

Programmes and calls for public health research in European countries

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Introduction: Public health research, at population and organizational level, needs to be identified independently within 'health' research from biomedicine and life sciences. In PHIRE (Public Health Innovation and Research in Europe), we investigated the extent and character of public health research calls and programmes in European countries. **Methods:** Country respondents, identified through national member associations of the European Public Health Association completed a standardized recording instrument. Public health research was defined, and the call period limited to the latest full year (2010). Of the 30 countries included (EU 27 plus Iceland, Norway and Switzerland), there were reports for 25 countries. A simple classification of the calls was developed. **Results:** There were 75 calls and programmes included. Of these, 41 (55%) together were in France and the UK, and 34 in a further 14 countries, while 9 countries reported there were no calls or programmes opened in 2010. Calls were categorized across diseases, behaviours, determinants, services and methodologies. Some calls were broad, while others—particularly in the countries with several calls—were more detailed towards specific issues. Levels of funding varied markedly and were difficult to define. Where stated, in 32 responses, 19 calls were only open to national applicants and 13 from abroad. **Conclusions:** Most European countries have competitive programmes and calls relevant for public health research, but they are poorly identified. Only a minority of countries present a wide range of topics and specific fields. Effort is needed to develop classifications for public health programmes and calls for public health research, improve information (including financial) collection to enable systematic comparisons and build greater recognition of public health research within research communities, with national and European research funding organizations, and for practitioners and policymakers.

Public Health Innovation and Research in Europe (PHIRE), led by the European Public Health Association (EUPHA), has studied the uptake of public health innovations in European countries and assessed national public health research systems. This sixth article in a series of nine in the PHIRE Supplement of the *European Journal of Public Health*¹ reports a survey of public health research programmes and calls for 2010, made through national public health associations and national respondents.

Introduction

Public health research links epidemiology, health services, systems and management, social and environmental sciences with clinical research for disease control, prevention and treatment. Bibliometrics of health journals show that publication rates vary²: there is greater output from countries, and a larger contribution of social sciences, in the north and west of Europe than in the south and east. Inquiries at national level³ indicate that most Ministries of Science believe that their Ministries of Health take the lead in public health research; yet, the Ministries of Health themselves rarely have an internal department taking responsibility for research.

The European Union (EU) will be spending ~8% of its total budget on research and innovation in the coming period 2014–

20.⁴ Expenditure by EU member states on research (for all subjects together) varies from <0.5 up to 4% of country gross national product: a target of at least 2% for all member states has been proposed.⁵ In seeking to create a European Research Area, the European Commission has promoted collaboration between researchers through joint projects, and between member states, such as through ERA-NETs⁶ and Joint Programming.⁷

National systems for public health research separate the structures and funding for research (research commissioning) from the research organizations, teams and individuals (research performers).³ Although the European Union wishes to strengthen national research budgets through funding from industry,⁴ public health research remains predominantly funded through the public sector. Independent foundations also provide significant levels of funding in some countries, while civil society organizations encourage health research agendas and assist in implementation.⁸

In all European countries, Ministries of Science and Ministries of Education, sometimes working through agencies (the structures differ country by country), control national research systems. However, while most Ministries of Science regard life sciences and biomedicine as within their remit, they often see public health research falling to the Ministries of Health.³ Ministries of Health have traditionally funded national schools of public health for

Box 1 Definition of public health research for survey

Public-health research refers to the organized quest for new knowledge to protect, promote and improve people's health. It

- is undertaken at population or health services level, in contrast to laboratory (cellular) or clinical (individual) health research;
- differs from public-health practice (which also uses scientific methods), as it is designed to obtain generalizable knowledge rather than to address specific programmes for service delivery;
- is usually goal-oriented, addressing questions of policy relevance, and may be published in either academic journals or reports; and.
- uses a range of observational methods, including surveys, registers, data sets, case studies and statistical modelling, and draws on disciplines including epidemiology, sociology, psychology and economics, and interdisciplinary fields of environmental health, health promotion, disease prevention, health care management, health-services research and health-systems research.

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both technical studies and teaching public health sciences. But contemporary public health is developing in medical schools, universities and institutes beyond the national schools of public health, and gains funds for research from a wider range of sources. PHIRE sought to describe the range of public health research programmes and calls across European countries.

