Who we are

The mission of the National Centre for Population Health & Wellbeing Research (NCPHWR) is to improve the health and wellbeing of the population of Wales. We do this by bringing together academia, the NHS, third sector, policymakers and practitioners to collaborate in cutting-edge research.

We focus on children and young people to help the population of Wales live a longer healthier life.

We do this by

• Generating an evidence base for population health policies, services and interventions.

• Working with others to implement the findings of our research on a large enough scale to make a real difference to the health and wellbeing of people in Wales.

Our key areas of research focus are

Healthy Development

Children & Young People

Vulnerable Children

Healthy Ageing

Maintaining Health and Wellbeing

Vulnerable Adults
Key Achievements in 2017-18

<table>
<thead>
<tr>
<th>Investment</th>
<th>Research &amp; Publications</th>
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<tr>
<td><strong>£6.5+ MILLION</strong></td>
<td><strong>150+</strong></td>
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Over £6.5 million from outside Wales invested in population health, leading to increased research into interventions that improve the health and wellbeing of the Welsh population.

Over 150 research publications achieved, providing an evidence base for population health policies, services and interventions.

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<th>Collaboration</th>
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Continued collaboration with our partners from research, the NHS, the third sector, policymakers and practitioners working together to implement findings to help our research make a difference beyond academia.

Increased awareness of NCPHWR as a centre of expertise for population health research leading to our findings influencing policy and practice across local authorities and Welsh Government.

This year, the NCPHWR has continued to focus on collaboration, bringing together academia, the NHS, the third sector, policymakers and practitioners to encourage the application of bids for new, exciting research.

We continue to achieve significant external funding through the support of the research infrastructure in Wales. More than ever, we are communicating to a wider audience through our increased social media activity and our continued success in seeing our research published. Finally, we have continued to engage and involve the public to increase the impact of our research.

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Foreword

Welcome to the third annual report of the National Centre for Population Health and Wellbeing Research (NCPHWR), covering its activities during 2017-18. It has been a year in which the Centre has continued to drive its mission of improving the health and wellbeing of the population of Wales.

To achieve this, we have continued to enable large numbers of successful funding bids to be created, securing over £6.5 million in funding.

In last year’s report we identified how our research was showing impact in health and beyond. This year we will show the results from our research into children and young people and healthy ageing.

We are working to translate our quality, evidence-based research findings to inform public services and government decision making.

This report will discuss our progress in our key areas of research between April 2017 and March 2018.

Thank you for taking the time to read it, we hope you enjoy.

The NCPHWR Executive Board

Introduction

The National Centre for Population Health & Wellbeing Research (NCPHWR) has been established to carry out research to improve the health and wellbeing of people in Wales. It is funded by the Welsh Government through Health and Care Research Wales.

The NCPHWR brings together expertise from across academia with Swansea, Cardiff and Bangor University working alongside Public Health Wales and our third sector partner Children in Wales.

Executive Board

Centre Director
Professor Ronan Lyons
Deputy Director
Professor Sinead Brophy
Deputy Director
Professor Simon Murphy
Deputy Director
Professor Shantini Paranjothy
Deputy Director
Professor Jane Noyes
Knowledge Transfer Lead
Dr Alisha Davies

NCPHWR Staff
Centre Manager
Sam Dredge
Centre Administrator
Elizabeth Irvine
Communications Officer
Sarah Toomey
Knowledge Exchange Officer
Ceri Davies

Who we work with

Research Centres
• DECIPHer (Centre for Development and Evaluation of Complex Interventions for Public Health Improvement)
• CASCADE (Children's Social Care Research and Development Centre)
• ADRC-W (Administrative Data Research Centre Wales)

HealthWise Wales

HDRUK (Health Data Research UK)
Research is undertaken to deliver and evaluate interventions that support pre-birth, early year’s education and primary and secondary school interventions, which form the basis of our work with children and young people.

**Research Impact**

- Our systematic review showed that enhancements to health services did NOT improve child development outcomes for children aged 3 and under.

- The HAPPEN network recruited over 4,000 pupils from 100 primary schools, providing information on pupils’ fitness, health and wellbeing back to the school and local government. This has helped identify areas of health and wellbeing to be prioritised. Findings included 50% of boys and 40% of girls being identified as physically fit.

