

Canolfan Iechyd y Boblogaeth Centre for Population Health



Canolfan Genedlaethol ar gyfer Ymchwil ar Iechyd a Llesiant y Boblogaeth
National Centre for Population Health & Wellbeing Research



2019-20 Annual Report





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About Us

Funded by Health and Care Research Wales, the National Centre for Population Health & Wellbeing Research (Centre for Population Health) brings together a leading team of researchers from Swansea, Cardiff and Bangor Universities and Public Health Wales to understand, evaluate and inform population health and social care issues and interventions.

We undertake research by making sense of data that can help support and improve people's health and wellbeing throughout their life. Our work explores and tackles some of today's most difficult health and social care challenges and provides new insights to help policy and decision-makers make informed improvements to population health – including for example by reducing social inequalities and healthcare costs.

Our research spans the entire life course and is divided into two-work packages:

Healthy Development

Our research informs work that aims to give children a healthy and happy start in life. There is considerable evidence that a person's experiences in childhood play a vital part in shaping their future – with early year's child development being associated with good health and educational outcomes in childhood, and better health and employment outcomes in adulthood. Our research into this covers the following areas:

- Maternal health and wellbeing (first 1000 days)
- Early years (0-7 years) evaluations
- Primary School interventions
- Community interventions with teenagers
- Impact of Adverse Childhood Experiences

Healthy Working Life

Our healthy working life research aims to identify some of the key health challenges many face through their lives. We aim to understand how these challenges can limit people's opportunities. We also aim to understand the wider determinants of health. Our research into this covers the following areas:

- Chronic conditions
- Work place health
- Health challenges in at-risk groups

In addition to working across the above work packages, we have two cross-cutting themes:

Social Care

Our Social Care research involves collaborations with academic and non-academic partners to support improvements in social care delivery.

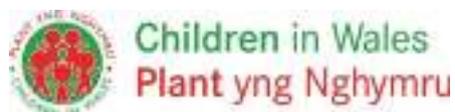
Knowledge Exchange

Our Knowledge Exchange theme enables us to share information across academia, Public Health and the third sector with the aim of informing policy, practice and provision.

Wider Collaboration

Our research is not limited to just our key areas of work. Our team also collaborates with researchers and organisations in the UK and internationally on a wide range of life course research and population challenges.

Centre Partnership



Foreword

Welcome to the latest Annual Report for the National Centre for Population Health and Wellbeing Research (NCPHWR), highlighting the work being undertaken across the Centre.

It's been a year of challenge but much reward. In February the Centre was successfully awarded continued funding from Health and Care Research Wales. This was achieved through the hard work of our researchers, partners and collaborators and we'd like to thank all those who helped achieve this.

Gaining this funding award has given the Centre the opportunity to reflect on where we are and where we're going, in what's now our fifth year of research.

Within Wales, the strength of child health and wellbeing research has continued with the Centre supporting early years and primary aged child research, once again helping to inform policy, practice and provision at a national and international level. Of particular note in demonstrating our impact has been the international recognition of school interventions such as Outdoor Learning and the Daily Mile.

Going forward, our work in early year's research will continue and be extended with an increased focus on pregnancy and the first 1000 days.

This year has also seen the Centre strengthen its reputation as a leading research centre in Population Health research successfully achieving over £6 million of external funding for population health research in Wales. Collaboration has been key to this success. Working in partnership with UK wide research groups such as Health Data Research UK and Administrative Data Research UK has meant that the Centre is able to demonstrate its leading expertise in Population Health data research within the UK to leverage international funding.

The beginning of March saw all of us begin to face the largest Public Health challenge in a generation. Even as we write, colleagues, partners and collaborators of the Centre are utilising their expertise and knowledge in population health, public health and healthcare to fight the COVID-19 pandemic. The pandemic is highlighting more than ever the crucial role that public and population health research has in creating and maintaining a healthy society.