Methods

PHIRE⁹ was a collaborative action through the EUPHA within European member states. EUPHA¹⁰ brings together national public health researchers through conferences and publishing the European Journal of Public Health, and also works on European health policy issues with other professional and non-governmental organizations, and within the EU Health Policy Forum.¹¹

In PHIRE, four partner organizations (in France, Malta, Slovakia, Lithuania) acted as regional coordinators, each linking with a further seven national public health organizations geographically. The partners created a data collection instrument, drawing on previous experience in developing national public health research profiles for Strengthening Engagement in Public Health Research (STEPS).¹² The definition of public health research (Box 1) was drawn from STEPS and its prior project *SPHERE* (Strengthening Public Health Research in Europe).^{3,13} The data included for each programme or call were: the name of the commissioning agency; description; funding and duration; and eligibility criteria. To enable comparable recording across a range of countries and with variability of national systems, in a limited period of time, the study focused on programs and calls that opened during 2010. A first version of the instrument was piloted in each of the countries of the regional coordinators, and revised through discussion.

National public health associations were initially contacted through the Governing Council of EUPHA. The EUPHA president sent letters introducing the regional coordinators. For each country, the regional coordinators sought a person able and willing to provide the information, assistance in organizing the information and completing the forms. More than 240 emails were sent and 60 phone calls were made, and the information was confirmed through iterative contacts. Responses were gained from 25 of 30 European countries, of which 16 had had relevant health programmes or calls in 2010 (Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Lithuania, The Netherlands, Norway, Romania, Spain, Sweden, Switzerland and UK).

The regional coordinators, the work package coordinator and technical coordinators together decided which national calls and programmes to include as public-health research. A total of 75 relevant programmes/calls were identified. Simple groupings were made for the calls, across the different research systems. Every item of the classification had at least one call (if no call existed, the category would not be included). Each programme/call was included in only one category. Iterations were made to refine the classification and to reduce overlaps and inconsistencies.

Table 1 Thematic areas of research calls

Thematic area	Number of calls /programmes
Open calls, no theme	11
Disease control	
Cancer	7
Mental health	3
Communicable diseases	4
Other or non-specified diseases	11
Environmental and occupational health	11
Health promotion	8
Health services (services, statistics, information, screening, organization, other)	14
Methods (epidemiology, social science, other)	4
Target groups: youth/ageing	2
	75

Table 2 Number and percentage of programmes/calls identified for all countries and excluding France and the UK

Area	All countries		Excluding France and the UK	
	Number of programmes/calls	%	Number of programmes/calls	%
Across public health	11	15	6	18
Disease control	25	33	10	29
Health promotion	19	25	9	26
Health services	14	19	7	21
Methods	4	5	2	6
Target groups	2	3	0	0
Total	75	100	34	100

Results

The classification included open calls, disease control (cancer, mental health, other non-communicable diseases, communicable diseases), environmental and occupational health, health promotion, health services, methods and target groups (Table 1).

France and the UK together had more programmes and calls than the other countries combined. This may reflect both programme and reporting differences, but the distribution of call themes was similar for both groups (Table 2).

Programmes and calls by theme

There were 11 programmes and calls under the broad title of public health or population research, in France, Ireland, Lithuania, Norway, Spain, Sweden and the UK (Supplementary Table S3). The calls were usually from the national research council, and

ranged from aetiological to intervention studies, with some countries including health services research.

More calls, one-third of the total, were identified for disease control. France has six calls specifically related to cancer (Supplementary Table S4), mainly epidemiology, from the National Cancer Institute or the National League Against Cancer, and the UK had one on early detection, including health services. There were three calls for mental health (Supplementary Table S5), respectively, for services for dementia/Alzheimer's disease (France), behavioural disorders in childhood or adolescence (Germany) and prevention interventions for depression and anxiety (The Netherlands).

Other calls for non-communicable diseases (Supplementary Table S6) included the following: in France, the fields of cardiovascular diseases (including associated diabetes, obesity, dyslipidaemia, hypertension), renal failure and cystic fibrosis; Germany for diabetes and obesity separately; Lithuania listed a full range of diseases; and Denmark and the UK broadly cited 'chronic diseases' and 'chronic non-communicable disease prevention', respectively. France also included public health research in a call on transplantation, and Germany included prevention in research on rare diseases. There were four calls for communicable diseases research (Supplementary Table S7): for Belgium (French-speaking community), this included vaccination and studies of disease notification; in France, the call was for HIV; in The Netherlands, it included Q-fever; and in Romania, it was for tuberculosis control.

