

UKCRC Public Health Research Centres of Excellence

FINAL REPORT

2018



igniting our potential

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Foreword

It gives me enormous pleasure to write the foreword to this UKCRC Public Health Research Centres of Excellence Final Report. The achievements of the six Centres are highly significant. The research infrastructure that has been built, the capacity which has been developed, the research that has been undertaken, and the translational links which have been made with practice, policy and the public since 2008 are truly impressive. The impact, which the centres have had across the UK public health landscape, attests to the hard work of all involved - past and present. I have had the privilege of working in different ways with each of the Centres. I was on the original commissioning board and the recommissioning panel at mid-term. I have been delighted to see the way that the centres have developed and matured.



Professor Mike Kelly

Looking at the long list of achievements now, and reflecting on the legacy of all this work, we should remember that this has been part of a genuine step change. The solid body of evidence which practitioners and policy makers can now call upon, including that produced by the six Centres, may well be a fixture in the contemporary public health system, but it wasn't always the case. In 2000 when I left academe to work in government, the situation regarding the evidence base in public health was far from promising. I remember being asked by a senior official in the Department of Health on the day I started working at the Health Development Agency, where the evidence to *really* guide policy was to be found! Ministers were keen to act. They were especially keen to try to reduce health inequalities. However, the amount of evidence available telling them how to deal with the issue effectively at local or national level, as opposed to simply telling them what was wrong, was very limited indeed.

There was lots of evidence describing problems and in the case of health inequalities, in extraordinary detail. But beyond high level exhortations about income redistribution or poverty reduction, what policies would look like on the ground was largely a matter of surmise, political preference and guess work; it was not evidence based. Health inequalities were firmly on the political agenda, but ministers were struggling to find concrete answers about what they should do. The same was true as the obesity epidemic emerged.

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In Health Promotion, in much of the research that was being done, there was a very strong emphasis on process, and much less on outcomes. There was of course some excellent epidemiology but for the most part in public health it focussed on proximal risk factors and aetiology. The attention to risk factors was frequently translated into downstream efforts to get people to change behaviour (without very much reference to what the evidence from Psychology or Sociology had to say about the matter!). Evidence-based medicine was making its voice heard in clinical medicine, but the idea that the principles of evidence-based medicine could be applied to public health was mostly thought to be a non-starter. This was usually (and inaccurately) attributed to the difficulties associated with doing randomized controlled trials in complex public health settings. There were few effectiveness studies and fewer still cost effectiveness studies. There was no health economics of public health at all.

But there was a vision that things could be better.

But there was a vision that things could be better. This first appeared in the Department of Health's 2001 Research and Development Strategy for Public Health. The establishment of infrastructure like the Centre for Reviews and Dissemination in York, the Health Development Agency and various research collaborations added to the momentum. Subsequently NICE acquiring a role to develop public health guidelines, the establishment of the NIHR, the creation of specific public health research funding streams, the setting up of the School of Public Health and the commissioning of the Policy Research Units have all helped to consolidate things.

There was a need to move beyond simply producing better and more evidence.

However, there was always something slightly different about the commissioning of the UKCRC Centres of Excellence. There was a recognition that research, no matter how good, would not do the job on its own. There was a need to move beyond simply producing better and more evidence. The idea was to do something, which would help to develop the public health research workforce and which would embrace multidisciplinary. It was hoped that collaborative working between academics, practitioners, and policy makers could be nurtured. The goal was to provide a bedrock of translational and applied research while maximising the use of existing evidence. How to deal with the various methodological issues across the many disciplines, which would need to be involved, was also seen as a priority. The idea for what became the six centres had crystallised. The hope was that the new initiative would help to establish a sustainable public health research community. It required a coordinated approach by the funders and they enthusiastically came on board.

Therefore, in the years that the UKCRC Centres have been operational we have seen these hopes and aspirations realised. This document says as much. We have witnessed an extension and development of the evidence base and the UKCRC Centres have undoubtedly made a major contribution to this. Among researchers and policy makers, there is a better understanding of the “problem to solution link” via evidence. There is much greater recognition of the pluralism of the evidence and the contribution that disciplines beyond epidemiology can make. There has been real progress in research workforce development. The results of the REF in 2014 in Unit of Assessment 2 (which included public health) in my view demonstrated the good shape that public health evidence in the United Kingdom is in, compared to where it was at the beginning of the century.

As we look to the future there are obviously risks. We must not suffer from self-induced institutional memory loss. We must not forget where we were, and neither must we forget how far we have come. It is a genuine achievement. None of this would have happened without sustained collaborative funding and in the UK we will need to continue to invest in public health research. There are still wicked problems to be dealt with, not least the structural patterning of health inequalities, the obesity epidemic, the misuse of alcohol and population inactivity. But as policy makers, guideline developers and practitioners we know a great deal more about all these things that we did at the end of 1999. For my part as we move into the next decade, I would like to see even more attention being paid to the evidence on “how to” make things happen. We have a real research infrastructure in place in public health; what we need to have more of in the future, is what was in the original vision of UKCRC about translation (or as I prefer to think about it, making things happen that will really make a difference). We also need to be politically savvy. We should not be drawn into trying to find illusory quick fixes for public health problems; the quick fixes that politicians, if not policy makers, often demand. Public health problems will continue to require long and concerted efforts to get to solutions. Come what may, we will still need to play the long game.

The Centres and the other developments described here, have given us a splendid platform on which to build the next generation of evidence and the evidence of how to make it work in practice.

The Centres and the other developments described here, have given us a splendid platform on which to build the next generation of evidence and the evidence of how to make it work in practice. It is the job of all of us interested in the health of the public to make that happen.

Professor Mike Kelly
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THE UK CLINICAL RESEARCH COLLABORATION LEGACY



Nick Wareham

Professor Nick Wareham
Director of CEDAR



F Kee

Professor Frank Kee
Director of CoENI



Simon Murphy

Professor Simon Murphy
Director of DECIPHer



Ashley J Adamson

Professor Ashley Adamson
Director of Fuse



John Frank

Professor John Frank
Director of SCPHRP



John Britton

Professor John Britton
Director of UKCTAS

The Centre of Excellence for Public Health NI

Professor Frank Kee, Director

CoENI has the aim of strengthening research and engaging policy, practice and the public in complex public health issues and health inequalities. Its enduring legacy has been in terms of People, Relationships and Ambition.



People

The UKCRC directly funded 21 PhD studentships and 14 post-doctoral fellows in the Centre. This catalysed a step change in research capacity in public health science in NI and was responsible, at least partly, for leveraging an additional 115 studentships and 68 post-doctoral fellows affiliated to our programmes over the decade. In addition, we launched a successful MPH course which 'feeds' our doctoral programme. Several of our early career researchers secured blue chip nationally competitive Fellowships (e.g. from NIHR, MRC and CRUK) and ultimately made the transition to tenured academic posts with co-funding of ten of these by our Universities to ensure sustainability. The Centre was also a springboard for academic leadership, with several co-investigators awarded promotions (4 to Senior Lecturer and 7 to Reader or Chair positions).

Relationships

We trail-blazed trans-disciplinary collaboration intra- and extra-murally. Several co-investigators within our Centre have sustained this approach by creating networks of public health researchers in their own Schools and Faculties, such as in the Centre for Evidence and Social Innovation¹ and the Centre for Health Research at the Management School². The value of a population approach has been further underpinned with new joint appointments across research centres such as in Big Data science, as part of the recent HDR UK investments which are also an example of enduring collaborations across the UKCRC Centres (notably with Professor Lyons from Swansea and DECIPHer for HDR-UK); and there have been many other successful and pending grant awards in partnership with investigators in the other Centres of Excellence that would not have been consummated without the UKCRC initiative.

Equally important has been the establishment of extra-mural relationships with our partner organisations, including the NI Public Health Agency and the Community Development and Health Network (3rd Sector), whose leadership has testified to the way the partnerships have foregrounded

evidence-based approaches in their work and how the Centre helped them take a more active part in generating new evidence (1-1 interviews available on our YouTube Channel)³.

Indeed, our establishment of the Northern Ireland Public Health Research Network brought together more than 400 individuals and partners, mostly from outside academia and including local government, to forge new ideas for research and evaluation of public health programmes.

Ambition

Unquestionably, the vision that we espoused in our original 2008 UKCRC proposal – one that identified the need to harness complex systems approaches to public health – was prescient given the current interest and investment by funders in exploring how complexity science might offer new insights to intervention development and testing. Kee and several of the other UKCRC Directors have already contributed to workshops as part of the ongoing MRC GUEST study to refresh the methodological guidance in this area. Dr Ruth Hunter, a recipient of an NIHR Career Development Fellowship on social network science has, with others, joined a UKPRP shortlisted network bid to develop the potential of Agent Based Models for public health evaluation. Another of our Lecturers (Dr Aideen Maguire) secured an MRC Methodology panel Fellowship to exploit the potential of Big Data research for public health and now will work alongside a new cohort of HDR-UK fellows in Belfast with the same ambition and mission.



Dr Ruth Hunter



Dr Aideen Maguire

It is this sort of methodological innovation, alongside the upskilling of people and nurturing of new relationships that were catalysed by the UKCRC investment and, now, is being sustained by a new generation of researchers and collaborative communities.

¹ www.qub.ac.uk/research-centres/cesi/

² www.qub.ac.uk/schools/QueensManagementSchool/Research/CentreforHealthResearchattheManagementSchool/

³ www.qub.ac.uk/research-centres/CentreofExcellenceforPublicHealthNorthernIreland/Research/

Centre for Exercise, Diet and Activity Research

Professor Nick Wareham, Director

CEDAR, a partnership between the University of Cambridge, the University of East Anglia and MRC units in Cambridge, studies the factors that influence dietary and physical activity behaviours, develops and evaluates public health interventions, and helps shape public health practice and policy.



A key reason behind the UKCRC initiative was the development of academic capacity in UK public health research, and in those terms it cannot be seen as anything other than a great success. Our 'Capacity Building' case studies illustrate just two of the many stories we can tell of careers that CEDAR has played a part in developing. PhD students from CEDAR are forging promising academic careers within our organisations, and CEDAR alumni are pursuing successful roles in academia, government and the private sector.

The initiative has also supported structural developments to build capacity, with Centre funding instrumental in establishing a sustainable basis for a number of key research programmes. In our first five years, Centre funding provided direct support for senior positions in our physical activity and dietary public health programmes. This allowed for the development of strong research programmes and the transition to long-term institutional funding.

The flexibility of Centre funding also supported progress through stages of observational studies and intervention development, and enabled a number of successful grant applications to help build coherent and sustainable programmes. The GoActive case study in this report tells just one element of this story. Further programme building continued in the second five year period, applying the lessons and principles from the first, with an expansion of our Public Health Modelling and Dietary Public Health programmes. The latter programmes have been active in research relating to live policy issues such as the proliferation of takeaway food outlets and the sugary drinks tax, as outlined in one of our 'Impacts' case studies.

