delighted that HCEC researchers continued to contribute to the Bangor Institute for Medical Research (BIMHR) evidence team with three full rapid reviews and three Rapid Evidence Summaries published this year. These included rapid reviews on domestic violence and abuse and COVID-19, Health Related Quality of Life in mildly infected individuals and interventions and best practices to support people with long COVID to return to normal activities, which alone has been viewed over 2,000 times since its publication in January 2023.

Our contribution has led to several HCEC researchers being co-investigators on the new Health and Care Research Wales Evidence Centre. Whilst this work will now sit ‘outside’ HCEC, this will enhance the health economics contribution to developing the evidence to answer key questions to improve health and social care policy and provision across Wales. This demonstrates our growing success in using our HCEC infrastructure as a platform to cultivate new programmes of work alongside developing our health economics researchers and providing new opportunities for health economists in Wales to deliver vital research to tackle the health and care challenges facing Wales.

**PROMOTING HEALTH ECONOMIC METHODOLOGY IN SPORT AND PHYSICAL ACTIVITY RESEARCH**

Dr Katherine Cullen joined the Welsh Institute of Physical Activity, Health, and Sport (WIPAHS), a pan-Wales network of Welsh Universities and Sport Wales, as theme lead for Health, Sport, and Physical Activity Economics. The collaboration focuses on research into the economic impacts of improving access to and engagement with sports in Wales, including recent research into the effectiveness of sport as a tool to address youth crime, Celtic Nordic walking and the adolescent population, and an evaluation of Actif North Wales which addresses key health inequalities in North Wales.

**OUR CONTRIBUTION TO THE WALES COVID-19 EVIDENCE CENTRE AND ITS TRANSITION INTO THE HEALTH AND CARE RESEARCH WALES EVIDENCE CENTRE**

We are delighted that HCEC researchers continued to contribute to the Bangor Institute for Medical Research (BIMHR) evidence team with three full rapid reviews and three Rapid Evidence Summaries published this year. These included rapid reviews on domestic violence and abuse and COVID-19, Health Related Quality of Life in mildly infected individuals and interventions and best practices to support people with long COVID to return to normal activities, which alone has been viewed over 2,000 times since its publication in January 2023.

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WORK PACKAGE 3B: CONTRIBUTING HEALTH ECONOMICS EXPERTISE TO DECISION-MAKING AND POLICY FORMULATION

EVALUATING THE SOCIAL SERVICE AND WELL-BEING (WALES) ACT 2014

HCEC researchers at SCHE collaborated with the Welsh Institute of Health and Social Care (WIHSC), University of South Wales, PRIME Wales and Swansea, Cardiff Metropolitan and Bangor Universities to undertake a 4-year evaluation of the Social Service and Well-Being (Wales) Act 2014. The final report was published by Welsh Government in March 2023. It sets out 19 evidence-based ‘test’ questions for Welsh Government and other stakeholders to consider the actions required to improve social services, and the quality and sufficiency of social care. This will help ensure that people in Wales are heard and can share decisions about their care and support.

Notable examples of how we supported decision-making and policy formulation in Wales in 2022/23 include:

- Providing health economics advice and support to the All Wales Medicines Strategy Group (Prof. Dyfrig Hughes), New Medicines Group (Prof. Deb Fitzsimmons) and the One Wales Medicines Assessment Group (Dr Berni Sewell and Dr Shaun Harris)
- Providing health economics advice to Health Technology Wales Assessment Panels (Dr Berni Sewell and Dr Katherine Cullen)
- Supporting the Welsh Wound Innovation Centre as Board Member (Prof. Deb Fitzsimmons)
- Being committee members of funding bodies including NIHR Programme Grant for Applied Research and NIHR Policy Research Unit Panel (Prof. Deb Fitzsimmons)
- Leading economics for the Welsh Institute for Physical Activity and Sport (Dr Katherine Cullen)
- Representing Early Career Researchers (ECR) in Wales at the UK Health Economics Study Group ECR committee (Dr Shaun Harris)
Progressing the Welsh Contribution to the EuroQol UK EQ-5D-5L Valuation Study

HCEC researchers are part of the EuroQol appointed and funded team to contribute to developing a new UK valuation study for the EQ-5D-5L questionnaire, an important patient reported outcome measure used in health economic evaluation and decision-making. The study officially commenced data collection in October 2022 and after successfully completing a pilot phase, data collection is now underway for the UK valuation of EQ-5D-5L with good progress being made in ensuring a representative sample of the Welsh population is included. The Welsh site, led by Dr Nathan Bray at Bangor University, has now conducted 95 interviews, and undertaken successful interim analyses. This important work will form the gold-standard valuation set for the EQ-5D-5L questionnaire in the UK, and on approval is expected to be adopted by the National Institute for Health and Care Excellence (NICE) and other UK health and care decision-making bodies as part of the ‘reference case’ for economic evaluations.

