

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



2023 - 2024
Annual Report



Contents

Foreword	1
Core Metrics	3
About Us	4
Work Packages	
Healthy Development	7
Healthy Working Life	11
Public Involvement	17
Public Engagement	21
Collaboration	23
Capacity Building	29
Celebrating Excellence	32
Future Plans	33



Foreword

The Centre has experienced a productive year, maintaining its focus on its core research areas: Healthy Development and Healthy Working Life – with these initiatives actively informing policy and practice to drive positive change. Throughout the year, the team has strengthened existing collaborations and developed new ones, enhancing the visibility and impact of Wales-based research. These efforts are instrumental in building a sustainable future for the Centre.

Foundations for Life Lifelong Health

The first few years set the stage for lasting health and wellbeing. Understanding these critical stages can promote healthy development for a lifetime.

With data on 300,000 births and in-depth repeated survey information from 3,190 families, the [Born in Wales project](#) is continuing to build a rich Wales-wide dataset expanding by 30,000 new births annually that tracks children from pre-birth through their early years and primary school. A comprehensive cohort profile published in 2024 detailed the project's design, data collection methods, and linkage capabilities. This year's research focused on breastfeeding during the COVID-19 pandemic, risk factors of low birth weight, and ultrasound techniques to inform interventions for improved child health.

The Centre continues to advance its work on Adverse Childhood Experiences (ACEs) with research on the impact of adults' healthcare engagement, highlighting the importance of trauma-informed care. The [My Experiences Cymru Survey](#), a first-of-its-kind national initiative, explored the experiences of young people with ACEs.

Improving Wellbeing and Longevity

Healthy Working Life tackles health and environmental issues to boost wellbeing and lifespan with research informing funding, policy, and impactful interventions.

The team's research on the early detection of Ankylosing Spondylitis through machine learning highlights the transformative potential of technology in healthcare. COVID-19 research provided crucial insights into the healthcare burden and long-term impacts – with the findings able to inform resource allocation and future pandemic preparedness.

Research on data sharing among agencies such as police, health, education, and social services highlighted several crucial recommendations. These recommendations are critical for developing practical guidelines and securing the necessary support to improve data-sharing practices, ultimately enhancing public health outcomes.

Prioritising Public Involvement in Research

The Centre is committed to public involvement by actively engaging the Patient & Public Involvement Panel (PPI) and through its coproduction projects that prioritise public needs. Central to the co-production work is empowering young voices - key initiatives include the [RPlace App](#), the [CORDS best practice guide for coproduction research](#), and the 'Research Explorers' group, which enables young people to shape research priorities and outcomes - ensuring that the research remains relevant and impactful.

The Centre has led significant projects such as the Mental Health Manifesto for Young People, in collaboration with Single Parents Wellbeing, to address mental health challenges faced by young people from single-parent households. The Centre's engagement with parents through the newly formed Born in Wales Healthy Families Feedback Group further demonstrates the dedication to integrating public insights into research processes. These efforts collectively position the Centre as a leader in co-production in research.

Powering Progress Through Collaboration

The Centre thrives on a vibrant network of research collaborators within the UK and across the globe. Through partnerships like [ADR UK](#) and [HDR UK](#), it leverages data-driven collaborations, unlocking a wealth of funding and expertise.

Collaborative projects like CARELINK Wales – a project that analyses linked data to identify risk factors for care entry and factors that support family preservation; MIREDA, and the Green and Blue Spaces Project, a project aimed to shed light on the long-term influence of green and blue spaces on mental health and wellbeing - demonstrate the power of collaboration, shared perspectives, and data. By fostering this robust network, the Centre has secured vital funding opportunities and expanded its reach. These collaborations have also provided access to essential resources and expertise, accelerating innovation in research that is critical for a sustainable future.

Investing in Wales' Research Capacity

The Centre continues to nurture future generations of researchers - empowering early-career researchers and establishing leaders by offering internships, doctoral program support, and mentorship opportunities. This comprehensive approach strengthens Wales' research capacity and ensures its long-term sustainability.

Advancing Public Health Through Strategic Funding Initiatives

The Centre's proactive approach to securing funding strategically aligns with its core research priorities. This focus ensures that funded initiatives address critical public health needs and advance health equity. Achievements this year include a £2.2 million Wellcome Trust grant awarded to the MAGENTA Project, a strategic initiative investigating the impact of temperature on pregnancy outcomes. Additionally, a £500,000 NIHR grant for CARELINK Wales enables a targeted program designed to identify risk factors in vulnerable child populations.

Sustainable Public Health Innovation

The Centre is committed to securing its long-term sustainability as a driver of public health innovation in Wales. By investing in collaborative research, leading innovative methods, building expertise, and translating research into real-world improvements, the Centre ensures lasting positive impacts on the health and wellbeing of the Welsh population.

Kind regards
The Executive Board

Core Metrics 2023-2024

Health and Care Research Wales infrastructure award to the Centre



Direct funding awarded

£714k



Jobs created through direct funding

23

Grants won during reporting period

Grants Won	Led by Centre	Through Collaborating
Number	11	1
Value	£4,470m	£744,624
Funds to Wales	£4,120m	£173,390
Funding to Centre	£1,915m	£173,390
Additional jobs created for Wales	8	1
Additional jobs created for Centre	8	1



Number of publications



Number of public engagement events



Number of public involvement opportunities

About Us

A Life-Course Approach to Population Health





The National Centre for Population Health & Wellbeing Research, established in 2024, is funded by the Welsh Government through Health and Care Research Wales. The Centre brings together a world-class team of researchers, statisticians, and data analysts from Swansea University, Cardiff University, Bangor University, and Public Health Wales.

Collaboration extends to third-sector partners, institutions, and organisations in Wales, the UK, and globally, leveraging combined expertise to improve population health.

The Centre's research adopts a life-course approach, focusing on two key programs: Healthy Development and Healthy Working Life.




Healthy Development

This program acknowledges the critical impact of early experiences on lifelong health and wellbeing. By generating evidence to inform policy and practice, the Centre aims to support children in Wales across four areas:

-  Maternal health and wellbeing (focusing on the first 1000 days of life)
-  Early years (0-7 years) evaluations
-  Interventions for children, young people, and teenagers
-  The impact of Adverse Childhood Experiences (ACEs) on health

Healthy Working Life

The Healthy Working Life program tackles health challenges individuals face throughout their working lives. It explores how these challenges affect wellbeing and opportunities, focusing on:

-  Chronic health conditions and their management
-  Workplace health issues in vulnerable populations
-  The influence of the man made built environment on health

The Centre provides valuable insights to policymakers and practitioners through data analysis, research, and collaboration. Its aim and commitment are to reduce health inequalities, improve health outcomes, and empower individuals to lead healthier, happier lives.

