



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



Contents

Foreword	1
Core metrics	3
About us	4
Our highlights - A year at a glance	7
Work packages	
Healthy Development	9
Healthy Working Life	15
Public involvement	23
Public engagement	25
Research infrastructure	27
Capacity building	29
Collaboration	33
Future plans	35



Foreword

The last year (2022-2023) has been a productive year for research and innovation at the Centre. The team has continued to advance important policy-relevant research into Covid-19 and to provide vital insights into the pandemic as part of the UK-wide research effort.

As Wales continues to emerge from the pandemic, the Centre has also focused on its core research packages of Healthy Development and Healthy Working Life and on new innovative initiatives to contribute to the development and visibility of Wales-based research.

Building the Foundations for a healthy life

The foundations for future health and well-being are created in the womb and over the first few years of life.

The Born in Wales study continued to grow over the year as a national birth cohort for Wales. This has included the introduction of a new survey for parents of toddlers, adding rich sources of data to improve understanding of early-life health determinants and the needs of parents and young children.

Seeking to help inform policy, the Centre undertook a review of school meals in Wales, with the team continuing to evaluate the impact of the Universal Free school meals for primary school children in Wales.

The Centre continues to advance research to understand the impact of traumatic events or experiences in childhood on individuals and families. An example of such work was the team's research on parental adverse childhood experiences and the perpetration of child physical punishment in Wales.

Understanding barriers to living a healthy life in adulthood

The Centre continues to deliver and support research that helps improve the health and well-being of people in adulthood to live happy, healthy lives. Our research which identified that health checks significantly improved survival for people with autism and Down's Syndrome, is starting to impact people in Wales positively.

Driving and informing change, our research demonstrated the preventative impact of linking police domestic violence and health data – a positive move towards improving safeguarding for the most vulnerable.

Continuing to respond to COVID-19

In response to the continued need to assess the impact of COVID-19, our research into vaccination uptake in pregnancy during the pandemic gave an overview of vaccination numbers and, importantly, an insight into the reasons why some expectant mums did not get vaccinated, providing vital information to help improve future uptake.

Further insights were gained from studies into how shielding reduced the incidence of COVID-19 in patients with inflammatory arthritis and the health impacts of working from

home during the pandemic, the latter informing a briefing paper considered as evidence by Welsh and Scottish Governments.

Making research more diverse and relevant

In the last year, our Patient and Public Involvement Panel has continued working with us to ensure our work is diverse and relevant.

The Centre developed the Champion and Cords projects, where our team co-produced research and strategies with children and young people, helping us gather data to improve our understanding of this underrepresented group.

Development of a data-enabled research environment

Datasets and advances in new technologies make research more flexible with a scope for a more significant impact. However, the current data skills shortage means many researchers need help accessing, understanding, and using data.

During the year, the Centre launched the Data Lab, delivering much-needed training, bringing in new sources of health and non-health data, and adding to the skills and quality of data held and produced in Wales.

Supporting research capacity in Wales

In 2022, the Centre increased the number of internships providing mentorship and experience in various skills and research development. The Centre continues to be committed to increasing Wales's research capacity and capability by supporting internships, Doctoral degrees, early career researchers, and senior research leaders.

Collaborating to strengthen collective impact

Our team continues working collaboratively with partners in the UK, such as ADR UK, COVID-19 Longitudinal Health & Well-being Co-Study, and HDR UK - adopting a partnership approach to data-driven collaborations.

Securing for 2023 - 2024, £1.4 million in funding from the MRC, the Centre will lead a ground-breaking UKwide partnership to accelerate capabilities and improve maternal and child health research. In 2022, the Centre launched the innovative MIRIT platform, enabling researchers worldwide to match and collaborate on joint projects, grant applications and publications on child and maternal health.

The year ahead

After a successful year, the Centre, during the year ahead, will continue to deliver innovative initiatives that set us on the path of achieving our ambitions for research.

Kind regards

The Executive Board

Core Metrics 2022-2023

Health and Care Research Wales infrastructure award to the Centre



Direct funding awarded

£907k



Jobs created through direct funding

13

Grants won during reporting period

Grants Won	Led by Centre	Through Collaborating
Number	2	2
Value	£135,929	£73,679,619
Funds to Wales	£135,929	£3,860,293
Funding to Centre	£135,929	£1,544,700
Additional jobs created for Wales	1	10
Additional jobs created for Centre	1	5



Number of publications



Number of public engagement events



Number of public involvement opportunities

About Us

We are the National **Centre for Population Health & Wellbeing Research**, funded by the Welsh Government through Health and Care Research Wales. We undertake research by evaluating data that can help support and improve people's health and wellbeing. Our work tackles complex public health issues and provides valuable insights to inform policy and practice, addressing challenges such as reducing social inequalities and healthcare costs.

To achieve this, we bring together a team of researchers, statisticians, and data analysts from the Swansea, Cardiff, and Bangor Universities alongside Public Health Wales and our third sector partners, Children in Wales, to understand, evaluate, and inform population health improvements.

Our research adopts a life-course approach, focusing on two primary programs: Healthy Development and Healthy Working Life.

Healthy Development

Under the Healthy Development program, we aim to support children in having a healthy and positive start in life. Extensive evidence suggests that early experiences significantly shape an individual's future. Positive development during the early years is associated with better health and educational outcomes in childhood and improved health and employment prospects in adulthood.

Our research covers the following areas:

- Maternal health and well-being (first 1000 days).
- Early years (0-7 years) evaluations.
- Children and Young People, teenagers and community interventions.
- Impact of Adverse Childhood Experiences.

Healthy Working Life

In the Healthy Working Life program, we strive to identify key health challenges that individuals encounter throughout their lives. We aim to understand how these challenges can prevent people from leading fulfilling, healthy, and happy lives. We also investigate the broader determinants of health and how they can impact opportunities for wellbeing. Our research covers the following areas.

- Chronic conditions.
- Workplace health challenges in at-risk groups.
- Built environment evaluations.