For regular updates on this work, please visit the EuroQol blog.

RAISING AWARENESS OF HEALTH AND CARE ECONOMICS

CHEME and the International Learning Academy, ALPHA Academy (ILA), at Bangor University hosted a free two-day course which was designed to accompany the textbook ‘Applied Health Economics for Public Health Practice and Research’, co-authored by our Co-Director, Prof. Rhiannon Tudor Edwards and Prof. Emma McIntosh of the University of Glasgow.

In their capacity as Health and Care Research Wales Senior Research Leaders, Prof. Deb Fitzsimmons and Prof. Dyfrig Hughes delivered the first of the publicly available inaugural series of Health and Care Research Wales Faculty webinars, exploring what health economists do and why it is so important.

Dr Berni Sewell has led the development of an in-house suite of training resources for the All-Wales Therapeutics and Toxicology Centre (AWTTTC) to support committee members of the All Wales Medicine Strategy Group (AWMSG) and its sub-committees to understand how health economics evidence is applied to health technology assessment.
Our annual Welsh Health Economics Group (WHEG) meeting remains a key opportunity to bring together the Welsh health economics community to share our work and discuss developments in relation to policy and research. In November 2022, we welcomed over 50 attendees from across academia, Health and Care Research Wales infrastructure groups, Welsh Government, Public Health Wales and NHS Wales.

Following presentations by Prof. Emma McIntosh (University of Glasgow) and HCEC researchers, an expert panel session consisting of Dr Brendan Collins (Head of Health Economics for Welsh Government), Dr Joanna Charles (Deputy Head of Health Economics for Welsh Government), Ms Rebecca Masters (Health Economist for Public Health Wales) and Mr Matthew Prettyjohns (Principal Researcher Health Economist at Health Technology Wales) discussed the health economic case for prevention and well-being.

2022/23 was a productive year for HCEC in terms of capacity building. These are some of our highlights:

**WORK PACKAGE 4: BUILD CAPACITY AND CAPABILITY IN METHODOLOGICAL AND APPLIED HEALTH ECONOMICS RESEARCH**

**Bringing together our Welsh community of health economics expertise**

Our annual Welsh Health Economics Group meeting (WHEG) remains a key opportunity to bring together the Welsh health economics community to share our work and discuss developments in relation to policy and research. In November 2022, we welcomed over 50 attendees from across academia, Health and Care Research Wales infrastructure groups, Welsh Government, Public Health Wales and NHS Wales.

Following presentations by Prof. Emma McIntosh (University of Glasgow) and HCEC researchers, an expert panel session consisting of Dr Brendan Collins (Head of Health Economics for Welsh Government), Dr Joanna Charles (Deputy Head of Health Economics for Welsh Government), Ms Rebecca Masters (Health Economist for Public Health Wales) and Mr Matthew Prettyjohns ( Principal Researcher Health Economist at Health Technology Wales) discussed the health economic case for prevention and well-being.

My involvement with HCEC (and WHESS before it) has helped me develop my career, build my own networks, grow my research portfolio and showcase the impact of my work, for example through a podium presentation of our evaluation of the costs of shielding during the COVID-19 pandemic at the International Society of Patient Outcomes Research (ISPOR) Europe conference in Vienna, Austria.

Dr Berni Sewell, HCEC Co-Investigator
Celebrating the success of our Early Career Researchers

Mr Abraham Makanjuola, HCEC Research Officer at CHEME, presented the Opening Doors to the Outdoors (ODO) Project at this year’s UK Health Economics Study Group meeting. Abraham was awarded first prize for the best presentation at the lightning talk session.

Mr Jacob Davies, HCEC Research Project Support Officer at CHEME, was awarded the Early Career Excellence Prize at the 2023 Bangor University ECR Spring Conference. Jacob received the award for evidencing excellence through his work in the School of Health and Medical Sciences, Bangor University.

