Public Health Wales
Research Highlights
2016/17
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Public Health Wales is involved in a wide variety of national and international research. Research is an essential part of what we do as an organisation, enabling us to understand the most effective approaches to improving the health and well-being of those living in Wales and beyond. As a population, we still face significant challenges such as the need to tackle persistent inequalities in life expectancy, childhood obesity, to reduce the overall consumption of healthcare, and plan for an increasing ageing population who may spend more years in ill health. Research has an important role in helping us to effectively approach and overcome these challenges. It enables us to identify and investigate those areas where there are gaps in the evidence, and produces new knowledge that guides our future direction of travel as a public health organisation. Research also determines where we invest resources in the years to come, and makes a positive impact on public health, policy and practice both nationally and internationally.

Since the launch of our Research Strategy in 2015, we have made great progress in developing research within the organisation and we are proud of what we have achieved so far. In addition to funding received from Health and Care Research Wales1 to support research delivery, we have also been successful in securing grants from national and international funders.

Exciting opportunities lie ahead to both strengthen and develop new collaborations and further increase the breadth of high quality research that we are involved with in line with our organisational aims. We hope that you agree that this report provides an important insight into the research activity taking place in Public Health Wales. As our research and development activity continues to grow and develop, we look forward to working with you in order to achieve improvements in the health and well-being of the population.

Dr Alisha Davies
Head of Research and Development
Public Health Wales

Research and Development across Public Health Wales

Research is essential to help us develop the evidence for the most effective interventions to help improve the nation’s health. It is vital in enabling us to further understand the attitudes, behaviours and factors that drive unhealthy behaviours and perpetuate health inequalities.

Dr Alisha Davies

Public Health Wales research in numbers....

Box 1. Key figures for research activity during the 2016/17 financial year

- £209,713 received from Welsh Government to support research in Public Health Wales.
- £307,801 external research income awarded to Public Health Wales (43% increase on the previous financial year (2015/16)).
- 124 academic publications in 2016 (Jan-Dec 2016).
- 24 active research projects in any single month.
- 10 new research projects were granted NHS research permission.

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1 Health and Care Research Wales is a national organisation, funded and overseen by the Research and Development Division of Welsh Government. It manages the NHS research and development funding allocation for all NHS organisations in Wales (including Public Health Wales) and provides an infrastructure to both support and grow research and development.
Research highlights

The following section highlights some of the outstanding research projects that have been completed or that are currently underway across the organisation. Our research reports and publications can be viewed on the Public Health Wales Observatory webpage.

Welsh Adverse Childhood Experiences

Kathryn Ashton, Dr Kat Ford and Professor Karen Hughes – Policy, Research and International Development Directorate

Why did we carry out this research project?

This study aimed to measure the prevalence of Adverse Childhood Experiences (ACEs) and their association with adult health in Wales. Recent evidence demonstrates that chronic traumatic stress in early childhood increases individuals’ risks of participating in health-harming behaviours, developing poor physical and mental health, and ultimately suffering premature mortality. Understanding which population groups are most affected by ACEs, how ACEs affect health and social well-being, and the impact they place on public services in Wales is fundamental to developing effective and prudent responses from multiple sectors.

How did we do it?

A face-to-face survey of over 2000 adults (aged 18-69 years old) resident in Wales was completed. Respondents were asked questions about ACEs and their current health-related behaviours, health outcomes and health care use.

What did we find out?

The survey found that for every 100 adults in Wales, 47 suffered at least one ACE during their childhood and 14 suffered four or more. The survey results show that suffering four or more ACEs increases the chances of high-risk drinking in adulthood by four times, having low mental well-being by five times, being a smoker by six times and being involved in violence in the last year by around 14 times (Figure 1). It also doubles the risks of frequent GP use and diagnosis with a chronic disease. The study also estimates the burden of health-harming behaviours on the NHS that could have been avoided if ACEs were prevented across Wales (Figure 1).

What changed as a result of this research?

The results have been shared with key organisations across Wales including local and national government, voluntary and public sector organisations and at national conferences. It has had significant impact for Wales, including an investment of £400,000 from Welsh Government for Cymru Well Wales to create an ACES Hub to tackle the impact of ACEs. A second population level ACE study is now examining resilience factors that can protect people affected by ACEs from suffering their harmful effects.
Why did we carry out this research project?
While harm reduction interventions have reduced blood borne viruses (BBV) among people who inject drugs (PWID), some PWID continue to share injecting equipment. The PROTECT study developed and tested a group intervention to reduce BBV risk behaviours.

