The NIHR public health research programme: developing evidence for public health decision-makers

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Introduction

In 2008, the National Institute for Health Research (NIHR) set up a new Public Health Research (PHR) programme. This aims to provide ‘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’.¹ It has a budget of £10 m per annum. It will fund high-quality research to answer questions that matter to people in public health. The approaches will include both evidence synthesis and primary research. The primary research designs will be rigorous but not limited to randomized controlled trials (RCTs) and the programme is particularly interested in evaluating natural experiments. It works in both commissioned and researcher-led modes and its detailed plans are set out on the NIHR² and the programme’s own websites.¹

This paper describes some of the strategic and scientific challenges the PHR programme will have to address, and considers how it can contribute to developing evidence that is useful to public health decision-makers and practitioners. It illustrates these challenges with reference to a specific example of the National Institute for Health and Clinical Excellence (NICE) public health guidance—‘Interventions in schools to prevent and reduce alcohol use among children and young people’ (referred to hereafter as ‘alcohol and schools’).³

The need for public health research

The UK has international strengths in epidemiological research but it has not traditionally been as strong in intervention research.⁴ The 2004 Wanless report on public health⁵ commented that ‘the major constraint to further progress on the implementation of public health interventions is the weakness of the evidence base regarding their effectiveness and cost-effectiveness across the majority of risk factors’, a sentiment echoed by other strategic documents.⁶–⁸

Since NICE took on the role of developing public health guidance in 2005, there has been an additional national focus on using evidence to support decision-making. This has highlighted a number of problems: the general dearth of robust evidence on effectiveness and cost-effectiveness mentioned above; the difficulties of applying to the UK evidence generated elsewhere; the challenges of adapting evidence paradigms from clinical medicine to public health; and the difficulties of translating research evidence into practice and across sectors. These challenges are well illustrated by NICE’s public health guidance on alcohol and schools. Most of the research evidence identified was generated in the USA, where culture tends to promote abstinence rather than the ‘safe and sensible’ approach favoured at the time by the UK Government. The evidence reviews emphasized relatively small standalone interventions because they could be evaluated using traditional designs such as an RCT, and there was little research evidence on wider activities such as whole school approaches. A cost-effectiveness approach based on NICE’s usual cost per quality-adjusted life year (QALY) seemed unlikely to be persuasive when costs would be incurred by one public sector (education) and benefits realized by others (health and criminal justice). Finally, there was little detail, even for ‘proven’ effective interventions, on how inequalities in alcohol-related harm could be reduced.
Strategic challenges for the PHR programme

The PHR programme must, of course, be set in the context of other research initiatives relevant to public health, and complement them. There is a great deal going on, both internationally (outside the scope of this paper) and within the UK, where recent developments include the National Prevention Research Initiative\(^9\) and the establishment in 2008 of the UK Clinical Research Collaboration Centres for Public Health Excellence.\(^10\) A major step for the NHS in England was the publication in 2006 of the government health research strategy Best Research for Best Health,\(^11\) which led to the setting up of the NIHR.

NIHR contributes to PHR mainly through its NETS (NIHR Evaluation, Trials and Studies) programmes. In addition to the PHR programme, NETS also commissions public health research through its Health Technology Assessment (HTA) programme. This programme, which was started in 1993, evaluates the ‘costs, effectiveness and broader impact of healthcare technologies’. Of the programme’s first 400 projects, about 15% were to do with public health, most related to screening. In 2005, the programme established a Disease Prevention Panel, with a remit to fund research ‘into the value of health technologies designed to promote health, prevent disease and reduce health inequalities’.

By focusing on interventions outside the NHS, the PHR programme complements the HTA programme’s portfolio of public health research within the NHS. Thus the ‘non-NHS’ tag of the PHR programme enhances rather than limits funding opportunities. Furthermore, the programmes will work together, such as in the 2009 obesity themed call (http://www.netsec.ac.uk/obesity). This is seeking proposals that evaluate interventions to prevent or treat obesity or overweight, whether those are delivered by the NHS or outside the NHS.

The PHR programme also needs to relate to OSCHR, the Office for the Strategic Coordination of Health Research,\(^12\) set up following the 2006 Cooksey review.\(^13\) This is the main mechanism for taking a strategic view of all publicly funded health research, and public health is likely to be one of OSCHR’s main areas of activity.