Meet our team

Executive Board

Our **Executive Board** encompasses the research leaders responsible for developing and implementing the Centre's policies and programmes of work.



Prof Sinead Brophy
Director



Dr Alisha Davies
Deputy Director



Prof Jayne Noyes
Chair



Prof Ronan Lyons
Executive Board



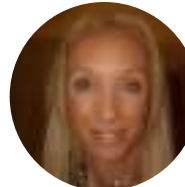
Prof Ernest Choy
Executive Board



Prof Alan Watkins
Executive Board



Prof Richard Fry
Executive Board



Dr Rebecca Hill
Executive Board

Patient and Public Involvement (PPI) Panel

Our **Patient and Public Involvement (PPI) Panel**, made up of public members, is involved in all aspects of our work, from helping to shape the research agenda, advising on research study design and helping to raise public awareness



Sarah Peddle
Patient & Public Involvement Chair



Adele Battaglia
Patient & Public Involvement



Marie-Claire Hunter
Patient & Public Involvement



Georgina Ferguson
Patient & Public Involvement



Samanta Gudziutaite
Patient & Public Involvement



Karen Harrington
Patient & Public Involvement



Debra Smith
Patient & Public Involvement

Research Team

Our **research team** of skilled data analysts, statisticians, and research officers is responsible for undertaking and supporting research within our Healthy Development and Healthy Working Life work packages.



***Dr Mohamed Mhereeg**
Research Officer/
Data Scientist



***Amrita Bandyopadhyay**
Researcher



Dr Roxanne Cooksey
Research Officer



Lois Griffiths
Researcher
Officer



***Dr Michaela James**
Research Officer



***Dr Jonathan Kennedy**
Data Analyst



***Hope Jones**
Researcher



***Dr Tash Kennedy**
Research Officer/
Data Scientist



Sana Shaikh
Researcher



Becky Amos
Healthy
Development -
Early Years ACEs



Dr Mayara Bianchim
Research Officer
& PPI Lead



***Ellena Crane**
Research Officer



***Mike Seaborne**
Research Officer/
Data Analyst



***Michael Parker**
Data Analyst

*Staff supported by multiple funders

Core Team

Our **core team** includes staff responsible for the operational day-to-day running of the Centre, supporting both the Executive and research teams to undertake and fulfil the Central research objectives.



Sam Dredge
Centre Manager



David Burdett
Research
Infrastructure
Support Assistant



Sarah Toomey
Communications
Officer

Work Packages | Healthy Development

The Healthy Development programme prioritises understanding how to support children’s long-term health and wellbeing. Through focused research, the programme identifies key factors influencing positive outcomes in children’s lives. This vital knowledge allows the Centre to determine the most effective ways to support families, ultimately informing policy, practice, and interventions that enhance children’s health and wellbeing.

The following case studies illustrate the Centre’s work and how it is impacting and driving positive change.

Born in Wales - Powerful Data, Engaged Parents - Unlocking the Secrets of Child Health



Key achievements.

- 3,190 families took part in parental surveys with an additional 785 surveys complete during the year.
- Formation of the Born in Wales Healthy Families Feedback Group with 39 PPI group members.
- Publication of the Born in Wales cohort profile paper.
- [Born in Wales discussed at the Senedd.](#)

Building a Richer Data Set

Launched in 2020, Born in Wales connects electronic data on mothers, partners, and babies born in Wales (around 30,000 annually). This robust dataset encompasses the following:

- Health Records: Primary care, secondary care, midwife data, public health records (vaccinations, hearing checks, health visitor assessments, breastfeeding data, COVID-19 vaccinations/testing).
- National Databases: National Community Child Health Database, Census 2021 data (replacing 2011 data), National Neonatal Audit Database.
- Social Determinants of Health: Police/

domestic violence records, substance abuse records, and social care data.

- Ultrasound Scans: Linking scans across Wales, coded for potential markers of cognitive development and school readiness.
- Repeated Parental Surveys: Ongoing surveys capture self-reported health data (stress, mental health, occupation, ethnicity) and open-ended questions on improving family health and wellbeing.

This enhanced data helps estimate variables like income for the broader Wales cohort, allowing researchers to draw meaningful conclusions for a larger population.

Longitudinal Tracking

Surveys targeted expectant parents and parents with children up to the age of three. In 2023, the project rolled out a third survey focusing on parents of nursery-aged children up to the age of five.

By leveraging [HAPPEN Primary School Network](#) data, researchers can now track children’s health and wellbeing from pre-birth through toddler and nursery years to primary school. This comprehensive approach allows the research team to gain a deeper understanding of how factors throughout childhood impact development.

Engaging with Parents in Wales

The Centre is committed to understanding the needs of families across Wales. Therefore, in 2024 the team established the Born in Wales Healthy Families Feedback Group. This group of 39 parents meets quarterly to discuss new research questions, share survey feedback, and guide the research direction. Their valuable insights are instrumental in shaping the Born in Wales project going forward.

New Insights from Born in Wales: Breastfeeding, Birth Weight, and Ultrasound Techniques

This year, the Born in Wales project was a valuable resource for population health research in Wales. A comprehensive cohort profile was published detailing the project’s design, data collection methods, and linkage capabilities. Additionally, researchers leveraged Born in Wales data to investigate essential areas, including breastfeeding during the COVID-19 pandemic, risk factors for low birth weight, and the effectiveness of a specific ultrasound technique.

Born in Wales publications

- [Cohort profile: Born in Wales—a birth cohort with maternity, parental and child data linkage for life course research in Wales, UK](#)
- [Breastfeeding initiation and duration through the COVID-19 pandemic, a linked population-level routine data study: the Born in Wales Cohort 2018–2021](#)
- [Weighting of risk factors for low birth weight: a linked routine data cohort study in Wales, UK](#)
- [Echogenic intracardiac foci detection and location in the second-trimester ultrasound and association with fetal outcomes: A systematic literature review](#)

A Wales-wide population-based database

Born in Wales Cohort

Born in Wales is the first linked longitudinal population-based database from the UK to connect maternity, parental and child data across Wales. The database is a rich resource for research in Wales.

