



# WHESS

Welsh  
Health  
Economic  
Support  
Service

Gwasanaeth  
Cymorth  
Economeg  
Iechyd  
Cymru

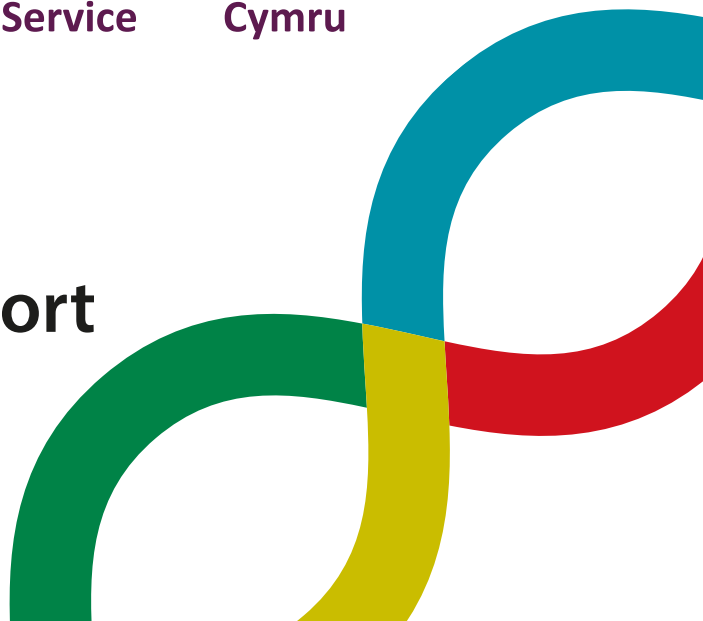


Ymchwil Iechyd  
a Gofal Cymru  
Health and Care  
Research Wales



Ariennir gan  
Lywodraeth Cymru  
Funded by  
Welsh Government

## 2016/17 Annual Report



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## Foreword

Funded by Health and Care Research Wales, the Welsh Health Economic Support Service (WHESS) is an all Wales infrastructure support service. WHESS brings together health economists based at the Centre for Health Economics and Medicines Evaluation (CHEME), Bangor University and the

Swansea Centre for Health Economics (SCHE), Swansea University. This allows equity in access to, and delivery of, the right expertise across Wales in health economics to support the design, conduct and delivery of the highest quality research with our collaborators.



*WHESS researchers from Bangor and Swansea, October 2016*

**Our mission is to support health and social care research and, through generation of evidence, use of 'economic principles' to inform and improve decision making in health and social care in Wales.**

We have continued to build on the networks developed previously, with key partners established across Wales; markedly, our work has supported the Clinical Trials Units (CTUs), NHS Health Boards and Trusts, local government, third sector organisations, academics and researchers. We have also made important steps towards enhancing Patient and Public Involvement (PPI) in our activities.

The focus in 2016/17 has been to capitalise on our established collaborations in order to support the growth of research income, enhance the quality of our research outputs and develop a cohesive

strategy to ensure our work makes a meaningful and demonstrable impact in improving the health and lives of people in Wales. The investment of capacity building within WHESS enables a strong, responsive and diverse community of health economists with a range of core and specialist skills in this rapidly evolving discipline based in Wales.

This report summaries the progress and key achievements of WHESS during April 1st 2016 - 31st March 2017, and outlines our approach to develop longer-term plans for impact and our future plans.



## Our Aim

WHESS has the over-arching aim to contribute to the goals of Health and Care Research Wales by **providing support and expertise in health economics to the health and social care community across Wales**. We have done this by working together with NHS Wales, Social Care organisations and Universities across Wales in providing health economics support at the early stages of developing a research idea, supporting funding applications and in the dissemination and implementation of research findings into practice.