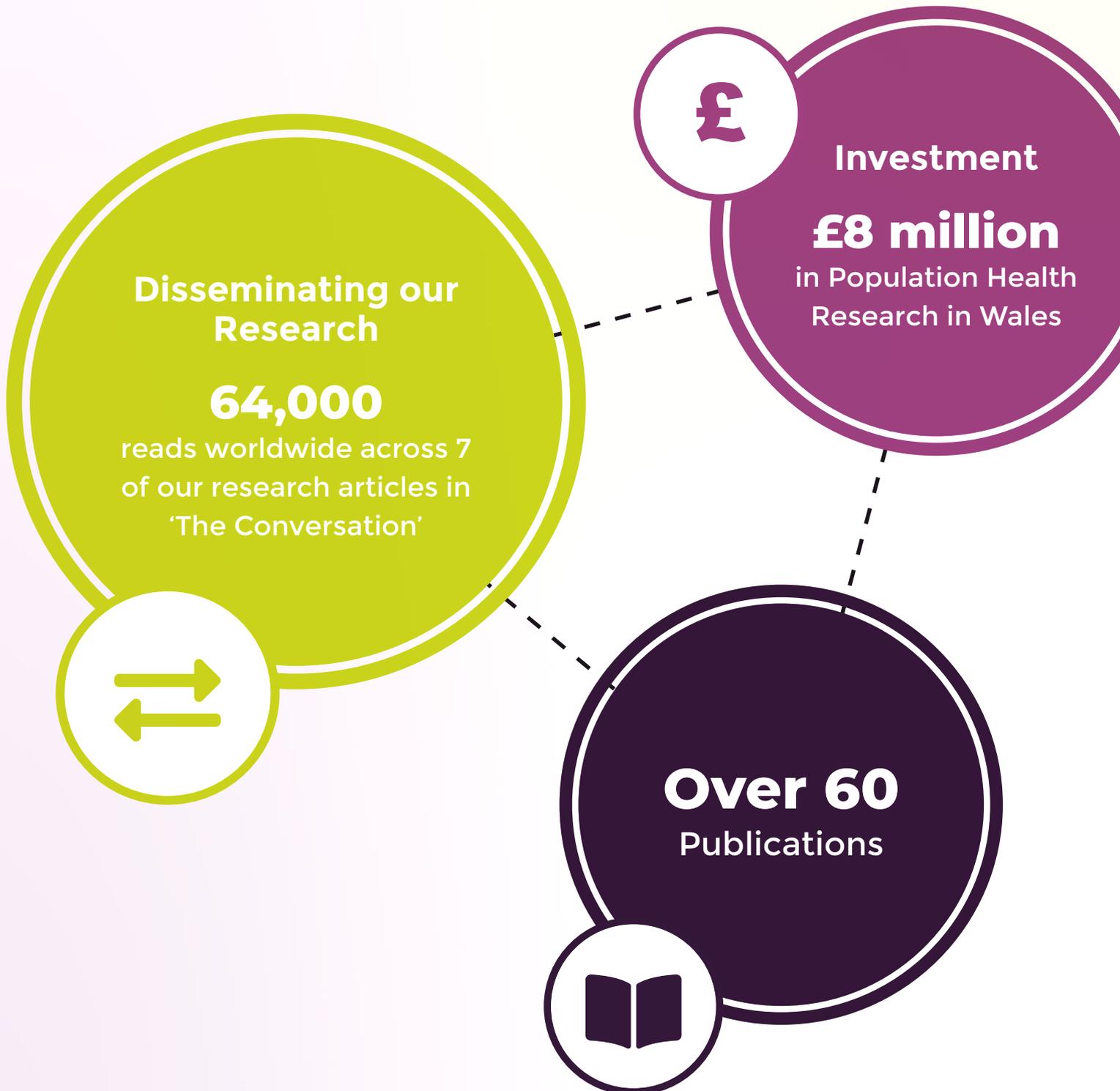
This report will highlight research undertaken in our work packages and our extended activities across the Centre between April 2019 and March 2020. Further it will present how, from our new funding period that starts in April 2020, we aim to support public and population health and healthcare going forward in these challenging times.

Thank you for taking the time to read the report.

The NCPHWR Executive Board

Key Achievements 2019-20

Working with our partners and collaborators, the NCPHWR has once again been successful in achieving significant funding for population health research in Wales. Research we've undertaken and supported has been published in over 60 Publications and has resulted in our research gaining national and international exposure.



Work Packages | Healthy Development



The Centre has continued to support research that identifies the importance of giving children a healthy and happy start in life.