Dr Katherine Cullen, Research Officer at SCHE, gained the ECR and Trainee award for poster at the Royal College of Psychiatrists Wales, Welsh Psychiatric Society, and National Collaborating Centre for Mental Health joint winter conference in December 2022 with her poster presentation on the cost-utility analysis of guided internet-based compared to individual face-to-face cognitive behavioural therapy for post-traumatic stress disorder in the UK.

INVESTING IN THE FUTURE LEADERS OF HEALTH ECONOMICS RESEARCH

Dr Llinos Haf Spencer was selected for the Welsh Crucible 2023, a professional development platform for Future Research Leaders in Wales. Llinos was also a co-applicant on the successful Health and Care Research Wales Evidence Centre bid and leads the health economics research rapid review team at CHEME.

Dr Mari Jones was promoted to Senior Research Officer at SCHE, as a recognition of her track record of success in health economics. She is Chief Investigator on the COSMO study as well as co-investigator (lead health economist) on funded studies from the NIHR, Health and Care Research Wales and industry.

Congratulations to...

Dr Lucy Bryning who completed her PhD in the field of mindfulness at CHEME and was on the forefront of involving members of the public in health economics research.

Dr Huw Lloyd-Williams who was awarded his PhD investigating the economics of adverse childhood experiences at CHEME.

Dr Bethany Fern Anthony who defended her PhD thesis on the provision of general medical services by non-medical health professionals and allied health professionals at CHEME.
This year has provided new opportunities for our researchers to contribute to the leadership and management of HCEC. Our agile approach ensures that HCEC has continued to support changes to the Health and Care Research Wales landscape over the past year, particularly our contribution to the development of the Health and Care Research Wales Faculty and trials research. We have also brought in a new role to develop our capacity building and applied methods work, co-led by early career researchers and Senior Researchers.

**Spotlight on...**

**EQUITY**

Equity means that all people are treated equally, and those with similar needs receive similar treatment irrespective of their capacity to pay. This was one of the founding principles of the NHS. Mr Jacob Davies, HCEC Research Project Support Officer, is undertaking research for a Masters degree focusing on equity in waiting times. Jacob’s work highlighted that Trauma and Orthopaedics have the longest waiting lists in Wales. In February 2023, 98,000 patients awaited treatment in Wales, with 12% of these waiting for over 105 weeks. Also, Prof. Steve Robson (Australian National University) researches elective waiting lists in Australia in comparison with the UK and Wales with consideration of socio-economic status and lifetime use of elective surgery as part of his Health Economics Masters by Research at CHEME. Steve brings a wealth of experience from his clinical background as well as his role as president of the Australian Medical Association. Tackling excessive waiting times is a crucial task within the NHS as they result in poorer patient outcomes, increased healthcare costs and greater inequality and inequity for the people of Wales.
OUR KEY PUBLICATIONS

In 2022/23, HCEC produced 30 publications. We upped our game in terms of research impact, with 22 papers published in peer review journals and 12 in journals with an impact factor greater than 4. A proportion (n=8) of our publications this year were published in other places including the Wales COVID-19 Evidence Centre publication library, Welsh Government Publication repository and the EORTC.

Examples of key publications 2022/23 include:


NOTABLE CONFERENCE ABSTRACTS FROM 2022/23:


For more information on HCEC publications, please visit our HCEC website.
Our citations are growing!

We are delighted to see how well our research outputs published during our time as HCEC are performing. On the SCOPUS citation index, selected recent HCEC led and supported papers where citations are climbing higher than expected for comparable outputs, based on an expected field weighted citation impact (FWCI) score of 1, include:

- **Improving quality of life through the routine use of the patient concerns inventory for head and neck cancer patients** (FWCI 5.37)
- **Content Validity of the EORTC QLQ-C30** (FWCI 3.46)
- **Palliative radiotherapy after oesophageal cancer stenting (ROCS trial)** (FWCI 2.73)
- **Surgery for submacular haemorrhage secondary to exudative age-related macular degeneration (TIGER study)** (FWCI 2.64)

Growing impact
HCEC Publications 2022/23

**ACADEMIC PAPERS**

- 22 Papers published in high-impact peer-reviewed journals such as the British Journal of Surgery and the European Journal of Cancer.

**GOLDEN ACCESS**

- 95% Published on the Wales COVID-19 Evidence Centre publication library, Welsh Government Publication repository and the EORTC.