Eleven calls were found for environmental and occupational health (Supplementary Table S8). This was broadly stated in Belgium (French community), focused on the workplace for The Netherlands while Norway excluded the workplace, and in Denmark the call was for food and nutrition, including manufacturing. There were several calls in France, both centrally and regionally, for environmental sustainability and risks such as endocrine disruptors.

The eight programmes and calls in health promotion (Supplementary Table S9) included general calls in Finland ('where results are useful in practice') and Iceland; diet and lifestyle in Denmark; nutrition and alcohol consumption in France; sexual health in The Netherlands; tobacco control in Switzerland; and the UK call was for social sciences research on addictions and eating behaviours.

Broad calls in health services and systems were reported for Denmark, Germany, Italy, Norway and the UK (Supplementary Table S10). Specific fields for calls included social insurance data (Finland), patient-user research (Denmark and UK), nursing (Denmark), primary care (UK), screening (The Netherlands), health technology assessment (UK, including health promotion) and research for management (UK).

Four countries had research calls related to research methods (Supplementary Table S11): in Belgium (French community), it was to improve death certification; in France, it was to develop cohort studies; The Netherlands call was for methods for (cost-) effectiveness, prevention, implementation research and evidence in public health; and the UK call included research on study design, evidence reviews, health outcomes and methods for complex interventions. Two calls were classified on an approach by target group: research on ageing and on youth (Supplementary Table S12).

Funding and regulations

The survey attempted to record the funding of the research programmes. The total amount reported for a programme or call ranged from €136 000 to €101 million, and for each project from €3000 to €21 million. However, these sums could be assigned to projects from 10 months up to 10 years duration, and many calls or programmes included research fields for which the public health funding was not separately identified. In practice, therefore, it

proved impossible to make even a pragmatic estimate of spending on public health research from the data currently available.

Across data for 32 programmes/calls, the nationality of the research team had to be national in 19 calls, and could involve foreigners in 13 calls (for other calls, unstated). When further explanation was provided, this included the following: (i) foreigners from EU countries with no further explanation (three calls, one country); (ii) foreigners could be involved if initiative, coordination or collaboration was from a national team (three calls, one country); (iii) international teams are allowed but only the national part will be financed by the call/programme (one call, one country); (iv) allowed if no national expertise is available (two calls, one country); (v) if working in the country (one call).

Some further information was provided for 12 countries about public health research, considered outside the direct scope of the study, but included for broader interest (Supplementary Table S13). These reports do not, of course, exclude similar findings existing in other countries. Some were programmes or calls on public health research outside the time range established for this research (opened in 2010), or without information available on dates, and some were for broader mechanisms where public health research could be eligible, for example, calls on 'health' or 'medical sciences'.

Discussion

PHIRE found 75 programmes and calls across the field of public health research open in 2010 within 25 European countries. In a majority of EU countries, at least one programme or call for public health research was present. A range of themes, diseases and behaviours was addressed across the categories of health determinants, health protection, health services, as well as methodologies including epidemiology, interventions and social sciences. Information was gained for 25 of 30 European countries, and relevant programmes and calls were identified in 16 of these. There was inevitably some under-reporting, partly because countries have different forms of publication and sources of funding, and similar enquiries have not previously been made. Moreover, public health research may be included within broader 'health' research programmes and calls, and less visible than clinical and biomedical research.

Programmes in most countries were funded by the national research councils, but in the two countries with more calls reported, France and the UK, these were strengthened and widened by the health services (or health insurers) and independent foundations. Where calls focused directly on public health research, they did not usually indicate a research discipline, although sometimes specifying epidemiology. Overall, most calls were for descriptive studies rather than for interventions that build on links with communities and civil society organizations as well as clinicians and health system managers.

There have been other reports mapping research in health services research,¹⁴ child health¹⁵ and food and health,¹⁶ but no review across public health research itself. Public health is an important responsibility within the EU Treaty,¹⁷ and the focus of actions by the EU Directorate for Health and Consumers. Since public health contributes as much to increasing disability-free lifespan as medical care,¹⁸ and at lower cost,¹⁹ gaining evidence for public health through research is a wise investment for all European countries.