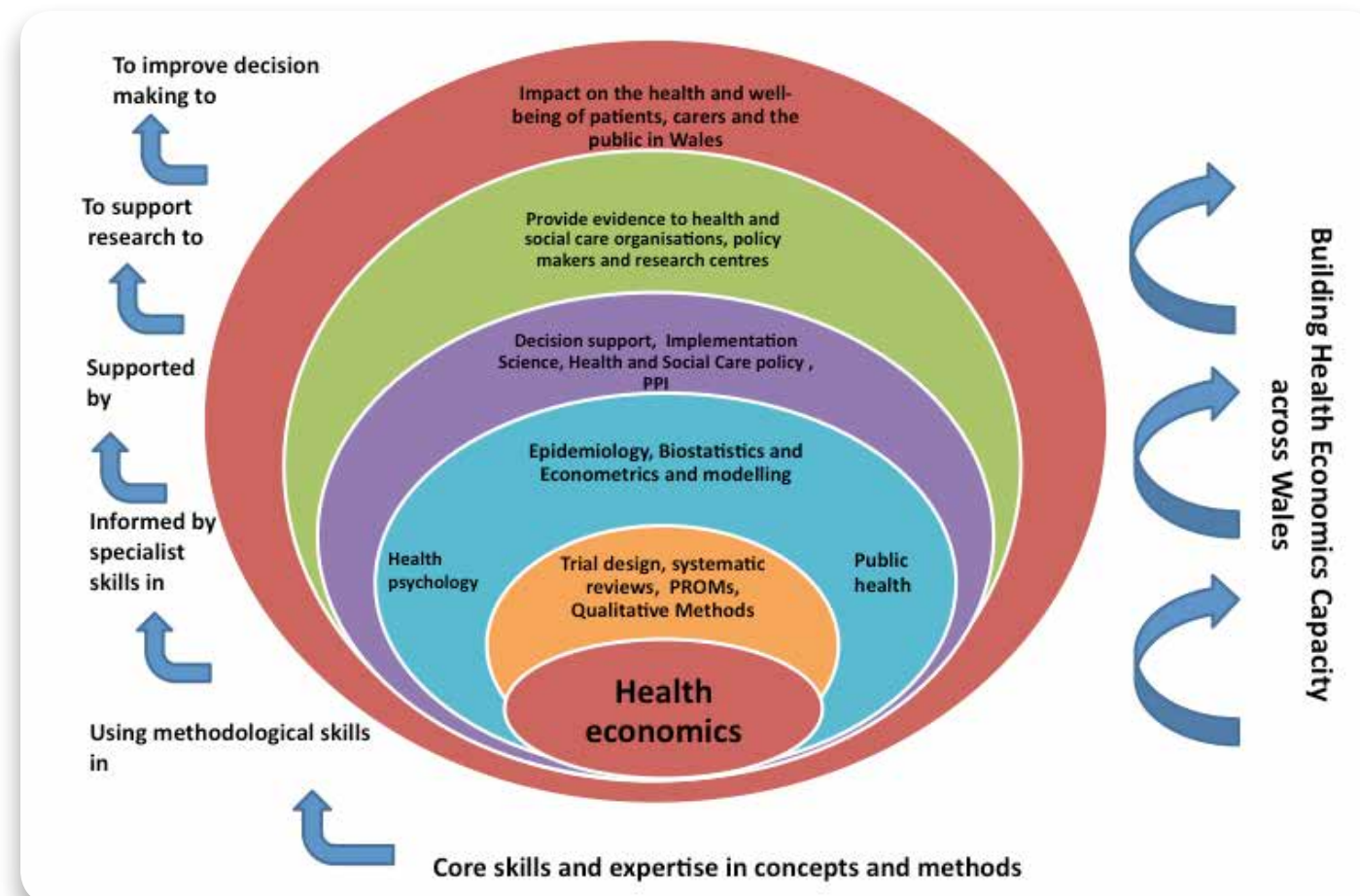
**We do this through providing two main functions:**

- i) **Providing health economics advice to NHS and social care organisations in Wales.**  
This includes advice on early research ideas, contributing to developing research proposals and funding applications and supporting the

dissemination of research findings. This is largely done through the All-Wales **Research Design and Conduct Service (RDSCS)**; which WHESS provides dedicated support to the three Welsh regional services.

- ii) **Maintaining and developing a cohesive health economic research community** which contributes to, and in some cases, leads research projects with other research colleagues across Wales, particularly in supporting the work of other centres and units within Health and Care Research Wales. We also provide a strategic function in providing health economics advice and expertise in Wales, working closely with organisations including the All-Wales Strategic Medicines Group (AWSMG), Public Health Wales, Local authorities and Third Sector Bodies such as Tenovus Cancer Care.

**How WHESS supports research and decision making in health and social care within Wales**



## Our work packages

### Supporting health and social care research in Wales

In our core work package, we have provided health economics advice relating to health and social care research in Wales, supported the early stage development of research proposals and, in appropriate cases, collaborated as co-applicants on proposals for funding. We have developed links with other health economic groups outside Wales and established collaboration with other international research groups to ensure Wales has a strong international profile in this discipline.

We have done this by:

- Providing advice to over 110 researchers across Wales regarding the designing, conducting and dissemination of research.
- Engaging closely with our colleagues in the clinical trials units across Wales to design high quality economic evaluations alongside clinical trials and studies.
- Working closely with NHS boards and Trusts with increasing engagement with social care

and third sector organisations to promote health economics thinking and methods into their activities and plans.