Physical Activity in Infancy

Early childhood is a critical period when healthy behaviours can be instilled for a future active lifestyle.

Barriers to this were explored in a study undertaken called 'Supporting physical activity in families with young children in deprived and affluent communities in South Wales'.

The study found that parents from deprived neighbourhoods were more likely to be under-active because of a complex web of community, social and personal barriers and factors which reduced motivation and hindered opportunity for physical activity.

It made the following four recommendations to help support greater parental involvement.

- Improved family-life balance
- Increased spaces for activity
- Encouraged beliefs and attitudes
- Increased physical activity facilitators

Primary School Research

The research we support continues to inform practice and provision at a national level. This year saw the publication of two major evaluations of primary school interventions being delivered throughout Wales with both studies gaining national and international recognition.

One study was undertaken to explore 'Head teachers, teachers and pupils experiences and views as to the learning experiences of the Outdoor learning programme within the key stage two curriculum (ages 9-11)'.

The study, the first in Wales to evaluate Outdoor Learning, found a variety of perceived benefits for pupils and schools.

It found both pupils and teachers noted improvements in pupils' engagement with learning, concentration and behaviour, as well as positive impacts on health and wellbeing in teachers, leading to increased job satisfaction.

Another study was 'The Daily Mile: Whole-school recommendation for implementation and sustainability. A mixed-methods study'.

Researchers explored teachers' and pupils' perspectives and developed a set of recommendations for the effective implementation and sustainability of the initiative.

The findings identified flexibility and adaptability as factors associated with a positive experience of the programme as well as the importance of the



programme not replacing current play provision, but being delivered as an additional playtime.

Further findings identified the benefit of having child-centred personal goal setting, teacher participation, and whole-school delivery with community support.

Physical Activity in Teenagers

In last year's annual report the ACTIVE project presented the quantitative views of teenagers in how best to engage them in physical activity.

Using data from that project, researchers from the Centre undertook a new study identifying '[Predictors of cardiovascular health in teenagers \(aged 13-14 years\): a cross-sectional study linked with routine data](#)'.

Predictors of cardiovascular health in teenagers were identified through data linkage with the Secure Anonymised Information Linkage (SAIL) Databank. Routine health data was linked with baseline data collected during a physical activity intervention.

The findings provided evidence of early life indicators which may make teenagers more vulnerable to poorer cardiovascular health in adolescence and potentially greater lifetime risk of cardiovascular disease.

Adverse Child Experiences

Centre researchers based in Cardiff University supported a scoping review to map the evidence

base on what works in safely reducing the need for children and young people to enter into statutory care.

The aim of the review was to identify key evidence clusters, gaps and uncertainties in the provision of children's social care services.

The review was undertaken to inform areas of research for the '[What Works Centre for Children's Social Care](#)'.

Vulnerable Children

We continue to support research that identifies challenges that some children and young people face.

For example, a study sought to evaluate '[The long-term associations between behavioural difficulties in early childhood and risk of adolescent injury](#)'.

Data on children with parent-reported behavioural issues were linked with hospital admission and Accident & Emergency (A&E) department records for injuries between ages 9 and 14 years.

The study suggested that children with high/abnormal hyperactivity or conduct problem scores were not at increased risk of injury; however, those with borderline conduct problems had higher injury rates.

Work Packages | Healthy Working Life



The Centre continues to support research that informs an understanding of how people can lead healthy and happy lives throughout the entire course of their lives.

For many this means being able to enjoy a fulfilling working life regardless of health and wellbeing challenges along the way and live as normal a life as possible.

Our research aims to predict disease earlier so people can get the appropriate treatment and support helping them achieve this.

Burden of Disorders

Work continued around the challenges around burden of disorders with a study aiming to 'Shine the light on eating disorders, incidence, and prognosis and profiling of patients in primary and secondary care: national data linkage study'.

Using linked electronic health records from general practitioner and hospital admissions in Wales, sourced within the SAIL Databank, data was identified to investigate the incidence of new eating disorder diagnoses.

The researchers examined the frequency of co-morbid diagnoses and looked at prescribed medications in cases and controls in the 2 years before and continued 3 years after diagnosis, and performed a survival analysis.

Chronic Conditions

Working with colleagues in England, Centre researchers undertook a study into 'Reducing

arthritis fatigue impact: two-year randomised controlled trial of cognitive behavioural approaches by rheumatology teams (RAFT)'.