Such policy-relevant research is emblematic of the explicit translational ethos at the heart of CEDAR. Now firmly underpinned by the organisational structures and approaches of the MRC Epidemiology Unit at the University of Cambridge, CEDAR will continue its work bringing leading research experts together with practitioners, policymakers and wider stakeholders to tackle complex public health issues.

Finally, the CEDAR philosophy is now playing its part on the global stage. Many of our researchers are closely involved in the new Global Diet and Activity Research Group and Network (GDAR) – www.gdarnet.org – funded by National Institute for Health Research (NIHR) to help combat poor diet and physical inactivity and reduce the risk of non-communicable diseases. Made up of researchers from Cameroon, Kenya, South Africa, the West Indies and the UK, GDAR will generate evidence on the factors that lead to poor diet and physical inactivity; design and evaluate interventions to change these factors; and investigate the long-term health and economic effects of such interventions.

The coming years present significant challenges for population health in the UK and around the world, and we look forward to playing our part in providing the evidence to help tackle them.

The Scottish Collaboration for Public Health Research and Policy

Professor John Frank, Director

SCPHRP, based within the University of Edinburgh, facilitates collaboration between all sectors of the public health community in Scotland, in order to inform the development and evaluation of novel public health interventions that equitably address major health problems.



After ten years of operations, initially as a small MRC Unit, then transferred into the University of Edinburgh as a Centre in 2012, there are at least four key legacies that SCPHRP can be proud of:

- 1 Fourteen Post-Doctoral Fellows (PDFs) were hosted and supervised since 2008, all of whom have responsible positions in either universities, or, in one case, as a Scottish Government policy analyst in public health; in an era of uncertain labour market conditions for PDFs, this is an excellent track record. In addition, a half-dozen PhD students have passed through SCPHRP at some point or been co-supervised by our two faculty members, as well as over a dozen MPH students, who have spent some months either doing a dissertation project within SCPHRP, and/or working as Research Assistants on our projects. The student evaluations of their SCPHRP attachments have been stellar.
- 2 Over 150 peer-reviewed publications were produced by team members; this is significant given that, unlike the other five UKCRC Centres, SCPHRP has never had more than two faculty working in it (Frank and Jepson) all its other research staff have been PDFs; similarly, all our completing PDFs were able to win at least one or two small peer-reviewed grants as Principal Investigator. (Over 30 grants have been won by our team in the last half-decade alone, with a total value of over £10 million.) This experience has prepared our senior trainees well for a research career, at a level of competence often not aspired to in the UK PDF setting.
- 3 Perhaps most importantly, SCPHRP's four Working Groups originally comprising over 80 diverse Scottish public health stakeholders, have built strong collaborative relationships between our team members (including all of our PDFs), and organisations spanning: public health professionals/NHS; Scottish Government; multiple charities/NGOs active in community development for improved health and health equity; as well as many researchers across more than a half-dozen Scottish universities. This stakeholder-interactive model of team research, to solve public health problems with multi-disciplinary approaches, is now well established in Scotland, and is being widely utilised by other researchers, as well as SCPHRP itself in its next phase, under the leadership of Jepson and McAteer.
- 4 SCPHRP has achieved a remarkably large "footprint" in social media (nearly 8000 Twitter followers) as well as through its e-magazine and e-newsletter (combined circulation now over 300).



Dr John McAteer



The Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement

Professor Simon Murphy, Director

DECIPHer, a strategic partnership between the universities of Cardiff, Swansea and Bristol, has established itself as a leading national and international centre for the development and evaluation of public health improvement. The Centre has facilitated a sustainable step change in public health improvement research by focusing on complementary work covering research capacity development, co-production, methodological innovation, evidence generation and long term population health impact.



In terms of research capacity development, DECIPHer has supported a new generation of transdisciplinary researchers, with 52 PhDs supervised to completion, 37 post doc fellowships undertaken and 21 first time principal investigators to date. The centre has also been extremely successful in securing long term sustainability by working with their respective universities to establish core academic posts and support applications for promotions, with 7 lectureships, 11 senior lectureships and 20 professorial posts within the period.

DECIPHer has also achieved systemic changes in public, policy and practice co-production. It established ALPHA, a young person's advisory group that has supported DECIPHer's work, advised on NIHR commissioned calls, the strategic direction of the international HBSC survey and supported the establishment of a sister social care group, Voices in Care. We have also seen the establishment of innovative transdisciplinary networks. These have covered a South West Regional collaboration including a research apprenticeship scheme and an annual conference, the development of the Public Health Improvement Research Network that has facilitated numerous policy trials in Wales and supported sister networks in Northern Ireland, Australia, Canada, Denmark and the School Health Research Network, an innovative, evidence generation and translation network that includes Welsh Government, Public Health Wales and every maintained secondary school in Wales as partners.

This work has been supported by the promotion of methodological innovation that has advanced the science of complex intervention evaluation, data linkage and the MRC framework. DECIPHer runs an annual short course program, which attracts up to 60 national and international attendees from academia, policy and practice and which is now delivered overseas across 3 continents. The courses are informed by an active research program of

innovation that has resulted in DECIPHer's work being cited as good practice in the HM Treasury Magenta book for policy evaluation, innovation in the use of routine data for natural experiments and new MRC guidance for process evaluations, exploratory trials (forthcoming) context implementation (newly funded) and the NIHR CIHR guidance on taking account of context in public health research.

DECIPHer has managed a research portfolio of studies in excess of £44 million and advocated a social ecological systems approach to intervention development and evaluation. This has led to theoretical innovation in the development of interventions that account for context and enhance implementation in a variety of settings and tackle a range of public health challenges (e.g. the health promoting school, safe sex and relationships and mental health to name just three), work that has been promoted in over 750 academic journal articles to date.

By combining these achievements in capacity, co-production, methodological innovation and research excellence, DECIPHer has been able to deliver real population impacts. This has included the development of ASSIST, an innovative peer smoking prevention intervention recommended by NICE and delivered in the UK and Europe. DECIPHer provided evidence for the re-design of the National Exercise Referral Schemes, and justification for its funding in Wales and for NICE guidance. DECIPHer has also been cited in the introduction of national policies, providing the evidence for the banning of smoking in cars and the justification for the ongoing funding of free healthy breakfasts for all primary schools in Wales, a rare example of a policy which has demonstrated improved population health and reduced health inequalities.

The UK Centre for Tobacco and Alcohol Studies

Professor John Britton, Director

UKCTAS, a network of 13 universities (12 in the UK, one in New Zealand) aims to deliver an international research and policy development portfolio, identify effective public policies to improve public health and wellbeing and build capacity in tobacco and alcohol research.



The UK Centre for Tobacco and Alcohol Studies (UKCTAS) is a strategic partnership of academic groups working together and with partners in advocacy and policymaking on programmes of research, teaching, training and policy development to prevent harms to health and wider society arising from tobacco and alcohol use. UKCTAS originated as the UK Centre for Tobacco Control Studies (UKCTCS) and expanded in accordance with its original objectives to become UKCTAS in the successful competition for second phase funding in 2013. Since UKCTAS was established in 2013 we have published over 900 peer-reviewed original research papers and around 100 reviews, letters and other academic outputs. We have attracted over £50 million in new research grant income, and achieved significant policy and practice impacts in a range of different areas.

UKCTAS has achieved substantial success in advancing tobacco and alcohol research and there is considerable evidence that this research has influenced policy and practice, all of which was detailed in our 2017 report¹. Achieving impact has been facilitated by the efforts of colleagues in a wide range of partner organisations that UKCTAS works with, many of whom are represented on the Centre's International Advisory Board.

The research conducted by the Centre has informed policy and practice, but this has not occurred through a simple process of Centre researchers communicating results to government or professional groups. Instead, a process of engagement and research translation has taken place with advocacy organisations acting as key intermediaries. These organisations include major UK Charities such as Cancer Research-UK and the British Heart Foundation, both members of the UKCRC Centre funders group, and smaller NGOs working on tobacco and alcohol issues such as Action on Smoking and Health (ASH) in London and ASH Scotland, the EU Smokefree Partnership, the Institute of Alcohol Studies and Alcohol Focus Scotland. It has also included regional advocacy bodies such as Balance North East, Fresh North East and Healthier Futures. Advocacy consortia such as the Smokefree Action Coalition and the Alcohol Health Alliance have also been important partners, along with umbrella groups working on specific topics, such as the Smoking in Pregnancy Challenge Group. Finally, committees that have an advocacy function but include cross-party representation from policy makers such as the All Party Parliamentary groups on tobacco and on cancer, among others, have been instrumental in working with UKCTAS to inform and change policy and regulatory frameworks.

¹ www.ukctas.net/pdfs/UKCTAS_2013-17_Report.pdf

The Centre for Translational Research in Public Health

Professor Ashley Adamson, Director

Fuse has had considerable impact on public health research and policy over the last ten years in North East England, nationally and internationally. Central to progress and impact has been capacity building for public health research within the partner universities. There have been eight academic appointments at Lecturer, Senior Lecturer and Reader level plus eight research posts and 19 PhD studentships funded directly through the UKCRC initiative. Fuse has also leveraged funding for additional posts, including Readers and Chairs in public health research and 30 additional PhD studentships.



fuse

The Centre for Translational
Research in Public Health

A UKCRC Public Health Research Centre of Excellence

Additional capacity has enabled us to develop critical mass in new and key research areas across Fuse, such as knowledge exchange and behaviour change. Fuse currently has over 1,400 network members, 266 of these are Associate members from across the region and further afield with an interest in public health research, both from academia and policy and practice who share Fuse's mission.

As part of our core mission of translation of research evidence into policy and practice we launched Fuse's responsive research and evaluation facility 'AskFuse' in June 2013. AskFuse has supported over 300 enquiries, resulting in over 35 funded projects, working with more than 150 partners in Local Authorities, NHS, general practice, and voluntary and community organisations across the North East and beyond. With the support of Fuse researchers, we have helped our partners to access existing knowledge or to work in collaboration to develop new research evidence that is relevant, timely and tailored to their needs and enabled them to find answers to issues that matter. This innovative model has attracted considerable national interest.

New ways of working include an innovative partnership with Gateshead Local Authority which involves a researcher-in-residence being co-located within the Council's Public Health team to inform the planning and design and implementation of interventions.

Engagement events and activities have been a key part of our strategy with over 400 events organised to date. In particular, Fuse Quarterly Research Meetings have been a key opportunity for research dissemination, dialogue about the implications for policy and practice, making new and strengthening existing contacts, and building a dialogue around research results and potential future projects. All Fuse meetings are free to attend making them available to all of our members.

Fuse also hosts the Physical Activity Research Workshops which provide a forum for sharing

knowledge about physical activity research and for network opportunities for academics and those working in policy and practice.

We have developed innovative ways to disseminate and mobilise our research findings into policy and practice, including research briefs, video and animation, infographics, theatre, and through social media. In April 2016 the Fuse Open Science Blog beat tough national competition to win the award for best blog in the education category at the UK Blog Awards. In six years the blog has received more than 438,000 page views from around the world.