**REPORTS**

- 8 Of conference presentations published in high-impact journals such as The Lancet.
We are proud to report how we have continued to sustain existing relationships alongside forging new ones to ensure we remain at the forefront of contributing to health and care research in Wales and beyond.

We invested in developing our collaboration with social care and public service providers in the last year. A notable example is our partnership with Developing Evidence Enriched Practice (DEEP) and the Centre for Ageing & Dementia Research (CADR) to support Neath Port Talbot Council’s ambitions to develop their research capacity. Prof. Deb Fitzsimmons contributed to the recent submission aimed at helping local authorities to develop their research capacity to tackle local health and social inequalities to an NIHR Health Determinants Call.

FORGING NEW COLLABORATIONS

We are delighted to welcome Dr Ceryl Davies and Prof. Murray Smith to the community of health economists in Wales. Ceryl joined Bangor University with an extensive background in law, social work and social policy and her expertise in social care economics will be an excellent asset to growing this vital area of work for HCEC. Murray joined Aberystwyth University as Professor of Rural Health Economics in December 2022 having started his career in Australia. With a background in econometrics and statistics, Murray has an extensive track record in health economics research to bring to Wales, working across several of our Health Boards. We are excited about the possibilities that Ceryl and Murray bring to health economics in Wales, particularly as we look to forge mutual working relationships on an all-Wales level for the future.

HCEC Co-Directors Prof. Rhiannon Tudor Edwards and Prof. Deb Fitzsimmons welcoming Prof. Murray Smith to the community of Welsh health economists at Aberystwyth University.
Collaborating to inform the delivery of rapid diagnosis models for people with suspected cancer in Wales

What was the question that HCEC could help with?
In the summer of 2018 (updated in early 2020), HCEC researchers at SCHE established the cost-effectiveness of a novel pilot rapid diagnosis centre (RDC) at Neath Port Talbot hospital that reduced time to diagnosis for people with non-specific symptoms that could be due to cancer from 84 days to 6 days and was cost saving compared to usual care. As a result of our evaluation, the RDC has become a core service in Swansea Bay University Health Board, enabling patients who previously did not fit any cancer pathway to receive timely diagnosis, reducing anxiety and stress and empowering them.

What will we do?
Following the success of the local RDC, the RDC model is now rolled out across Wales as a way to improve patient care and outcomes and work more efficiently. Furthermore, the Moondance Cancer Initiative has made available funding to expand the RDC model to site-specific cancers, including colorectal cancer in younger patients and head and neck cancers. HCEC researchers at SCHE are funded to undertake the evaluation of these new patient pathways which are hoped to improve patient care and cost-effectiveness of cancer services. Also, Cancer Research UK is funding the development and evaluation of a new prostate cancer pathway, with HCEC undertaking the health economic evaluation.

What is the expected impact?
This continuing programme of work has the potential to transform cancer services in Wales and beyond to reduce waiting times, and improve patient care, patient outcomes and the use of scarce NHS resources.

LEADING AND SUPPORTING RESEARCH IN LIVER DISEASE

The British Association for the Study of the Liver funded the Hepatocellular Carcinoma UK (HCC-UK) and National Cancer Registration and Analysis Service (NCRAS) Partnership involving academic groups across the UK, including Swansea University. The Partnership developed a programme of research based on a hepatocellular carcinoma dataset collated from the population-based cancer registry for England linked to other datasets managed by NCRAS. As part of this research, HCEC researchers at SCHE developed analyses to quantify the impact of hepatocellular carcinoma to the NHS budget which was published in BMJ Open Gastroenterology. This successful collaboration led to SCHE joining the Liver Research Cymru Partnership which links all NHS organisations across Wales behind the Welsh Government Liver Disease Action plan. The partnership secured funding from NIHR this year to build the research community within Wales, understand the data available within the Secure Anonymised Information Linkage (SAIL) databank, and to test the dataset to address key objectives, including the cost-of-illness of liver disease in Wales.
Our Key Collaborators

HEALTH AND CARE RESEARCH WALES INFRASTRUCTURE

- Centre for Trials Research
- Swansea Trials Unit
- North Wales Organisation for Randomised Trials in Health
- PRIME Wales
- Centre for Aging and Dementia Research
- Research Design and Conduct Service
- Secure Anonymised Information Linkage
- Wales COVID-19 Evidence Centre
- Wales School for Social Prescribing Research
- BRAIN
- Developing Evidence Enriched Practice
- National Centre for Mental Health