- Working with other research centres and units within the Health and Care Research Wales community - from providing input into workshops and working on specific applications, through to core membership of their research teams.
- Undertaking conference presentations, invited talks and visits across the UK and beyond to promote the work of WHESS. This has included an invited visit by Professor Edwards to the Scottish and Irish health economists groups, to support the growth of a health economics community similar to the WHESS model; Professor Fitzsimmons and Dr Andersons' invited visit to the MD Anderson Center, Houston and partner Universities, Texas, a successful visit which is already fostering opportunities for collaboration with Velindre NHS Trust.



Professor Deb Fitzsimmons (left) and Dr Pippa Anderson (centre) with Professor Shine Chang, Professor of Epidemiology, The University of Texas MD Anderson Cancer Center, Houston, Texas USA; February 2017



## Supporting Welsh-led clinical trials: Seal or Varnish?

WHESS researchers were part of the multi-disciplinary team led by Professor Chestnutt and Professor Chadwick at Cardiff University Dental School in collaboration with Cardiff University Faculty for Trials Research. **This NIHR Health Technology Assessment (HTA) trial evaluated the relative clinical and cost effectiveness of fissure sealants versus fluoride varnish in preventing dental decay in children; based within a South Wales population.** We devised a comprehensive evaluation over the short and longer term, with PPI involvement from the outset in the design, piloting and interpretation of our results. **With similar clinical effects, our economic analysis found that fluoride varnish would reduce costs for the NHS across a range of different scenarios.** In a letter to all community dental teams in Wales (dated 22 Feb 2017), **the Chief Dental Office for Wales has already utilised the findings from this trial to refocus the 'Designed to Smile Programme' in Wales, demonstrating its direct impact to the Welsh population.** The full HTA report (published April 2017) is available at: <https://www.journalslibrary.nihr.ac.uk/hta/hta21210/#/abstract>

## Equitable access to health economics advice and support

This work package has centred upon WHESS providing equitable access to those undertaking health and social care research across Wales.

### Our work has included:

- Ensuring a strong WHESS presence on the Health and Care Research Wales Board and membership of related groups such as the Health and Care Research Wales Managers meetings and All-Wales RDCS meetings

- Providing dedicated support to each of the three regional RDCS in Wales; including a triage system by the 3 regional leads, Rhiannon Tudor Edwards (NW Wales), Pippa Anderson (SW Wales) and Deb Fitzsimmons (SE Wales), to ensure timely referral of requests for support to the right expertise within WHESS
- Giving advice units to over 100 NHS and social care professionals, from single advice sessions to dedicated bid support