We have built international partnerships to share our research with leading scientists and organisations across the globe. In April 2011 Fuse were the founders of the first International Knowledge Exchange in Public Health Conference held in Durham which attracted 150 delegates from all over the world. A second conference followed in Holland in 2013 hosted by Tranzo at Tilburg University, a third hosted by Fuse in Newcastle-Gateshead in April 2016 and a fourth in Vancouver, Canada in May 2018 in partnership with the Michael Smith Foundation for Health Research.

Fuse is a founding member of the NIHR School for Public Health Research (SPHR). Established in April 2012, the Fuse research income generated through the SPHR during the first phase was in excess of £2.9m. Fuse has been successful in the renewal of its membership of the NIHR School for Public Health Research from April 2017 to 2022 for which I am honored to have been appointed as national Director. In addition to this Fuse has been successful in bringing in excess of £200m in grant funding to North East England, has had over 1,000 peer reviewed publications and has over 30,000 citations.

We are delighted to confirm sustained funding of the core Fuse administrative posts and research activities through contributions from our partner Universities, secured to March 2022 in the first instance.

To view our legacy statement please visit: www.fuse.ac.uk/aboutus/fuselegacy

CAPACITY BUILDING

The UKCRC Public Health Research Centres of Excellence have built significant new academic capacity through strategic investment in career development, with a strong emphasis on supporting early career researchers, and creating opportunities for working across disciplines in academia and policy/practice. Each of the Centres has created a vibrant research environment, which encourages development and interdisciplinary collaboration.

UKCRC Centre of Excellence for Public Health (CoENI)



Developing people and public health datasets and resources

Building capacity by nurturing talent has been at the heart of our success. The core UKCRC funding helped us leverage another 115 studentships and 68 project-related post-doctoral Early Career Researchers and thus, provided a sustainable platform and springboard for impressive career trajectories.



Dr Helen Coleman

Dr Helen Coleman is but one example. Her first postdoctoral research fellow position in the Centre was in 2009, supported later through a Cancer Research UK Postdoctoral Fellowship that led to one of our UKCRC Lectureships. She subsequently

acquired a Visiting Research position at Vanderbilt University (US), and a growing international reputation related to primary and secondary cancer prevention. Following promotion to Senior Lecturer in 2016, she now leads her own group, has published 70 high-impact papers, supervised 4 PhD students to completion and was recently awarded a six year Cancer Research UK Career Establishment Award. Her own reflections on career transition were published in the Times Higher Education¹ in March 2018.



Dr Anne Kouvonen

From 2012 to 2014, Dr Anne Kouvonen worked as a Lecturer in Sociology and Social Policy at the UKCRC Centre of Excellence for Public Health (NI) commencing a research programme investigating migrant mental health. Changing domestic circumstances took

her back to her native Helsinki from where she continued her collaborations as a CoENI co-investigator, research supervisor, fellow as well as a co-investigator in the the NI Administrative Data Research Centre (ADRC), part of our 2013 quinquennial renewal. Anne also holds an Honorary Lectureship

in Social Epidemiology, in CoENI. Such work helped accelerate her promotion to the position of first ever female Professor in Social Policy at the University of Helsinki².

We have also built capacity through the provision of new data-sets and resources. Thus we initiated the first large scale longitudinal study of ageing in Northern Ireland, ("the NICOLA study")³, designing it to maximise comparability with other well-established international longitudinal studies. Its value to capacity building has been significant, attracting support for 12 PhD students and six post-doctoral fellows, and establishing international reach by affiliating with a number of important global research consortia⁴⁻¹⁰.

An equally important public health priority group is young people and because our NI government statistical agency does not contribute to the HBSC study (www.hbsc.org/), we partnered with NISRA to establish The Wellbeing in Schools (WiSe) study, a longitudinal panel exploring the role of schools on the health and wellbeing of 11-18 year-old students in 90 post primary schools in Northern Ireland. The team led by Professor Connolly and Dr Laura Dunne (UKCRC Lecturer) have hosted showcase events for policy and practice audiences (2013/15), brought survey findings to schools as part of the ESRC Festival of Social Science (2017) and is currently developing the first School Research Partnership in Northern Ireland.¹¹⁻¹³ The WiSe Study also contributed directly to organising an event on socio-emotional learning in schools where findings of two trials CESI has completed were reported but where we then used the event as a forum to engage with teachers around priorities for WiSe. WiSe has so far been the key resource supporting the work of three Early Career Researchers.



Professor Paul Connolly



Dr Laura Dunne

1 www.timeshighereducation.com/news/career-advice-how-transition-phd-student-senior-lecturer

2 www.youtube.com/watch?v=k8lTxPtwYGc

3 www.qub.ac.uk/sites/NICOLA/

4 Gateway to Global Aging Data consortium: www.g2aging.org/

5 The International Age-related Macular Degeneration Consortium: www.amdgenetics.org/

6 The EU funded EYERISK Network: www.eyerisk.eu/

7 The European Eye Epidemiology Ophthalmology consortium: www.ncbi.nlm.nih.gov/pubmed/26686680

8 The Haplotype Reference Consortium for European-ancestry samples with a focus on anthropometric phenotypes (GIANT): portals.broadinstitute.org/collaboration/giant/index.php/GIANT_consortium

9 The lipid phenotypes (GLGC): www.lipidgenetics.org/

10 The LifePath project epigenome-wide association data for socio economic inequalities (using education as a proxy): www.lifepathproject.eu/

11 www.qub.ac.uk/research-centres/CentreofExcellenceforPublicHealthNorthernIreland/Research/WiSe-TheWellbeinginSchoolsStudy2013-/

12 www.qub.ac.uk/research-centres/cesi/News/SCHOOL-BASEDSOCIALANDEMOTIONALLEARNINGPROGRAMMESWHATWORKS.html

13 www.qub.ac.uk/research-centres/cesi/News/CESIDoctoralStudentAideenJohnsonWinsPosterCompetition.html

Centre for Exercise, Diet and Activity Research (CEDAR)



Ms Emilie Aguirre: Legal high flyer brings novel perspectives to potential harms of sugar liberalisation



Ms Emilie Aguirre

Emilie Aguirre, JD (Harvard), was a Research Associate in the Dietary Public Health Research programme at CEDAR, and is an ongoing academic collaborator with researchers in Cambridge.

Emilie trained as a lawyer and sociologist and spent two years at CEDAR, where she was a Fulbright Schuman scholar, Harvard Knox Fellow, and Isaac Newton Trust grantee. She brought a novel legal perspective, examining the impacts of macro-level policies on food systems, diet, obesity and health, in particularly the impact of the EU Common Agricultural Policy (CAP) and international trade law and their contributions to creating an obesogenic, unsustainable food system. Her work on the CAP and sugar showed that the liberalisation of the sugar market in the EU may increase sugar consumption, particularly among the lowest socioeconomic groups, and damage public health across Europe and beyond.¹ These considerations remain relevant in the UK as it seeks to leave the EU and establish new trade deals. This evidence has figured in Public Health England's thinking about the wider influences on diet, and the associated paper in the *BMJ*² gained national media coverage, as well as informing CEDAR's ongoing research to a whole-systems approach.

Following a stint as an Academic Fellow at the Resnick Program for Food Law and Policy at UCLA School of Law, Emilie is now undertaking a PhD in Health Policy and Management at Harvard Business School. In 2016 she was named as one of "30 under 30 inspirational young people making the food system more nutritious and sustainable."

Dr Nicholas Jones: PhD student to civil servant: from secondments to a policy career



Dr Nicholas Jones

Dr Nicholas Jones' PhD at CEDAR focused on the application of the Dietary Approaches to Stop Hypertension (DASH) eating plan to the UK, and more broadly his work touched on food security and health inequalities. He was also involved in work to develop interactive data visualisations to allow exploration of food consumption patterns and prices^{1,2} and had his work featured in national media.

Whilst at CEDAR, Nick successfully competed for a place in the ESRC Internship Scheme, spending three months working in the Health Analytical Services Division of the Scottish Government, conducting analyses using linked social care and administrative health data. He has also completed a three month internship at the Centre for Science and Policy (CSaP) at the University of Cambridge, where he organised a workshop to assess the evidence surrounding the benefits of play in middle childhood and analysed qualitative data emerging from the CSaP Policy Fellowships programme. These internships gave Nick the opportunity to see how evidence is used to develop policy and reflect on this, informing the direction of his later PhD work and developing skills outside the core scientific training of a PhD.

In his final year Nick won an award from the Cambridge Society for the Application of Research for his work on developing low-cost healthy diets. After completing his PhD, Nick joined the Civil Service Fast Stream at the Department for Transport, where the analytical and transferable skills he gained during his PhD are proving indispensable.

1 Evidence Brief: EU Common Agricultural Policy Sugar Reforms. Implications for Public Health (2015): www.cedar.iph.cam.ac.uk/resources/evidence/eb9-eu-cap-sugar/
2 Aguirre E *et al* 2015: www.ncbi.nlm.nih.gov/pubmed/?term=BMJ+2015%3B351%3Ah5085

1 Interactive: Food, income and education: who eats more of what? epidvisualisations.medschl.cam.ac.uk/food-income-education/
2 Interactive: Food price changes 2002-2015: epidvisualisations.medschl.cam.ac.uk/foodprice/

The Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer)



Building capacity: methodological innovation, short courses and transdisciplinary networks

DECIPHer has led or collaborated on the development of a range of high profile methodological guidance, including process evaluations, feasibility studies, the adaptation of 'effective' complex interventions for use in new contexts and case studies of co-production and prototyping.

Outputs¹⁻⁶ from these activities have shaped the continuous evolution of DECIPHer's internationally renowned methodology short course teaching programme which builds capacity with academics, policy makers and practitioners. This includes established courses on developing and evaluating interventions and process evaluation that annually attract over 60 national and international participants. Versions of these courses have also been delivered in numerous countries across 3 continents since 2014, including Australia, Canada, Germany, Ireland, France and Norway.

This work has also supported the success of PHIRN, a transdisciplinary network, linking DECIPHer, CASCADE (a social care institute) and the Cardiff Trials Unit to build methodological capacity and promote cross policy working. For example, this collaboration led to a bid to the Department for Education, who made a significant investment in a 'What Works Centre in Children's Social Care'. Through the application of robust scientific methods, developed by DECIPHer partnerships, the Centre aims to safely reduce the number of children and young people entering into care in England.

Bristol Research Apprenticeship Scheme

From 2012, DECIPHer has supported four "research apprenticeships" at the Centre for Public Health at the University of Bristol.

These two-year roles give early career researchers experience of research in areas such as alcohol, tobacco and substance misuse, physical activity and healthy eating, sexual health and mental health.



Vanessa Er, who joined in 2016, found that the scheme uniquely provided her with the experience of working with different collaborators on multiple projects when most ECRs tended to focus on one. Practical experience is provided in applying research techniques - literature searches, systematic reviews, primary data collection and quantitative analysis - to public health. Research apprentices can access skills training in topics such as genetic, epigenetic and aetiological epidemiology, medical statistics, health economics, qualitative methods and health services research plus the DECIPHer short courses in developing and evaluating complex public health interventions.