Having the user of research as the customer is central to the purpose of all NIHR programmes. But this is easier said than done in public health. If our aim is that all public health decisions should be based on sound evidence as to their likely consequences, then this means that the PHR programme, like other NIHR programmes, needs to engage with public health decision-makers. But these people are scattered (national, regional, local); they often do not recognize themselves as decision-makers for public health; and they may neither have much tradition of, nor opportunity for, incorporating evidence into their decision-making processes.

Patients and the public are at the heart of Best Research for Best Health but turning the principle of public involvement in research commissioning in PHR raises practical issues. For example, what are the best ways of engaging the public at different stages of the programme’s work: advising on priorities, refereeing proposals, being part of research teams, making outputs useful? Which members of the public should be sought: people who are representative in demographic terms or who are interested or who have specific expertise or who work to support the public? And crucially, are members of the public willing to give their time and expertise to the programme?

Scientific challenges for the PHR programme

A central scientific challenge is the scale of the problem. There are huge gaps in the evidence for prevention for nearly all of the big public health issues, such as obesity or substance misuse. Even in smoking cessation, where there is a large evidence base, we know little about how to tackle inequalities in smoking behaviour. Furthermore, whilst there is widespread acknowledgement of the aetiological role of the wider determinants of health, we have little information on how interventions in these wider determinants, for example changing public transport or improving housing conditions, influence health outcomes and inequalities in health outcomes.

For example, NICE guidance on alcohol and schools identified five major evidence gaps (research recommendations).\(^3\) These included investigating prevention of inequalities in alcohol use and testing whether school-based interventions might actually lead to some children and young people starting to drink alcohol. They also addressed organizational issues to do with applying interventions in the UK school settings and integrating them with other activities to promote children’s health and reduce substance misuse more generally.

A second challenge is the relatively small capacity of the traditional public health academic community: what is needed is much greater engagement from other academic communities as well. For example, for school-based interventions to prevent and reduce alcohol use, those whose research interventions in schools need to engage in public health, and there needs to be research involving the police, parents and children and young people themselves. Economic considerations also need to be an integral part of
any research approach, including consideration of economic paradigms other than cost-effectiveness and a long-term perspective that includes costs averted in sectors other than health. And researchers need to work with those who fund, organize and work in schools as well as with students and parents.

Third, it is clear that most public health problems require complex solutions. For example, school-based interventions to prevent and reduce alcohol use can only be one component of the public health action to tackle underage and harmful drinking, and also need to be integrated into other health promoting activities in schools and with the core business of education (which may itself influence drinking). Thus research on school-based interventions should, ideally, test the effectiveness of different combinations of approaches across this whole spectrum of activity. However, such complex research is relatively rare, reflecting the need for methodological development, lack of funding and a small research cadre with skills in complex evaluation. Regular, sustained funding such as is now established in the PHR programme should help to encourage evaluations of complex interventions. The Methodology Research Programme is the funding mechanism under OSCHR for substantive methodological research projects. However, ‘embedded methodological research’ relevant to public health evaluations will be promoted within intervention studies funded under the PHR. These will include feasibility and pilot studies of interventions, an essential feature for public health intervention development.

Finally, there is the challenge to know what works, for whom, in what circumstances. Few intervention studies are big enough to assess effectiveness in sub-groups, nor is sufficient attention paid to ensuring that data on different groups are collected in ways that will allow later collation. NIHR programmes have championed evidence synthesis but its potential in public health (for example, to bring together evidence on tackling inequalities in health) is still under-developed. But the scientific challenge goes beyond issues of statistical power. Some groups of people with high levels of need are rarely included in research studies. For example, in NICE’s review on alcohol and schools, there was no specific research information on looked after children and some of the research evidence that existed, for example on school interventions with a family component, could not be applied to them.

Conclusions

The new PHR programme has many challenges to address. However, it extends current opportunities to invest in public health research. A consistent funding stream that focuses on an area of need—information on non-NHS interventions—should facilitate not only an increase in the evidence base in areas such as complex or ‘upstream’ interventions, but also methodological development, improved research capacity and better translation of research into practice.

To succeed, this new programme will need active engagement of everyone involved in public health—decision-makers, practitioners, academics, educators and the public—often working together. The programme has made a promising start, with an established advisory board of public health stakeholders, a research funding board of active public health academics, developing programmes of identification and prioritization of topics needing research, and public involvement. Calls for proposals are issued every 4 months. For more information and to find out how you can contribute or apply to the programme please visit www.phr.nihr.ac.uk

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References


