Public health research in the UK: a report with a European perspective

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ABSTRACT

Background Public health research is of growing interest within Europe. Bibliometric research shows the UK with a high absolute output of public health publications, although lower per capita than Nordic countries. UK contributed to a European Union (EU) project PHIRE to assess public health research and innovation.

Methods UK health research structures, and programmes funded in 2010, were determined from internet search. Expert informants were asked to comment on national uptake of eight projects EU collaborative health projects. The Faculty of Public Health and the UK Society for Social Medicine discussed the findings at a meeting with stakeholders.

Results Health research in UK is funded by research councils, the National Health Service (NHS) and independent foundations. Reviews and reports on public health research have encouraged diversified funding. There were 15 programmes and calls in 2010. The UK participated in all eight EU projects, and there was uptake of results for four.

Conclusions Strategic coordination between public health researchers and practitioners, and the UK research councils, ministries of health and medical charities would strengthen research for policy and practice. With growing expertise and capacity across other EU countries, the UK should take more active leadership in European collaboration.

Keywords management and policy, public health, research

Introduction

That biomedical research contributes strongly to medicine is widely recognized, but there is less systematic recognition of the contribution of public health research. Across Europe, the European Public Health Association (EUPHA) represents the national public health associations concerned with public health research and practice.¹ The Faculty of Public Health and the Society for Social Medicine are institutional members of EUPHA for the UK. We report here the results from UK participation in a comparative study of public health innovation and research in Europe (PHIRE).

From its foundation in 1992, EUPHA’s activities have included the annual European public health conference and publication of the European Journal of Public Health. The Faculty has partnered with EUPHA in collecting Europe-wide information. SPHERE assessed health research structures in EU member states²: bibliometric research across six areas of public health research—infectious disease control, health promotion, health management, genetic epidemiology, health services and environmental health—showed that Europe contributes around one-third of world output in public health research.³ Within Europe, the UK has the highest numerical output of European countries, although the Scandinavian countries have higher per capita output.⁴ The following study, STEPS,⁵ explored the finding that the 12
countries joining the EU in 2004–2007 have lower research levels, investigated the use of the EU’s Structural Funds for research6 and addressed the contribution of civil society organizations to public health research in these countries.7

In the current study, PHIRE,8 EUPHA sought to strengthen the engagement of its member national associations and also of individual researchers who are voluntary members of EUPHA’s thematic ‘Sections’.1 PHIRE has described national systems for public health research, determined calls and programmes for public health research open in 2010 and assessed the uptake of a selection of public health innovations across European countries. The findings from UK participation are presented here.

**Methods**

PHIRE was a 30-month project co-funded through the European Commission’s Heath Programme.8 The consortium was led by EUPHA, with seven partners from national public health associations including the Faculty of Public Health for the UK. Based on the previous work,2 one of the partners developed a template to record descriptions (‘profiles’) of national public health research structures. The partners in four countries (France, Malta, Slovakia and Lithuania) asked each national public health association to review their country profile and to use it to identify programmes and competitive calls for public health research that had been disseminated in 2010.

One partner (Sweden) coordinated participation of EUPHA Sections through their Section leads. Seven Sections selected one, and one Section selected two, collaborative projects that had been funded by the European Commission’s Health Programme, between 2003 and 2005, and were therefore finished at the earliest by 2009 (giving time for uptake). The European projects were chosen for their topic interest to the Section, and for having involved a range of EU countries. The EUPHA Section leads developed an instrument for assessing uptake retrospectively, including questions on the country situation before the project, how results from the project were disseminated, the impact on different stakeholders, factors hindering and/or facilitating impact and activities to promote dissemination of results. The instrument was tested in a pilot study, with web-based reporting. The Sections were asked to identify country informants who would complete an electronic questionnaire and return it to the coordinating centre. Sections performed variably in gaining informants and the UK informants were gained for five out of the eight European projects. An overview report, drawing together the country-specific results, was returned to each national public health association.8

The UK Faculty of Public Health and the Society of Social Medicine together held a meeting in London in May 2012, with 20 participants, including representatives from the four country health departments, the research councils, medical charities, researchers and public health practitioners. Working documents for the meeting included a description of the UK public health research structures and programmes, competitive calls in 2010 and information on the eight innovation projects. We searched on the internet to identify previous reviews and recent developments for structures of public health research in the UK. The workshop discussion, of the materials provided and between participants, was written-up as a country report.10