	Cohort size The cohort comprises all children born in Wales since 2011 with linkage up to the age of 11. They are primarily of age 0-11.
	Survey data To augment the data, the Born in Wales and HAPPEN Primary School surveys contribute quantitative and qualitative responses.
	Cohort comprises of • 80% females and 20% males • 75% are from ethnic minority backgrounds.
	Age distribution • 28.8% of children are under the age of 5 • 63.2% are aged 5-11.
	Future plans Born in Wales will expand by 30,000 new births annually in Wales with including to link-up data of children and parents already in the database. Supplementary datasets complement the existing linkage, including primary care, hospital data, educational attainment and social care data.

Want to find out more?
Contact: Born in Wales Lead Researcher,
Hope To see with a Jones@wales.ac.uk



Childhood experiences shape healthcare engagement: A call for trauma-informed care

Adverse Childhood Experiences (ACEs) like abuse, neglect, and household dysfunction are linked to poorer health and increased use of healthcare later in life. However, a recent study by our research team at Bangor University and Public Health Wales explored how ACEs affect how adults interact with healthcare providers.

The study found a clear connection between ACEs and healthcare engagement. Adults

with high ACE scores reported feeling less comfortable using various healthcare settings, including hospitals and doctor's offices. They were also more likely to use medication but had poorer adherence to treatment plans. Additionally, they held a more negative perception of healthcare professionals' care and understanding.

These findings highlight the long-term impact of childhood experiences on healthcare engagement. The study underscores the importance of preventing ACEs and implementing trauma-informed approaches within healthcare settings. Training healthcare providers in trauma-informed care can create a more comfortable environment for patients with a history of childhood adversity, potentially fostering trust and improving treatment outcomes. Further research is needed to explore the specific mechanisms linking ACEs to healthcare engagement for more targeted interventions.



"This research adds to our understanding about what factors might influence people's engagement with healthcare services. It's important that we understand what affects people's comfort in the use of health services as this will affect use of services, and potentially affect health outcomes. This knowledge will help improve the delivery of future services and improve equity by helping services to better understand who is less likely to engage and the reasons why people might not engage."

Dr Sikha de Souza
Consultant in Public Health,
Public Health Wales, Screening Division



Read the full report here:
<https://phwwhocc.co.uk/resources/adverse-childhood-experiences-and-engagement-with-healthcare-services-findings-from-a-survey-of-adults-in-wales-and-england/>

My Experiences Cymru Survey: Understanding ACEs in young people

Impact:

- This is the first national study to ask young people about their experiences and tie this to their views on what support and help should be available.
- The first study to capture the impact of the COVID 19 pandemic on young people's childhoods in Wales.



The My Experiences Cymru is a national survey for 16-18-year-olds in Wales. It explored their experiences with ACEs and what support should be available to help with ACEs. The survey was promoted online and through workshops, with 670 responses.

This project adopted a co-production approach with young people, who actively shaped the research. CASCADE, a young carer's group, approved the survey design, and over 100 young people participated in mental health

and ACEs awareness-raising workshops as part of the survey promotion. Additionally, Bridgend College students analysed free text responses, offering their perspectives on data analysis. This research is unique in its approach, empowering young people by valuing their views on public health challenges and involving them in developing solutions. It will help address gaps in the current research around ACEs; whilst existing studies have addressed the prevalence of ACEs in Wales.

"Your work is important, thank you."
"I like this [survey] because it actually helps people through hard times."

"This questionnaire was extremely well-made as you have taken into account that some of the questions could be upsetting and you have also added helplines at the end. Thanks for that!"

Testimonials from young people who took part in the survey

This work package aims to investigate and tackle the health and environmental challenges people encounter daily. Its research provides valuable insights to guide funding, shape policy, and develop interventions for better health, wellbeing, and longevity.

These impact case studies demonstrate how the Centre's work is helping to effect positive change.



Impact:

- The study identified distinct risk factors for men and women, with a 70-80% prediction rate.
- This research enables earlier diagnoses and better patient care.

Early detection of Ankylosing Spondylitis: A game changer

"It's fantastic to see the cutting-edge role that machine learning can play in the early identification of patients with health conditions such as AS and the work being undertaken at the National Centre for Population Health and Wellbeing Research.

Though it is in its early stages, machine learning clearly has the potential to transform the way that researchers and clinicians approach the diagnostic journey, bringing about benefits to patients and their future health outcomes."

Professor Kieran Walshe, Director of Health and Care Research Wales

Ankylosing Spondylitis (AS), a common inflammatory arthritis, often takes eight years to diagnose due to unclear symptoms. This delays treatment and worsens patient outcomes.

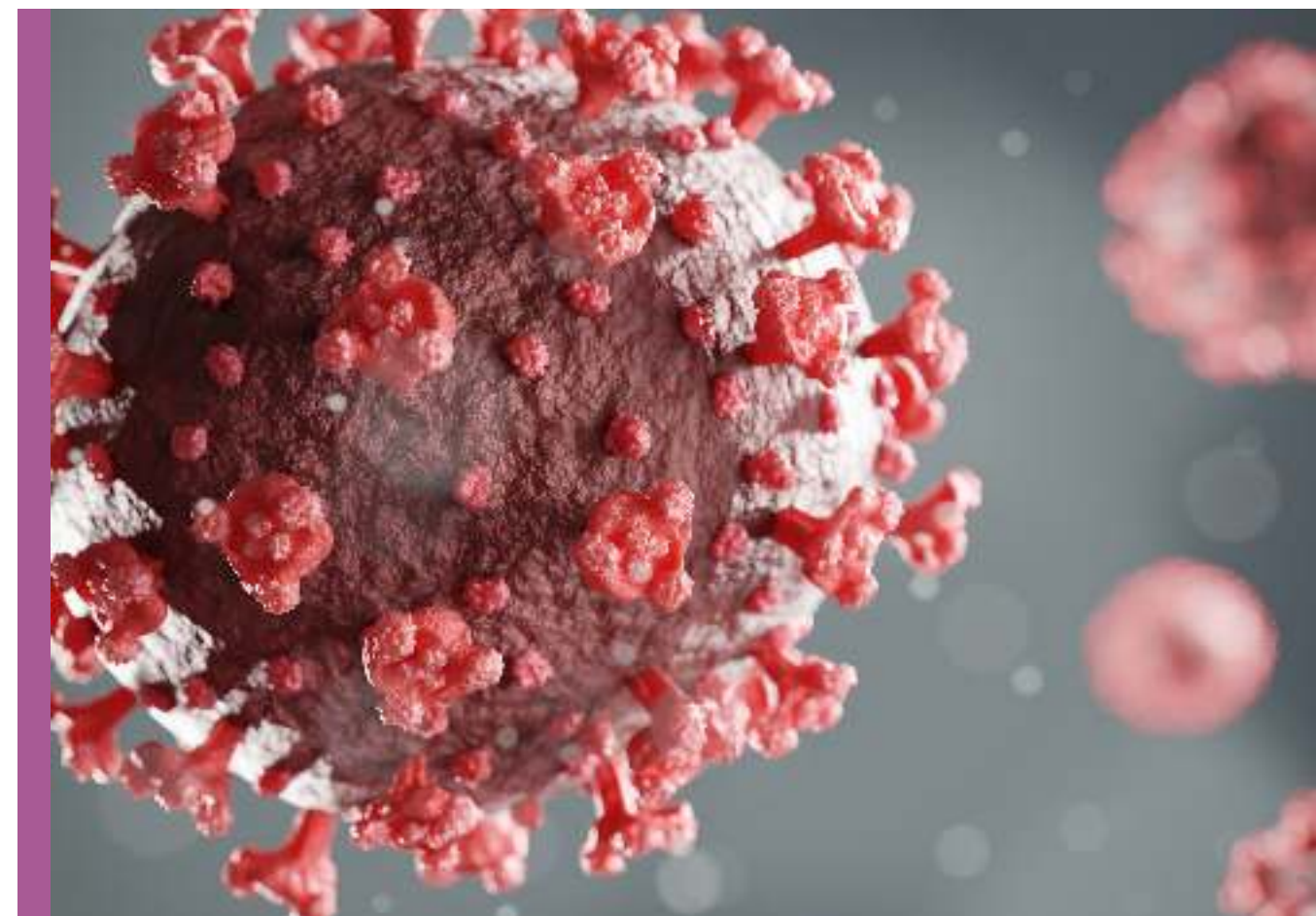
Researchers at the Centre used machine learning to analyse patient data and identify risk factors for AS.