- The School Health Research Network (SHRN) has increased the number of secondary schools it is engaging with; it now works with 100% of maintained schools and over 100,000 pupils in Wales providing data to inform each school’s own planning activities through the provision of bi-annual tailored and benched marked school profiles. This has resulted in SHRN influencing policy in a significant number of schools.

“The HAPPEN project has raised the pupils’ awareness of the importance of exercise and, in consultation with the school council, we have further developed our outdoor play areas.”

Primary School Head Teacher, Swansea

"Being a member of SHRN gives our school access to up-to-date and relevant research, support and information. This can be used to direct our school focus on health and wellbeing."

Assistant Head Teacher, North Wales

Research is undertaken to identify dataset trends for vulnerable children and children with Adverse Childhood Experiences (ACE’s). Researchers from the Centre also provide expertise-undertaking studies into Child Maltreatment. Research into autism and improving the health of children with autism is also undertaken.

**Research Impact**

- Research into the use of antipsychotic drugs in children with autism gained international exposure through ‘The Conversation’ website. This research identified higher evidence of epilepsy, diabetes and respiratory infections requiring admission, in all young people on antipsychotic drugs.

- In February 2018, researchers from the Centre organised an international symposium discussing the development of a standardised tools to support data collection for Child Maltreatment.

- Our cohort study identified an increased risk of emergency hospital admissions in children, particularly for injuries and victimisation, associated with mental disorders and alcohol misuse in the household. The results indicate the need for policy measures to provide support for young families that are affected.

“Being a member of SHRN gives our school access to up-to-date and relevant research, support and information. This can be used to direct our school focus on health and wellbeing.”

Assistant Head Teacher, North Wales
The Centre undertakes research into a variety of different challenges posed by adults that might result in them being identified as vulnerable. These challenges range from chronic health conditions such as arthritis and dementia and adults with intellectual disability, to the burden of disorders and substance abuse. These challenges are identified using linked health records (general practice and hospital records) to look at long-term health information collected through HealthWise Wales and analysed using the SAIL Databank. Research is also undertaken to identify interventions that can support the maintenance of health and well-being of adults through improvements in the environments they live in.

Social Care Research forms a cross-cutting theme in the Centre, underpinning all areas of the Centre’s work. The Centre works closely with colleagues from other social care relevant Centre’s, such as the Wales School for Social Care Research (WSSCR) and Wales Kidney Research Unit (WKRU), as well as health boards, local authorities and third sector organisations such as the Wales Council for Voluntary Action (WCVA).

This year a key focus of the Centre’s work around social care was undertaking a Population Needs Assessments Analysis of 22 local authorities, identifying priority areas across Welsh authorities as well as current gaps in research and data. In total, seven sets of reports were produced, themes included:

- children and young people
- older people, health/physical disabilities
- learning disability and autism
- mental health
- sensory impairment
- carers who need support
- domestic abuse and sexual violence
- advocacy services
- asylum seekers and refugees
- homelessness
- substance abuse
- veterans

As a result, a number of Pan-Wales priority areas were identified for requiring improvements such as public understanding, client focus, transitions, advice and assistance.

Going forward local authorities are using the findings from the reports to form actions plans. This will be achieved by many of the suggestions and aspirations for improvement, highlighted in the evaluation being turned into concrete actions. After a second phase of analysis, actions can then be carried out and followed up by how the NCPHWR could best input into these plans.
Work Packages | Cross-Cutting Themes

Knowledge Transfer

The Centres Knowledge Transfer work program aims to turn our research into benefits outside of academia. It works to increase the level of evidence-based practice through disseminating research findings and increasing the number of new collaborative research projects.

Seeking to support Knowledge Mobilisation, the Centre has attended a series of workshops run by Welsh Government, identifying barriers to accessing knowledge across the health and Social Care network. These workshops have brought together policymakers, practitioners and third sector representatives to discuss some of the changes and solutions to this process.

