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Towards a new model of evidence for public health

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Abstract

Background We are faced with a growing crisis of non-communicable diseases driven by factors such as unhealthy diets, physical inactivity, tobacco use, and alcohol consumption, compounded by major inequalities in health. Over recent decades, biomedical research methods have helped to answer many important questions about treatment and prevention, but the kinds of tools that can tell us which intervention to choose over another are not invariably the most appropriate to address complex challenges such as designing healthier cities, or creating healthier, more sustainable food systems. The aim of this project was to identify the main obstacles to obtaining valid and appropriate evidence to guide public health decision making, and propose a set of solutions to address these problems.

Methods We conducted a series of case studies to illustrate some of the problems with the current dominance of the biomedical approach to the generation and use of evidence for complex public health problems, including an analysis of the types of projects funded by the National Institute for Health (NIHR) Public Health Research (PHR) Programme since 2009. We held a workshop on Sept 12–13, 2016, for several internationally recognised experts on complex systems approaches to public health evidence to produce a consensus statement.

Findings The NIHR case study showed that funding from the PHR Programme has predominantly gone to the evaluation of downstream, individual-level interventions, with only a small proportion devoted to assessment of upstream policy actions (>75% of the 110 funded proposals examined downstream or midstream interventions). The key conclusions from the meeting are that current approaches to research and policy in major public health problems such as obesity have reached an impasse. Breaking this impasse will require a move beyond linear models of cause and effect to embrace complex systems approaches to both the generation and use of evidence. Achieving a solution will require many changes, ranging from strategic shifts in the way research is funded to new conceptual models for tackling public health problems at system level.

Interpretation There is a pressing need to change the focus of research and action to tackle complex public health problems. Research funding must address the challenges of evaluating not only complex interventions, but also simple interventions within complex systems. The tools required to do this are still in the early stages of development, but we need to rebalance our approach to public health research to encompass complex systems science and methods in addition to more traditional

biomedical approaches. The expert group will publish its views in a consensus paper towards the end of 2016.

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Contributors

HR developed the original ideas underpinning this work. Both authors have contributed to their subsequent development, and the research for the case studies.

Declaration of interests

We declare no competing interests.