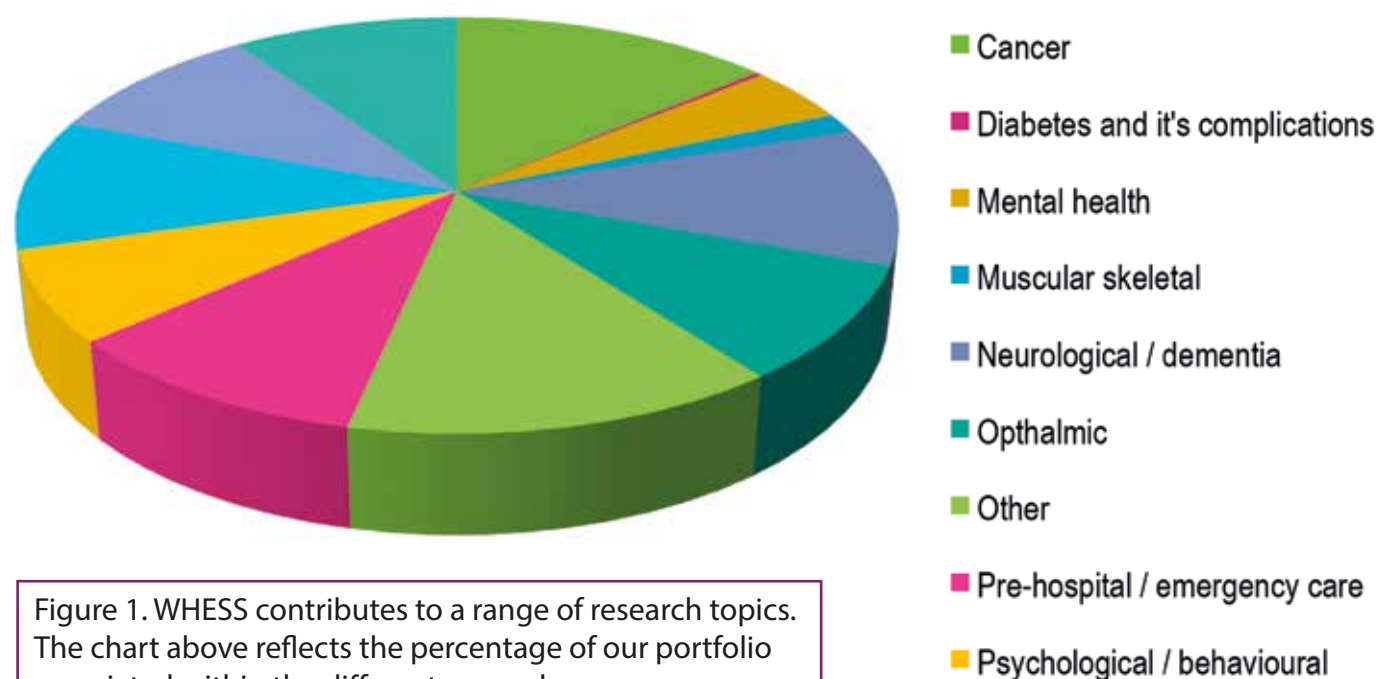


Figure 1. WHESS contributes to a range of research topics. The chart above reflects the percentage of our portfolio associated within the different research areas.

- Supporting RDCS events at both regional and national level including 'early ideas' workshops and 'All-Wales writing retreats to support professionals in developing grant applications'; WHESS supported over 14 applications from across Wales through this event for the Health and Care Research Wales Research for Patient and Public Benefit (RfPPB) funding call in January 2017.
- Mentoring early and mid-career WHESS researchers to develop skills and experience in engaging with the health and social care community such as participating in bid development and writing papers.

- Supporting and mentoring health and social care professionals in undertaking their first project, from local NHS projects involving service evaluation, through to supporting into research awards and doctoral studentships supported by Health and Care Research Wales.
- Engaging in a range of events within NHS boards and trusts such as the 'Shine' events held within Abertawe Bro Morgannwg and Hwyl-Dda University Health Boards and the 'Science Slam' at Besti Cadwalader University Health Board.



Dr Andy Brand of NWOOTH, The Bangor Trials Unit and Professor Rhiannon Tudor Edwards, CHEME at the 'Science Slam'

## Strategic leadership and building capacity in health economics in Wales

WHESS continues to build upon its successful model, to deliver effective governance and management to ensure our strategic overall direction, effectiveness, supervision and accountability.

Building upon our WHESS advisory board in 2015/16, we have utilised the expertise and advice from our chair, Professor Dyfrig Hughes, and external advisor Professor Andrew Street (University of York) in order to develop plans to provide greater engagement and input from across the UK and further strengthen our patient and public involvement.

During 2016/17, we have also put in place:

- **Greater representation on the WHESS advisory board from the devolved UK countries.** Professor Mandy Ryan from Health Economics Research Unit (HERU), University of Aberdeen has agreed to join the Advisory Board, providing perspective from Scotland. Professor Ryan works closely with the Scottish Chief Scientist's Office and Scottish Government. Professor Steve Morris, Professor of Health Economics at University College London (UCL) has also joined the Advisory Board. Professor Morris is Deputy Director of the Centre of Applied Health Research and is affiliated with the University College London Hospitals (UCLH)/UCL Comprehensive Biomedical Research Centre and the Division of Research Strategy.

- Plans to include a member from the All-Wales RDCS and CTUs on our advisory board.
- Greater inclusion of our mid-career researchers in the leadership and management of WHESS with a specific portfolio of responsibility for developing

the quality of communication and engagement with collaborators and generating impact through the production of high quality publications.

- Personal career development plans with all WHESS researchers, supported by mentoring, to aid capacity building.

### Nurturing health economic talent in Wales: The Welsh Health Economics Group (WHEG)

WHESS has continued to benefit from support to hold the annual WHEG meeting which brings together academic health economics research units to form a critical mass of health economists in Wales. **Originally established in 2000, WHEG provides a valuable opportunity for WHESS to meet with particular emphasis of providing a supportive environment for WHESS postgraduate students and early career researchers to obtain experience in presentation and seek advice from experienced health economists.** In 2016/17, we have also developed a workshop on mutually beneficial areas for WHESS researchers to gain experience in key skills. As part of ensuring our researchers have exposure to the wider policy and practice context, Dr Jonathon Price also provided an invited lecture on "Some things we know about economic disadvantage in Wales".

## Key achievements

In this section, we highlight some of the ways WHESS has contributed to the health and social care agenda, with focus on key milestones and areas of investment in developing our research capability and capacity throughout 2016/17.

## Research success

### Our key outputs have been:

#### /// Supporting and leading research funding applications from Wales

- During 2015-2017, WHESS researchers contributed to 74 funding applications to funding schemes with 43 achieving success so far - a 58% success rate.

#### /// Generating new knowledge through publications and reports

- Our profile of completed projects shows a record of achievement with 66 publications generated from Welsh-led research over the last 2 years. We are achieving an average impact factor of 3.526 from our publication of Welsh-led studies, and the highest impact factor for a journal article resulting from a Welsh-led study is 24.008 (Journal of Clinical Oncology).