Meet our team

Executive Board

Our **Executive Board** encompasses the research leads 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



Dr 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



Dr Helen Davies
Patient & Public Involvement



Dr Rachael Hunter
Patient & Public Involvement



Samanta Gudziutaite
PPI Panel Member

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



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

Our Highlights

A Year at a Glance

Major grants won:

- Centre is leading a £1.4 Million collaboration funded by the MRC to improve capabilities and enhance maternal and infant health research.
- Building on strong collaborations, the Centre was part of a successful multi-million-pound Health Data Research UK refunding grant bringing £1.5 million to Wales.

Entrepreneurial approach to research:

- Established the Data Lab, equipping healthcare professionals with cutting-edge training and facilitating easy access to datasets for researchers around the UK.
- We are pioneering the innovative MIRIT initiative to foster international collaboration among researcher groups with shared expertise and interest in maternal and infant health.

Influencing Policy and Practice:

- Our research findings on Health checks for adults with a learning disability influenced policy and practice changes, including informing the Welsh Government Learning Disability Action Plan 2022 – 2026. Planned changes include decreasing the age at which people can receive a health check in Wales.
- The outcomes from our investigation into the “Health Impacts and Inequalities of the New Way of Working” have significantly contributed to evidence reviews on remote work conducted by the Welsh and Scottish governments.
- Presenting a comprehensive case study on the current status of school meals in Wales at the Research Consortium for School Health & Nutrition and the World Food Programme (UK) event, we have contributed crucial insights to shape the provision of free school meals in the UK and globally.

Centre leaders with a strong UK and international academic profile:

- Professor Ronan Lyons, Deputy Director at the Centre, was admitted to the Academy of Medical Sciences' influential Fellowship.
- Professor Sinead Brophy, Professor Jane Noyes, and Professor Ronan Lyons have been appointed Senior Research Leaders for Health & Care Research Wales, further strengthening our leadership in the field.

High-quality publications in academic journals:

- Our research has been published in high-impact journals such as The Lancet, The BMJ, BMC Infectious Diseases, PubMed, Age and Ageing, Rheumatology (Oxford), and SAGE Journal - Journal of the Royal Society of Medicine.

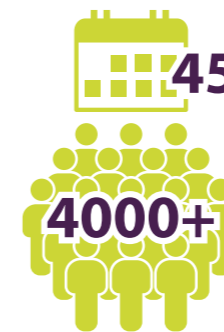
Improving understanding to inform decision-making:

- Over 2,500 individuals participated in Born in Wales surveys, enabling comprehensive tracking of health, well-being, and the impact of parenthood.
- Launching a new Born in Wales survey targeting parents of toddlers, we continue to expand our understanding of early childhood development and related factors.
- Our “My Experiences Cymru Survey” engaged over 500 young people aged 16-18, delivering valuable insights into protective measures for vulnerable youth facing adversity in Wales.

Building capacity:

- Helping to develop the next generation of researchers by supporting 4 internships and 4 PhD students.

Communications & Engagement:



45 events attended by over 4,000 people



National media attention on Global Radio and BBC Radio Cymru.



204 downloads and 4 new podcasts on our Research unwrapped podcast series.



18.k video views on our YouTube channel. 8 new videos.

Work Packages | Healthy Development

The Healthy Development work programme focuses on researching key factors that contribute to improving future outcomes for children and aims to identify how best to support families. Identifying these factors can inform policy, practice, and interventions crucial to improving children's well-being.

These impact case studies demonstrate how our work is helping to effect positive change.

Born in Wales - Building a rich population cohort



Key achievements.

- An entire country cohort of over 30,000 births a year
- 2,500 + completed surveys by parents.
- Launch of a new second survey for parents of toddlers- with 600 surveys completed to date.
- Development of a Nursery Network and survey.

[Born in Wales](#), established in 2020, links electronic data on mothers, partners, and babies for children born in Wales (approximately 30,000 births per year).

Born in Wales links health records for primary care, secondary care, midwife data, public health records (vaccination uptake/hearing checks, health visitor assessment, breastfeeding data, and COVID vaccination/testing), plus data held in the National Community Child Health Database.

The project also links educational data, Census 2011, police/domestic violence, substance abuse, and social care data.

To enrich the data further, the team are in the process of linking to Census 2021 and the National Neonatal Audit Database. Also, work is underway to link to ultrasound scans (all Wales) coded for future follow-up markers predictive of cognitive development (and school readiness).

Our researchers enhanced this electronic birth cohort with repeated surveys with parents with

self-reported health data regarding stress, mental health, occupation, ethnicity and open-ended questions about what is needed to improve health and well-being for families.

This enhanced data is used to extrapolate for the more extensive cohort study so that variables such as income can be estimated in the larger all Wales cohort.

With surveys currently running for expectant parents and parents of toddlers, in 2023, the team are rolling out a third survey for Nursery aged children. Using data held in HAPPEN Primary School Network - the team will be able to track children's health and well-being from pre-birth through the toddler and nursery years and primary school.

Born in Wales publications



[Population birth outcomes in 2020 and experiences of expectant mothers during the COVID-19 pandemic.](#)



[COVID-19 Vaccination in Pregnancy: The Impact of Multimorbidity and Smoking Status on Vaccine Hesitancy](#)



[Intention to breastfeed and association with subsequent breastfeeding duration](#)

"Conducting research into issues that matter most to women will have the greatest impact on their health and wellbeing as they transition into motherhood.

The Born in Wales study provides women and their partners with an opportunity to participate in research, share their experience and contribute to developing evidence for families, health care professionals and policymakers on how to support families to give children the best start in life."

Sharon Jones, Lead Research Midwife at Swansea Bay University Health Board

Study identified risk factors associated with low birthweights

Every year 20 million children are born with a low birth weight (LBW).

Our researchers explored the risk factors for LBW so that resources and interventions could be scheduled effectively.

The cohort study comprised 693,377 children born in Wales between 1998 and 2018.



[Watch this short animation of the main findings.](#)



Read the full study here:
<https://bmjopen.bmj.com/content/13/2/e063836>

Research explores COVID-19 vaccination uptake and views during pregnancy

Born in Wales research aims to create a better understanding and an evidence base to inform policy and practice - helping to give children the best start in life.