The Knowledge Exchange Action group (KEAG) facilitated by Public Health Wales (PHW) has continued to support the Centres Knowledge Transfer program. This year the group has again has brought together representatives from

- Welsh Government (Social Research) and Knowledge Mobilisation
- Welsh Assembly
- Social Care Wales
- Welsh Local Government Association
- Wales Council for Voluntary Action
- Alliance for Useful Evidence
- Evidence and Information Service
- Public Patient Involvement Service
- NHS Centre for Quality and Human Rights
- DECIPHer (Centre for Development and Evaluation of Complex Interventions for Public Health Improvements)
- Third Sector organisations

This group continues to provide a platform for discussions and collaboration to encourage the knowledge exchange process. This year, some key outcomes resulting from these have been

- Centre researchers invited to provide expert evidence to the Welsh Assembly
- Exploratory dissemination of Needs Analysis Report produced by the Centre identifying its impact of social care provision at local authority level

Evidence Masterclass Feedback

The NCPHWR ran two ‘Evidence masterclasses’ in 2017-18 to support policy makers and practitioners from across Wales to use research evidence when making decisions. After the classes, we asked them what advice they’d give to researchers who wanted to inform policy in their field. Here’s what they told us:

"Publications in journals are rarely seen by non academic staff so ensure research is circulated through a variety of communications and associated networks, topic bulletins etc."

"I would suggest that researchers get to know their local third sector organisations; network with them and jointly identify policy-related evidence needs based on shared objectives."

"Keep things simple, practical and think about the timing, getting involved at the start of a project or the development of a strategy."

"My advice is to link in with key policy representatives to find out what research is needed. Where possible, attend relevant project groups to network and hear more about current issues."

"Develop contacts and networks to pick up what the practitioner’s main concerns and priorities are."

"I would urge researchers to strive to ensure policy makers base their decisions on the best evidence."
Communicating to a Wider Audience

NCPHWR Researchers become authors in the Conversation UK

Throughout the last year, NCPHWR researchers have provided an expert voice to address a global audience. The Conversation Website has over 100 million readers with 8 million reads per month on UK content.

Articles published on our research have received over 10,000 hits in the UK and around the world. Being published in The Conversation demonstrates the impact our research is having, both nationally and internationally.

New Website Launch

In March 2018 the Centre launched its new bilingual website.

Key features include ‘Case Studies’, ‘Current Projects’, ‘Researcher Directory’ and ‘News & Events’. To encourage on-going engagement the new website features a ‘Contact Us’ form for collaboration enquiries and an e-Newsletter sign-up for the general public.

The NCPHWR website is at the heart of the Centre’s new communication strategy, which aims to increase engagement with both the research community and the wider public.

ACTIVE Project Launch

Last year the ACTIVE project, funded by the British Heart Foundation and supported by NCPHWR was launched.

Project Trial Manager Michaela James and Head of British Heart Foundation Cymru, Ruth Coombs were interviewed by ITV Wales and Bay TV. Radio interviews featured on BBC Radio Wales’ Good Morning Wales, BBC Radio Cymru’s Taro’r Post and local radio station The Wave 96.4FM.

The project aims to see whether giving teenagers vouchers to spend on activities of their choice can reduce the time spent being sedentary, improve fitness, lower the risk of heart disease and improve general health.

Research into Inter-generational Care

Hen Blant Bach, an inspirational TV series for S4C, showcased a unique social project aimed at bringing pre-school children and pensioners together in an exploration of inter-generational care.

The programme enabled the Bangor University team to conduct research into the effect of the three days on the children, adults and staff who are associated with the establishments.

The TV series was nominated and reached the final state for the New York Festival International Film and Television Awards.
Working with other Research Centres

One of the key activities of the NCPHWR is to collaborate on different research projects in both Wales and other parts of the UK. By working with other key research infrastructures in Wales allows expertise to be utilised to the benefit of the Welsh population.

A key partnership between the NCPHWR and DECIPHer (Centre for Development and Evaluation of Complex Interventions for Public Health Improvements) has continued with NCPHWR researchers supporting the work DECIPHer undertakes examining multiple risk factors effecting young people around issues such as substance misuse.

Researchers from the Centre are building a strategic partnership with CASCADE (Childrens Social Care Research and Development Centre) to identify areas for collaboration to improve the social care research capacity in Wales.

NCPHWR researchers, supporting NHS Wales Collaborative have created time travel indicators using Geographic Information System (GIS) mapping to help NHS Wales in translating data that can be used to improve understanding of behaviour trends.

Influencing Policy

Throughout the year the NCPHWR has undertaken a number of activities aimed at influencing policy.

School Health Research Network (SHRN) academics have been invited to sit on both the Educational Settings Advisory Board for School Health Policy Delivery and the Tobacco Control Delivery Board Prevention Group. SHRN are also working with Welsh Government Pioneer Schools to implement an evidence-based approach to improve pupil health impacts.