Two apprentices have undertaken PhDs: Heide Busse's studentship - the effectiveness of mentoring in schools in improving student health, wellbeing and educational outcomes - is co-funded by DECIPHer. The RA post was a brilliant stepping stone for Heide who, having come straight from an MSc, was able to extend her research and academic skills whilst gaining insight into public health research. This experience helped her to identify what she wanted to investigate in her PhD.



Ms Heidi Busse

We are proud that our apprentices have produced lead author publications and given presentations at national and international conferences. The Department of Health and Social Care has expressed interest in this model and it is being adopted by the NIHR School for Public Health Research.

- 1 Bonell C *et al* 2018: (PMID: 29673378)
- 2 Hallingberg B *et al* 2018: doi.org/10.1186/s40814-018-0290-8
- 3 Hawkins J *et al* 2017: (doi.org/10.1186/s12889-017-4695-8)
- 4 Moore G *et al* 2015: (doi.org/10.1136/bmj.h1258)
- 5 Moore G and Evans RE 2017: (doi.org/10.1016/j.ssmph.2016.12.005)
- 6 Moore G *et al* 2018: (orca.cf.ac.uk/111665/3/From%20complex%20interventions%20to%20interventions%20in%20complex%20social%20systems%20BLIND%20post%20review%20FINAL.pdf)

The Centre for Translational Research in Public Health (Fuse)



fuse

The Centre for Translational Research in Public Health

A UKCRC Public Health Research Centre of Excellence

Embedded researcher in a public health team

Fuse and Gateshead Council in North East England have developed an innovative partnership to develop research capacity. Dr Mandy Cheetham works as an 'embedded researcher' alongside the council's Public Health team to undertake research which helps inform public health planning and delivery. This collaboration has helped academics to understand how the Council utilizes research evidence, and raised awareness of potential mechanisms of influence by gaining insight into the Council's decision-making processes. It also identified pressures on Local Authorities and local communities and built research skills within the Public Health team.¹



Dr Mandy Cheetham

Mandy's embedded role helps increase capacity through strong relationships with wider stakeholders consulting her for advice on related research projects, and brokering links by drawing on the wider expertise of Fuse academics. Research undertaken includes an evaluation of integrated health and wellbeing services, and a qualitative study to explore community-led approaches to address childhood obesity in partnership with a local voluntary organisation and community members.^{2,3}

The impact of this collaborative approach has been to improve community access to local leisure facilities, young people's participation in physical activity and the schools' Daily Mile initiative. It has led to a community carnival, addressed traffic concerns outside primary schools, seen volunteers and apprentices working together to cook a weekly affordable community lunch, and established a healthy pizza social enterprise with potential employment opportunities.

The embedded researcher role has developed capacity through engaging communities experiencing health inequalities in this locality, enabling responsive, collaborative public health approaches to be developed.

1 Cheetham M *et al* 2017: (PMCID: PMC5759539)
2 Cheetham M *et al* 2018: (PMID: 29566687)
3 Cheetham M *et al* 2017: (PMID: 28881219)

Physical Activity Group Workshops (PAW)

The Fuse Physical Activity Group workshops¹ aim to build research capacity in physical activity related public health research for those working in policy, practice and academia by sharing knowledge, providing networking opportunities, and stimulating debate across sector boundaries.



Dr Liane Azevedo

The workshops were modelled on the successful Fuse Quarterly Research Meeting (QRM) template and are collaboratively organised by academic and local authority colleagues on topics relevant to public health practice. Previous workshops have covered: active travel, measurement of physical activity, school-based physical activity, obesity, ageing, inequalities, physical activity in pregnancy and early years, and prevention and management of long-term conditions.

Each workshop typically attracts around 80 delegates, and feature nationally and internationally renowned speakers from academia, and policy and practice. This has included academics from universities across the UK and overseas, as well as speakers from local authorities, NHS trusts, community and voluntary organisations. These speakers have presented innovative research findings and ideas at the workshops. In addition, they have provided an opportunity for undergraduate and PhD students to develop their presentation skills and networks with innovators in their field of expertise.

Important workshop outcomes have included research collaborations, PhD supervisions and revisions of local authority commissioning briefs. The members are now developing a research agenda for the next five years based on focus group discussions held at a 10th anniversary event.

1 www.fuse.ac.uk/events/fusephysicalactivityworkshops/previous%20events/

The Scottish Collaboration for Public Health Research and Policy



Public Health Professional Fellowships (2014-2016)



Three mid-career trainees were selected from three Health Boards' public health sections, with nomination letters from their DPH. Each were co-mentored by John Frank and a SCPHRP Fellow on a practice-based "research" project, supported by the DPH. These included:

- 1 Evaluation of 30-month health visitor (HV) data on the Strengths and Difficulties Questionnaire validity (Sensitivity/Specificity), against the HV's own assessment of risk, in Greater Glasgow and Clyde
- 2 Literature review and situation analysis for a Pre-Conception Care Programme in Lanarkshire¹
- 3 Evaluation of a non-weight-loss based programme for overweight patients in Highlands and Islands

In addition to informing practice in their respective Health Boards, all projects are currently either in preparation or published in a relevant journal. Feedback from both the trainees and Directors of Public Health indicates that participation in the programme has led to greater public health research capacity at the local level, although this was not without challenges, e.g. time-budgeting of trainees.

¹ Goodfellow A *et al* 2017: (doi.org/10.1186/s12913-017-2544-1)

Working-group model and uptake of SCPHRP-type practices



In the last ten years, SCPHRP has created a strong and durable environment for joint working between top scientists and decision-makers.¹ This environment has supported the design, implementation and evaluation of innovative, evidence-based, public health policies and programmes. Our 80+ Working Group members connected us to a diverse suite of Scottish universities, policy units, and public health practice settings. The adoption of SCPHRP-type practices entailing a joint "producer-user" approach to applied public health research is evident through the establishment of the Public Health Evidence Network (PHEN)², which SCPHRP helped to develop. PHEN aims to act as a central hub through which Scottish Government can make requests for research/reviews/evidence. The network works in much the same way as the Working Group model adopted by SCPHRP over the past 10 years.

¹ www.ingentaconnect.com/content/tpp/ep/2012/00000008/00000003/art00006?crawler=true&mimetype=application/pdf

² www.fphscotconf.co.uk/SHSC/media/uploaded/EVSHSC/event_122/Garth_Reid_2.pdf

The UK Centre for Tobacco and Alcohol Studies (UKCTAS)



Masters courses and CPD teaching

UKCTAS has developed a range of teaching and training modules on tobacco and alcohol that will continue to run after the funding period ends. UKCTAS developed two Masters modules on tobacco (merged into one from 2015) that are offered as part of the Masters in Public Health programme at the University of Nottingham, but also open to researchers and others from the UK and overseas. UKCTAS also developed a four day Continuing Development Course, 'Tobacco Control in Practice' which was updated by UKCTAS in 2015 to become 'Nicotine and Tobacco Research: Current Issues, Policy and Practice' reflecting both the core content and new developments on nicotine containing devices. This revised module has successfully run from 2015-18 and will continue to be offered to professionals and researchers from the UK and further afield in coming years.

UKCTAS added to the tobacco control teaching with two new offerings on alcohol. Kings' College London now runs an accredited alcohol masters module which was offered for the first time in 2016 and again in 2017/18 as part of the MSc in Addiction Studies course; meanwhile Stirling University has set up an alcohol CPD course 'Alcohol Policy in Practice' which was first offered in Edinburgh in 2014, in Sheffield in 2015 and Stirling in 2016/17. This has proved very popular and will run again in 2018 and beyond.



As with our tobacco modules, all early career researchers and doctoral students involved in the Centre are encouraged to attend one of these courses, as well as international students from a number of Universities where UKCTAS has developed partnerships. Details are available at www.ukctas.net/educationandtraining.html.

Since October 2017, UKCTAS has also been running a 14-week distance-learning module in International Tobacco Control, accredited by the University of Stirling, as a partnership between the University of Stirling and the International Union on Tuberculosis and Lung Cancer.

PhD and research fellow development

During our funding period we have supervised 15 doctoral students and generated 14 post-doctoral research posts, with many of our fellows moving on to substantive academic posts.

Capacity building through collaborations with advocacy organisations

We have built capacity in advocacy by close work with partner organisations ranging from direct collaboration on funded Centre studies to organising events, briefings or meetings that include dissemination of results from Centre research. Advocacy organisations possess the skills and experience to directly lobby for policy and practice change in ways that it is difficult or not always appropriate for academics to do. It is unlikely, for example, that the Centre's research on themes such as smoking in pregnancy, electronic cigarettes and tobacco harm reduction, standardised packaging of tobacco, smokefree prisons, alcohol minimum unit pricing, drink-driving and alcohol brief interventions would have achieved impact without meaningful and sustained collaborative relationships with advocacy organisations. Where possible we have ensured that early career researchers are fully engaged in this process, thus gaining vital experience in policy translation.

RESEARCH EXCELLENCE

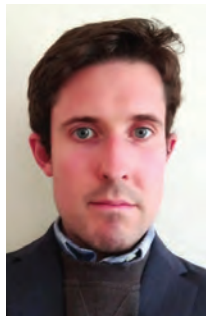
The UKCRC Centres have promoted theoretical and methodological innovation and have made a significant impact on developing and promoting the use of scientific evidence for effective approaches to improving population health.



UKCRC Centre of Excellence for Public Health (CoENI)



Methods for mitigating selection bias in surveys



Unfortunately, in HIV endemic areas, rates of HIV testing remain low - even in locations where HIV prevalence is high. One of the chief issues is dealing with non-participation. Those who decline an HIV test may be more likely to be HIV positive (missing not at random), and this creates a very serious problem of selection bias,

which can result in substantial underestimation of HIV prevalence.

Using a selection model approach adapted from labour economics, Dr Mark McGovern and his team have developed a methodology to accurately measure HIV prevalence, even when those who are HIV positive decline testing^{1,2}. The team also evaluated a gift intervention aimed at increasing HIV testing in a hyper-endemic community in sub-Saharan Africa³, the findings from which suggest that a food gift voucher could be highly successful in raising HIV testing rates.

Mark and his team have since developed an open source software package to implement their approach⁴ and have subsequently delivered open training workshops to practitioners in government and the third sector at Harvard University, the University of London and the US Centers for Disease Control and Prevention (CDC). Mark has also been invited to participate in the UNAIDS reference group advisory committee, who develop the methods used to generate global AIDS statistics, and has contributed to reports on HIV prevalence⁵. He has contributed to the South African Human Sciences Research Council report producing new HIV prevalence estimates for South Africa which account for non-participation⁶.

Why logic is not enough

Our ageing population presents significant challenges for society. Informal carers are thus the subject of much ongoing government policy interest.