Results from Data

33.2% received the vaccine postpartum (after birth)



Sharing our research findings with midwives, healthcare workers, parents and decision makers in Wales.

Headline findings:

33.2 % of pregnant women in Wales waited until after the baby was born to receive the COVID-19 vaccination.

Reasons for vaccine refusal included lack of research about long-term outcomes for the baby, anxiety about vaccines, inconsistent advice/information, and preference to wait until after the pregnancy.

The study, published in the BMC Infectious Diseases, identified women living in Wales who were pregnant between April 13 and December 31, 2021, aged 18 or older, and eligible for Covid-19 vaccination.

- 32.7 per cent of women received at least one dose of the COVID vaccine during pregnancy; 34.1 per cent remained unvaccinated throughout the follow-up period; and 33.2 per cent received the vaccine postpartum.
- Younger women (aged under 30) and those living in areas of high deprivation were less likely to have the vaccine; and,
- Asian and other ethnic groups were slightly more likely to have the vaccine during pregnancy than White groups. Unvaccinated pregnant women are at increased risk of requiring hospital treatment for COVID-19 compared to those vaccinated.

Unvaccinated pregnant women are at increased risk of requiring hospital treatment for COVID-19 compared to those vaccinated. In addition, severe COVID-19 in pregnancy significantly increases the risks to the baby.

As we continue to live with COVID-19, it is essential to research maternal and baby health providing rigorous evidence to inform maternal and child healthcare, policy, and practice.



Read the full study her: <https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-022-07856-8>

Case study on current status of school meals in Wales - part of a UK-wide study



Impact

Case Study presented the current status of school meals in Wales as part of a UK-wide study.

In November 2022, researchers from the Centre and Public Health Wales presented a Case Study on school meals in Wales during an event held in London. This event brought together representatives from all four UK devolved nations to provide an overview of the current state of school meals as part of a comprehensive study conducted across the UK.

The event was organised by [Research Consortium for School Health & Nutrition](#) and the World Food Programme (UK) to inform and support the provision of free school meals.

The Research Consortium facilitates collaboration between academic, research and development partners to address the global knowledge gap in school health and nutrition. Its primary objective is establishing an evidence base to guide policymakers and program implementers.

Wales holds a unique position due to the recent introduction of universal free school meals for primary school children. This presents an opportunity to develop an evaluation program involving all relevant stakeholders from the outset.

The evaluation of the universal free school

meals program, currently under development, will consider the programme's short, medium- and long-term benefits, both in terms of health and socio-economic benefits.

The Centre will continue collaborating with partners from other devolved nations and worldwide to facilitate cross-learning and information sharing. Furthermore, the researchers at the Centre will evaluate the implementation of free school meals and the benefits to the health and well-being of children.

[Read the School Food Case Study: Wales](#)

[View and download the Case Study of UK School Meals: Summary](#)

“By engaging with leading experts from each of the four UK devolved nations, we have been able to develop a contextually sensitive profile of the current school meals landscape across the United Kingdom, demonstrating the strength of the programme as well as the areas in which the nations can learn from each other.”

Professor D.A.P. Bundy, London School of Hygiene and Tropical Medicine

Parental Adverse Childhood Experiences (ACEs) and their use of physical punishment on children.



Headline findings:

This study revealed child physical punishment is strongly associated with parents' own ACE exposure.

Action to prevent child physical punishment should recognise the additional challenges faced by parents that have suffered ACEs and tailor programmes accordingly.

Legislation banning all forms of corporal punishment in Wales was passed in March 2022. This study provided data on reported levels of child physical punishment before the ban and, therefore, could be repeated in future to see if levels (already low) have changed.

Researchers conducted a national survey of Welsh adults and measured relationships between the number of adverse childhood experiences (ACEs) parents (n=720) had suffered during childhood and their use of physical punishment towards children.

The study revealed:

- Child physical punishment use increased with the number of ACEs parents reported.
- Parents with 4+ ACEs were almost three times more likely to have ever physically punished a child and eleven times more likely to have done so recently.
- The majority (88.1%) of parents that reported recent child physical punishment had a personal history of ACEs, while over half reported recently having been hit themselves by a child.

Child physical punishment is strongly associated with parents' own ACE exposure. Prohibiting physical punishment can protect children and, with appropriate family support, may help break intergenerational cycles of violence. Action to prevent child physical punishment should recognise the additional challenges faced by parents that have suffered ACEs and tailor programmes accordingly.

This study was led by Public Health Wales and supported by the Centre.



Read the full study here:

[IJERPH | Free Full-Text | Parental Adverse Childhood Experiences and Perpetration of Child Physical Punishment in Wales \(mdpi.com\)](#)

“The introduction of legislation prohibiting the physical chastisement and punishment of children has Wales leading the way in the UK in prioritising policy and law that prevents Adverse Childhood Experiences.

This research helps policymakers, practitioners, and politicians make decisions around direction and purpose and is vital to securing a safer and more compassionate Wales for children.

Understanding intergenerational impacts also aligns with another hugely important legislation in Wales, The Wellbeing of Future Generations (Wales) Act 2015. It is an important contribution to the legislation's stated goals and implementation.”

**Dr Joanne Hopkins, Programme Director
ACES, Criminal Justice and Violence
Prevention, Public Health Wales**



Work Packages | Healthy Working Life

This work aims to investigate the health and environmental challenges that individuals encounter in their daily lives. Providing valuable insights that can be utilised to guide funding, shape policies, and develop interventions to promote better health, well-being, and longevity.

These impact case studies demonstrate how our work is helping to effect positive change.

Study demonstrates the power of linking police and healthcare data.



Impact

Our research illustrates the predictive and preventative power when agencies share information.

Sharing data can allow for efficient, targeted allocation of resources – both for police by preventing future callouts and for healthcare by preventing visits from injury, reducing the strain on the NHS.

The 1998 Crime and Disorder Act requires agencies to collaborate on joint crime reduction strategies, including data sharing. While feasible for individuals, rarely is whole agency data linked.

This NIHR funded research, to be published in The Lancet, examined the feasibility and knowledge gained from linking police datasets with health data.

