COMMENTARY

Frequently Asked Questions About Population Health Intervention Research

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ABSTRACT

Population health intervention research requires stronger definition. There are overlaps and differences between it and established domains such as evaluation, health impact assessment, knowledge translation, health services research, and social and public policy analysis. The value added of this growing field is its potential to draw more resources as well as diverse expertise, methods and ways of knowing under one umbrella at a critical time in history. That is, at a time when actions to reduce health inequities have become paramount.

Key words: Population health; intervention research; evaluation

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Population health intervention research (PHIR) was developed to redress a particular trajectory. Researchers and policy-makers were accumulating more knowledge about population health problems than population health solutions.[1-8] A similar imbalance had been observed in the United Kingdom.[9] The World Health Organization's Commission on the Social Determinants of Health also makes a strong case for more intervention-based research to assist policy-makers to redress health inequities.[10]

PHIR has flourished in Canada, guided by a unique collaboration of researchers, policy-makers and funding agencies known as PHIRIC (Population Health Intervention Research Initiative for Canada). This initiative has overseen major training investments, new funding streams, workshops and symposia.[11,12] It has also encouraged methodological debates[13-15] and sparked the redevelopment of peer review guidelines. PHIR is a priority area of the Canadian Institutes of Health Research-Institute of Population and Public Health.[4]

The field building has occurred while the definition of PHIR has still been evolving. Definitions enable forward movement through the power of language and organized thought.[16] We now offer the results of conversations that have been occurring across Canada about what PHIR is, what it is not and why this matters. The material has been derived from website-based consultations, symposia and ideas developed by the Communications Working Group of PHIRIC.

What is a population?

Lots of people. In a population health context, the interest is in the insights obtained from a population that we would not get from studying individuals (or say, organs or genes). Adding extra units often changes the nature of any entity; for example, when two people changes to group, or when group changes to community, or when community changes to society. The theoretical perspectives informing the analysis may make corresponding shifts in scale from intrapsychic to social or political.

Interventions that are examined in PHIR may function within many kinds of boundaries – cities, communities, schools, organizations, countries, regions, villages, neighbourhoods, societies or across the globe. Health inequities are generated (and possibly generated in different ways) right across this spectrum.

The definition of "population" contrasts with definitions of "community", which emphasize a shared characteristic, value or location.[17] Many interventions with a community perspective are created or co-created by communities to reflect particular values, needs and interests as part of a broader process of empowerment.[18] This harnesses and builds on the shared phenomena in some way. Community interventions are part of PHIR, but they are distinguished by these special dynamics.

What is population health intervention research?

Population health intervention research is the use of scientific methods to produce knowledge about policy, programs and events that have the potential to impact health at the population level.

The interventions may be: deliberative efforts to improve health in a variety of sectors (e.g., health, education, taxation, housing); investigations of the health "side effects" of actions in these sec-

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tors that are designed for another primary purpose; or investigations of the health consequences of natural phenomena, such as earthquakes.

What is meant by impact at the population level?
In its simplest form, many use the term population health intervention when they refer to policies and programs having an impact on lots of people, rather than on one person or a few. Examples might include: new childhood vaccines; new taxes on tobacco; changes in workplace design; new screening methods in disease prevention. Reducing health risk among lots of people at once is such a contrast to the one-to-one administering of a clinical intervention, that many people call this population-level impact.

However, use of the term "population" from the field of population health in the definition of PHIR is intended to highlight interventions that change the underlying socio-cultural and environmental conditions of risk[19] and reduce health inequities.[20] Insights about health that come from the study of populations are different from insights that come from the study of individuals. This is because some phenomena that affect health only exist at the population level – such as contagion, hierarchy, clustering, and distribution, along with concepts like collective socialization[21] and structuration.[22] So "impact at the population level," instead of simply being about reaching lots of people, should be about recognizing and harnessing this population dynamic and changing it so that health inequities are addressed. It is this second interpretation that PHIR was principally designed to meet.[4]

In addition, to be truly effective, a population health intervention would reduce risk exposure in successive cohorts of people within the setting(s) under investigation. That invites a different type of intervention than one that is only dealing with the people currently experiencing the problem and trying to reach or help each one of them, one at a time.