How did we do it?
The PROTECT intervention was co-developed by service users, service providers, policy makers and academics and consisted of three one-hour weekly sessions delivered to same gender groups. PWID attending community addiction/harm reduction services or needle exchanges, from across the UK, were randomised to receive either the group intervention plus a leaflet on BBV transmission, or the leaflet only. Injecting and sexual behaviours, self-efficacy and plans to avoid risk behaviours, and BBV transmission knowledge were assessed at baseline, at the end of the intervention, and one month post-intervention.

The research was led by King’s College London and in addition to Public Health Wales, involved the University of the West of Scotland, University of York and Betsi Cadwaladr University Health Board.

What did we find out?
We found that participants who did not attend any intervention sessions were more likely to be homeless, inject drugs for a greater number of days in the last month, and use a greater number of needles from a Needle Exchange in the last month than those who attended at least one session. Fewer injecting risk practices, improved self-efficacy, better hepatitis C and B transmission knowledge, and greater use of withdrawal prevention techniques was reported in the intervention group compared to the control group. The overall recruitment and retention rates in this trial led us to conclude that the findings do not support a progression to a full trial. However, PWID perceived that information about BBV transmission was not part of their usual conversations with key workers and practitioners and welcomed the possibility to discuss injecting techniques, good vein care, and BBV transmission.

What changed as a result of this research?
The intervention provided valuable insight, showing the need for a greater embedding of BBV risk reduction in the work of substance misuse services. In addition, a policy document has been produced for stakeholders, and more broadly, the study has highlighted the relevance of randomised control study designs within public health research.

Evaluating the potential of using an observation tool for parent child interaction in the first two weeks of life

Dr Aideen Naughton - Quality, Nursing and Allied Health Professionals Directorate

Why did we carry out this research project?

Child neglect is a significant public health concern and has devastating short and long-term consequences. Emotional maltreatment has profound effects on the developing brain but is hardest to identify in infancy. There is a need to identify babies at risk of neglect and emotional maltreatment through early observation of the parent-child interaction, so that implementation of interventions can lead to better child outcomes. This study seeks to evaluate the feasibility of using an observation tool, which has been validated previously for use at 2 to 7 months of age, at a much earlier age.

How did we do it?

The protocol was developed with Cardiff University and Cardiff and Vale University Health Board, and parents were involved in the study design. Women who had been admitted for induction of labour were recruited. The study consisted of carrying out Parent-Infant Interaction Observation Scale (PIIOS) observations on two occasions, the first within the first two weeks of life (Time 1) and the second between 8 and 10 weeks of age (Time 2).

What did we find out?

Findings of the study included relatively easy recruitment of suitable participants, full data completion of questionnaires and acceptability of the observations at time 1 and time 2. Using the PIIOS, it was possible to score across 10 of the 13 items with an awake infant aged 2 weeks.

What changed as a result of this research?

An end-of-study report has recommended that a trial and test of a modified scoring system (based on the PIIOS) be developed for a study using a larger sample size. Further study will be required to assess whether such an approach can reliably produce a consistent valid screening tool to assess parental sensitive responsiveness or attunement at this early stage.

Life after Prostate Cancer Diagnosis

Dr Dyfed Wyn Huws, Dawn Allan and Janet Warlow – Health and Wellbeing Directorate

Why are we carrying out this research project?

Prostate cancer is the most commonly occurring cancer in men in Wales. The number of men with the disease is increasing and treatment may affect the health-related quality of life (HRQL) of men and their partners/spouses. In addition to improving treatment, it is important to measure the outcomes of importance to patients and partners/spouses so that services can be tailored to meet men’s needs.

The main aims of this research project are:

- to describe the HRQL (e.g. physical, psychosocial) of men with prostate cancer using a variety of research methods;
- to explore if and how HRQL is associated with or predicted by disease, treatment or patient characteristics to help develop health care policy and service delivery to better meet the needs of such men and their families;
- to describe the levels of patient empowerment and explore the interaction between patient empowerment and HRQL.

How is the research being carried out?

The study is led by the University of Leeds and Queens University, Belfast, and Public Health Wales is the lead organisation for Wales through the Welsh Cancer Intelligence and Surveillance Unit. The study is the first of its kind for prostate cancer, and is a large UK-wide prospective cohort study of men diagnosed with prostate cancer. The cohorts of men identified from cancer registries complete a validated cross-sectional postal questionnaire 12 months apart. The study has significant third sector and prostate cancer patient group involvement, including in the methodology, questionnaire design and writing the report, as well as peer reviewed papers.

What do you expect to change as a result of this research?