The study group consisted of 8,709 residents living in South Wales who had a public protection referral between 12/08/2015 and 31/03/2020.

The Public Protection Notification (PPN) Database for Domestic Violence was linked with the victim's health records to examine

factors associated with an emergency medical admission within 12 months of the PPN referral for domestic violence.

The study found that the crucial factors associated with emergency medical admission for the victim within 12 months of the PPN included:

- Attending emergency healthcare services more than 3 times in three years
- Aged younger than 19 or older than 70.
- Being a cigarette smoker or receiving smoking cessation advice (addiction behaviour)
- Being injured at the scene
- Prescribed Central Nervous System drugs
- Prescribed drugs to treat infections
- Pregnancy within the household.

The team found that observing healthcare data from one to three years before the public protection referral established that emergency admissions was the most crucial factor for predicting those victims who will experience other emergency admissions. The Centre will continue to working with the police, healthcare services, and other partners to develop this research and improve data sharing.



"This research demonstrates the potential to improve safeguarding for those at risk.

We must use the findings to improve the way we work together on data linkage and be innovative with the sharing of information where it is proportionate to protect people from harm."

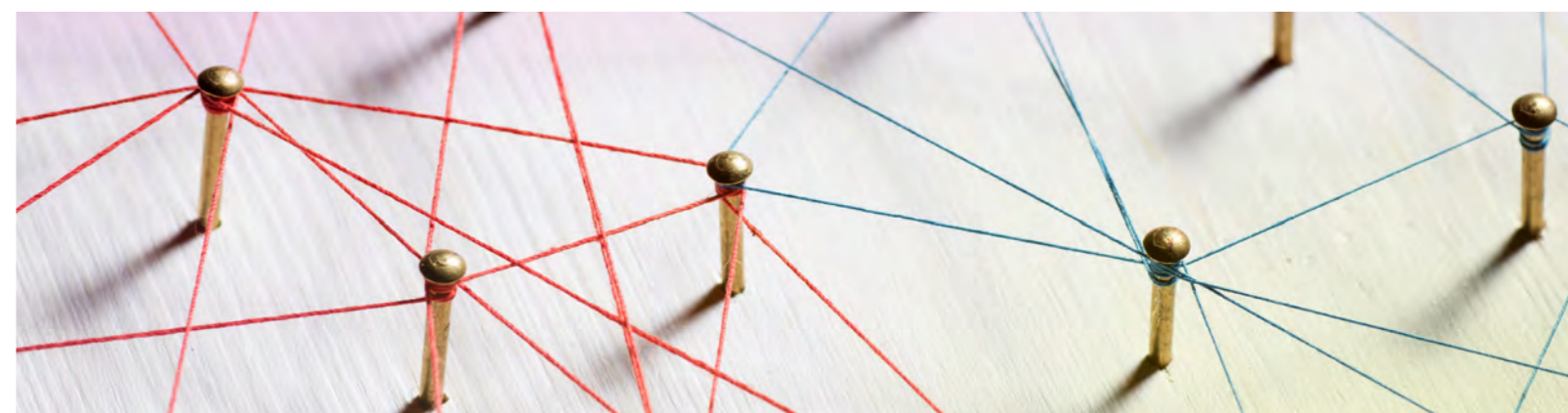
DI Ben Rowe
South Wales Police



"Linking of police and healthcare data has demonstrated that highly vulnerable individuals are detectable in multiple healthcare datasets before involvement of the police. Our work identifies and lists the crucial factors associated with emergency medical admission following the first public protection referral callout.

This research shows that data sharing and linkage could help reduce callouts to the police and future emergency medical admissions."

Dr Tash Kennedy
Lead researcher



People with autism live 50% longer and those with Down's Syndrome live 25% longer with an annual Health Check.



Impact

This study was presented at the "Supporting the delivery of Learning Disability Annual Health Checks in Wales" conference in July 2022.

This research has underpinned several new studies further developing this area. In addition to informing policy and practice changes in Wales; the age at which people are eligible to receive a health check is being decreased.

[Welsh Government Learning Disability Action Plan 2022 - 2026](#)

Individuals with learning disabilities often experience more health conditions such as epilepsy, autism, and dental problems. This population is at a higher risk of living sedentary lives, becoming overweight, and developing chronic conditions like diabetes, cardiovascular disease, and respiratory disease.

Inequalities in health are apparent for people with learning disabilities; health checks have been recommended as one component of international health policy to address this issue. However, few studies have evaluated the extent to which providing health checks leads to long-term health benefits.

This MRC funded research, initially undertaken in 2019, examined if health checks are associated with better survival and lower mortality rates than those without health checks. The study indicated that health checks had favourable results for those with autism or Down's syndrome, with the findings informing policy and practice.



Read the full study here:
<https://bmjopen.bmj.com/content/12/4/e049441.full>



Study included 26,954 people with a learning disability living in Wales between 2005 and 2017

The team used the Secure Anonymised Information Linkage (SAIL) Databank to link and examine the medical records of the total population of people with a Learning disability in Wales.

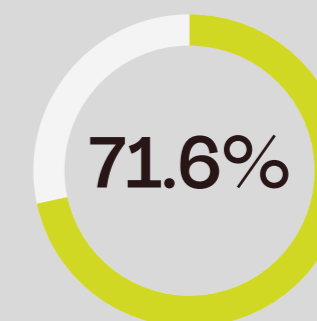
Main findings

Reduced deaths for people with a learning disability



Having a health check was associated with reduced deaths for people with a learning disability, especially those with autism or Down's syndrome.

71.6 % had no record of a health check



A small number of people had received one health check but many did not continued to have health checks annually with their GP.

71.6 % had no record of a health check

"This is the first paper to identify improved survival for people with autism who have a learning disability and people with Down's syndrome.

We can now use these important findings to promote the importance of health checks to people who have a learning disability, those who provide support to people to access health checks and those who deliver health checks.

This research has helped inform the Welsh Government Learning Disability Action Plan 2022 - 2026, - which is a fundamental step towards improving the health and wellbeing of people in Wales who have a learning disability."