The study identified distinct risk factors for men and women, with a 70-80% prediction rate in test data. This research paves the way for earlier diagnoses and improved patient care.



Read the full study here: [Predicting a diagnosis of ankylosing spondylitis using primary care health records-A machine learning approach | PLOS ONE](#)

COVID-19 is associated with post infection conditions but healthcare burden is low



A Centre study investigated healthcare utilisation following COVID-19 infection in over 249,000 people in Wales.

The study found an increased risk of fatigue and embolism in COVID-positive individuals, particularly within the first four weeks after infection. Anxiety and depression were less frequent. Importantly, the overall burden on healthcare services remained low, with only a small minority experiencing post-viral illness.

The study highlights the need for clinician awareness of increased embolism risk and potential mental health complications

following COVID-19. These findings can inform healthcare resource allocation, policy decisions, and future pandemic preparedness.



Read the full study here: [Healthcare use attributable to COVID-19: a propensity-matched national electronic health records cohort study of 249,390 people in Wales, UK | BMC Medicine | Full Text \(biomedcentral.com\)](#)

Unlocking data for public protection: study examines opportunities and challenges of data sharing



Researchers at the Centre explored the untapped data-sharing possibilities among key agencies, including the police force, health, education, and social services.

In a study published in January 2024, researchers carried out semi-structured interviews with 36 individuals from the four police services in Wales, along with representatives from the Violence Prevention Unit and the Police Liaison Unit, to understand their opinions on the systems used for public protection and their views on data sharing.

The study identified opportunities and challenges and provided practical solutions, including the need for standardised data systems, clear data sharing frameworks, and addressing data protection concerns. Researchers have recommended guidelines and high-level support to overcome these

barriers, making the study's findings highly applicable.

This research forms the second element of the NIHR-funded project titled "Unlocking Data to Inform Public Health Policy and Practice". The study highlights the potential benefits of data sharing for better decision-making and targeted interventions but emphasises the importance of public trust and clear protocols for data governance.



Read the full study here: [Investigating methods of sharing data between police, health, education, and social services: Semi-structured interviews with police service areas in Wales \(biomedcentral.com\)](#)

Evaluating patient reported outcomes in Value-Based Healthcare - actionable insights for improvement

Impact:

The Heart Failure Service has adopted some of the recommendations to improve healthcare service delivery and resource allocation.



Value Based Healthcare (VBHC) is about improving healthcare for patients while keeping costs down. Patient-reported outcome Measures (PROMs) are questionnaires designed to track patients' health, treatment, and experiences. They have gained traction in VBHC due to their focus on patient priorities.

This study used robust research methods to understand how PROMs worked in four VBHC programmes in a Welsh Health Board. Researchers used a Realist Evaluation to understand how, why, and for whom PROMs work within a VBHC context and a Social Return on Investment analysis to measure the social and economic value of PROMs for patients and healthcare services.

The team found that PROMs added substantial social and economic value to Heart Failure services, working well for clinicians and services, ultimately improving the quality of care for patients and their families. However, PROMs added little value to Parkinson's Disease and Epilepsy services. Furthermore, none of the programmes resulted in better collaboration between patients and clinicians.

These findings demonstrated that careful consideration is needed in selecting suitable services and tailoring the implementation of PROMs to meet specific service and patient requirements effectively.

The findings of this study will guide policy and clinical leaders in shaping how PROMs are used nationally. The team involved policy and clinical leads in Wales to develop tailored and practical recommendations to improve the implementation of PROMs to better achieve the goals of VBHC. The current implementation of PROMs requires careful revision to ensure effective resource allocation and enhanced patient outcomes.

Main recommendations include:

- Redesign PROMs specifically for routine care, focusing on what matters most to patients.
- Provide training for patients and clinicians on using PROMs within VBHC.
- Patients should receive feedback on their PROM scores.
- IT systems for PROMs should be integrated with patient records.

"Working with the research team has been a very positive experience, throughout the process there has been support and guidance in a very professional and yet relaxed approach. The team have gained enormously when thinking of the research process and the importance of research to inform practice. Taking part in the study has raised the discussion within the team around how PROMs are facilitated in practice and the potential benefits, along with how this could be improved. The study has supported our work and development to incorporate PROMs with patients with comorbidities and long - term conditions. Having greater insight into nurses and patients perception of PROMs has been instrumental in how we engage with our team to deliver."

Linda Edmunds, Consultant Nurse in Heart Failure (ABUHB)

Gender Differences in Fibromyalgia - Diagnosis Trends and Treatment Differences



Centre researchers examined how fibromyalgia affects men and women differently, using health data from 2004 to 2018. Fibromyalgia, a condition causing widespread pain, is often seen more in women, but this study explored whether changes in diagnosis criteria have altered this trend.

Key Findings:

- Researchers analysed data from 22,568 people with fibromyalgia, with an average age of 48.
- Women made up 88.8% of cases.
- The findings showed that there wasn't a significant increase in diagnosed men over time.