The study sought to see if the course delivered to groups of patients by rheumatology teams using cognitive-behavioural approaches, plus usual care, reduced rheumatoid arthritis fatigue impact more than usual care alone.

The results suggested that multiple rheumatoid - fatigue impacts can be improved up to, at least 2 years by such an approach.

Work Place Health

A study undertaking a 'Mixed-methods evaluation comparing the impact of two different mindfulness approaches on stress, anxiety and depression in school teachers' aimed to support teachers' wellbeing at school.

This study compared the impact of two different 8-week courses: 1) Foundations and 2) Mindfulness-Based Stress Reduction (MBSR), delivered to school teachers, on quantitative (stress, anxiety and depression) and qualitative (experience, acceptability and implementation) outcomes.

The results demonstrated that both courses were associated with significant reductions in stress. MBSR was associated with improved depression outcomes. No differences were found in terms of experience and acceptability.

Work Packages | Social Care



Social Care continues to form a cross-cutting theme in the Centre. Through collaboration with local authorities, health boards, voluntary sector organisations and other partners we are co-producing and co-delivering research projects with impact.

Some examples of our work are in the following areas.

Social Prescribing

Work continues in the exploration of key research questions around social prescribing.

Social prescribing broadly describes initiatives which allow health and social care professionals to refer people to a range of local, non-clinical services in order to improve their health and wellbeing.

The Centre is part of the Wales School for Social Prescribing Research which is investigating issues such as: models of social prescribing, evaluation, skills required for link workers, and the vocabulary used around social prescribing.

The School works with Communities of Practice across Wales to determine research priorities and to ensure that the work we do is grounded and meaningful.

Foster Carers

As part of our activity a colleague has recently undertaken a Masters in Research, which evaluated the provision of foster carer training

across Wales. Telephone interviews were carried out with representatives from eleven (50%) Welsh Local Authorities using a semi-structured quantitative survey with additional open-ended questions. A comparative thematic analysis explored commonalities and differences in the training programmes offered.

Having successfully completed the MRes, work continues and she is now embarking on a PhD with aspirations to adapt and develop the Enhancing Parenting Skills Programme (EPaS), making it relevant for use with foster carers.

Both of these projects have been co-funded by KESS 2 and the Children's Early Intervention Trust.

Children's Palliative Care

The Centre is part of an NIHR (National Institute for Health Research) funded project that has been investigating wellbeing and 'healthy development' in the context of palliative care for children.

Children can receive palliative care over decades and health promotion is an integral part of children's palliative care.

Research in Care Homes

The Centre has continued to work with the ENRICH Cymru network (Enabling Research in Care Homes) to explore common themes around health and wellbeing in social care settings.

Work Packages | Knowledge Exchange



Once again this year we've continued to work in close collaboration with our partners and collaborators to share knowledge aiming to inform policy, practice and provision.

Evidence Masterclass

September saw our Evidence Masterclass delivered by the Alliance for Useful Evidence and hosted by Public Health Wales (PHW).

In attendance were policy researchers from Welsh Government, practitioners from PHW and researchers from the Centre.

The focus of the masterclass was Early Years research and the aim was to understand the type of evidence that policy makers value and how best to provide this.

Attendees were also encouraged to explore ways their research and practices could be best delivered to inform policy.

Overall it was an excellent opportunity for stakeholders to network and to foster stronger working relationships.

In addition, those that attended discussed ways to work collaboratively in the future to make sure that high impact research and best practice are disseminated effectively.

Wales Population Health Conference 2019

In November the Centre delivered the Wales Population Health Conference 2019. The aim of the Conference was to showcase the breadth of population health research currently being undertaken in Wales.

The focus of the Conference was to demonstrate how current research is supporting the Future Generations Act (Wales) and to identify how both research and legislation can be utilised to improve the health and wellbeing of people in Wales.

Research was presented by a number of groups:

- Public Health Wales
- Centre for Ageing and Dementia (CADR)
- Centre for Development, Evaluation and complexity and Implementation of Public Health improvements (DECIPHer)
- HealthWise Wales
- Centre for Evidence Based Early Interventions (CEBEI)
- Cardiff University School of Medicine.