**Results**

**Structures**

The identified UK health research structures (Fig. 1) take into account the devolved government of the UK in four countries—England (with five-sixths of the total population), Northern Ireland, Scotland and Wales. The research councils operate across the UK, and at European level formally through the Department for Business, Innovation and Skills, and practically through the European Science Foundation (the European association of national research councils). The Medical Research Council (MRC) provides most health research funds, but other councils such as the Economic and Social Research Council (ESRC) also fund relevant research. Both councils fund internal research units—mostly now placed within universities—as well as competitive external grants. The National Health Service (NHS), in contrast, has devolved budgets and is managed by each of the four countries separately. Research within the NHS in England is controlled by and funded through the National Institute for Health Research (NIHR), a part of the NHS linked closely with the Department of Health. The UK health services is represented at European level at the European Commission’s Directorate for Health and Consumers, but UK health research is represented through the research councils to the European Commission’s Directorate for Research and Innovation.

Public health priorities, policies and programme themes are broadly similar across the four countries, but the health systems increasingly differ. In England, the public health system and workforce are being transferred out of the NHS, where it has developed for almost 40 years, back into local authorities that have no other medical responsibilities, and led by an ‘executive agency’ (Public Health England). The report here presents the position just prior to this formal change in 2012.
Public health research programmes
The UK public health research tradition stretches from the London Bills of Mortality in the 17th century, protection from scurvy in the 18th century, vaccination in the 19th century and chronic disease epidemiology in the 20th century, to its current extension across the whole field of health and health care. The MRC was established in the first part of the 20th century, while from 1948, the Ministry of Health took on responsibility for the organization of the NHS. In the 1970s, the ‘customer–contractor’ policy supported coordination of the ministry of health and research ‘contractors’ in universities and independent organizations. With increasing focus on clinical research, in the 1990s hospitals identified the funds used for NHS research, leading to a separate national budget for health research, currently held (in England) by the NIHR.

The place of public health research within overall ‘health’ research has been less clear at national policy level. Reviews over the past decade are shown in Box 1.

Research funding
The total budget of MRC in 2010–2011 was almost £800m. About one-third (£290m) was for grants, a half (£420m) for the MRC’s 500 internal research programmes and one-tenth (£80m) to studentships. The MRC does not report allocations within its Boards, such as the Population Sciences and Public Health Board (which includes biomedical as well as population research across fields including infectious diseases, obesity, addiction and reproductive health) and its programme areas, such as ‘Lifelong Ageing and Wellbeing (which includes epidemiology and health behaviours).

Annual funding from the NIHR is around £900m. Two-thirds (£600) goes to biomedical and clinical research ‘infrastructures’. One-quarter is for ‘direct research programmes’. Public health can compete with clinical research in ‘Programme Grants for Applied Research’ (£38m) and has got more specific support in the Service Delivery and Organization programme (£9m) and ‘health protection’ research (£10m) (the Public Health Research Programme’).
Box 1 Reviews related to public health research.


2003: ‘Increasing the Impact of Health Services Research on Service Improvement and Delivery’ (Report, author Penny Dash) proposed ‘improving the alignment of commissioners, researchers and users of health services research in England’.

2004: The Wellcome Trust, the largest medical charity funding research, recommended establishing a ‘top-level funders group’ to develop a strategic framework for public health research.

2004: Medical charities and UK research councils established the UK Clinical Research Collaboration (UKCRC) ‘to develop a coherent approach to funding health-related research’. Its 2006 report ‘Health Research Analysis’ revealed that about two-thirds of £2.5 billion UK health research funds were allocated to laboratory-based non-clinical research, and smaller proportions on health and social care services research, primary prevention and health promotion research, and research for psychological, social and economic factors.

2004: In response to a report on cancer prevention research, the National Prevention Research Initiative, through a consortium of government and charity funders, provided £12m over 5 years to fund research into chronic disease prevention.

2005: The Wellcome Trust, the largest medical charity funding research, recommended establishing a ‘top-level funders group’ to develop a strategic framework for public health research.

2005: A UKCRC Strategic Planning Group was established in 2005 to develop ‘a coordinated approach to public health research’. Gaps in research included knowledge of the determinants of health, cost-effective interventions, support for sustained behavioural change, evidence for policy into practice and evaluation afterwards. Actions should include greater investment in academic capacity at all career levels, multidisciplinary and collaborative working, and more investment in translational and applied research.