Gender Differences

- Women had higher body mass index (BMI), more widespread pain, stress, bereavement, gastrointestinal issues and abnormal thyroid function. They were more likely to receive steroids, antidepressants, anxiety medication, and vitamin D.
- Men had more co-existing health conditions and were more commonly treated with gabapentin - a prescribed treatment for the condition.

Despite changes in diagnostic criteria, fibromyalgia remains more commonly diagnosed in women. This may suggest under-diagnosis in men. The study highlights the need for further research into why men and women receive different treatments and experience different symptoms.



Read the full study here:

https://academic.oup.com/rheumatology/article/62/Supplement_2/kead104.137/7136324

Equity in Digital Health: A Scoping Review for the World Health Organisation



Building on a review by Public Health Wales (PHW) on Equity within digital health technology within the WHO European Region, PHW in collaboration with the National Centre for Population Health and Wellbeing Research is undertaking a comprehensive scoping review commissioned by the World Health Organisation (WHO).

The scoping review aims to examine how fairness and equity considerations are integrated across Digital Health - from regulation and implementation to evaluation. The review will explore resources like guidelines,

frameworks, and assessment tools used across the WHO European Region and internationally.

This review supports the WHO's Regional Digital Health Action Plan by identifying equity issues in the regulation, implementation, and evaluation of digital health. By establishing a systematic approach to assess existing resources, it ensures digital health solutions are developed, implemented, and evaluated with a focus on inclusivity and accessibility. The review seeks to ensure that digital health innovations benefit all demographic groups, thereby fostering more equitable health outcomes.



"PHW is committed to target digital exclusion when it comes to digital health solutions, and we are happy to keep collaborating with our WHO European Region partners on this important topic.

We know that the digital transformation of healthcare services can improve access, empower patients, and contribute to better health outcomes but we also know that this can increase the risk of widening existing inequities if we do not prioritise digital equity.

Our follow-up scoping review will examine the extent to which equity is incorporated within the regulation, implementation, and evaluation of digital health. This work will provide practical guidance and support for researchers, health professionals, developers, and policymakers to ensure that digital health solutions do not leave anyone behind."

Dr Diana Bright
Senior Public Health Researcher -Public Health Wales NHS Trust

By involving the public in the design, execution, and dissemination of research through the Patient & Public Involvement Panel (PPI) and co-production projects, the Centre ensures that its research prioritises the public's needs. This collaborative approach strengthens research quality, generating meaningful outcomes and positive impacts for Welsh communities.

Empowering Young Voices: How the Centre is championing children's rights



Co-production is a core principle at the Centre, ensuring research is relevant and impactful for the communities involved. This approach aligns with the UNCRC, particularly Articles 12 (the right to be heard) and 15 (the right to access safe public spaces).

Key Projects:

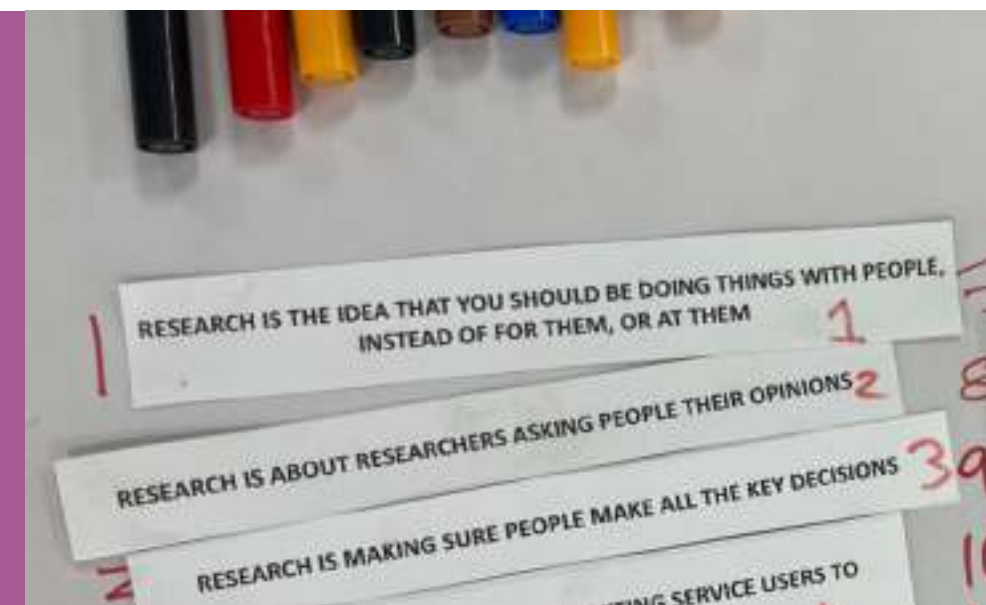
- **RPlace App:** A mobile app co-developed with young people to empower them to review and advocate for changes in their communities.

- **CORDS:** A best practice guide for co-production research, emphasising inclusivity, flexibility, authenticity, and reflection.
- **Research Explorers: Codi Lleisiau Pobl Ifanc:** A young person's research group that empowers young people to directly influence research priorities, aims, outcomes and project design. The group has already fed into funding and student development opportunities and will help to shape future work.

Engaging Youth in Research: Research Explorers

Impact:

The Centre's commitment to co-production and children's rights positions Wales as a leader in this field, with the potential to significantly improve the health and wellbeing of children and young people.



Centre researchers held a workshop in March 2024 with 12 pupils from Olchfa School to understand how to make research relevant and engaging for young people.

Mental health, social relationships, and physical activity emerged as key areas of interest. Pupils wanted accessible, interactive, and well-communicated research. The workshop also explored youth perspectives on desired societal changes. Education reform was a top priority, including increased student voice and a variety in activities. Social change focused on affordability, work-life balance, and environmental sustainability. Equity and removing barriers were recurring themes.



Read the full report from the workshop here: <https://ncphwr.org.uk/wp-content/uploads/2024/05/Olchfa-Report-W1-2.pdf>



Mental Health Manifesto for Young People: Co-production with young people from single-parent households



Researchers at the Centre collaborated with Single Parents Wellbeing (SPW) on a National Lottery-funded project to develop a Mental Health Manifesto for Young People (CYP) from single-parent households.

The project aimed to empower CYP to manage their mental health and access support, build leadership skills, and influence positive change in mental health policies.

A co-produced rapid review identified key themes for successful co-production with CYP, including shared power, safe spaces, accessible discussions, and ongoing evaluation. These

recommendations can help guide practitioners in implementing effective co-production processes with CYP.