***At the end of March 2017, the value of funded projects in the WHESS portfolio is approximately £9.2 million.***

### Contribution to world-class research outputs: The CLARITY Project

The **CLARITY project explored the one year safety and effectiveness of using intravitreal aflibercept** rather than the standard of panretinal laser photocoagulation for proliferative diabetic retinopathy, which is the most common cause of severe sight impairment in people with diabetes. In the study, adults aged 18 years or younger with type 1 or 2 diabetes and previously untreated or post-laser treated active proliferative diabetic retinopathy were recruited from 22 UK ophthalmic centres. Patients were randomly assigned to receive repeated intravitreal aflibercept or the standard treatment panretinal laser photocoagulation for 52 weeks. The two treatments were assessed by change in best-corrected visual acuity at 52 weeks. Two hundred and twenty-two participants took part in the study (112 in aflibercept group, 109 in panretinal laser photocoagulation group). Patients with proliferative diabetic retinopathy who were treated with intravitreal aflibercept had an improved outcome at 1 year compared with those treated with panretinal laser photocoagulation standard care. Aflibercept was found to be non-inferior and superior to panretinal laser with an average best corrected visual acuity difference 3.9 letters [95% CI 2.3–5.6],  $p < 0.0001$ ) and 4.0 letters [2.4–5.7],  $p < 0.0001$ ). There were no safety concerns.

The findings of this study have been published in The Lancet:

Sivaprasad S, Prevost AT, Vasconcelos JC, Riddell A, Murphy C, Kelly J, Bainbridge J, Edwards RT, Hopkins D, Hykin P and CLARITY Study Group, 2017. Clinical efficacy of intravitreal aflibercept versus panretinal photocoagulation for best corrected visual acuity in patients with proliferative diabetic retinopathy at 52 weeks (CLARITY): a multicentre, singleblinded, randomised, controlled, phase 2b, non-inferiority trial. Lancet. 2017;389:2193-2203.

### /// Developing early career pathways and leadership development in health economics

Several WHESS researchers are developing their own portfolio of work in key areas of work as a result of the investment made in nurturing talent.

- **Dr Bernadette Sewell** has achieved a number of successes as lead health economist on several Welsh-led bids, including and the recently awarded ABACUS trial in collaboration with the Wales Cancer Research Centre and Tenovus Cancer Care.
- **Katherine Cullen**, in collaboration with Professor Ceri Phillips, Secure Anonymised Information Linkage (SAIL) and RAND Europe has secured a WHESS led projected funded by the MS Society to establish the costs of not treating Multiple Sclerosis with Disease Modifying Therapies.

- **Dr Sam Groves** is the lead health economist/co-applicant, led by Dr Ceri Battle, Abertawe Bro Morgannwg University Health Board and in collaboration with the Swansea CTU on the Health and Care Research Wales funded STUMBL trial to establish the feasibility of a future definitive trial comparing the use of a new prognostic model for the management of blunt chest wall trauma patients in the Emergency Department versus conventional management

- **Dr Nathan Bray** and **Dr Carys Jones** have been awarded Health and Care Research Wales funded post-doctoral fellowships.



### Developing new leaders in health economics research in Wales: Dr Nathan Bray's Fellowship: the MobQOL project

Nathan's fellowship research project, called **MobQoL**, will use qualitative and quantitative research methods to develop **a new instrument for measuring the quality of life of people who use wheelchairs and mobility aids**. This will help researchers and medical professionals to understand how mobility-aids improve the quality of life of people with mobility impairments. This project will involve interviewing people with mobility impairments about how mobility affects quality of life, then developing a questionnaire based on their responses. In order to create a scoring system, we will then ask a large number of people to state their preferences for all of the different health states identified in the new questionnaire. Throughout the project, we will test the questionnaire to make sure that it is valid and reliable. **More information about the project is available from the MobQoL website <http://cheme.bangor.ac.uk/mobqol>**

#### /// Contributing to policy development and decision making within Wales

WHESS has continued to provide senior, independent, health economics expertise to the All-Wales Strategic Medicines Group (AWSMG) and New Medicines Group (NMG), and in 2016 has provided expertise to the One Wales Interim Pathways Commissioning Group

- WHESS provides health economics expertise to a range of groups, including NHS Wales Respiratory Health Implementation Group, Velindre NHS Trust Transforming Cancer Services Group, Cancer Implementation Group (Patient-Centred Care Subgroup), Abertawe Bro Morgannwg University Health Board Diabetes services and the Welsh Health Specialised Services Committee (WHSSC).
- Working in collaboration with colleagues in the Centre for Educational Development, Appraisal and Research (CEDAR), Cardiff University, WHESS researchers provided health economics expertise

and analysis to support the NICE guidelines (NG48) on oral health for adults in care homes, published July 2016 <https://www.nice.org.uk/guidance/ng48>