2009: UKCRC funded four ‘UK Public Health Research Centres of Excellence’ within existing academic structures (£5m each for 5 years).

2009: NIHR established a competitive ‘Public Health Research Programme’ (up to £10m per annum) for evaluation of interventions outside the NHS and consolidated its ‘Service and Organisation’ programme (£20m). Similar changes occurred in Wales, Scotland and Northern Ireland organization.

2011: Five universities come together to form the Scottish School of Public Health Research supported by the Scottish Funding Council (SFC).

2011: NIHR call for a new ‘Public Health Research School’ provides funding for eight academic institutions in England ‘to build closer relations between researchers and practitioners’.

2012: Medical Research Council current structure includes a Population Health Sciences Group with responsibility including ‘epidemiology, investment in cohorts and biobanks, population research methodologies including modelling and population-based genetic studies’.

References


UK medical ‘charities’ (with 25% governmental co-funding through tax remission) also allocate funds of around £800m. There has been no unified analysis of expenditures by charities on public health research, although it is known that the proportion spent broadly on prevention is low.\footnote{\cite{11}}

Cancer Research UK in 2010 made a call for research in prevention and early intervention, while several charities contributed to the National Prevention Research Initiative fund (now closed). Although behavioural and some policy research is supported by the major charities, there appears to be little funding of health services research by medical charities.