The findings will enable UK service providers to better plan their services with policy makers, patients and the third sector in order to improve HRQL. This will be aided through the involvement of clinicians and NHS organisations from the outset.

The study is a UK wide study and is funded by Prostate Cancer UK in partnership with the Movember Foundation Health Outcomes Initiative (www.lifeafterprostatecancerdiagnosis.com).

To read about the study aims, intentions and planned publications, go to: 10.1136/bmjopen-2016-013555

10 Principal Investigator for Wales.
11 The Health and Wellbeing Directorate comprises the Health Improvement and Health Intelligence Divisions, the Local Public Health Teams and Primary, Community and Integrated Care. This covers activities such as the Early Years Programme, Stop Smoking Wales, Child Measurement Programme for Wales, and the Welsh Cancer Intelligence and Surveillance Unit. There are also the Dental, Optometric and Pharmaceutical Public Health Teams, as well as other services.

9 The Quality, Nursing and Allied Health Professionals Directorate has a broad responsibility including a duty towards risk and information governance, quality and nursing as well as a safeguarding service. The Centre for Equality and Human Rights is also within the Directorate.
Public Health Wales

Professor Mark Bellis
Dr Charlotte Grey

How did we carry out this research project?
Mass Unemployment Events (MUEs) can have a marked detrimental impact on the health, social and financial situation of individuals and families, and can destabilise local communities. There are clear social, economic and health benefits to responding to these events, but often the focus is largely on training and vocational support to secure re-employment for those made redundant. There is minimal or no consideration of the health and longer term consequences of mass unemployment, nor the impact on those indirectly affected such as families and the local community. Whilst there are extensive public health plans to deal with the impact of other acute events affecting communities such as flooding, a framework to respond to MUEs is lacking.

What did we find out?
The study produced a comprehensive understanding of the health and social impact of mass unemployment. This included the:

- detrimental impact on physical and mental health mediated through (i) direct loss of income and poverty, (ii) the stressful event and subsequent increased anxiety and loss of self-esteem, and (iii) an increase in self-destructive behaviours, such as smoking, alcohol consumption and attempted suicide;
- financial hardship for household and family members, in addition to managing stress and securing re-employment, with a detrimental impact on family dynamics;
- wider impacts on the local community through increased competition in the labour markets, disconnecting social networks, and to some extent emotional trauma, affecting the health and well-being of the local population.

The study identified the need for a longer term preventative view through:
- economic forecasting of global and local labour markets to better meet future needs and ensure development of sustainable employment;
- skills development in the workforce as an essential foundation for building economic recovery, and ensuring the unskilled are also supported to prevent widening social inequalities;
- investment in infrastructure and a strong strategic planning process from all major stakeholders, in order to lay the foundation for an economic recovery;
- more socially responsible employers regarding the management of restructuring;
- building psychological resilience in individuals and communities to cope with the impact of economic shocks.

What changed as a result of this research?
A public health informed response framework was produced, centring on all those affected by addressing the health and psychosocial needs, alongside re-employment and financial support. The framework was shared widely across public health and key stakeholders nationally and internationally to inform practice. This will help to build the evidence to strengthen a preventative approach to the impact of MUEs including how to best identify and support those areas at risk from MUEs.

What have we achieved so far?

1. Develop research skills of staff within Public Health Wales

All staff should have the opportunity to develop their research skills to enable them to access and use the available evidence and contribute to generating evidence that informs their practice.

Since launching the Research Strategy, we have hosted monthly Lunch and Learn sessions for staff on areas of public health interest. In addition, we have worked with other NHS Wales organisations to develop a model that supports public health research focused on the needs of the Local Public Health Teams. Further, we have developed both the Public Health Research and Development Hot House and a virtual research community to promote networking.

To access the study report, infographic and case studies visit: https://research.publichealthnetwork.cymru/en/news-and-funding/mue-mass-unemployment-events-report/
2. Help to create new knowledge

Public Health Wales will support the development of new research knowledge and will work to ensure research activity is focused on key areas of importance for public health in Wales, in particular areas such as childhood obesity, smoking, improving mental health and well-being and reducing inequalities.

We have supported collaborative projects such as HealthWise Wales16 that link together routinely collected health and social care data to evaluate public health programmes and policies. Our research on ACEs has had significant impact for Wales and has led to investment from Welsh Government to further tackle the impact of ACEs. In addition, Public Health Wales successfully led an application to the National Police Chief’s Council Transformation Fund to support extension of the South Wales Police Innovation Programme17 to an all-Wales approach.