In March, Centre Deputy Director Simon Murphy gave expert evidence to the Health Social Care and Sports Committee within the Welsh Assembly discussing the state of child health and wellbeing. The evidence provided will now be used to direct policy.

Communicating to a Wider Audience

Working with the NHS

The Centre’s ability to evaluate complex public and patient data across Wales is making our work particularly useful to the NHS. Many of the funding bids and research projects are co-produced with NHS clinicians, managers and informatics staff. A significant proportion of our research aims to identify findings the NHS can use, either to improve services or better understand the way behaviours can effect how patients use hospitals and community health services.

Research Data produced from the HAPPEN network was used by the Abertawe Bro Morgannwg University Health Board (ABMU) Public Health team to inform their work plan on improving the mental health of children.

NCPHWR researchers, supporting NHS Wales Collaborative have created time travel indicators using Geographic Information System (GIS) mapping to help NHS Wales in translating data that can be used to improve understanding of behaviour trends.
Public Engagement & Involvement

Public Events

Over the last year NCPHWR took part in a number of public engagement events throughout Wales. This offered a unique opportunity to engage and share our research and research findings with the public. The events attended by the Centre varied, ranging from science festivals to lecture presentations.

Highlights in the event calendar included the family focused Swansea Science Festival 2017. Held from the 8th - 10th September at the National Waterfront Museum, the event attracted 9,000 visitors over the two days.

In March 2017 “Super Science Saturday”, again another family focused event, was attended by over 1,900 visitors.

Let’s Talk About Data

In July 2017 the ‘Let’s Talk About Data’ survey was launched by the Centre’s Public Engagement Officer. The aim of the survey was to obtain the Welsh population’s opinion of using anonymised data for medical research. The survey was distributed through many different community channels including local volunteering groups, the SAIL Databank Consumer Panel and during community based events in local hospitals. The survey, which had over 100 responses, has now drawn to a close and the data once analysed will form the evidence base for the public engagement strategy for the next two years.

Public Panel

Public involvement plays an integral part in the research process at NCPHWR. Each member of the NCPHWR recognises the value of public involvement, and it is now commonplace that members of the public are included as partners in research projects, with more co-produced applications being made.

NCPHWR have access to the SAIL Databank Consumer Panel, a panel made up of 16 members of the public who form an advisory board for researchers. Over the past year, NCPHWR researchers have accessed the panel on several occasions for various projects including; the NIHR funded, Green and Blue Spaces project (GBS). The GBS project consulted with the panel, in the very early stages of the project design process with the Panel providing advice and guidance in relation to public benefit and how to build an effective public engagement pathway. Since this initial consultation the project has been approved. Future consultations with the Panel for the project have now been arranged.

Youth Panel

Young people’s views play a key part in directing the research the NCPHWR undertakes. Views are sourced through the ALPHA ‘Young people’s Advisory Group that is based within the Centre for the development and evaluation of complex interventions for Public Health improvements (DECIPHer), a NCPHWR collaboration Centre.

ALPHA is a great platform for developing research that is relevant to the youth of today. Young participants are able to make real contributions to UK public health policy and learn research techniques that will broaden their experiences and enhance their job prospects. The group advise our researchers by discussing and debating their views on public health topics and research the Centre carries out.
Case Studies

ACTIVE Project

An Overview of the Project
Funded by the British Heart Foundation and supported by the NCPHWR, the ACTIVE project aimed to tackle inactivity by giving teenagers vouchers to spend on physical activities of their choice to reduce the time spent sedentary and lower the risk of heart disease. The project was designed to change the attitudes of young people, encouraging teenagers to embrace alternative activities – whether it is dancing, trampolining, swimming or skateboarding. By giving this group a choice, ACTIVE aimed to empower teenagers to take ownership of their behaviours and tailor activity directly to what the individual enjoyed.

Aim of the Project
The ACTIVE Project aimed to improve the fitness and heart health of teenagers in Swansea through a multi-component intervention. Each year 9 pupil received £20 worth of activity vouchers a month to spend on existing activity provision, to create their own or to spend on equipment. This was facilitated by a support worker and peer mentor scheme.