Dr Dermot O'Reilly

Many studies have detailed the adverse effects of caregiving on the immune, inflammatory and stress-response systems of the body and have inevitably inferred a reduced life expectancy for caregivers. However, Dr Dermot O'Reilly and his group used the population-wide coverage of the 2001 Census in Northern Ireland, linked to mortality records^{1,2}, to produce the first evidence that caregiving was associated with a significant reduction in mortality risk.

There is also a common perception that caregiving is inevitably associated with poor mental health outcomes. The logical conclusion is that caregiving should be associated with a higher risk of suicide. But again, the actual estimation of suicide mortality risk through the linked Census and mortality records demonstrated that this was not so; most caregivers are at lower risk of suicide and even those with poorer mental health have the same suicide risk as their non-caregiving peers.

Thus, logic alone is insufficient to bridge a shortfall in the evidence gap. The presence of large population-wide linked data sets now makes the identification of generalizable public health evidence more feasible and practical³.

Caregiving needs a reappraisal. The unwarranted and overly pessimistic portrayals of caregiving may be deterring caregivers in a time of increasing need, a message echoed in editorials on O'Reilly's work⁴.

1 Marra G *et al* 2017: (doi.org/10.1080/01621459.2016.1224713)

2 McGovern M *et al* 2015: (PMID: 25643102)

3 McGovern M *et al* 2016: (doi.org/10.1093/ije/dyw122)

4 cran.r-project.org/web/packages/GJRM/GJRM.pdf

5 www.epidem.org/sites/default/files/reports/Boston%20report_FINAL_0.pdf#page=6

6 www.doi.org/10.7196/SAMJ.2017v107i711207

1 O'Reilly D *et al* 2008: (PMID: 18667262)

2 Ramsay S *et al* 2013: (PMID: 23737544)

3 O'Reilly D *et al* 2015: (PMID: 26371207)

4 Maguire A *et al* 2016: (PMID: 27594205)

Natural experimental studies point the way for healthy transport policies

A shift towards more active lifestyles could be a 'best buy' for improving public health, and CEDAR has been leading the way in developing and applying innovative



methods to learn more about how changes to our physical environment might affect our travel choices, physical activity and health.

The opening in 2011 of the Cambridgeshire Guided Busway (a new bus network with a high-quality off-road path for walking and cycling) provided the opportunity for a natural experimental study of the effect on residents' travel patterns. The study¹ showed that how people travelled to work depended on many different factors, ranging from childcare to parking. Nevertheless, over time, people living closer to the busway were more likely to increase their cycling, and less likely to use their car, for commuting than those living further away. This demonstrated how changing transport systems has the potential to improve people's health through physical activity.

Among other work in this area, CEDAR also led the evaluation work package of iConnect (Impact of COncstructing Non-motorised Networks and Evaluating Changes in Travel).² This multidisciplinary study integrated various perspectives from public health and transport research. It evaluated the travel, physical activity and carbon impacts of Sustrans' Connect programme, a UK-wide project to create new traffic-free crossings and bridges to enable access to schools, shops, parks and countryside. Results showed that these new routes have encouraged more people to get about by foot and by bike, and it was one of the first studies to show that changing the environment to support walking and cycling in the UK can have measurable benefits for public health. The study also highlighted the importance of multi-sectoral and cross-disciplinary collaboration across research, policy and practice in encouraging healthy transport policies.

1 Ogilvie D *et al* 2016: (PMID: 26764445)

2 Goodman A *et al* 2014: (PMID: 25033133)

SPEEDY to GoActive, from observation to interventions with Centre support



Prior to establishing CEDAR, the Behavioural Epidemiology Programme at the MRC Epidemiology Unit was developing a world-leading body of work on correlates and determinants of physical activity behaviour in young people, with the aim of informing future intervention development. The UKCRC investment in CEDAR enabled the team to accelerate the learning from this observational research and to initiate the translation of this evidence into the development of interventions targeting physical activity in young people.

Observational work demonstrated the importance of the periods outside of school lesson times for changes in young people's physical activity, and that the factors influencing this change are time- and context-specific¹. This led to an investigation of how and where adolescents would like to change behaviour, showing the importance of choice and flexibility in the types and locations of activity and who to engage with.

CEDAR investment into further work to develop interventions for adolescents led to the initiation of GoActive – www.goactive-uk.com – an intervention targeting the whole of Year 9 and offering flexibility, competition, mentorship, rewards, novelty, and choice². Following successful preliminary feasibility and pilot testing, the team were awarded an NIHR Public Health Research grant to evaluate the effectiveness of GoActive in 16 secondary schools in over 2500 students, a study which is ongoing³. An embedded mixed-methods process evaluation is included to help understand how and why the GoActive intervention works.

1 www.cedar.iph.cam.ac.uk/research/directory/speedy/

2 Corder K *et al* 2015: (doi: 10.1136/bmjopen-2015-008610);

3 Brown HE *et al* 2017: (doi: 10.1136/bmjopen-2016-014419)

The Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer)



Promoting innovation in policy trials and data linkage: an evaluation of the Primary School Free Breakfast Initiative

The Primary School Free Breakfast Initiative (PSFBI), a national school programme of universal free healthy breakfast provision, was a pioneering, high quality health improvement research project led by Professor Simon Murphy¹. As the first rigorous cluster randomised trial of a national free breakfast initiative, it developed and validated robust, innovative measures for population health evaluation. Findings demonstrated improvements in children's attitudes towards and nutritional intake at breakfast time². It also utilised the Secure Anonymised Information Linkage (SAIL) database to link to educational performance data and perform sub-group analyses according to socioeconomic status. Sub-group analysis found reduced breakfast skipping in the most deprived schools and households³. In this, it is one of the few UK evaluation studies that have provided evidence of a progressive universal policy approach to health inequalities. Whilst further analyses demonstrated an association between consumption of a healthy breakfast and better educational outcomes⁴.

This project directly informed national governmental strategy to improve the health and educational experience of children and young people in Wales, with results of both the main trial and sub-group analysis often cited by Welsh Government. This is reflected in government action, whereby these results have had a direct impact on the level of policy funding in the context of austerity⁵. £3.5m was provided for 2005-06, rising to £12.7m for 2012-13. By 2016/17, 66% of primary schools across Wales had implemented the scheme and on one of the census days that year, 59,648 pupils ate a free school breakfast.

Impact through innovation: adaptation of an effective school-based smoking prevention intervention (ASSIST) to address obesity, illicit drug use and promote physical activity

Over 131,000 UK students have now taken part in ASSIST, an effective school-based peer-led smoking prevention intervention. It was included in the Tobacco Harm Reductions plans of the Scottish and Welsh Governments and is recommended in National Institute of Health and Care Excellence guidance on smoking prevention¹. An estimated 2,620 young people have not taken up smoking because of ASSIST who otherwise would have done so. Using the Medical Research Council Guidance for the development of complex interventions, and the ASSIST model of informal peer-led delivery, DECIPHer affiliates adapted ASSIST to address other public health priority areas through phased research on intervention adaptation, feasibility testing and a pilot cluster randomized control trial. Studies have included: AHEAD (Activity and Healthy Eating in ADolescence) - an obesity prevention programme; PLAN-A², which attempted to increase adolescent girls' levels of physical activity; and ASSIST+FRANK, a drug prevention programme to deliver information from the UK national drug education service: www.talktofrank.com. The UKCRC funding of DECIPHer provided time for the principal investigators to develop these applications and support public engagement activities to refine the interventions. The intervention is also being used in independent research in France, Northern Ireland and Columbia.

1 Murphy S *et al* 2010: (PMID: 20602868)

2 Moore L *et al* 2010: (PMID: 17888158)

3 Moore GF *et al* 2007: (PMID: 16988648)

4 Moore GF *et al* 2007: (PMID: 17381902)

5 Moore GF *et al* 2014: (PMID: 24476560)

1 www.ncbi.nlm.nih.gov/pubmed/29068622

2 www.bristol.ac.uk/sps/plan-a/



babyClear® - Implementing an effective system level intervention to promote smoking cessation in pregnant women



The proportion of women smoking during pregnancy is higher in the North East than elsewhere in England. Smoking during pregnancy has a significant impact on women's and babies' health, including increased risk of premature births, stillbirths and low birthweight.

Fuse researchers worked in partnership with Fresh (the regional North East tobacco control programme), midwives and stop smoking staff and identified a need for improved implementation of National Institute for Health and Care Excellence guidance to support pregnant women to quit smoking.

This work led to the implementation of babyClear®, a system-wide service reconfiguration. Routine carbon monoxide monitoring and opt-out referral to Stop Smoking Services were introduced across all eight NHS Trusts in the region, underpinned by training of front line staff in maternity and smoking cessation services, and the introduction of a clear referral pathway.

Fuse evaluated the effectiveness and process of implementation of this initiative with funding from the NIHR School for Public Health Research (SPHR) Public Health Practice Evaluation Scheme (PHPES). Results showed that quit rates in pregnancy nearly doubled, and there was a significant increase in birthweight among quitters' babies^{1,2,3,4}. For maximum benefit, organisations needed the ability to reorganise and standardise their systems, requiring belief from staff, maintenance of practical adjustments and reflection on adapting to new challenges.

1 Bell R *et al* 2017: ([dx.doi.org/10.1136/tobaccocontrol-2016-053476](https://doi.org/10.1136/tobaccocontrol-2016-053476))
 2 Fuse Brief: www.fuse.ac.uk/research/briefs/Reducing%20smoking%20in%20pregnancy%20-%20impact%20of%20introducing%20the%20babyClear%C2%A9%20programme.pdf
 3 <https://discover.dc.nihr.ac.uk/content/signal-000403/the-babyclear-programme-helped-pregnant-women-stop-smoking-in-north-east-england>
 4 <http://sphr.nihr.ac.uk/wp-content/uploads/2017/07/SPHR-FUS-PES-BBC-final-report.pdf>

Foodscape - testing interventions to promote healthier take-away food

The 'Foodscape' study aimed to identify effective interventions to change the food offered by takeaways, and to test and evaluate their potential for improving diets and reducing obesity. An evidence review found that calorie labelling and rewarding food-outlets



with healthy eating accreditation were two common interventions tested but there was little evidence of effectiveness¹. Businesses were positive about interventions that came at no extra cost and did not change customer perceived value, taste and portion size.² Those delivering interventions to increase healthier food choices in independent food-outlets said takeaways were particularly challenging but worthwhile targets and suggested that interventions should be tailored to takeaway types, take account of the need of food outlets to maintain profit and engage suppliers³.

Using the UK National Diet and Nutrition Survey, the researchers found that about a fifth of people ate takeaways at home once a week or more and this was most common in 19-29 year olds⁴.

Three small-scale interventions were identified, developed and tested:

- 1 Five hole compared to 17-hole shakers delivered 66% less salt in the laboratory and made a small difference in the salt content of meals from shops, when similar portion sizes were compared^{5,6}.
- 2 A 'Healthy Takeaway Masterclass' for staff from 18 local takeaways, was delivered with a local authority. Each takeaway completed a healthy eating 'pledge' sheet and 15 businesses reported achieving at least one pledge. Changes requiring minimal effort and cost were most popular.
- 3 A supplier-led intervention to promote smaller portion sizes of fish and chip meals (approximately half the weight of standard portion) was found to be acceptable to traders and customers.