3. Work in partnership with others

Public Health Wales will continue to seek opportunities to undertake research in collaboration with others, acting as an effective and active partner. Through this, the organisation will gain the benefits of increased access to new and different perspectives, expertise and resources. It can also offer others an insight into Public Health Wales’ service areas, where research can be translated into practice.

Box 3. Transforming Young Lives across Wales: The Economic Argument for Investing in Early Years

Public Health Wales funds research carried out by other organisations as this enables us to use resources and expertise not available within the organisation, to help us to function effectively and successfully meet our objectives. It also offers the opportunity for independent measure of the impact of research and services on public health in Wales. Public Health Wales commissioned Bangor University, Centre for Health Economics and Medicines Evaluation, to produce the Transforming Young Lives across Wales: The Economic Argument for Investing in Early Years report, which looked at the economic evidence on assigning public sector resources to supporting the child, the whole family and the wider community. The report was published in October 2016 and is available via the following link.

http://cheme.bangor.ac.uk/reportspublications.php.en

4. Effectively communicate what we know

Public Health Wales will effectively communicate the findings from research to staff within the organisation, stakeholders and the public to ensure that knowledge is utilised across the public health system to best effect and that we learn from the results of our research.

We have facilitated conferences, seminars and workshops in Wales promoting evidence-based practice for practitioners and researchers working on public health priorities in all sectors in Wales, such as the Research in Wales event hosted by Public Health Wales in March 2017 (Box 4). We have also developed a new Public Health Wales research and development monthly news and updates bulletin.

Box 4. Public Health Wales Research, Policy and Practice: Working Together in Wales Conference

Public Health Wales hosted the second Research in Wales conference in Cardiff in March 2017. The conference showcased some of the latest public health research in Wales and talks were given from several key individuals in the public health arena, including Dr Frank Atherton, Chief Medical Officer for Wales. Presentations and notes from the conference are available at: http://research.publichealthnetwork.cymru/en/news-and-funding/public-health-research-policy-and-practice-working-together-wales-conference/

How is research governed and supported in the organisation?

All research projects involving Public Health Wales staff, patients and service users or resources must receive NHS research permission18 before being undertaken and then be appropriately managed and monitored in line with the new UK Policy Framework for Health and Social Care Research. The Public Health Wales Research and Development (R&D) Office team manages the NHS research permissions process for all research carried out across Public Health Wales and also provides advice to researchers on preparing applications for other review bodies, such as NHS Research Ethics Committees20.

16 HealthWise Wales is a Health and Care Research Wales initiative for a Welsh National Population cohort study, which will engage the population of Wales to become actively involved in research to improve health and well-being. It aims to recruit those living in or using health services in Wales to provide data, creating a platform for research, policy and service development and evaluation.


18 The Research Design and Conduct Service (RDCS) is available to NHS and social care professionals who meet minimum eligibility criteria and provides guidance and advice to enable researchers to both assess the potential of an idea and to develop a study or trial idea effectively up to the point of application for funding. Further information is available at: https://www.healthandcarenhsresearch.gov.wales/research-design-and-conduct-service/

19 “NHS management permission” (also referred to as ‘R&D approval’ or ‘R&D permission’) must be obtained by researchers conducting research in the NHS in Wales for each NHS research site identified. Further information is available from https://www.hra.nhs.uk/approvals-amendments/

Future Plans

There are several exciting research programmes that are currently underway in Public Health Wales or are expected in the near future.

£6.87 million has been awarded through the Police Transformation Fund for new research addressing a multi-agency ACE-informed approach toward vulnerability that enables early intervention and root cause prevention in Wales. We are also working with primary care and schools, and Community Housing Cymru to explore the development of an ACE-informed approach in practice. Microbiology services are developing work around infections and disease, and the use of new genome technologies. New intervention trials are planned, such as those to reduce teenage pregnancy and promote positive sexual health. The Welsh Cancer Intelligence and Surveillance Unit (WCISU) is involved in the International Cancer Benchmarking Partnership. This unique and innovative collaboration brings together clinicians, policymakers, researchers and cancer data experts to measure international differences in cancer survival and identify factors that might be driving these differences. WCISU is also involved in the Eurocare study and the London School of Hygiene and Tropical Medicine’s global study CONCORD-3. More widely across Public Health Wales, new work streams are also expected in areas such as social prescribing, health sustainability, mental health resilience and the Well-being of Future Generations Act.

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References


22 Further information regarding the Eurocare study is available from: http://www.eurocare.it/
23 Refer to http://csg.lshtm.ac.uk/research/themes/concord-programme/ for further information regarding the CONCORD-3 study.
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