Workshops were also facilitated to encourage greater collaboration between these groups and stakeholders.

Working With Others



The Centre continues to work with research groups and infrastructures across Wales and beyond. Working in collaboration with these groups means we are able to utilise a wider range of skills to harness greater investment into Wales as well as share expertise.

Investment in Wales

Researcher leaders in the Centre working in collaboration with research centres such as Health Data Research UK have been successful in gaining over £3 million worth of external funding into Wales.

This has been achieved through building collaboration across institutions and by integrating health data science to support a wider health focus.

Informing Policy and Provision

Currently we are working with the Administrative Data Research Centre Wales, a centre created to make information collected by different government departments and agencies available for academic research.

The focus of this work is to help inform Welsh Government policy in areas of early years aiming to ensure children get the best start in life.

With our expertise in health data we have been able to assist other leading population health groups such as the Centre for Development, Evaluation, Complexity and Implementation in Public Health Improvement (DECIPHER) to successfully inform policy around young people and substance misuse.

Wales Leading Population Health Data

Working with these groups also helps us to put Wales at the forefront of Population Health research in the UK. Our ability to make sense of the data means we can provide the context and answers to real life questions that can help improve the health of the population of Wales.

Social Prescribing Network

The Centre has continued to work closely with partners across the research infrastructure, health boards and the voluntary sector to support research into the growing area of Social Prescribing.

The Wales Social Prescribing Research Network was formed through these partnerships and led to the Wales School for Social Prescribing Research which was launched in April 2020 and which is funded by HCRW through PRIME.

Communicating to a Wider Audience | Media Activity

NCPHWR marketing and communications strategy plays a central role in disseminating of research findings to the wider research community, practitioners, policy-makers and the public – locally, nationally and internationally. The Centre continues to use a wide range of marketing tools to achieve this including website, social media, press releases and utilizing The Conversation.

Online and Social Media 2019 – 2020

Social media platforms are an important marketing tool for NCPHWR and are used to:

- Disseminate and increase visibility of our work
- Foster peer-to-peer collaboration and network building
- Engage in two-way conversations with the public

Snapshot of online and social media highlights and achievements for 2019 – 2020

Website



14.5% increase in new users

Twitter



392.2k impressions and **39%** increase in followers

Facebook



Highest reaching post achieved over **2k** views

YouTube



9 new films featured on Centre's channel

Altmetric - highlights from the year

Publications reach into the top 5% of all research outputs scored by Altmetric. Altmetric allows our researchers to measure the impact of their papers beyond citations and measures attention achieved from both traditional and online digital media.

Shining the light on eating disorders, incidence, prognosis and profiling of patients in primary and secondary care: national data linkage study

- Attention Score 217.
- 24% reads by practitioners | 54% reads by members of the public
- 30 news stories in 24 outlets including MSN, Medical Daily, Physicians Briefing, Yahoo News.
- 2 publications that cite this research output.

Curriculum-based outdoor learning for children aged 9-11: A qualitative analysis of pupils' and teachers' views:

- Attention Score 382.
- 12 news stories in 10 outlets including World Economic Forum, The Medical News, EurekAlert.
- 10% reads by practitioners | 89% reads by members of the public
- 2 publications that cite this research output.

THE CONVERSATION

The Conversation is an independent source of news, analysis and expert opinion. Several of our researchers are authors and NCPHWR uses The Conversation as a way to deliver findings direct to the public.



7 articles
published focusing
on new research



**Over
64,000
reads**



Geographical reach included
reads in the United States,
Canada, Australia, Singapore,
Europe



TV, Radio & UK Tabloids

'In June 2019, Emily Marchant (PhD Researcher) spoke on Canadian radio on the Scott Thompson Show about research findings on Outdoor Learning and the huge benefits it has for children and teachers, and the issue of why it is not used more in schools. CBS Boston News also discussed Emily's research live on air. In March 2020, Emily Marchant was invited to appear on ITV News to talk about her research on the Daily Mile.

Communicating to a Wider Audience | Public Engagement

The Centre has continued to undertake activities that aim to engage the public with our research. This begins by increasing the public's awareness of the research we support and produce.



'Let's Talk About Research'

In July we attended the 'let's talk about research' event organised by Health and Care Research Wales and held at Cardiff Museum. This gave us an opportunity to meet the public and talk about the research we undertake and support.