A short film has been produced to describe this research⁷.

1 Hillier-Brown FC *et al* 2017: (PMID: 27899007)
 2 Hillier-Brown FC *et al* 2017: (PMID: 28103846)
 3 Goffe L *et al* 2018: (PMID: 29374480)
 4 Adams J *et al* 2015: (PMID: 25889159)
 5 Goffe L *et al*: (PMID: 27670137)
 6 Goffe L *et al* 2016: (PMID: 27668747)
 7 www.tinyurl.com/foodscapecfilms

The Scottish Collaboration for Public Health Research and Policy



Engaging with the public health policy and practice community in Scotland

Scotland has long had the steepest health inequalities of any Western European country, exceeded in all of Europe by only a few former Soviet client states. Over the past 10 years, SCPHRP has brought together public health policy makers, practitioners and researchers to develop research specifically related to intervention development and evaluation in relation to some of Scotland's most deeply rooted public health issues. SCPHRP has been successful in promoting the use of more intervention sensitive health inequality measurements in Scotland (e.g. weight-for-gestational-age and prematurity, instead of birth-weight per se)¹. In late 2017, Professor John Frank, Centre Director, was approached personally by the Co-Chair of a major group led by the Scottish Government that was drawing up plans for re-organising Public Health structures in Scotland. They wanted a set of prioritisation criteria², based on the scientific literature, which could be used by invited representatives of Scottish public, private and voluntary sector bodies, to select Scotland's most important public health problems, to guide the reorganisation³.

Intervention development framework (6SQUID)

SCPHRP have made a substantial contribution to the field of intervention development¹ over the past four years, with the publication (in collaboration with MRC SPHSU) of the 6SQUID intervention development framework (Six Steps in Quality Intervention Development)². Existing frameworks for intervention development have been criticised for being too vague or too cumbersome. The 6SQUID framework tries to address this by providing a pragmatic series of steps for both researchers and practitioners working in the field of public health intervention development. The framework is currently in use both nationally and internationally, and underpins masters level courses in the development and evaluation of complex intervention at the Universities of Edinburgh and Glasgow.



1 www.ncbi.nlm.nih.gov/pmc/articles/PMC3250637/
 2 www.sciencedirect.com/science/article/pii/S027795361530023X
 3 www.gov.scot/Publications/2017/12/4517

1 www.frontiersin.org/articles/10.3389/fpubh.2016.00154/full
 2 jech.bmj.com/content/70/5/520

The UK Centre for Tobacco and Alcohol Studies (UKCTAS)



Alcohol policy

UKCTAS academics were commissioned by the group responsible for developing the new UK Chief Medical Officer's drinking guidelines and undertook a series of projects commissioned by Public Health England, to inform policy recommendations on alcohol to government and the National Health Service. These projects included: (1) investigating potential health, economic and societal impacts of taxation and minimum pricing policies for alcohol and identification and brief advice (IBA) for risky drinkers by primary care practitioners; (2) estimating the number of alcohol dependent adults in need of specialist assessment and treatment and the number of children living in their households and (3) estimating the risks associated with different levels and patterns of alcohol consumption for UK adults to inform revisions to the UK Chief Medical Officers' low risk drinking guidelines.

UKCTAS also adapted or updated our modelling of the potential impact of minimum unit pricing policies for Wales, Northern Ireland and the Republic of Ireland, all of which are taking steps towards implementing the policy which is now in place in Scotland. Each of these governments has cited our work extensively in their policy development and legal processes. We performed new analyses for the Scottish Government on the comparative effectiveness of Minimum Unit Pricing and alcohol taxation, and this work formed a key part of their successful defence of Minimum Unit Pricing in the Scottish courts.

We have also been developing new modelling methods to allow us to adapt the Sheffield Alcohol Policy Model to the Local Authority level. These new models will enable local decision makers to understand the extent and distribution of alcohol-related harm in their area, and appraise the potential impact of a range of policy options to address this.

Research on tobacco harm reduction

UKCTAS research has been instrumental in shaping regulatory approaches to the use of e-cigarettes to reduce harm from tobacco smoking. For example, UKCTAS academics from Professor Robert West's groups at UCL have provided key evidence on electronic cigarette use and smoking cessation. This study of the association between e-cigarette use and changes in quit attempts, success of quit attempts, use of smoking cessation pharmacotherapy, and use of stop smoking services in England demonstrated that changes in prevalence of e-cigarette use in England have been positively associated with the success rates of quit attempts¹. UKCTAS researchers have also been involved in research from the International Tobacco Control Policy Evaluation Project demonstrating that the success of e-cigarettes when used in quit attempts, varies according to country and the regulations governing e-cigarette².

Work from the Edinburgh group has explored, using qualitative methods, smokers' and ex-smokers' views, understandings and experience of e-cigarettes³. The study was one of the first qualitative studies on adults' views of e-cigarettes. It found that different groups of smokers bring diverse expectations, requirements and concerns to their evaluations and therefore to the potential use of nicotine-containing products. The ambiguity around e-cigarettes in public health debates and medical practice was reflected in the positions and concerns of smokers. Their second recently completed study explored disadvantaged young adults' (16-24 years old) perceptions of e-cigarettes (two papers under review). It found that e-cigarette use among this group was mainly short lived, and often faltered when socialising and drinking, or at times of stress. E-cigarette norms were being informed by the similarities and differences between smoking and vaping.

We have produced a substantive review of use of e-cigarettes by young people, demonstrating clear evidence against major gateway progression from electronic to tobacco cigarette consumption⁴.

1 Beard E *et al* 2016: www.bmj.com/content/354/bmj.i4645.abstract
 2 Adkison SE *et al* 2013: (PMID: 23415116)
 3 Rooke C *et al* 2016: (PMID: 26055267)
 4 Bauld L *et al* 2017: (PMID: 28850065)

TRANSLATION AND IMPACT

The UKCRC initiative was set up to address the shortcomings in tackling public health issues which are likely to have a significant impact on the health of the nation. The emphasis placed on collaboration is highlighted by the use of high quality evidence to inform decision making in health and other sectors, and demonstrable impacts on policy, practice and the health of populations.



The PARC Study



Pupils and parents from Elmgrove Primary School, Belfast

Changing the environment to promote active lifestyles and reduce sedentary living will significantly improve public health. Largely down to the work of two of our UKCRC Lecturers, Professor Mark Tully and Dr Ruth Hunter, the centre's academics have changed local government practice in Northern Ireland¹, devised a new measure of neighbourhood walkability, built capacity in its use across UK statutory and Third Sectors² and have influenced international (WHO) policy around the use of physical and social environments, in particular around the use of greenspace³. Tully was invited to contribute to the Expert Panel Scoping Workshop that led subsequently to updated NICE guidance on physical activity and the environment⁴. Hunter's review demonstrated how changes in the built and urban green space environment can improve physical activity levels but particularly when they are harnessed along with synergistic social environment interventions. It has been cited in the forthcoming recommendations from the World Health Organisation (Europe) on urban green space interventions⁵.

- 1 Strategic plans for Greenways by the Department for Infrastructure: www.infrastructure-ni.gov.uk/sites/default/files/publications/infrastructure/aecom-greenways-report.pdf
- 2 ESRC Knowledge Exchange award to extend the coverage of walkability mapping and to promote the use of the walkability tools across the UK: www.researchcatalogue.esrc.ac.uk/grants/ES.J010588.1/read/reports
- 3 Hunter RF *et al* 2015: (PMID: 25462429)
- 4 Nice Guideline (NG90): www.nice.org.uk/guidance/ng90/evidence
- 5 WHO report 2017: www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2017/urban-green-space-interventions-and-health-a-review-of-impacts-and-effectiveness.-full-report-2017

Methodological innovations - Bayesian efficient design choice modelling and Studies Within A Trial (SWAT) and Studies Within A Review (SWAR)

Professor George Hutchinson's group has conducted a number of discrete choice studies to assess how individuals trade off the benefits and risk of lifestyle behaviours, including physical activity and diet¹⁻⁶. In fact, he and his colleagues were responsible for the invention of the Bayesian Efficient Design to improve the efficiency of non-market valuation. This method is now used world-wide to analyse consumer, patient and public choices in food, health, transport, environment, consumer goods and services. Its application improves statistical efficiency and reduces sample size requirements by one third, thus improving the decision processes and efficiency of all kinds of service providers. Since 2014, major software companies such as SAS Corp and STATA have added our Bayesian Efficient Survey (BES) method of choice modelling to their mainline products which is an impressive public sector endorsement of this important method.

There has been relatively little research done into the methods used in randomised trials to ensure that they are effective and efficient. Working with the MRC Network of Hubs for Trials Methodology Research, Professor Mike Clarke and his colleagues have established the Study Within A Trial (SWAT) and Study Within A Review (SWAR) initiative, in an effort to help trials to be more efficient. Since April 2018 the NIHR's Health Technology Assessment program has encouraged everyone submitting a proposal for HTA funding to request up to £10,000 to conduct a SWAT within their trial. Clarke will continue to work with NIHR and several other initiatives to ensure that health and wellbeing can continue to be improved by improving the quality of research.

- 1 Boeri M *et al* 2013: (PMID: 23228950)
- 2 Grisolia J *et al* 2013: (PMID: 23906130)
- 3 Grisolia J *et al* 2015: (PMID: 25779694)
- 4 Longo A *et al* 2015: (PMID: 26347960)
- 5 Grisolia J *et al* 2018: (PMID: 29957508)
- 6 Scarpa R *et al* 2007: www.jstor.org/stable/27647797

Centre for Exercise, Diet and Activity Research (CEDAR)



From fast food to fizzy drinks: CEDAR research showing how the physical and fiscal environments affect our food choice



CEDAR research has been generating important evidence to support policies aimed at improving the population's diet. For example, in our towns and cities, reducing the growth of takeaway food outlets could support healthier eating and help reduce levels of obesity¹. Our research is determining how food access has changed over time, how it is linked to socioeconomic status, and how it affects our diet and body weight. Our evidence is being cited in key guidance and strategy publications; we are providing evidence to directly support takeaway planning decisions; building relationships with public health and planning professionals²; increasing public understanding through media work; and have produced the online Food environment assessment tool (Feat) – www.feat-tool.org.uk – to support those in planning and public health to create healthier food environments.

In the fiscal realm, all eyes are on the new UK Soft Drinks Industry Levy. CEDAR researchers have contributed to a growing evidence base about the harms of sugary drinks, as well as industry and public perceptions. With partners from Oxford and LSHTM, CEDAR is now leading a major natural experimental study³ to evaluate whether, how and for whom the new Soft Drinks Industry Levy has a health-effect. The research is studying the impacts on reformulation, the processes by which the tax came about, as well as wider changes in public, political, societal and industry attitudes. CEDAR also contributed to an evaluation of Jamie Oliver's 10p sugary drink restaurant charge; and is collaborating with researchers abroad to evaluate the impact of other sugar taxes, notably in Barbados.

