



Ymchwil Iechyd  
a Gofal Cymru

Health and Care  
Research Wales



Swansea University  
Prifysgol Abertawe



PRIFYSGOL  
BANGOR  
UNIVERSITY



Children in Wales  
Plant yng Nghymru



GIG  
CYMRU  
NHS  
WALES | Iechyd Cyhoeddus  
Cymru  
Public Health  
Wales

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)*



Llywodraeth Cymru  
Welsh Government

# 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

Damon Berridge

**Julie Bishop**

Gwyneth Davies

Christine Dobbs

**Adam Fletcher**

**David Fone**

David Ford

Belinda Gabbe

**John Gallacher**

Judith Greenacre

**Helen Henningham**

**Sharon Hillier**

**Kerry Hood**

**Robin Howe**

Tom Humphrey

Kerina Jones

**Michael Robling**

Sarah Rodgers

**Jonathon Scourfield**

Samuel Sheppard

Gareth Stratton

**James White**

Shangming Zhou

## 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