- Dr Pippa Anderson has been instrumental in setting up Health Technology Wales, hosted by Velindre NHS Trust. This included a visit to Sweden and Denmark in November 2016 to explore their models in order to inform the strategic direction and operational plan for Wales. Preliminary discussions are being progressed to explore how WHESS can contribute to the activities of the Bevan Commission within Wales.
- Dr Pippa Anderson has led a number of prioritisation events across NHS Health Boards, facilitated by her Health and Care Research Wales funded PhD studentship. Using programme budgeting and marginal analysis approaches (PBMA); Dr Anderson has devised a novel, real-world application that has been tested across a range of areas.

### Exploring the social value of third sector services for carers of people with dementia in Wales Developing new leaders in health economics research in Wales: Dr Carys Jones' Fellowship

**In Wales there are 45,000 people living with dementia** and the cost of illness has been estimated as £1.4 billion per year. The highest part of this cost is **unpaid care by family and friends**. Support services can be fragmented across the health and social care sectors, and the third sector (e.g. non-profit and charitable organisations) play an important part in supporting people with dementia and their families. This Fellowship, funded by the Welsh Government through Health and Care Research Wales, will **explore the social value of third sector services for carers of people with dementia in Wales**. Using a variety of methods including case studies and social return on investment analysis, the findings from this Fellowship have the potential to improve service delivery through examining the value for money provided by third sector initiatives, identifying what works for whom in the provision of these services, highlighting examples of best practice, and ascertaining barriers to accessing services for carers.

## Economic benefits

Our economic impact has included:

#### /// The return on investment for WHESS equates to:

- £12 returned for every £1 invested to grant income to health and social care research in Wales, from Welsh led projects (from funding bodies within and outside Wales).

#### /// Building workforce capacity

- WHESS has achieved the development of a critical mass of health economists in Wales including:
  - 6 new health economists have been appointed in 2016/17
  - 20 researchers are now linked to WHESS including mentoring of PhD health economics graduates working at other Higher Education Institutions (HEIs) in Wales
  - 11 PhD students are affiliated to WHESS.
  - Facilitated funding to be obtained to host

health economics courses across health care programmes in Wales including the Masters in Public Health and BSc Intercalated Programme for Medical Students at Cardiff University, Graduate Entry Medical Programme, and Swansea University.

## Investing in future areas of work

### Patient and public involvement

A key objective in 2016/17 has been to enhance our patient and public involvement and engagement work. Building on success from key projects where lay people have not only been the subject of research but have been involved in the planning, management and dissemination of our work, we are in the process of recruiting a patient and public representative to our advisory board to ensure we can utilise the best possible use of PPI across the WHESS programme of activities.

### Putting patient and public involvement at the core of health economic evaluation: The AMD pathfinder study.

The **Age Related Macular Degeneration (AMD) pathfinder study** is an evaluation of four hospital eye services moving provision of care into a community setting, funded by Welsh Government. The study management group includes two lay members of the public. **Doing this research has also enabled us to make contact with and get input from Community Health Councils, who also represent public and patients.** These participants represent their communities and keep the service user and public at the forefront of the minds of those of us doing research, ensure study materials are appropriate for respondents, keep the research team grounded in reality and the 'possible' and help the study team understand a lay audience and how they should receive study outputs and how they differ from 'academic' or 'clinical' outputs.

### Building our contribution to social care research

With a growing commitment to develop stronger collaboration to support social care research within Wales, WHESS has established links with the recently established School for Social Care Research. WHESS has already contributed to a