1 www.cedar.iph.cam.ac.uk/resources/evidence/eb7-takeaways-obesity/
 2 www.local.gov.uk/tipping-scales
 3 www.cedar.iph.cam.ac.uk/research/dietary-public-health/food-systems-public-health/sdil/

A road to impact: engaging with the Department for Transport to support policy, develop careers and deliver online tools



CEDAR has developed a productive relationship with the Department for Transport (DfT), which has acknowledged its “clear impact on DfT’s cycling policy development”¹. Through Cambridge’s Centre for Science and Policy’s (CSaP) Policy Fellowship Programme we engaged with the Deputy Director for Sustainable Travel and Equalities Pauline Reeves, and Permanent Secretary Philip Rutnam. DfT policymakers have spoken at CEDAR events, and our researchers have shared our evidence at policy events and forums – including at a Policy Leaders Fellowship Roundtable on the future of cities, involving a number of Directors General, Permanent Secretaries and other senior UK policy leaders. We were part of a CSaP/DfT organised ‘Policy Propellers’ professional development scheme, which seeks to help up-and-coming civil servants gain a better understanding of evidence use in policymaking.

Our relationship with DfT led to the commissioning of the Propensity to Cycle Tool – www.pct.bike – led by our Public Health Modelling programme in collaboration with Universities of Leeds and Westminster. This interactive web based tool, is being used by planners to prioritise where to invest to best realise uptake of cycling, and was highly commended in the Cycle Planning Awards 2015 and 2016. Public Health Modelling researchers have also developed improved active travel appraisal methods for the DfT’s transport analysis guidance (WebTAG).

In addition, we have provided evidence submissions to a range of parliamentary and guidance bodies, and developed relationships with local and regional government and other agencies in the UK and internationally².

1 www.csap.cam.ac.uk/media/uploads/files/1/csap-annual-review-2014.pdf
 2 <https://mrc.ukri.org/news/browse/influence-on-policy-citations-in-public-health-guidelines-on-physical-activity/>

The Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer)



Promoting policy and practice impact: the School Health Research Network

The School Health Research Network (SHRN) is a partnership between Cardiff University, Welsh Government, Public Health Wales (PHW) and Cancer Research UK, led by DECIPHer. Launched in 2013, it aims to improve the health and wellbeing of young people in the school setting by generating research evidence and facilitating its translation into policy and practice.



*Dr Julie Bishop
Director of Public Health Improvement,
Public Health Wales*

Secondary school membership of SHRN increased from 69 in 2013 to 212 in 2017, including all maintained secondary schools in Wales.

SHRN has built a national health and wellbeing data infrastructure with biennial collection of student and school-level data. In 2017, 111,000 students took part, over 60% of the national student roll. This data is fed back to stakeholders at all levels in the school health system, including schools, local authorities, Welsh Government and PHW.

SHRN collaborates closely with the Welsh Network of Healthy School Schemes (WNHSS), PHW's core school health programme. This ensures that SHRN research is practicable in the school setting and enhances WNHSS Coordinators' effectiveness by strengthening their evidence-informed practice. To ensure strategic alignment of the two networks, senior representatives from SHRN, PHW and WNHSS sit on both networks' Advisory Boards.

The collaboration has seen changes in WNHSS practice, with school-level data feedback reports informing coordinators' work with schools and catalysing authority-wide health action planning with strong student voice input. Regular joint activities between WNHSS and SHRN include training and WNHSS coordinator input at SHRN events for schools. New Local Authority level data reports will further enhance the value of the work supporting area based needs assessment and planning and strengthening strategic co-ordination between health and education, including through local public services boards that are responsible for the agreement of local wellbeing goals. The use of the data to help monitor the Public Health Outcomes Framework is also being explored.

National Policy Evaluation

DECIPHer has played a key role in fostering a supportive environment to facilitate robust evaluation of a range of high profile social policies in Wales. These studies, involving collaboration with policy makers in Welsh Government and a wide range of practitioners have had a demonstrable impact on the decision making process.



*Dr Frank Atherton
Chief Medical Officer
for Wales*

The relationships and ways of working that have been established by the DECIPHer team have allowed the various challenges of evaluating high profile policies to be successfully navigated, notable examples being pragmatic trials of the Primary School Free Breakfast Initiative (PSFBI)¹ and National Exercise Referral Scheme² commissioned by the Welsh Government. The PSFBI study was one of the first trials of free breakfast provision in schools and was subsequently included as a case study of a randomised controlled trial in HM Treasury's Magenta Book³, the UK Government's guidance on evaluation. As well as commissioned research, DECIPHer has collaborated with national policy makers and practitioners in health and social care to seek research income to evaluate other social policies, such as a feasibility trial into the use of a social norms approach to address alcohol consumption among university students⁴.

DECIPHer research has also contributed to the development and monitoring of legislation, particularly in the area of tobacco policy. For example, the Welsh Government commissioned CHETS (CHild exposure to Environmental Tobacco Smoke) studies with young people in Wales have contributed to monitoring the impact of restrictions on smoking in public places and providing evidence to inform legislation around smoking in cars carrying children⁵. Funding has also been secured from NIHR to undertake a natural experiment examining the impacts of e-cigarette regulation via the EU Tobacco Products Directive on young people's use of e-cigarettes.

- 1 Murphy S *et al* 2011: (PMID: 20602868)
- 2 Murphy SM *et al* 2012: (PMID: 22577180)
- 3 www.gov.uk/government/publications/the-magenta-book
- 4 Moore GF *et al* 2013: (PMID: 23594918)
- 5 Moore GF *et al* 2015: (PMID: 25636793)

The Centre for Translational Research in Public Health (Fuse)



fuse

The Centre for Translational Research in Public Health

A UKCRC Public Health Research Centre of Excellence

Energy drinks and young people's health

Around one in three young people say that they regularly consume energy drinks, which typically contain high levels of caffeine and sugar. Under-18s in the UK consume more energy drinks than those in other European countries.



Energy drink consumption in schools was identified as a concern in County Durham (North East England) by parents, teachers and professionals. This collaborative research aimed to explore the factors influencing this behaviour and inform plans to develop interventions to educate young people and parents. It is the first qualitative research on energy drinks to involve primary school children.

A review of the existing evidence demonstrated that consumption of energy drinks by under-18s is associated with adverse outcomes, risky behaviours and common health complaints, such as headaches and stomach aches¹.

The qualitative study, exploring views and experiences of energy drinks, involved pupils (aged 10-14), staff and parents from four schools in County Durham. Pupils also helped to survey the accessibility and availability of energy drinks locally.

The research revealed that energy drinks were easily available in local shops; sold for as little as 25p (four for £1 promotions); targeted at children through online adverts, computer games, television and sports sponsorship; and linked to extreme sports, gaming, sexuality, gender, and use of sexualised imagery.²

An information leaflet was developed with local parents and used in schools and dentist surgeries across County Durham and an animated video that health practitioners are using when they visit young people. The findings received international media coverage, contributed to a national campaign and most UK supermarkets subsequently banned the sale

of energy drinks to under-16s³. A Government inquiry was launched acknowledging the study, the research team gave evidence to the Science and Technology committee on the effects of energy drinks on young people's mental and physical health⁴, and banning the sale of energy drinks to children was included in the government's childhood obesity plan⁵.

The study was funded by The Children's Foundation and supported by local partners including Durham Drug and Alcohol Advice Service.

AskFuse - rapid response and evaluation service for policy and practice partners

In June 2013, Fuse launched AskFuse (www.askfuse.ac.uk), a rapid response and evaluation service to provide decision makers and practitioners with an easy-to-access portal for public health evidence in North East England¹. The service responds to a broad range of research requests from the health, wellbeing and social care sectors. Examples of enquiries include requests for support with applying the existing evidence base, queries about how to make best use of current data, and requests to undertake service evaluations.



AskFuse draws on the expertise of Fuse colleagues and works collaboratively with partners throughout the process of addressing a specific issue.² AskFuse has supported more than 300 enquiries, resulting in over 35 funded projects, and more importantly has created meaningful partnerships. This is evidenced by increased applications from local partners for the NIHR School for Public Health Research (SPHR) Public Health Practice Evaluation Scheme (10 in last call alone) and several co-organised events. The service has also attracted national interest and been copied by other organisations and networks.

The AskFuse service provides an important backstage for informal conversations between decision makers, practitioners and academics about local research needs. The service identifies potential for working across local authorities, helps to negotiate new types of evidence, and supports capacity building through embedded PhD studentships.^{3,4}

1 Visram S *et al* 2016: (PMID: 27855083)

2 Visram S *et al* 2017: (PMID: 29190753)

3 www.theguardian.com/lifeandstyle/2018/mar/05/uk-supermarkets-ban-sales-energy-drinks-under-16s

4 www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/parliament-2017/energy-drinks-17-19/

5 www.gov.uk/government/publications/childhood-obesity-a-plan-for-action-chapter-2

1 Rushmer R *et al* 2018: (doi.org/10.1332/174426416X14829329957024)

2 Van der Graaf P *et al* 2018: (PMID: 29538725)

3 Van der Graaf P *et al* 2018; Performing collaborative research: A dramaturgical reflection on an institutional knowledge brokering service. Health Research Policy and Systems. Under review: contact P.Van.Der.Graaf@tees.ac.uk for further information

4 Van der Graaf P *et al* 2017: (PMID: 29166894)

The Scottish Collaboration for Public Health Research and Policy



Establishment of and involvement with the Public Health Evidence Network (PHEN) (2016-ongoing)



The Public Health Evidence Network (PHEN) aims to increase the effectiveness and efficiency of getting evidence into policy and practice by creating a much closer link between those who generate and manage evidence with policy makers and practitioners who apply it. PHEN currently consists of the Evidence for Action (EFA) team in NHS Health Scotland, SCPHRP, Glasgow Centre for Population Health, Healthcare Improvement Scotland, and the MRC Social Public Health Sciences Unit. PHEN synthesises diverse sources of knowledge and evidence to produce high quality reviews, primary research and advice to policy makers. SCPHRP has led and collaborated on a number of reviews in addition to conducting primary research informing a number of major Scottish public-health related policies in the past two years, including policy related to tobacco control and early learning/childcare.

Evaluability Assessment Collaborative (2015-ongoing)

Working alongside NHS Health Scotland, and MRC Social and Public Health Sciences Unit, SCPHRP established the Evaluability Assessment Collaborative, providing evaluation advice to the Scottish Government in relation to a number of major national public health policies. Evaluability assessments (EA) provide a systematic approach to the planning of evaluation projects, by working closely with those who are planning to develop and implement interventions - in this case, at the policy level. Evaluability assessments have since been conducted in relation to the Family Nurse Partnership scheme¹, free school meals, pregnancy and parenting in young people, and the enhanced health visiting programme. The recommendations of the Evaluability Assessment Collaborative have been taken on board in three out of the four EAs conducted so far, with no action taken as of yet in one. Two further evaluability assessments are underway².