Paula Phillips (March 2023), Senior Improvement Manager, Learning Disability Improvement Cymru

Exploring the Health Impacts and Inequalities of the New Way of Working



Impact

Findings from the paper have been considered within evidence reviews on home working by [Welsh Government](#) and [Scottish Government](#).

A [policy focused briefing](#) which summarised the findings from the paper received national media attention (e.g. Global Radio, BBC Radio Cymru).

The COVID-19 pandemic transformed our ways of working. While the legal restrictions that enforced home working were lifted in Wales in January 2022, home working is still prevalent.

Working from home (WFH) offers greater flexibility – a characteristic of fair work that the Welsh Government prioritize within their employment-related policies. Going forward, Welsh Government has proclaimed its ambition to have 30% of workers working remotely regularly. However, there has been little evidence to demonstrate how the shift to WFH might impact health. Data were collected from 615 working adults in Wales between November 2020 and January 2021 in a nationally represented household survey.

- More than 45% of those able to WFH reported worsened mental well-being and loneliness.
- Working from home worsened the diets, physical activity, smoking, and alcohol use of those in poorer health.
- Approximately 50% were able to WFH, although individuals living in more deprived areas, in atypical employment or with precarious income, were less able to WFH.
- Nearly 60% wanted to WFH to some capacity.

This work highlights the importance of supporting employers and employees to realise the benefits of home working, and to minimise the potential harms. Furthermore, the findings serve as a reminder that the opportunity to WFH is not accessible to all. Enabling access to other forms of flexible work may be necessary to provide equitable access to this characteristic of fair work for those that cannot WFH.



Read the full study here: https://journals.lww.com/joem/Fulltext/2022/10000/Exploring_the_Health_Impacts_and_Inequalities_of.2.aspx

“This work encourages and guides employers to implement healthy and safe working practices, and promote good health and wellbeing, regardless of sector, industry or location of work.

These findings reiterate what employers are telling us on a day-to-day basis. They recognise the benefits of more flexible ways of working introduced over the last two to three years, but also acknowledge there are downsides to remote working that need to be considered and handled carefully.”

Mary-Ann McKibben, Consultant in Public Health and lead for Public Health Wales’ health and work programmes



Shielding reduced incidence of COVID-19 in patients with inflammatory arthritis but vulnerability is associated with increased mortality.



Headline findings

- COVID-19 incidence was lower in individuals with inflammatory arthritis (IA) and shielding was associated with reduced COVID-19
- Key risk factors including age, smoking and comorbidities were associated with increased COVID-19 related mortality
- These factors can identify individuals to shield during times of high COVID-19 prevalence and pre-vaccination.

People with inflammatory arthritis (IA) faced challenges during the COVID-19 pandemic, including concerns about higher risks of infection. The NHS advised many individuals with IA to follow shielding practices, including social distancing. However, such advice led to an increase in health anxiety.

Researchers undertook a retrospective, population-based cohort study. The study, funded by the Nuffield Foundation, aimed to examine the risk of COVID-19 infection for people with IA and the potential for adverse outcomes.

Anonymised health data from the SAIL Databank was linked, including primary and

secondary care, Office for National Statistics Mortality and COVID-19 laboratory data, for the population of Wales.

Individuals aged 18 years and over who had tested positive for COVID-19 between March 2020 and May 2021 and had rheumatoid arthritis, psoriatic arthritis or ankylosing spondylitis formed the study cases. They were compared to the general population who had tested positive for COVID-19.

- The COVID-19 incidence rate was 3.5% in people with IA versus 6% in the general population. This showed that individuals with IA had a lower incidence of COVID-19, probably due to shielding.

- IA was not associated with increased mortality following COVID-19 infection;
- Comorbidities, such as diabetes and cancer, and other factors, such as smoking and increasing age, were associated with an increased risk of dying within 28 days of infection.
- Researchers identified two additional risk factors: previous history of severe infection leading to hospitalisation and hospitalisation in the 12 months before the pandemic. These key risk factors can be used to selectively identify “vulnerable” individuals with IA at greater risk of poor outcomes from COVID-19 for shielding.



Read the full study here:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9248059/>

“NRAS welcomes these assurances that this research provides. During the height of the pandemic and even now when COVID is still very much present in our communities, people with Inflammatory Arthritis have and continue to be, understandable, anxious about the level of risk they may have of becoming seriously ill with the virus.

This retrospective study may give many the confidence to start living their lives as they did pre-pandemic and NRAS is grateful for the researchers’ work on this topic.”

Clare Jacklin
CEO National Rheumatoid Arthritis Society (NRAS)

Study explored the gender differences in patients with Fibromyalgia

A recent study published in the Lancet Rheumatology explored gender differences among patients diagnosed with Fibromyalgia. By analysing primary-care data, the study aimed to uncover variances in medical history and treatment approaches.

The findings revealed that a significantly higher number of women were affected by Fibromyalgia. Men with the condition are considerably more likely to have additional medical conditions, known as comorbidities.



Read the full study here:

[https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913\(22\)00296-X/fulltext](https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00296-X/fulltext)

By involving the public in the design, execution, and dissemination of research, we ensure that our work addresses their needs and wants effectively. Over the past year, our PPI Panel has continued to collaborate closely with us to ensure that our work remains relevant to the diverse needs of individuals across Wales. Furthermore, our Centre has embarked on new innovative co-production projects with the public. This collaborative approach helps ground our research, enhancing its quality and generating meaningful outcomes and positive changes for communities.

Co-producing with children and young people

the CHAMPION Project



“People with chronic pain can often feel like we are not listened to but in this project everything we said was listened to, noted down and discussed which made me feel like my opinions were valued.

Being able to take part in the CHAMPION project feels like something positive is coming from my chronic pain conditions and that my input and experiences are going to help others like me in the future. It's a wonderful feeling.

The whole experience of being involved in the project has been so positive, I honestly can't think of anything I would have changed about the process except maybe having more meetings because I feel very invested in the project and have loved taking part!”