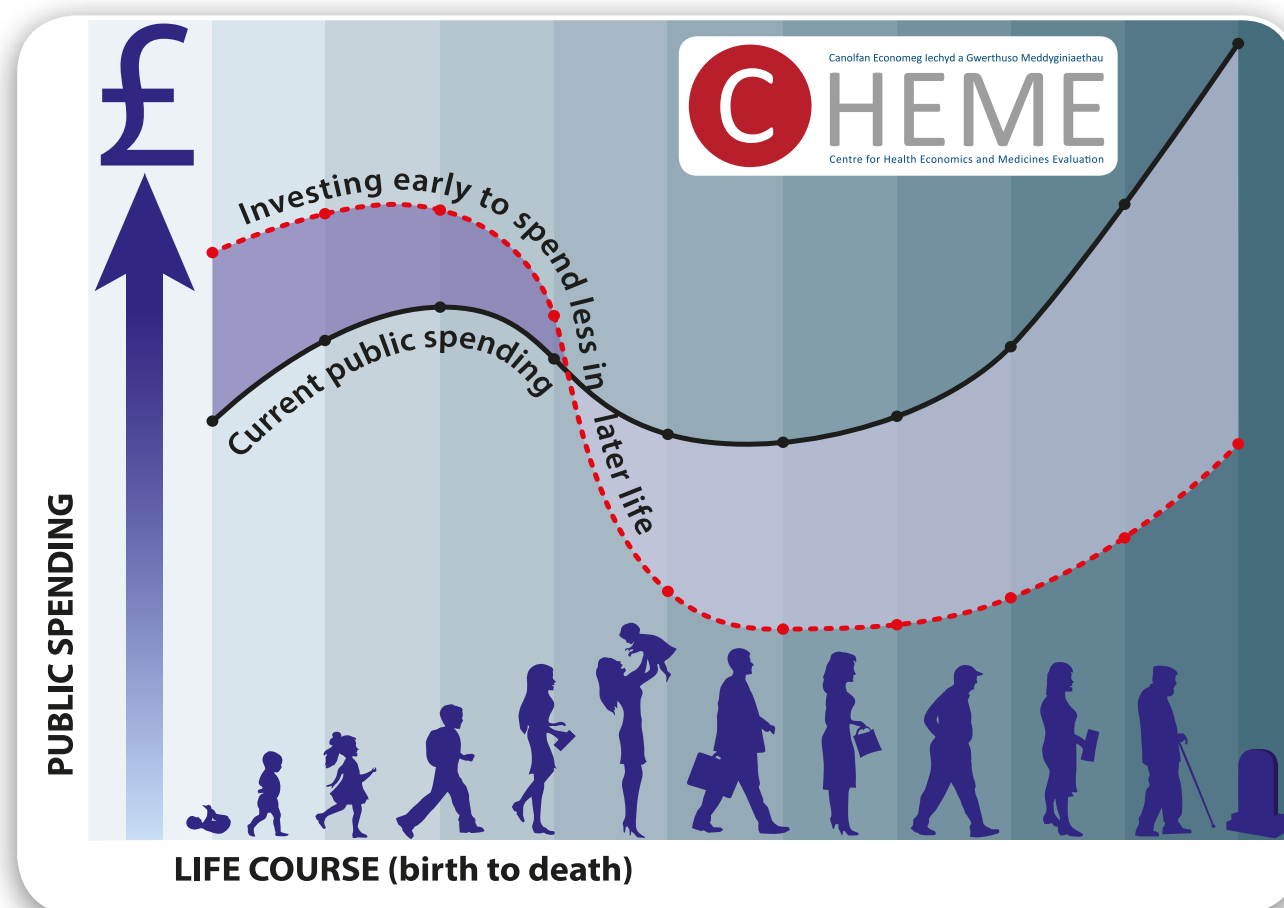
range of projects across Wales with a strong social care element and we plan to grow this of activity with the appointment of a dedicated WHESS lead for social care.

**Developing community-based research with the community: The Solva Care Evaluation**  
 The **Solva Care** evaluation was a community led project intended to improve people's health and quality of life. Solva Care coordinates a team of volunteers who visit older and more vulnerable people who need help with daily tasks. Volunteers also help carers by looking after their loved one for a short while. The study determined whether it was possible to collect information that could be used to describe Solva Care and the differences it has made. Solva Care clients valued the emotional support and practical assistance they received and felt it enabled them to remain independent and active in the community. Volunteers said their role was rewarding and enjoyable. The study showed that it is feasible to collect information that can be used to research how Solva Care works and what difference it makes. We also found that **Solva Care is needed and valued by the community. It has the potential to keep people living longer in their homes despite deteriorating health. It may also reduce unplanned use of health services and the length of time people stay in hospital because there is more support when they come home.**

### Working with other agencies and partners across the life course

Building upon a strong ethos of a public health approach in understanding the determinants of health and ill-health within populations and the need for health economic thinking and methods to be embedded into robust evaluations of complex

interventions, WHESS researchers have developed a strong portfolio of work across the life course, from early years interventions through to end-of-life care, often working in partnership with a range of stakeholders.



### Recent examples of projects that have been supported by WHESS include:

- Supporting the health economics contribution to the Cardiff University-led **Building Blocks 2** project – a follow on study to **evaluate the longer-term outcomes of a term impact of a home-visiting programme on child maltreatment in England.**
- Working with Gentoo housing association and Nottingham City Homes, to evaluate the costs and outcomes associated with social housing improvements. This work has recently been published in the International Journal of Public Health. Health and Care Research Wales have funded **PhD student Eira Winrow** to further

investigate **the impact of housing on health and NHS expenditure.**

- The end of study event for the Economic and Social Research Council (ESRC) and Arts and Humanities Research Council (AHRC) funded Dementia and Imagination study of an arts intervention for people with dementia. **CHEME** led the economic evaluation work package for the study, and **Dr Carys Jones** presented the findings of the Social Return on Investment analysis. Engaging with stakeholders is at the heart of SROI analysis, and one of the highlights of the event was a panel session involving study participants discussing their experiences and involvement with the project.