Programmes and calls

Fifteen programmes and calls were open in 2010 in the UK (Table 1) (the list does not include direct funding of...
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<th>Overall objective</th>
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<td>Multidisciplinary research activities across a range of ageing topics, including pain, rehabilitation and healthy behaviours, through research ‘collaboratives’, networks, studentships, grants and pilot studies</td>
<td>In 2010/11, the Phase 3 call was for: (i) major determinants of health and wellbeing in later life, (ii) identify and develop effective interventions, (iii) Inform policy and practice including the development of services and technologies for independent living.</td>
<td><a href="http://www.mrc.ac.uk/Utilities/Documentrecord/index.htm?d=MRC008586">http://www.mrc.ac.uk/Utilities/Documentrecord/index.htm?d=MRC008586</a></td>
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<td>Research seeks to strengthen the knowledge base or evaluation of the impact of complex interventions in health research.</td>
<td>The MRC Panel is particularly keen to support applications for methods research which focus on: (i) behavioural change interventions, (ii) psychological interventions and (iii) natural experiments, i.e. assessments of policy interventions on health.</td>
<td><a href="http://www.mrc.ac.uk/Fundingopportunities/Highlightnotices/index.htm">http://www.mrc.ac.uk/Fundingopportunities/Highlightnotices/index.htm</a></td>
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<td>PROMs are an assessment of health status and health-related quality of life that comes directly from the patient.</td>
<td>Improving the generation and validation of PROMs, improving the interpretation and evaluation of PROMs</td>
<td><a href="http://www.mrc.ac.uk/Fundingopportunities/Highlightnotices/PROMs/MRC005962">http://www.mrc.ac.uk/Fundingopportunities/Highlightnotices/PROMs/MRC005962</a></td>
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<td>Population Health Sciences—population-based studies into aetiology of disease, traditional epidemiology and social and behavioural medicine.</td>
<td>Current thematic priorities include Nutrition . . . obesity; Ageing and lifelong health; Maternal health and the early origins of health and disease; Medical sociology; lifestyle, socioeconomic and behavioural impacts</td>
<td><a href="http://www.populationhealthsciences.org/mrc-strategic-priorities.html">http://www.populationhealthsciences.org/mrc-strategic-priorities.html</a></td>
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<td>Health Technology . . . covers any method used by those working in health services to promote health, prevent and treat disease and improve rehabilitation and long-term care.</td>
<td>Effectiveness, costs and broader impact of healthcare treatments and tests. NHS-funded interventions include: (i) Screening programmes or components of screening programmes</td>
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<td><strong>UK Public health research calls</strong></td>
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<td>(7) MRC/NIHR Methodologies Research Programme</td>
<td>Methods development and methodological outputs that are applicable beyond a specific case study.</td>
<td>(i) Methods for the design and analysis of primary descriptive and evaluative studies. (ii) And secondary reviews and evidence synthesis of descriptive and evaluative studies. (iii) Methodologies in the applied disciplines underpinning research in the health science, for example, (iv) The assessment and validation of patient-reported measures of health, health outcomes and satisfaction (v) Methods development research to support the use and evaluation of complex interventions in health research.</td>
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<td>(8) NIHR Programme grants for applied research</td>
<td>Response-mode programme on promotion of health, prevention of ill health, and optimal disease management (including safety and quality), especially for conditions causing significant disease burden.</td>
<td>Applied health research including health services research; public health research; behavioural research; economic evaluations and modelling.</td>
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<td>(9) NIHR Research for patient benefit</td>
<td>Response-mode programme to benefit of users of the NHS in England. It funds regionally derived applied research projects in health services and social care.</td>
<td>While clinical trials form the largest single category, there is also qualitative work in mixed methods studies, pilot studies and other health interventions.</td>
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<td>(10) NIHR Service Delivery and Organization</td>
<td>The programme's goal is to identify, prioritize and refine the research needs of the NHS management community; to commission research that will be of great value to that community in shaping, influencing and contributing to decision-making; and in promoting the more effective use of research evidence alongside</td>
<td>Commissioned workstream</td>
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<td>(11) National Prevention Research Initiative</td>
<td>Research into chronic non-communicable disease prevention.</td>
<td>It supports research, both inside and outside of the NHS setting, by addressing health behaviours at the level of the individual, community or population, and with consideration of environmental factors. Relevant behaviours include physical activity, diet, alcohol misuse and tobacco use. The focus in 2010 is to support cross-disciplinary research which develops, tests or evaluates interventions that can potentially have a major impact on population health, using the full range of evaluation methods, including experimental and quasi-experimental (or observational) designs and natural experiments.</td>
<td><a href="http://www.netscc.ac.uk/">http://www.netscc.ac.uk/</a></td>
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<td>(12) NIHR Public ealth research</td>
<td>Evaluate public health interventions: new knowledge on the benefits, costs, acceptability and wider impacts of non-NHS interventions intended to improve the health of the public and reduce inequalities in health</td>
<td>The Public Health Research programme complements the Health Technology Assessment (HTA) programme (which may evaluate public health interventions delivered within or commissioned by the NHS) 17 projects were funded in 2010/2011</td>
<td><a href="http://www.phr.nihr.ac.uk/">http://www.phr.nihr.ac.uk/</a> <a href="http://www.dh.gov.uk/">http://www.dh.gov.uk/</a> prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_130371.pdf</td>
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<td>(13) NIHR Research capability programme</td>
<td>Use of national electronic health records system</td>
<td>Most of the research studies within the pilot are non-interventional. Some of the studies within the pilot are interventional—these studies are known as clinical trials. Ten pilot studies were commissioned in 2010.</td>
<td><a href="http://www.connectingforhealth.nhs.uk/systemsandservices/research">http://www.connectingforhealth.nhs.uk/systemsandservices/research</a> <a href="http://www.scot-ship.ac.uk/sites/default/files/PDFs/peter-knight-slides.pdf">http://www.scot-ship.ac.uk/sites/default/files/PDFs/peter-knight-slides.pdf</a></td>
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<td>(14) Department of Health Policy Research Programme</td>
<td>Heads of the main policy groups in the Department of Health submit requests for research directly to the PRP. Research is not commissioned in response to unsolicited proposals. Research on early detection of cancer</td>
<td>Whole range of responsibilities of DH</td>
<td><a href="http://www.dh.gov.uk/en/Aboutus/Researchanddevelopment/Policyresearchprogramme/DH_40021">http://www.dh.gov.uk/en/Aboutus/Researchanddevelopment/Policyresearchprogramme/DH_40021</a></td>
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institutes and units). Only calls for public health research open in 2010 were recorded, for uniformity across European countries in PHIRE. Most funders have at least annual calls for competitive grants, although the priorities of calls can vary from year to year. The main funders were the MRC and the NIHR. The Department of Health’s Policy Research Programme supports coordinating actions and system developments for NHS clinical and organizational fields. Disease charities appear not to fund research on organizations and systems for chronic disease control. Other ways of funding for public health research include institutional grants (e.g., MRC units with longer-term research, such as cohort studies), grants to individuals and infrastructures and financial support to universities from the Department of Education and Science, were not included for this analysis.