The research aligns with the goals of the Mental Health Manifesto led by Single Parents Wellbeing, which aims to embed co-production in their work to support positive mental health and wellbeing outcomes for CYP. The manifesto strives to address increasing challenges faced by CYP in single-parent households, contributing to the broader efforts to improve mental health outcomes for this demographic across the UK.

“This review highlighted a number of considerations for those who are planning to use a co-production approach in their work with children and young people. Successful co-production has many benefits, from informing the design of bespoke, youth-led services to the development of children and young people’s skills through participation in the co-production process. Because of its potential, it’s important to get co-production right. We hope that this review will provide organisations with key considerations that support and inform the design and implementation of meaningful co-production projects with children and young people.”

Hannah Spacey, Research and Evaluation Division at Public Health Wales

“This review evidences the importance of using a co-production approach, which runs throughout every aspect of Single Parents Wellbeing. With the focus on issues to consider when working with young people in creating safe and valuable experiences in co-production, as well as flexibility and continuous reflection to adapt to the needs of the young people, this review supports and adds merit to the Mind Our Future Mental Health Manifesto project.”

Dr Nicole Burchett
Manager of the Mental Health Manifesto project at Single Parents Wellbeing



Watch video on the recommendations from the rapid review:

https://www.youtube.com/watch?v=_SBOScEpiCc

Engaging with Parents in Wales: Empowering Voices for a Healthier Wales

The Born in Wales research team is committed to understanding the needs of families across Wales. This year, the team established the Born in Wales Healthy Families Feedback Group, a dedicated forum for parents to share

their perspectives. With 39 engaged parents meeting quarterly, this group is providing invaluable insights that are directly shaping the research and project.



“I joined the Born in Wales parent group as I wanted to have my voice heard about things I think are important. The group is really welcoming and interesting – getting to hear other parents that have had similar experiences to me but also hearing different experiences was eye-opening. I’m looking forward to digging into important topics, getting my voice heard and hopefully making a difference in the things that the Born in Wales research focuses on.”

Emily Garlick,
Member of the Born in Wales Healthy Families Feedback Group

This team aims to maximise the impact and reach of the Centre’s research by creating engaging content like news stories, podcasts, and social media updates. Researchers engage in public outreach and seek innovative ways to reach underserved communities, aiming to inspire, inform, and educate in an accessible and enjoyable way.



21 press releases and articles with coverage in BBC News, Medical Xpress, Yahoo News, The Western Mail, Police Insights, Police Professional, and Health Tech Digital News.



3 articles published in The Conversation UK.



3 interviews on local radio.



4 podcasts.



20% increase in followers on X



Listen to podcasts



[Born in Wales researcher Hope Jones speaks to Sam Dredge - dad to toddler Florence](#)



[Born in Wales researcher Hope Jones speaks to expectant mum Flo Avery](#)



[Born in Wales researcher Hope Jones speaks again to expectant mum Flo Avery - this time about the barriers to research for expectant parents](#)



[Dr May Bianchim speaks to Georgina Ferguson-Glover about her involvement and co-production work on the Champion Project](#)

Outreach Visits – Born in Wales

The Born in Wales team have further strengthened their outreach by partnering with hospitals, five dads’ groups in Wales, church groups, and libraries, expanding the reach of the project and ensuring diverse voices are heard. This new proactive approach resulted in engagement among expectant fathers increasing by 100%. Born in Wales remains committed to inclusive and transparent research. By empowering voices from the community, we contribute to a healthier Wales for all families.



“It is evident from the significant increase in the number of Born in Wales surveys being completed that having the researchers on site at the maternity unit to approach and invite pregnant women and their partners to complete the surveys is very productive. This approach provides the opportunity for the research team to identify women, optimise the timing and environment to encourage participant engagement.”

Sharon Jones
Lead Research midwife, Swansea Bay University Health Board

Public Events

- The Born in Wales team attended the Swansea Science Festival Family Weekend on the 28th & 29th October 2023.
- 4200 people attended the event.



By fostering a robust network of research collaborators across the UK and internationally, the Centre is expanding its research impact and securing its long-term position in the UK's research landscape. These collaborations unlock a wealth of advantages, including access to vital funding and expanded professional networks. Shared resources and expertise fuel innovation and accelerate research advancements, ultimately ensuring a sustainable future for the Centre's vital work.

These are just some of the collaborations that have strengthened the Centre's position over the last year.

MIREDA: Collaborative Effort to Improve Maternal and Infant Health



Impact:

Consolidated birth data (England, Scotland, Wales) in standardised format for comparative analysis.

The Centre leads the Mother & Infant Research Electronic Data Analysis (MIREDA) Partnership. Funded by a £1.4 million MRC grant awarded in 2023, MIREDA represents a strategic investment in improving maternal and infant health outcomes, particularly among disadvantaged populations.

This collaborative effort unites leading researchers from the University of Edinburgh, King's College London, the University of Nottingham, the University of Birmingham, and the Bradford Institute for Health Research. MIREDA positions itself at the forefront of innovation by developing novel research tools that leverage existing datasets and creating a centralised resource integrating birth cohort data with various areas of healthcare. Through a multidisciplinary team and standardised data methodologies, MIREDA fosters robust research collaborations, paving the way for unlocking new knowledge to enhance health outcomes for mothers and infants.

Significant progress has been achieved in the past year. MIREDA has successfully consolidated birth data from England, Scotland, and Wales, ensuring a standardised format for comparative analysis. This allows researchers to explore how natural variations in healthcare practices across the UK impact maternal and infant health. For example, MIREDA can investigate the influence of prenatal vaccination rates and financial support programs during pregnancy on the health of both mothers and babies.

By examining the interplay between regional healthcare practices and family health outcomes, MIREDA aims to identify strategic interventions to improve maternal and child health across the UK. This initiative aligns with the Centre's commitment to utilising data-driven insights to deliver positive real-world impact, ensuring a healthier future for mothers and their children.

CARELINK Wales: Collaboration for Vulnerable Children

Impact:

- Improved service planning: Evidence informs future policy and services to better meet the needs of vulnerable children and families.
- Empowering decision-makers: Social workers gain a deeper understanding of risk factors and outcomes, leading to more informed interventions.
- Reduced inequalities: Insights guide service delivery, addressing disparities in care across Wales.
- Enhanced knowledge base: Dissemination through diverse channels equips researchers and practitioners with valuable knowledge.
- Legacy for future research: The linked dataset establishes a valuable resource for further investigations.



Children in care are among society's most vulnerable individuals, often experiencing worse educational, employment, and health outcomes. The number of children in care is rising in Wales, highlighting the need for targeted interventions and a better understanding of risk factors.