Young person with chronic pain

This research, funded by the NIHR, investigated the experiences and perceptions of children with chronic pain and their families of chronic pain, pain treatments and services. Thirty-three stakeholders were involved in every research stage, including children, parents, health professionals and the third sector. They participated in developing the grant proposal, finalising the review protocol, making decisions about sampling and organising studies for synthesis, and interpreting and disseminating findings. In addition, co-producers were

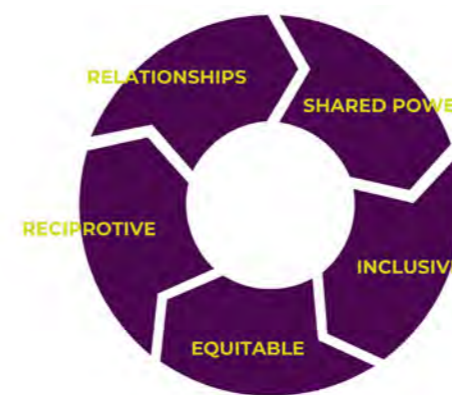
involved via workshops, meetings, email, and conference calls.

Stakeholder involvement in study design, analysis, interpretation and dissemination ensured the relevance and usefulness of the review outputs. In addition, their involvement helped to address any ambiguities or controversies in the findings, leading to more meaningful conclusions that could inform policy and practice improvements.

CORDS

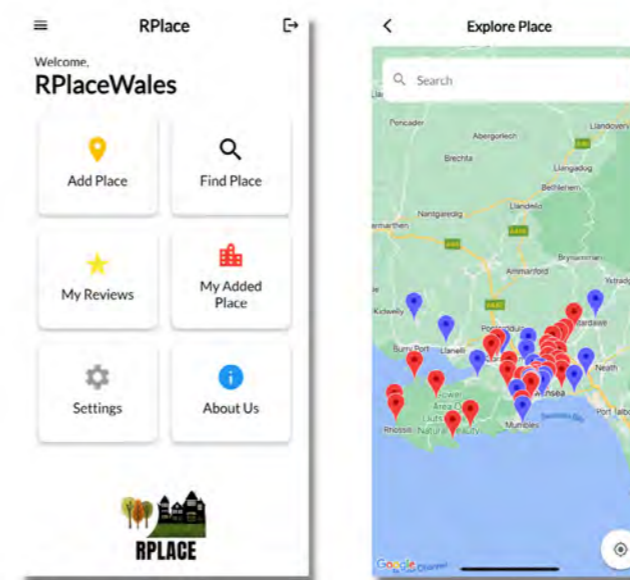
A best practice guide for co-production in research

KEY PRINCIPLES OF CO-PRODUCTION



The Centre and its researchers have been embedding co-production into their work packages since 2015. We have produced our [CORDS: Best Practice Guide](#) to assist our research teams and help others who may be looking to incorporate co-production. Several CORDs work packages are ongoing within the Centre, including; the ACEs My Experiences Cymru Survey, Born in Wales surveys and the RPlace app.

RPlace app co-designed with young people



“As a university student, I often struggle to find platforms to express my views. Rplace is a fantastic app that allows me to be heard, and I'm confident that it will help many others like me feel the same way.

Thank you, Rplace, for creating a platform that values and amplifies diverse voices”

Swansea Youth Bank Panel Member

RPlace is a community-based study supported by Play Wales. The primary objective of RPlace is to provide a platform for young individuals to voice their opinions and catalyse positive changes within their local communities.

To achieve this goal, the team have created a mobile app called 'RPlace' that enables young people to review and assess their local areas. By utilising this app, young people can actively advocate for their desires and requirements, consequently influencing improvements in the

places they live, play, and attend school.

The development of RPlace has been a collaborative effort, with active involvement from young people in the local area. Their valuable input has been instrumental in co-designing the mobile app and identifying areas where evidence is lacking. Furthermore, they have made initial recommendations, such as enhancing the walkability of communities, to ensure a comprehensive and impactful experience.

Our communications activities strive to maximise the reach and influence of our research by generating compelling and relatable content. We utilise various accessible formats, such as news stories, podcasts, videos, and social media, to inform the public about our work. By doing so, we aim to foster a greater understanding and engagement with our research among a wide audience.

Our team actively engages in public outreach events, creating opportunities to connect with communities. Through these activities, we aim to inspire, inform, and educate in an engaging and enjoyable manner, ensuring that our research becomes accessible and understandable to everyone.

- **10 press releases** with coverage in the Medical Xpress, TodayUKNews.com & News Break (USA), Newswise (USA) & News-Medical.net (Australia), Mirage News Australia, Scitechdaily (USA), Italia Salute (Italy), Science Daily (USA).
- 2 interviews on **local TV**.
- National media attention on **Global Radio** and **BBC Radio Cymru**.
- 204 downloads and **4 new podcasts** on our **Research unwrapped podcast series**.
- **14 % increase in our Twitter following** (2,404 followers)
- **18.k video views** on our **YouTube channel**. 8 new videos.

Research Unwrapped

EPISODE 4 ▶



HOST HOPE JONES
In this episode, chats to
New dad **Rob Garlick**



WWW.NCPHWR.ORG.UK @NCPHWR_WALES
NATIONAL CENTRE FOR POPULATION HEALTH & WELLBEING RESEARCH

Interactive exhibits at family events

- 'Where would we be without research?' at @XploreScience in #Wrexham attended by 268 people from across North Wales.
- Swansea Science Festival 2022, which 5600 people from across South Wales attended.

Outreach events Born in Wales

- Attended several parent groups directly engaging with over 120 parents.
- At groups Born in Wales research team has been available for discussion with parents/guardians about our research and links to our surveys for them to complete. There is also opportunities for new ideas and research questions and topics of interest to be discussed.

My Experiences Cymru Survey

- **Promotional YouTube video** co-produced with young people.
- 40 workshops in FE Colleges in South, Mid, West and North Wales.
- Engaging directly with 600 young people.
- 500 completed survey's to date.



Our research infrastructure tackles and addresses some of the critical challenges and barriers currently facing researchers – by delivering the skills and training needed to access and use data, providing data standardisation and data management expertise, and nurturing global research collaboration.