### Expanding the use of health economics in the education sector

Professor Rhiannon Tudor Edwards and Dr Jo Charles have embarked on a new collaboration with the School of Psychology and School of Sport and Exercise Science at Bangor University and Centre for Educational Development, Appraisal and Research (CEDAR), University of Warwick, to conduct research in the education setting. Entitled '**Collaborative Institute for Education Research, Evidence and Impact (CIEREI)**', they will work with GwE, the North Wales Regional School Effectiveness and Improvement Service to evaluate the impact of GwE school improvement provision. The collaboration will also guide WHESS to areas of most need and impact on key outcome for schools and children, including health and well-being and chances in later life, creating opportunities for future collaboration.

### Collaboration within industry

The following study is an example of WHESS being invited as a partner on a successful large-scale European funded 'H2020' bid.

The **FlowOx™** study is a **European collaboration led by Salford University and a privately-owned Norwegian commercial company, Otivio AS.** Otivio's main product, FlowOx™, has been **developed to address peripheral arterial disease (PAD).** The FlowOx™ comprises a negative pressure boot system which patients wear for around 2 hours a day. It is non-invasive and intended for home use. Early long-term patient testing demonstrated **increased blood flow, reduced pain and improved wound healing as a result of FlowOx™ use.**



## Developing and measuring the longer term impact of our work

### Thinking more about impact

Health and social care budgets are under extreme pressure and the Welsh Government, NHS Wales and Social Care providers need to understand as never before the value of existing and new health and social care interventions. WHESS is in a strong position to deliver this information, and thus ensuring that the impact, both in the medium and longer term, is fully understood and captured as part of our core strategy.

**The full impact of WHESS activities can only be accomplished if health economic thinking is fully embedded into the activities of all of those involved in decision making, from an individual technology assessment through to policy, with health economics in a prime position to enable the delivery of Prudent Health care and Choosing Wisely.**

**The cornerstone to our impact strategy is communication.** Building on our success to date, in constructing active participation with individuals, other research groups, health boards, Welsh Government and other key stakeholders, **we intend to create a more aligned, transparent and engaged approach to our work in order to obtain the broadest impact possible.**

Our commitment to this strategy is realised with the creation of a WHESS impact lead and ensuring that knowledge exchange and impact is part of our refreshed project advisory groups' core agenda. A managed approach is taken from the outset in our forward-facing strategy, in terms of creating, maximising and measuring the impact of our activities.

### This includes:

- Continuing to develop cross-organisation collaborations such as building on the success of our collaboration with the All Wales Therapeutics and Toxicology Centre (AWTCC) into new areas including diagnostic technologies;
- Having greater test and challenge of our work, through our UK wide advisory group to ensure we benchmark our work to leading UK and international competitors;
- Building on our success in capacity building which includes succession plans for future health economic leaders in Wales;
- Greater targeting of our support to enable other researchers to translate their findings (with the inclusion of health economic evidence) into routine clinical practice or policy;
- Appointment of a communication lead for WHESS and development of a communication strategy;
- Tailoring our communication material (including enhancing our website and social media presence) to ensure health economics is suitably tailored and targeted for all our audiences;
- Involvement in events at local, national and international level such as engagement events, workshops and international conferences;
- Continue building our relationships with Welsh Government (for example, Professor Rhiannon Tudor Edwards was invited to the Senedd by the Welsh Government to review the £7 billion Health, Social Care and Sport Budget for 2017/18), health boards, social care and third sector organisations; and enhance our interaction with commercial organisations;
- Using our developed impact support system to monitor and collect data to support impact.

## Conclusions and priorities for the future

2016/17 has seen WHESS take important steps forward. We have continued to champion an 'All-Wales' approach to our activities. With the investment in our team, we are already showing excellent progress in building capacity and ensuring Wales has a strong and vibrant health economics community for the future, through our talented team of researchers.

Our research income has shown steady increase, we are working well across all our sectors, forging new collaborations with clear priorities to focus on enhancing our PPI and social care connections. We are showing a steady return of high quality research outputs, have expanded our advisory group and will prioritise greater focus in disseminating and deepening understanding of 'what we do' across a range of audiences involved in health and social care in Wales, with greater clarity provided to demonstrate our impact.

*We look forward to a busy and productive 2017/18*



Dr Pippa Anderson



Professor Deb Fitzsimmons



Professor Rhiannon Tudor Edwards





<https://www.healthandcareresearch.gov.wales/welsh-health-economics-support-service/>