National Centre for Population Health and Wellbeing Research

Y Ganolfan Genedlaethol ar gyfer Ymchwil ar Iechyd a Llesiant y Boblogaeth

Prof./Athro Ronan Lyons
(Director/Cyfarwyddwr)
Mission

Make a significant impact upon the health and wellbeing of the population of Wales through applied research

Make Wales a world leader in population health science by:

• Improving the scale, speed, cost effectiveness and uptake of cutting-edge research

• Creating an evidence base for policies, services and interventions

• Implementing findings on a scale with population level impact

• Expanding links to leading international research groups
Building upon success of 4 NISCHR RRGs and 5 RCUK Centres of Excellence in Wales

• RRGs: Epi-Screen, PHIRN, WARN and CYPRN
• The MRC-led multi-funder Farr Institute Centre for the Improvement of Population Health through E-records Research (Farr Institute CIPHER)
• The MRC-led multi-funder Centre for the Development and Evaluation of Complex Intervention for Public Health Improvement (DECIPHer)
• The MRC Cloud Infrastructure for Microbial Bioinformatics (CLIMB) Centre
• The MRC UK Dementias Platform (DPUK)
• The ESRC Administrative Research Data Centre in Wales (ADRC-W)
Key policy and research themes

• Key policy priority areas:
  (A) Children and young people  
  (B) Promotion and maintenance of health through an extended working life

• Research themes:
  (A) health informatics /applied epidemiology
    • observational and interventional
  (B) public health improvement
  (C) knowledge transfer

• Co-ordinate multi-institutional, multi-disciplinary, multi-agency health and social care research
  • Bid development and implementation

• Engage with the public, policy makers and practitioners
NCPHWR Structure

Executive Board

• **Ronan Lyons**, Director
• Deputies:
  • **Sinead Brophy** (informatics)
  • **Simon Murphy** (public health improvement)
  • **Shantini Paranjothy** (epidemiology)
• **Alison Kemp**, children and young people
• **Ernest Choy**, extended working life/Industry
• **Jane Noyes**, social care
• **Mark Bellis**, policy
• **Catriona Williams**, third sector
• **John Gregory**, acute paediatrics/industry/CRN
## Rest of team of investigators

<table>
<thead>
<tr>
<th>Damon Berridge</th>
<th>Kerry Hood</th>
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<tr>
<td>Julie Bishop</td>
<td>Robin Howe</td>
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<td>Gwyneth Davies</td>
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<td>Shangming Zhou</td>
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<td>Sharon Hillier</td>
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Collaborators across Wales

Davina Allen
Nazar Amso
Steve Bain
Christopher Bridle
John Chester
Donald Fraser
Richard Hain
Sally Holland
Billie Hunter
Judy Hutchings
Antony Johansen
Nigel John
Stephen Jones

Sue Jordan
Daniel Kelly
Mark Kelson
Lesley Lowes
Sabine Maguire
Simon Moore
Judith Phillips
Colin Powell
Julia Sanders
Jonathon Shepherd
Julia Townson
Jean Ware
Alison Weightman
International collaborators

• **Elizabeth Walters**, University of Melbourne

• **Leslie Roos**, University of Manitoba

• **Laurence Moore**, MRC Social and Public Health Sciences Unit, University of Glasgow

• **Mark Nieuwenhuisen**, CREAL, Barcelona

• **Chris Murray**, University of Washington

• **Stephen Manske**, University of Waterloo, Canada

• **John Frank**, Public Health Research & Policy, University of Edinburgh

• **Paul Elliot**, Imperial College, London
Informatics

Preliminary data analyses and evidence syntheses to support the development of new research grants in the following areas:

• Automated routine data surveillance system for detecting adverse drug events

• New web, mobile health and GIS data collection tools for health and disease monitoring (e.g. physical activity, wellbeing, respiratory function)

• Natural Language Processing (NLP) technologies to liberate the detail hidden in social care and health documents to improve specification of exposures, outcomes and phenotypic enhancement

• Explore opportunities for gene-environment, stratified and personalised medicine research through linkage of biological and health data

• Explore utility of phenotypically rich data collected during population based screening, e.g. abdominal aortic aneurysm and bowel screening
Applied Epidemiology

Expand the Wales Electronic Cohort for Children (WECC)
  • > 1 million children, data from 1990 to 2016
  • Embed components of other cohorts:
    • Millennium Cohort Study, Growing Up in Wales, Welsh Study for Mothers and Babies, Brecon Cohort
  • Enhance with social services (e.g. care status) and laboratory data
  • Embed intervention evaluation

Developing new population based adult e-cohorts, incorporating national audit datasets on long-term conditions for epidemiological studies
Contribute to national and global research efforts on measurement of the population burden of disorders

Improve understanding of issues around food safety, the pathogenesis of bowel infections and the influence of the microbiome on health
Public Health Improvement

• Methodological support to develop a program of rigorous health and social care improvement in community settings:

• Develop responsive collaborative bids linked to emerging interventions and health improvement policies to improve population health and reduce health inequalities

• Further develop the MRC funded School Health Research Network (SHRN) to build a sustainable world-leading infrastructure for highly responsive school-based health and social care improvement

• Assess feasibility for a Workplace Health Research Network infrastructure in Wales

• Pilot and apply for full funding for intervention studies and evaluation of natural experiments, such as evaluation of the Fostering Changes parenting programme or the social and health impact of the housing interventions
Cross-cutting research activities

• Better understanding of the causes and consequences of antenatal maternal health and adverse childhood experiences on child health and development

• Evaluation of interventions addressing child and adolescent health and social care priorities, including:
  • smoking cessation during pregnancy
  • breastfeeding maintenance
  • Interventions to reduce use of tobacco, alcohol and drugs
  • Physical activity and the role of active transport in preventing obesity

• Promotion of health through an extended working life
  • Fitness and well-being
  • Research supporting disease control particularly in: Asthma, Cardiovascular Disorders, Infectious Diseases and Musculoskeletal Disorders
  • Evaluation of screening interventions
Key metric: external grants

We promised to deliver £1 into Wales for every £1 invested by Wales

- £2.25M invested in Centre

Success to date:

- 7 grants from EC, ESRC, MRC, NIHR, WT starting 01/04/15 onwards

Value to Wales: £1.7M