Data Lab making access to data quicker and easier



“The shortage of data science skills means being able to employ a member of the Data lab to undertake the analysis of our data has enabled us to keep our study on track and deliver key outputs.

The Data Lab team have provided findings in a clear, open, and professional way and has also supported other team members.

The opportunity to share learning has been fantastic.”

Dr Rosemary Hollick, The Institute of Applied Health Sciences, The University of Aberdeen

The [Data Lab](#) creates easily accessible linked datasets which researchers can use for data discovery enabling researchers to develop their research questions and pilot analysis methods and see if data is missing, not collected, or not as expected before starting a project.

The Data Lab provides:

- Training to health care professionals and researchers to better understand and use data.
- Brings in new sources of health and non-health data, adding to and enriching the anonymised data sets currently held in

Wales, enabling researchers in Wales and further afield to gain deeper insights into the wider social determinants of health and wellbeing.

“It has been a pleasure working with Jon’s team in the Data Lab; they are highly skilled, professional and deliver reliable, transparent and repeatable analysis.”

Professor Krish Nirantharakumar, Institute of Applied Health Research, University of Birmingham

Providing a platform to enable global Maternal, Paternal and child health research

The [Maternal and Infant Health Research Initiative \(MIRIT\)](#) aims to bring numerous benefits to the research community, revolutionising the collaboration process by offering a streamlined and time-efficient method for establishing initial connections between the Centre and other research groups -facilitating mutually beneficial matches and enhancing accessibility within the research community.

MIRIT welcomes participation from research groups worldwide and those based in the UK involved in health and well-being-related research concerning maternal, paternal, and child health.

By encouraging collaboration, MIRIT strives to foster joint research projects and publications, facilitate PhD projects, support grant applications, and encourage sharing skills, contacts, and networks.



Capacity Building

The Centre aims to support Wales's research ecosystem by helping to cultivate sustainable research skills, capacity, and capabilities. This approach starts by offering internships and extends its support to PhD students, early career researchers, and fellowships. This pathway ensures the development and growth of a robust research community in Wales.

Internships

Over the last year, the Centre has supported 4 internship students. These valuable learning experiences allow aspiring researchers to acquire practical skills while working with real-world data. These internships also serve as platforms for established researchers in our team to mentor and guide emerging talent, fostering a collaborative environment and a vibrant research community.

Areas of research include:

- Implementation of the RPlace App. The project aims to address young people's needs and concerns, supporting their health and well-being by facilitating change in their local communities. The two internships are in partnership with the children's charity Play Wales.
- A grant writing internship aiming to harness external grant funding and build capacity. Health & Care Research Wales funded internship.
- A study exploring the impact of value-based healthcare on long-term conditions. In addition, patient and public involvement work around women's reproductive health.
- Covering research areas such as grant writing, impact of value based healthcare, PPI work in Women's reproductive health, and the implementation of the RPlace App.



"My time at the Centre has considerably improved my analytic and writing skills. Fresh out of my Master's and new in the UK, being surrounded by more experienced researchers who are supportive has enabled me to overcome my initial challenges."

Dobgima Morfa, Intern



"Working as an intern on the Rplace App has been an amazing experience. The team has created a positive and supportive working environment that has allowed me to develop my skills in data analysis. It's been a privilege to be a part of such a meaningful project and work alongside such a talented team."

Sana Shaikh, Intern



"This internship has allowed me to gain so many new skills, participate in research and learn from inspiring colleagues. The Centre opened up the possibility of starting a PhD to further my career options. I'm so grateful for the opportunities I've been given by interning here!"

Amana Baig, Intern



"Being a postgraduate researcher at the Centre has allowed me to become part of a vibrant research community. Dealing with a welcoming staff, a comfortable place to study, and an expert supervisor who guides and support me leading me to gain valuable experiences. Helping me develop academically and personally."

Eman Albaihani, PhD Student

Capacity Building

PhD Studentships

The Centre has been proud to host 4 PhD Studentships, bringing new perspectives and diverse ideas to the Centre's research activities - cultivating a culture of academic excellence, and creating an environment that nurtures and develops a talented pool of researchers.

Areas of research include:

- A study into adverse childhood experiences (ACEs) focusing on co-producing research with young people with lived experience. PhD studentship in partnership with ESRC and Public Health Wales.
- An evaluation of implementing a women-centred NHS endometriosis website and tools to support more timely diagnosis and shared decision-making with general practitioners. PhD studentship funded by Health and Care Research Wales.
- Co-development of a smart watch-based intervention to reduce weight post-pregnancy in Arab women. ESRC funded PhD Studentship.
- A study to explore why people elect not to receive a kidney transplant. A KESS PhD studentship.

Enhancing Support for Early Career Researchers

The Centre is committed to nurturing the potential of early career researchers and facilitating their journey towards becoming future leaders in research. As part of this, we offer them a unique opportunity to actively engage in the leadership of the Centre by inviting them to join our Executive Board. This year, we are pleased to welcome Timothy Pickles, an early career researcher and Health and Care Research Wales NIHR Doctoral Fellow, who has become an active participant in our board meetings.

"It has been fantastically insightful for me to join the Executive Board of the National Centre for Population Health and Wellbeing Research. I have been able to see the breadth of exciting research across the centre and make new connections with other researchers in Wales."

**Tim Pickles, Health and Care Research Wales
NIHR Doctoral Fellow**



Centre Leaders with a strong UK and international academic profile

In April 2022, three members of our Executive Board were recognised as Senior Research Leaders in Wales, solidifying their role as exemplary figures in the field. Professors Sinead Brophy, Ronan Lyons, and Jane Noyes have been selected to provide leadership and act as ambassadors and advocates for health and care research in Wales.

In June 2022, Professor Ronan Lyons was admitted into the Academy of Medical Science's influential Fellowship. This esteemed fellowship is bestowed upon individuals who have made remarkable contributions to biomedical and health science, showcasing their exceptional ability to generate new knowledge and improve the well-being of individuals worldwide.



"As a Centre, we are committed to developing researchers and building research capacity and capability. Therefore, we greatly look forward to the role of providing leadership and acting as ambassadors to the research community here in Wales over the next three years."