CARELINK Wales, funded by the NIHR and led by HDR UK Wales, works in partnership with researchers at the National Centre for Population Health and Wellbeing Research, researchers from five other Institutions, and Public Health Wales.

The project analyses linked data to identify risk factors for care entry and factors that support family preservation.

CARELINK Wales works with charities, parents, and children with care experience, which informs this data-driven approach.

Collaboration is at the heart of CARELINK Wales, driving positive change for vulnerable children and the systems that support them.

"With Cost of living – household income is a factor. Social workers can act quicker to take a child away when families can't afford to get new clothes, have a cleaner or replace broken appliances etc. It doesn't feel fair. Look at the reality vs the social workers expectations."

"COVID impacted access to services, but social services removed less children during that period as they couldn't access foster carer placements. COVID forced social workers to work better with families, but now it has returned to how it was."

CASCADE Voices feedback on the project.

AI Tackles Multi-Morbidity: A Collaborative Effort



Impact:

- £640,000 funding secured as part of a larger £13 million UKRI initiative.
- Utilisation of AI to identify health patterns can streamline healthcare processes and reduce the burden on healthcare systems.

In collaboration with Birmingham and Oxford Universities, the Centre's researchers secured funding to use AI for multimorbidity (where a patient has two or more long-term health conditions). This collaborative project aims to develop an AI model to predict future health problems based on existing conditions.

Led by Oxford, the project utilises AI to analyse patient data and identify patterns between health conditions. This could empower doctors to create personalised treatment plans and proactively intervene to prevent new health problems.

This £640,000 project is part of a wider £13 million UKRI initiative to leverage AI for healthcare transformation. By using AI, the project can potentially improve patient care, enhance healthcare efficiency, and advance medical knowledge of multi-morbidity.

This collaborative research between universities highlights the power of combining expertise for impactful innovation in healthcare.

"The potential for AI to accelerate and improve all aspects of our health is vast.

The UK is in a strong position in this field, but with a range of challenges across many aspects of society, including the healthcare system, novel solutions are needed. That is why UKRI is investing in these projects in order to advance our research and improve health diagnostics and outcomes."

Dr Kedar Pandya, Executive Director Cross-Council Programmes at UKRI

Nationwide collaboration uncovers risks of under-vaccination against COVID-19 in the UK

Impact:

- By estimating the potential reduction in severe cases with full vaccination, the study provided valuable data for public health interventions.



Under vaccination against COVID-19 posed a significant public health threat in the UK. Professor Ronan Lyons, Deputy Director of the Centre and a member of the HDR UK COALESCE Consortium, collaborated with researchers from across England, Northern Ireland, Scotland, and Wales to address this issue.

- The study revealed significant under vaccination rates (32.8%-49.8%) across all UK nations.
- The study identified key demographics at higher risk of under vaccination – which included young people, those living in more deprived backgrounds, of non-

White ethnicity, or had a lower number of comorbidities were less likely to be fully vaccinated.

- Crucially, the research linked under vaccination to a heightened risk of severe COVID-19 outcomes.



Read the full study here :

[Undervaccination and severe COVID-19 outcomes: meta-analysis of national cohort studies in England, Northern Ireland, Scotland, and Wales - The Lancet](#)

"This nationwide collaboration has been essential in understanding the scope of the under vaccination challenge and its impact on COVID-19 outcomes across the UK.

By sharing data and expertise, we can develop more effective vaccination strategies and ensure better public health preparedness for future pandemics."

**Professor Ronan Lyons,
Deputy Director, The National Centre for Population Health & Wellbeing Research**

Green and Blue Spaces Project: Unlocking the link between nature and wellbeing








Funded by the National Institute for Health Research (NIHR), the Green and Blue Spaces Project was a collaborative effort involving researchers from the Centre based at Swansea University, the University of Liverpool, the University of Exeter, Cardiff University, and the Barcelona Institute for Global Health.

The project aimed to shed light on the long-term influence of green and blue spaces (GBS) on mental health and wellbeing. The research utilised routinely collected health and environmental data, securely linked within the SAIL Databank, enabling comprehensive analysis.

The Green and Blue Spaces Project has significantly advanced our understanding of the long-term relationship between GBS and mental health. By promoting accessible and well-maintained GBS, we can create healthier and more equitable communities for all.

This case study highlights the importance of green and blue spaces for mental health and well-being. The project's findings can inform future research and policy decisions to ensure equitable access to these spaces for all populations.

Publications

-  [The use of Enhanced Vegetation Index for assessing access to green space](#)
-  [The Green and Blue Spaces \(GBS\) and Mental Health in Wales e-cohort](#)
-  [Visiting nature is associated with lower socioeconomic inequalities in wellbeing in Wales](#)
-  [Ambient greenness, access to local green spaces, and subsequent mental health](#)
-  [Green and blue space exposure changes and impact on individual-level wellbeing and mental health](#)

“Working in partnership with researchers has helped bring together academic excellence with expertise from policy and practice. This increases the impact and uptake of evidence and ensures that the findings from this work can help us improve and support the value of green and blue space for mental health and wellbeing in Wales.”

“It has been extremely rewarding to be part of this collaborative Project. The research findings from across the Project highlight the need for evidence-based policies that prioritise and conserve green and blue spaces, paving the way for a healthier and more equitable future.”

Sue Williams
Senior Social Researcher at Cyfoeth Naturiol Cymru/Natural Resources Wales

Capacity Building | Investing in the future

Building the next generation of talent is vital in cultivating a sustainable research culture in Wales. The Centre actively supports five PhD students, three interns, and early-career researchers by providing opportunities and fostering the development of research skills and capabilities. The Centre empowers researchers to generate high-quality findings that inform real-world solutions and ultimately strengthen Wales's overall research ecosystem.

Interns

"My experience as an intern with the Born in Wales project has been an active blend of learning, collaboration, and purpose-driven work. I have developed valuable skills, and participated in meaningful research, with the support of expert colleagues. I am immensely grateful for the opportunities this internship has provided."

Fran Williams, Intern, Born in Wales



Working as an intern on the Born in Wales Project has been a fantastic experience! The team has created a supportive and positive working environment. I have gained new skills and have been given lots of opportunities to grow my knowledge base within the field of research related to child health and wellbeing. I am very grateful for the opportunities that I have been given during my time within the Centre.

Rachel Davies, Intern, Born in Wales



"My internship at the Centre has been an incredibly rewarding experience. It's not only strengthened my technical skills in programming but also deepened my understanding of statistical analysis. Beyond that, the internship provided a unique opportunity to develop my stakeholder engagement and management capabilities in the UK context. I gained practical knowledge in Patient Public Involvement (PPI) and research writing, which will be invaluable in my future endeavours."