ACADEMIC

- Bangor University
- Swansea University
- Cardiff University
- Aberystwyth University
- University of South Wales
- University of Southampton
- University of Nottingham
- University of Edinburgh
- University College London
- Kingston University
- Kings College London
- University of Liverpool
- University of Birmingham

NHS AND CARE ORGANISATIONS

- Aneurin Bevan UHB
- Betsi Cadwaladr UHB
- Cardiff and Vale UHB
- Cwm Taf UHB
- Swansea Bay UHB
- Hywel Dda UHB
- Public Health Wales
- Velindre NHS Trust
- All Wales Therapeutics and Toxicology Centre
- Health Technology Wales
- Neath Port Talbot Council
- Pembrokeshire County Council
- Royal College of Surgeons (Ireland)

INTERNATIONAL

- European Organisation for Research and Treatment of Cancer
- Horizon Europe

CHARITIES AND THIRD SECTOR

- Citizens Advice Bureau
- Moondance Cancer Initiative
- Cancer Research UK
CONCLUDING REMARKS: OUR AMBITIONS FOR FUTURE GROWTH

Our third year continues to demonstrate our year-on-year growth in terms of income, awards and outputs. Our spirit of working in collaboration continues to flourish, as shown by our leadership and support of excellent health and care research in Wales. Our researchers have gone from strength to strength with a strong pipeline from PhD to Professor in Health Economics expertise in Wales, including the welcome of Prof. Murray Smith and Dr Ceryl Davies to our community.

HCEC has strong senior leadership and a young, energetic workforce of early and mid-career researchers who are developing and benefiting from mentorship in grant capture and policy support. Our Advisory Board of recognised international experts in their field from across the UK continues to support us through critical scrutiny of our work, ensuring HCEC can be benchmarked with other health economic units and that our work fits with Welsh Government, research funder and service priorities so that HCEC can continue to impact the changing policy, practice and research landscape.

The continued funding of HCEC by Health and Care Research Wales until March 2025 was a strong endorsement of our work so far and gives us opportunity to develop our vision for the future of HCEC over the coming years. We are looking forward to a period of growth in research excellence over the next years.
At the core of our vision for HCEC is our continued commitment to world-class health economics both in terms of academic outputs and policy support. We recognise the challenges Welsh Government and the providers of health and social care face across Wales. It is more important than ever to generate evidence of cost-effectiveness and potential benefits to social value to support decisions about the allocation of increasingly scarce resources. So we can sustain the health and care system for the benefit of the people of Wales and promote considerations of efficiency, value and equity.

It seems timely to reflect on our progress in the past three years and to set our objectives for the future. We return to the founding work in health economics of the late Prof. Alan Williams to illustrate how applying economic theory to health and care decisions can form the basis of HCEC’s growing impact on health and social care, and the people and places of Wales.

The scope of impact of health economics and HCEC on health and care, decision making and priority setting in Wales. Adapted and updated from Alan Williams’s famous plumbing diagram.

With our increasing focus on prevention in primary, secondary and tertiary care, strengthening the NHS and social care system in Wales will be at the centre of our activities. Our portfolio of work backs up our ambitions. It reaches from delivering methodological and applied work in understanding the determinants of health and measuring health and well-being, to providing crucial evidence on the cost-effectiveness of different interventions and services, through to how and where to prioritise and ensure that our health and care systems provide efficient and equitable care for the people in Wales.

Combined with financial and/or in-kind support from our Higher Education Institutions, Health and Care Research Wales funding provides us with the opportunity to grow our project portfolio, research impact, communications and connections, and our investment in training of early career researchers and mentoring of those developing a career in health economics in Wales. We are well-positioned to compete for UK and European research grants, collaboratively bringing in millions of pounds into Wales from UK Research and Innovations, NIHR Health Technology Assessment and the Medical Research Council, as well as Horizon Europe and research grants from other international bodies.

On behalf of HCEC, we thank you for reading our 2022/23 Annual Report. We hope to meet you during the next year to discuss and share ideas and to work with many of you over the coming months and years.

Prof. Rhiannon Tudor Edwards and Prof. Deb Fitzsimmons
For more information on Health and Care Economics Cymru, our work and how we can support you, please visit our website: https://healthandcareeconomics.cymru/

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If you would like health economics advice or discuss how we can support you in your research, please feel free to email us:

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