The team invited children to express how they were feeling by painting their face on a plate through creative means such as paint, glitter, and stickers. We also discussed our Outdoor Learning and Daily Mile research with them and their parents or carers.

This gave us the opportunity to promote the impact of these studies but also to present further opportunities to get involved in other areas of our research.



Cardiff Science Festival

In February, during half term we took over a shop space for a day at the Capitol Shopping Centre in Cardiff.

We again delivered activities where children were asked to paint their face on a plate showing what wellbeing meant to them.



Swansea Science Festival

Later on in February we attended the Swansea Science festival attended by over 3000 people. We invited children to take part in a 1 minute bounce around on a space hopper. Their pulse was taken before and after to see if it had increased. We then talked about the physical changes that had occurred such as increased heartbeat and body changes such as sweating and being out of breath.

Communicating to a Wider Audience | Disseminating Our Research



Dissemination continues to be an important activity for the Centre. Through presenting at conferences and publishing research we aim to disseminate our research and that which we support to help inform policy, practice and provision.

Conferences

In April the Centre supported the HAPPEN Schools Conference attended by over 100 teachers, school support staff and primary school educationalists.

The findings of the most recent survey were presented with attendees invited to discuss ways in which the survey could be used to support the new Health and Wellbeing areas of learning outcomes in the new curriculum.

In June the Centre delivered a symposium presenting research from our Early Years work package.

Researchers from across the Centre presented the results of projects such as the Schools Health Research Network (SHRN), SAFE TEA campaign and our collaboration with our partners in Public Health Wales.

June also saw NCPHWR researcher Charlotte Todd present our Outdoor Learning and Daily Mile intervention at a Policy Forum for Wales Seminar. Presented were ways that these interventions could be integrated in the Health and Wellbeing plans for local authorities.

In July researchers from the Centre attended a Learning Disabilities Seminar organised by Public Health Network Cymru.

At this, we presented findings on the impact in life expectancy for adults with intellectual disabilities that undertook health checks, suggesting an increased life expectancy for those that did.

In November, Emily Marchant from the HAPPEN project was invited to present at the 5th European Conference on Health promoting Schools in Moscow.

At the conference Emily discussed how the HAPPEN network works with schools to support their Health and Wellbeing through greater understanding of their pupils feelings.

In October Michaela James from the ACTIVE project delivered a workshop at the Public Health Wales 'Building a Healthier Wales, Conference 2019. Michaela presented ways that young people can be motivated with Physical Activity to increase their engagement.

Publications

Much of the research we've supported and undertaken this year has resulted in over 60 papers being published in international journals, including publications such as the BMJ Global Health and the International Journal of Population Data Science.

Having this research published helps us to promote Wales as a leader in population health research.

Going Forward

It is now becoming clear the COVID virus will have an effect on the short, medium and long-term state of our health and wellbeing in Wales and beyond.

As a population health research centre we will be at the forefront of understanding and responding to this.

For example, the Centre has already begun to evaluate the impact of the extended lockdown on both pupils and teachers. We will also evaluate how those in the front line of the response to COVID have been affected.

Identifying, evaluating and understanding this impact will be a key focus of the Centre. And our aim to inform policy, practice and provision will continue.

Working to assist our partner Public Health Wales with the public health challenges faced will be a key objective of the Centre going forward.

We'll support them to evaluate how the wider determinants of health have been impacted by the pandemic and how this will result in changes to people's health and wellbeing.

Collaboration will also continue on our joint focus on adverse childhood experiences and possible increases in these due to COVID-19.

Through our new data laboratory, our strength in health data science will be used to support others to access information to help understand some of the health and wellbeing challenges we will face.

We have re-doubled our commitment to ensuring the public play a key role in directing the research we undertake by cementing Patient and Public Involvement in the decision making process of the Centre.

To support this we've implemented a new Patient and Public Involvement Steering Committee that will oversee our commitment to achieving this.

So more than ever, the importance of working together with the public, our partners and collaborators will be demonstrated.

We believe the strength Wales has in population and public health research will mean that we are well placed to respond to any challenges we face going forward.





Ymchwil Iechyd
a Gofal **Cymru**
Health and Care
Research **Wales**



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