Rene Abang, Intern, Born in Wales



PHD Students



"My PhD research at the Centre has been an incredibly rewarding experience, particularly thanks to the support I have received from my supervisors, Prof Sinead Brophy and Dr Michaela James. Their guidance has been instrumental in shaping my research on Free School Meals. I am currently finalising a comprehensive literature review for publication, which wouldn't have been possible without their expert advice and encouragement. This supportive environment at the Centre has been invaluable in building my confidence and research skills.

Amy Locke, PhD Student, Free School Meals Evaluation



"Since the start of my PhD, I have always felt like I am in an environment where growth and excellence thrive. The resources available and the skills I continue to gain here have been invaluable. I am immensely grateful to the unit and my supervisors for their unwavering support throughout my PhD journey."

**Richmond Opoku, PhD student
focusing on outcomes of children in care across the UK**



As a trained medical doctor, transitioning to an academic focusing on the social determinants of health was challenging during the initial days of my PhD. However, I am incredibly grateful for my supportive supervisors who have consistently provided guidance. The team encouraged my learning and growth, allowing me to acquire new skills with confidence and without the fear of judgment.

**Gargi Naha, PhD Student
Focusing on the social determinants of health**

Centre Intern to Public Health Wales Researcher

"The Centre's internship was a springboard to my current role as a researcher at Public Health Wales. It equipped me with the vital analytical skills needed for research. The team's guidance was fundamental in gaining knowledge of research and co-production methods.

My internship was a rewarding experience - I learnt so much - from mapping community voices to presenting at Play Wales seminars and securing funding for RPlace.

The knowledge gained from my internship shaped me into a well-rounded professional, setting me up for my current role at Public Health Wales and my future as a researcher."

Sana Shaikh, Researcher at Public Health Wales



Centre support helped me achieve my Master's dream

"I am absolutely thrilled to have secured my Master's! It wouldn't have been possible without the support of the team at the Centre. Their guidance and encouragement have been instrumental in my academic journey and career development.

Michael Parker, Centre Researcher



In recognition of outstanding research achievements, the Centre is proud to highlight recent award wins by the team.

Co-Production Key to Better Chronic Pain Research for Kids: Dr. Bianchim Wins Award

Dr. Mayara Silveira Bianchim Research Officer & Patient Public Lead at the Centre won the Best Poster Presentation Award at the 2023 Cochrane Colloquium. Her research, titled "Co-producing with children and young people for a meta-ethnography on experiences of chronic

pain, treatments and services," explored co-production methods to improve the relevance of medical research for children with chronic pain. Dr. Bianchim's work was praised for its potential to enhance healthcare policy and practice.



Centre's research contributes to Queen's Anniversary Prize Win

Professor Ronan Lyons, Co-Director of the Centre and SAIL Databank, was presented with the Queen's Anniversary Prize along with other Swansea University officials in recognition of SAIL's pioneering efforts in harnessing public health to improve population health and well-being.

Centre research contributed to this work, providing crucial data and insights that informed healthcare professionals and policymakers. This collaborative effort proved instrumental in the award-winning research, particularly in the fight against COVID-19.



Future Plans.

Building a Sustainable Future

Throughout funding, the National Centre for Population Health & Wellbeing Research has established strong and collaborative links, demonstrating that working together enhances our collective impact. Recognising that we are better and stronger together, the Centre remains dedicated to its core areas of expertise while fostering these invaluable partnerships. Moving forward, the Centre is committed to continuing its collaboration with current partners and applicants, ensuring a sustainable and impactful future for the health and wellbeing of the people of Wales.

Research Focus and Collaboration

Child and Maternal Health: The Centre is fast establishing itself as a leader in women and child health, continuing to develop and strengthen work in this area. This includes expanding the Born in Wales program, collaborating on the MIREDA and MIRIT projects, and involving researchers in MAGENTA - a new Wellcome Trust project that studies how rising temperatures/heatwaves affect pregnancies in Wales and London. In addition to child health, the Centre is strengthening its research on women's health across the lifespan, including reproductive health, mental health, chronic diseases, and menopause. Researchers across the Centre have supported the development of the Women's Health Catalytic Bid, which, if funded, will lead to significant advancements in several of these core topics.

Deepening Expertise: The Centre will strategically invest in research infrastructure and training to strengthen its leadership in the "Healthy Development" and "Healthy Working Life" programs. This includes attracting and retaining top talent through competitive funding applications and research fellowships.

Collaborative Advantage: The team recognise the power of shared knowledge. They will actively continue to work with and pursue collaborative research opportunities with universities, institutions like Public Health Wales, third-sector partners and research projects such as ADR UK and HDR UK. This collaborative approach leverages diverse expertise to advance population health in Wales.

Building a Sustainable Future

Funding Security: The Centre will continue to focus on diversified funding sources to ensure long-term financial stability. This includes securing grants through competitive applications and forging partnerships with public and private organisations with aligned interests.

Knowledge Sharing: The Data Lab will continue to provide essential data analysis and research expertise to policymakers and practitioners across Wales and the UK. The Centre is partnering with key organisations, such as ADR UK, to develop training courses to address knowledge gaps within the research community, further strengthening the UK's research ecosystem.

Expanding Our Reach

Wales-Wide Impact: The team will remain dedicated to working with the Welsh Government and Public Health Wales to translate research findings into actionable policy changes. This collaborative approach will ultimately reduce health inequalities and improve health outcomes throughout Wales.

UK and International Partnerships: The Centre will actively continue to seek and strengthen research partnerships within the UK and internationally. Sharing knowledge and best practices across borders will lead to more robust evidence-based solutions for population health challenges.

By prioritising our core research areas, fostering strong collaborations, and securing diversified funding, the **Centre and its researchers are well-positioned to ensure a sustainable future for population health research** in Wales and beyond.





Find out more about our work on our website
www.ncphwr.org.uk

Keep up to date with our latest research news and activities by following us on our social media channels:

- X: [@NCPHWR_Wales](#) | [@NCPHWR_Cymru](#)
- Facebook: <https://www.facebook.com/NCPHWR>
- Instagram: <https://www.instagram.com/ncphwr/>
- YouTube: https://www.youtube.com/channel/UCVJureKU-8xK87kn_VJzpdA

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



Ymchwil Iechyd
a Gofal Cymru
Health and Care
Research Wales



Ariennir gan
Lywodraeth Cymru
Funded by
Welsh Government