Implementation of European collaborative projects

PHIRE studies eight European collaborative projects that were chosen by EUPHA thematic Sections. More than half of the EU countries were partners in all the projects, and the UK was involved directly in all of the eight (Table 2). In PHIRE overall, data were collected from EUPHA Section informants for about half of all the EU countries: there were not respondents in every country, nor were the projects themselves distributed across all the countries. The UK informants provided answers for five of the eight projects. The project with the greatest UK impact reported was Child Safety Action Plans (CSAP), which fitted well with the existing policy initiatives in Scotland and Wales, though less in England. Children, Obesity and Associated Avoidable Chronic Diseases (CHOB) project had three UK NGOs involved, and the respondent (a nutrition manager) reported its potential for influencing national action with the food industry and informing local-level activities. European Core Indicators in Diabetes (EUCID) had responses independently from Scotland and England: the project’s output proposals had matched UK practice and provided valued European comparisons, although some partner countries’ data were considered poor. In three projects [Vaccine European New Integrated Collaboration Effort (VENICE), Healthy Ageing (HA) and European Alliance against Depression (EAAD)], the EUPHA Section did not gain a UK respondent. While the project on EAAD has not included UK in the second phase, HA has become the overall theme for the European Commission’s health programme in 2014–2020 and also fits with Joint Programming of research entitled ‘More Years, Better Lives’, which is coordinated by Germany with the UK ESRC as a partner. In two projects [urban health indicators (URHIS) and implementing environmental and health information systems in Europe (ENHIS)], the respondent was not able to identify UK partners and impacts, but enquiries (unpublished observations) have identified that both the URHIS and ENHIS projects included the UK partners and have contributed to international work with World Health Organization.

Discussion

Main finding of this study

The UK public health research system is complex, with numerous funding, performing and collaborative organizations and both institutional and programme-based commissioning. There is active communication and coordination between the major health research funders and between the four
nations, but within this a focus on public health research and its contribution to national health was less clear. Fifteen UK programmes and calls open in 2010 were identified, across a range of public health research fields including health promotion, health services epidemiology, surveillance, management and wider determinants.

While there is ambivalence to European cooperation at the broader political level, the UK was a partner in all the European collaborative projects chosen, and these projects had also shown their success as continuing European partnerships. There was also uptake of some of the projects into UK public health practice, and this was more likely when UK policy was already prepared—for example, in the child safety plans and marketing food to children. Studying the European projects complemented the assessment of public health research structures and programmes—giving ‘research-into-practice’ examples of how European funding on health can be brought into UK public health practice.

**What is already known of this topic**

Previous European work has shown the challenge of drawing together information on public health research.
At present, health research both in the UK and EU is directed predominantly towards biomedical research. The EU has promoted coordinating mechanisms, including ERA-nets and Joint Programming, to encourage strategic development and share funding. But, while UK research priorities and policies are determined on the basis of national concerns and evidence gaps, the European perspective is not necessarily considered—either whether relevant work is being undertaken elsewhere in Europe or whether collaboration with European partners would be a more successful and faster approach to gaining relevant knowledge.

**What this study adds**

New EU programmes for both research (entitled Horizon 2020) and health (entitled EU Health Programme), and also for the Structural Funds (also called Cohesion and Regional funds), start from 2014, providing new opportunities for EU engagement in public health research. Strengthening public health research requires leadership by the UK national Departments of Health, in setting research funding priorities, promoting communication with stakeholders and ensuring sufficient funding levels. UK collaboration on public health research is also needed at European level. UK universities are active in gaining EU funding and UK experts contribute in European decision-making. The UK could support European collaboration through initiatives including creating databases and registries to reduce duplication, identify early benefits and enhance impact; systematically collecting information on both EU and member state funding programmes for comparisons; and promoting knowledge on European research within UK public health practice.

**Limitations of this study**

As a partner in PHIRE, the UK has contributed to further systematic investigation of public health research and innovation across Europe, although the national data gathered were limited by the collaborative structure and funding of that study. Government and research organizations contributed information for the UK analysis but were not formal signatories for the report. This allows greater freedom of reporting but may confer less detail and accuracy.

This mapping for PHIRE, however, could not report the actual research undertaken, and there is no system for reporting public health research calls and programmes collectively (such as exists in France) or to assess whether the research programmes are delivering relevant and high-quality outputs and benefit to public health practice and policy. Stronger coordination is needed between public health researchers and practitioners, through their representative organizations, and the UK research councils, medical charities, NIHR and the four UK country ministries of health.

**Acknowledgements**

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