The Results
The early findings have shown that giving teenagers the financial ability to access activities improved their fitness (compared to children in schools who did not have the vouchers) and improved blood pressure and vascular health. Teenagers used their vouchers to do fun, social activities that did not require prior skills (like trampolining or going to the water park). The study found 65% of the teenagers were unfit and in the control group this increased by 5% over the year. Teenagers are almost entirely autonomously motivated. They do activity because they want to and not because someone tells them to or makes them feel guilty. External pressures will not work to get teenagers in deprived areas active. Empowering teenagers to access activity they want to do with their friends appears to be a step in the right direction to improve fitness and activity in teenagers.

The Impact
Researchers identified impact across all stakeholders from pupils, teachers and activity providers. Discussing the impact the results could have on the provision of local authority Sports development providers, identified the impact.

“ar focus now is to use the results to shape and inform our planning or our areas of work in terms of barriers participation what the barriers are, and is for us as a team really to tackle those issues and look at programmes on how we address them within our delivery.” (Council Focus Group)

Further funding is now being sourced to identify the impact that removing some of these barriers will have on the fitness of those young people involved.

Early Birth and the Risk of Hospital Admissions Due to Breathing Problems

A team of researchers from the NCPHWR investigated the association of early premature birth and the risk of emergency hospital admissions for breathing problems during childhood.

The Challenge
Premature birth (when a baby is born before the 37 week mark) is associated with breathing problems, impairment in growth and development of the brain or central nervous system and can affect educational outcomes. Premature birth rates have increased over the last 10 years and the long term effects and implications for health are a concern for doctors and public health officials.

The Research
Many studies have focused on babies born before 32 weeks but there are few studies for those born between 34–36 weeks. This research project studied births ranging from before 32 weeks up to 42 weeks of pregnancy.

The team of researchers studied health records for 318,613 children born in Wales between 1998 and 2008. These records were made anonymous so that individuals couldn’t be identified.

The Results
The results of the study showed that the risk of admission to hospital with breathing problems decreased with each week up to 40 to 42 weeks; meaning that the health risks to the baby are reduced for infants born later in pregnancy.

Even at 39 weeks there was an increased risk of emergency hospital admissions for breathing problems compared to babies born at 40–42 weeks.

The Impact
The research demonstrated the rich insights that can be gained from studying large scale linked health records to explore the causes of disease and healthcare use in children, particularly focusing on age at birth. The team has been able to improve understanding of the number of infants affected.

The number of children under 5 with breathing problems linked to early birth is significantly large and as a result has an impact on health services and costs to the NHS.
Conclusion

In years one and two of the NCPHWR, our focus was on implementing the infrastructure to ensure the Centre achieved its remit of delivering cutting-edge research to improve the health and wellbeing of the population of Wales. Over the last twelve months, we have continued to make significant progress in achieving this.

Moving into our fourth year, our research will generate findings that demonstrate impact, supporting our aim to improve the health and wellbeing of children and young people and provide the knowledge to help make the population of Wales live a longer healthier life. The focus now is to demonstrate the impact our research continues to have.

Achieving Impact

The research infrastructure, unique to Wales, has enabled us to attract over £6.5 million in the last year. The Centre’s ability to achieve funding from outside of Wales allows us to continue to build capacity and increase our ability to generate the cutting-edge research being undertaken. Achieving this funding demonstrates that Wales is leading the way in population health.

Collaboration and Partnerships

The Centre will continue to bring together academia, the NHS, the third sector, policymakers and practitioners to collaborate on research currently being undertaken and new projects over the coming year.

We will increase Patient Public Involvement (PPI) in our research to make sure it stays relevant and useful. To do this the Centre will implement the new (PPI) standards to support this happening. These standards will inform the way the Centre engages and undertakes co-production.

Communicating to a Wider Audience

We have raised our profile in Wales and beyond by increasing the amount of social media coverage the Centre is generating and will continue to maximise opportunities to disseminate our research through various social media platforms.

Influencing Policy

Our primary (HAPPEN) and secondary (SHRN) school networks have again generated research findings directing schools and local authority provisions and will continue to provide evidence to achieve this. In providing expert evidence, our research has informed policy decisions across Government. Links already formed with policymakers will continue through our Knowledge Transfer program with the objective of disseminating our research to inform policy.

In summary, we will continue to deliver findings that demonstrate how our research supports the ambition to build a Wales that is prosperous, secure, healthy and active.