The study described competitive research programmes. Public health research also includes a wider range of studies such as analyses of national statistics, policy and management, evaluations of innovations and social technologies and health determinants such as welfare, food, transport and environment. Equally, biomedicine gains funds for investigator-led research (also called 'discovery' or 'frontier' research) in life sciences. In the coming EU Horizon 2020 programme,²⁰ for example, there will be substantially increased funding for the European Research Council separately from the

programmes and calls of Societal Challenges, including health research.

This study identified research programmes and calls mainly in the 15 'older' EU member states. Respondents to the survey from several of the new EU member states described existing national research programmes overall, but said that these did not practically extend to public health research. Similarly, European Structural Funds have been directed to research, but only in limited form to public health research.²¹

Assessment by national respondents is a source of variability for our findings. We sought to limit this by a uniform recording schedule, but countries differ in the information available and source of programmes. Our findings support earlier evidence²² of higher per capita research rates in the Nordic countries and the UK, and lower publication rates—except for environmental health research—in eastern European countries. Priorities for public health research between countries have also been reported: a survey of opinions in national public health associations²³ gave greatest priority to health promotion and health policy research; and lack of social and policy sciences has also been demonstrated in the wider field of food and health research.

There is as yet no uniform taxonomy for public health research. The European Medical Research Council has adopted the Health Research Classification System²⁴ to cover the 'full spectrum of biomedical and health research—from basic to applied—across all areas of health and disease'. The 21 'health' categories are the traditional 'systems' in medicine (blood, cancer, cardiovascular, congenital disorders in alphabetic order), and only Category 20 'Generic Health Relevance' includes both 'public health research, epidemiology and health services research and underpinning biological, psychosocial, economic or methodological studies that are not specific to individual diseases or conditions'. But the classification offers some other entry points for public health research topics, such as 'tobacco', 'research design' and 'policy'. Analysis by 'code groups', which include 'prevention' and 'health services', presented as a 'kite diagram', has been used in making the case for more health research.²⁵

There is a major difficulty of bringing European data together. Only in France, the national research organization Inserm has a unit (IRESP) that collects public health research calls from both public and sectors.²⁶ Estonia and Slovenia each keep all their funded research on a single searchable database,^{27,28} while some other countries have semi-searchable databases. The EU's own system works at the level of programmes, but not realistically for public health keywords. There is an issue of scale (small countries identify projects, while large countries report programmes), and complexity—as more multi-disciplinary research makes it harder to track the public health elements.

In some countries in our study, the respondent stated that there was no public health research programme or call opened in 2010 – but there could have been research calls in another year. For other countries, respondents indicated it was impossible to find calls specifically for public health research, either within the large areas of calls (e.g. Poland) or in the narrower investigator-led calls (e.g. Slovakia). A third possibility was support from sources other than the state—external funds, European (e.g. Structural Funds). The reporting needed to separate public health research programmes from funding for public health practice and actions.

Perhaps most importantly, research programmes and calls are only a relatively small proportion of the total investment in research. Most countries give direct financial support to institutions, with research programmes specified less clearly than in a competition, and fund buildings and staff at junior and senior levels. The cross-over with the educational sector is potentially fruitful—research is increasingly located in multidisciplinary universities rather than single-discipline institutes—but makes funding and governance harder to identify.

The study found a range of national public health research, but little European coordination. Although some Ministries of Health (e.g. Germany, Ireland, Sweden, UK) were direct funders of programmes and calls for public health research, the majority leave research to the Ministries of Science. No ERA-NET or Joint Programming has been created for public health research, nor have Research Infrastructures been developed for public health. Similarly, the European Commission's Directorate for Research maintains no information on research by member states, or bilateral collaboration. In Brussels, the national officials representing research and health sit at different committees. And the European Parliament's Committee is for 'Industry, Research and Energy'—maintaining the position of physical sciences and commerce over social sciences and public not-for-profit research.

One further concern for public health research is to develop studies of economic dimensions. Biomedical research gains support from the pharmaceuticals industries, which then becomes a charge on health care expenditures. Public health research must present the case that evidence for practice across health promotion, health determinants, health services and health care systems research is equally good value-for-money. Research for practice is needed as much for public health as for clinical medicine.

Conclusions

While public health research was identified in a majority of the EU countries, there is much room to raise the range of themes and to increase comparisons. Public health research, linking social sciences with medicine, should be a significant part of national health research agendas. These competitive programmes and calls should balance calls in biomedicine, complement university and institute directly funded research, and be responsive to the needs and priorities of the health system.

Supplementary Data

Supplementary data are available at *EURPUB* online.

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