**Professor Sinead Brophy
Director at the Centre**



"Along with my colleagues at the Centre, I feel passionate about supporting and developing our next generation of researchers and continuing to champion Wales' world-leading health care research."

**Professor Ronan Lyons
Centre Executive Board**



"We have ambitious plans to build research capacity and capability within the Centre for Population Health. These awards will be invaluable in helping us achieve this. It's an honour to receive such an award."

**Professor Jane Noyes
Centre Executive Board**

Collaboration

We actively engage in extensive research collaborations across the United Kingdom and the entire world. These collaborations provide us with numerous benefits, including access to funding, opportunities to build networks, sharing of resources and expertise, and the ability to accelerate innovation and enhance the impact of our research.

Our collaborations encompass a wide range of organisations, including ADR-UK, the COVID-19 Longitudinal Health & Wellbeing Co-Study, PRIME, SAIL Databank, CASCADE, Play Wales, BEACHES, and HDR UK. Currently, our team is actively collaborating with researchers from universities such as Oxford, Bristol, Edinburgh, Glasgow, Cambridge, York, West of England, King's College London, the London School for Hygiene and Tropical Medicine, as well as the Bradford Institute for Health Research and the National Institute for Health and Care Excellence (NICE).

Play Wales collaboration - ensures that research outputs are relevant



Impact

- The Wants and Needs of Children In Terms of Play Paper
- The RPlace Mobile App
- Swansea level report about local area from initial piloting work
- Presentations at Play 2022 Conference

Play Wales, the national charity dedicated to promoting the importance of play for every child in Wales, is at the forefront of advocating for children's rights to engage in play. Their ultimate goal is to create a play-friendly Wales through intentional leadership, inclusive collaboration, enthusiastic education, and sensitive support.

Since 2021, the Centre has partnered with Play Wales to provide four internship opportunities. These internships aim to facilitate students' learning and development by immersing them in research, fostering collaboration, and engaging with stakeholders. By combining the Centre's expertise, skills, and experience with Play Wales's practical knowledge and values, this collaboration ensures that the research outcomes are relevant, impactful, and applicable in real-world scenarios.

"NCPHWR's approach to working collaboratively and across disciplines has provided valuable and compelling learning. Together, we are identifying ways to empower professionals with knowledge, confidence and tools for meaningful engagement with children in research and decision-making regarding their lived everyday experiences."

Marianne Marinello, Assistant Director (Policy, Support and Advocacy), Play Wales

Lead on partnership to accelerate capabilities and improve research on maternal and infant health



Impact

Awarded £1.4 Million from the Medical Research Council.

MIREDA will develop the tools, infrastructure and expertise needed to enable researchers in the UK to advance research into maternal and infant health.

The Mother & Infant Research Electronic Data Analysis (MIREDA) partnership aims to improve the well-being of mothers and infants, with a particular focus on disadvantaged populations. Its primary objective is to create new research resources and tools utilising routinely collected data to advance maternal and infant health.

The Centre leads this collaborative effort and brings together 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.

Addressing inequalities in society starts with improving maternal and neonatal health. Given societal and economic challenges, including rising obesity, escalating living costs, inequality and large sections of society facing poverty and deprivation, it has never been more critical to understand how best to protect future generations.

MIREDA will shape understanding and inform interventions by:

- Creating a UK resource that includes harmonised maternal and infant birth-cohort health data linked to local datasets in public health, neonatal health, imaging, primary care and hospitals;
- Establishing a multidisciplinary collaboration to undertake analysis in each

- cohort without needing to move the data;
- Developing methods for data standardisation and common data management across datasets and implementing software for automating epidemiological study methods;
- Working with others to build research capacity and networks in the field, using online and face-to-face workshops, seminars, conferences, and research development group meetings to share knowledge and skills; and,
- Providing pump-priming funding to support rising-star researchers and international maternal and infant health collaborations. It will also leverage additional funds for research to improve maternal care and infant outcomes.

"It is exciting to be able to work with National Centre for Population Health & Wellbeing Research who are leading on MIREDA.

By bringing together contemporary birth cohorts across the UK we have a huge opportunity to learn from each other and understand how we can best improve pregnancy outcomes for mothers and babies."

Professor Rebecca Reynolds, Queen's Medical Research Institute, Edinburgh University

Future Plans.

Our focus for the year ahead

Looking ahead to 2023 -2024, the Centre will continue to work towards our vision of improving the health and well-being of people living in Wales.

Our team will continue to **make research count** through our Public and Patient Involvement Panel and our work with CORD (Co-production of Research and Strategy), ensuring we produce **relevant, high-quality research** to inform policy and practice.

Through the Data Lab, the Centre will continue to deliver our ambition to **strengthen the research ecosystem in Wales** by sharing our expertise - fostering a community of researchers with the skills needed to access, understand and analyse routine data.

In the year ahead, the Data Lab team will expand into **evaluating new policies and interventions** and looking at how the rapid changes brought about by COVID have impacted the population's health, work and daily living. This involves working closely with Public Health Wales, the Welsh Government, and with collaborators in other UK nations and Europe to share learning and **improve evidence-based decisions and plans**.

We will continue to **provide opportunities to develop talent** – helping to build capacity for early career researchers with internships, PhDs, mentorships, and through our Senior Research leaders.

Leading on initiatives to progress maternal and child health, in the year ahead, the Centre will focus on expanding and enriching the Born in Wales cohort and launching the UK-wide MIREDA partnership.

Driving change, the Centre will continue to work with the local police to evaluate what works to help prevent violence and how services can best work together to prevent crisis situations for families.

We will **build on existing partnerships and create new ones**. We will continue collaborating with Play Wales, working with local people to improve communities, especially for families with young children and teenagers. We will create new global partnerships through our Maternal and Infant Health Research Initiative (MIRIT).

In the year ahead, the Centre remains committed to our **ambition to help raise the profile of Welsh research and research expertise** in the UK and worldwide.





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:

-  Twitter: [@NCPHWR_Wales](https://twitter.com/NCPHWR_Wales) | [@NCPHWR_Cymru](https://twitter.com/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