1 Whitehead R *et al* 2018: www.healthscotland.scot/media/1829/rapid-evidence-review-strengths-and-limitations-of-tobacco-taxation-and-pricing-strategies.pdf
 2 Laird Y *et al* 2016: www.healthscotland.scot/media/1830/the-economics-of-tobacco-and-tobacco-control-an-overview-of-the-2016-us-national-cancer-institute-tobacco-control-monograph.pdf
 3 Riches E *et al* 2018: www.healthscotland.scot/media/1831/what-is-the-causal-link-between-tobacco-outlet-density-and-smoking-prevalence.pdf
 4 Laird Y *et al* 2017: www.healthscotland.scot/publications/tobacco-control-strategy-in-scotland-a-qualitative-study

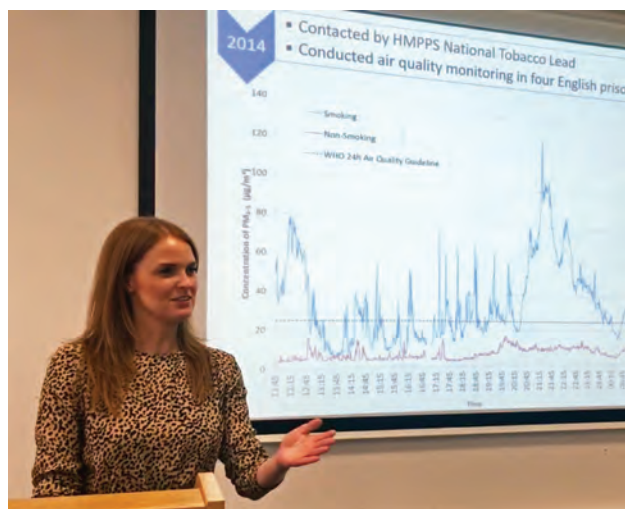
1 www.healthscotland.com/documents/26102.aspx
 2 bmcomedresmethodol.biomedcentral.com/articles/10.1186/s12874-017-0334-4

Disadvantaged populations

One of the UKCTAS PhD students, Leah Jayes (Nottingham), measured levels of indoor particulate (PM 2.5) pollution, demonstrating extremely high levels in the indoor environments of a sample of English prisons in which smoking is allowed. The work also demonstrated that current efforts to separate smokers and non-smokers have little effect in protecting non-smokers from passive smoke exposure. Personal monitoring of prison staff demonstrates extremely high levels of exposure sustained during their working day. This work led, after independent confirmation by another research organisation, to the announcement of a programme of implementation of smoke-free policy across the prison estate to be implemented from October 2015. This process has now begun: the first cluster of four English prisons went smoke-free in spring 2016; women’s and sex-offender prisons followed suit later in 2016; and the policy is gradually being introduced across the English prison estate. All prisons in Wales are also now smoke-free. Leah Jayes has measured the change in indoor particulate pollution generated by the policy, and completed studies of staff and prisoners in these institutions before and after policy implementation to explore expected and actual difficulties with implementation, and identify lessons to apply as the policy is extended across the UK.



Tobacco harm reduction



Dr Leah Jayes

UKCTAS has taken a leading role in promoting the use of electronic cigarettes and other non-tobacco nicotine sources as a reduced harm substitute for smoking. Key outputs and contributions since 2013 include:

- Authoring evidence summaries used as the foundation for policy by Public Health England (PHE)¹⁻³. These reports all attracted substantial media interest, particularly the 2015 paper which estimated that electronic cigarette use was likely to be around 95% less harmful than tobacco smoking.
- Publication, through our close collaboration with the Royal College of Physicians (Britton chairs the RCP Tobacco Advisory Group), of a report *Nicotine Without Smoke*, a report advocating widespread promotion and adoption of electronic cigarettes as a consumer alternative to tobacco⁴. The report attracted substantial international media interest and a leader article in The Times newspaper.



Professor Ann McNeill



Professor Linda Bauld



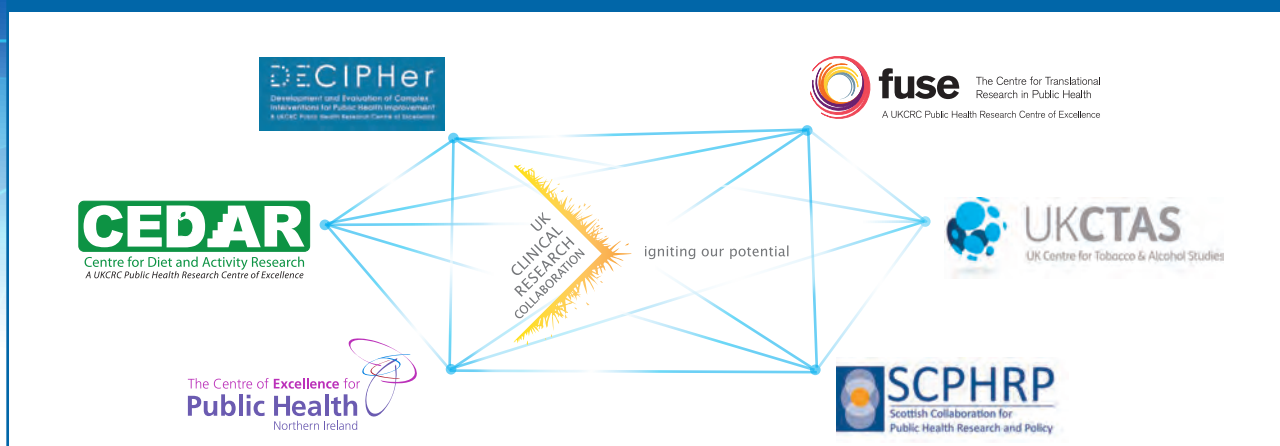
- Primary research funded by HTA, CRUK, Pfizer, PHE and other sources to clarify the efficacy of e-cigarettes in smoking cessation, the natural history of dual use, aldehyde emissions from e-cigarette flavourings, safety and effects of e-cigarettes in pregnancy. UKCTAS was one of the first research centres to evaluate the safety of e-cigarettes (EC) and their effects on users, and this work fed into the PHE and RCP reviews, the National Centre for Smoking Cessation Training (NCSCT) briefing to stop-smoking practitioners, and briefings for the CMO and all-party parliamentary group. This input influenced clinical practice within the national stop-smoking services and is increasingly influencing primary care practice. Among other papers, UKCTAS reported on the ‘real world’ effectiveness of e-cigarettes used in quit attempts by smokers and a recent paper demonstrating objective evidence of significant reductions in toxin exposure among smokers who switch completely to electronic cigarettes. This helped to produce guidance on the integration of e-cigarettes into treatment for smokers offered by NHS top Smoking Services. Through surveying Stop Smoking Services personnel, UKCTAS is working with ASH and PHE to monitor ongoing changes in smokers’ interest and use of EC. UKCTAS academics have written and oral evidence to Victoria Health and the Therapeutics Goods Administration in Australia, Ministry of Health in New Zealand and the Canadian and Scottish and Welsh parliaments/ assemblies (John Britton, Linda Bauld, Ann McNeill); and authored a briefing paper critiquing a scientific assessment and policy options report on electronic cigarettes (referred to in the report as Electronic Nicotine Delivery Systems (ENDS) and Electronic Non-Nicotine Delivery Systems (ENNDS) prepared for the WHO Seventh Conference of the Parties 1 of the Framework Convention on Tobacco Control (FCTC COP-7).

 - UKCTAS has established the UK Electronic Cigarette Research Forum in partnership with Cancer Research UK and Public Health England. The forum meets face to face three times a year involving researchers, policy makers and practitioners and produces a monthly evidence briefing written by Linda Bauld with colleagues at CRUK. The forum has already produced a number of new collaborations across UK Universities (extending beyond UKCTAS) resulting in successful grant applications to CRUK, who have funded 40 studies on e-cigarettes since 2014.

- 1 McNeill A *et al* 2016: www.gov.uk/government/uploads/system/uploads/attachment_data/file/454516/E-cigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England.pdf
- 2 McNeill A *et al* 2018: assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/684963/Evidence_review_of_e-cigarettes_and_heated_tobacco_products_2018.pdf
- 3 Bauld L *et al* 2014: www.gov.uk/government/uploads/system/uploads/attachment_data/file/311491/E-cigarette_uptake_and_marketing.pdf
- 4 www.rcplondon.ac.uk/file/3563/download?token=MuoK_ZRO

IN FIGURES

FUNDING, IMPACT, CAPACITY



■ Phase 1 • 2008 – 2013 ■ Phase 2 • 2013 – 2018



Income

| | Phase 1 | Phase 2 |
|--|---------------------|---------------------|
| European / International Funding | £2,487,025 | £56,338,948 |
| Charities | £8,935,962 | £32,943,909 |
| Government / NHS / Local Councils | £36,746,226 | £33,039,925 |
| NIHR | £55,438,641 | £61,865,266 |
| Other | £30,871,066 | £11,456,930 |
| Research Councils | £26,778,259 | £38,607,752 |
| University | £272,703 | £286,043 |
| Total | £161,529,882 | £234,538,773 |



Research Fellowships

| Phase 1 | Phase 2 |
|--|------------|
| 0 European / International Funding | 3 |
| 1 Charities | 7 |
| 7 Government / NHS / Local Councils | 15 |
| 1 NIHR | 10 |
| 61 Other | 71 |
| 12 Research Councils | 35 |
| 5 University | 2 |
| 87 Total | 143 |



Personal Fellowships

| Phase 1 | Phase 2 |
|--|-----------|
| 2 European / International Funding | 5 |
| 3 Charities | 12 |
| 4 Government / NHS / Local Councils | 3 |
| 6 NIHR | 5 |
| 5 Other | 5 |
| 6 Research Councils | 1 |
| 0 University | 3 |
| 26 Total | 34 |

Studentships

| Phase 1 | | Phase 2 |
|---------|-----------------------------------|---------|
| 0 | European / International Funding | 6 |
| 3 | Charities | 7 |
| 15 | Government / NHS / Local Councils | 37 |
| 2 | NIHR | 9 |
| 18 | Other | 54 |
| 15 | Research Councils | 35 |
| 18 | University | 16 |
| 71 | Total | 164 |

Active Studentships

| Phase 1 | | Phase 2 |
|---------|-----------------------------------|---------|
| 1 | European / International Funding | 20 |
| 1 | Charities | 3 |
| 18 | Government / NHS / Local Councils | 34 |
| 0 | NIHR | 3 |
| 28 | Other | 35 |
| 15 | Research Councils | 22 |
| 7 | University | 11 |
| 70 | Total | 128 |

Promotions

| Phase 1 | Phase 2 |
|---------|---------|
| 41 | 70 |

Sustained Core Posts

| Phase 1 | Phase 2 |
|---------|---------|
| 20 | 49 |
| | 2 |
| | 3 |
| 20 | 54 |

Publications

Phase 1

1631

Phase 2

3478



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