Does this mean that some studies that are currently thought of as health promotion research, program evaluation, policy research, health impact assessment and health services research are included in PHIR?
Yes. PHIR is an umbrella concept designed to grow the collective field as a whole and particularly to extend to and to privilege investigations that are examining the policies and programs and events that affect "upstream" determinants of health. This would include actions that distribute resources, such as education and income taxation policies.

So PHIR can be about interventions operating both inside and outside the health sector?
Yes.

What about interventions that impact on a lot of sick people, like a new drug or technology – is that PHIR?
No. Such research is well catered for by the definitions of clinical research and health services research.

For an intervention within the domain of health services to be investigated as a population health intervention, one would have to be able to argue that the impact is truly at a population level. This might be the case in some universal health services.

There is always going to be some overlap between PHIR and certain aspects of health services research. The ambiguity will be useful to the extent that some settings and services take more of a focus at a population level. PHIR, however, privileges a primary prevention perspective. So lots of very good treatments with a large impact still do not change the number of people who get sick in the first place or the health inequity in how that sickness is distributed.

Why is PHIR coming into prominence now?
This is because too much emphasis in public and population health research was being placed on increasingly fine analytic descriptions of increasingly sick populations. There needed to be stronger emphasis on primary prevention and solutions to the problem of health inequities. PHIR is a pragmatic move to build a unifying field among an array of disciplines and fields and draw strength from that.

It also seemed that some population and public health investigators were in danger of losing sight of the fact that a person's socio-economic status or position is the outcome of policies and programs designed by societies. Whole generations of researchers had simply come to think of socio-economic status as an independent variable. The policies, programs and events that generate and distribute socio-economic position and other determinants of health in the population are interventions. The PHIR terminology recognizes and targets the human decision, choice and power behind the policy and program making that result in some people being poor and others not. Interrogation of these policies and programs will involve insights and skill sets from areas of education, humanities and health as well as the social sciences, where policy analysis has been the focus of study for a long time.

Does the focus of PHIR have to be on the effects of the intervention for it to be considered intervention research?
No. Intervention research is about all parts of the process of designing and testing solutions to problems and getting solutions into place – *or any one piece of this*. It can involve process evaluation of interventions (assessing reach, implementation, satisfaction of participants, quality). It can involve assessment of the contribution of the socio-cultural and political context and how interventions adjust to different contexts. It extends to the mechanisms of interventions and assessment of how interventions are sustained over time or become embedded in organizations and societies. It also includes scale-up research, i.e., understanding how interventions are spread to new sites or taken up differently by different groups.

That said, a lot more research on the effects of interventions is needed, and more particularly, whether effects are differential.

So PHIR and evaluation cover the same territory in many respects?
Yes.

Is there any advantage in having a new or separate term from evaluation?
We do not want people to stop using the term "evaluation". It is already a strong field and profession. The advantage of using the term "intervention research" (and PHIR when referring to population health interventions) is simply that it extends to the research activities involved in intervention design and development as well.

This avoids the (often incorrect) connotation that evaluation is necessarily passive, external and after the event. Plus, it is a term that may entice more resources and more researchers into the field, researchers who currently (erroneously) do not see evaluation as a form of research.

Is there any disadvantage to having a new term like PHIR?
Yes. The development of a new field and terminology can be fractious, particularly if some stakeholders feel undervalued. Also, the word "research" may be awkward for some agencies whose remit is not research. So the word "evaluation" is likely to be retained.

Does PHIR have to be any particular type of method or design?
No. The method of PHIR might be experimental, quasi experimental, observational, participatory, qualitative or quantitative, or mixed methods. Data sources might be primary or secondary. Time frames might be prospective or retrospective. An entire PHIR study might involve mathematical modelling or the development of new theories or methods. Appropriate PHIR study design and methods all depend on the question being addressed and the maximum amount of rigour one can get into the study design given the circumstances and available resources.

Is needs assessment PHIR?
No. Studies that generate lists of a population's health problems or resource deficits are not PHIR. Even if this activity involves surveying people about what services or programs they would prefer, it is not PHIR. It may lead to or inform future PHIR, because it may lead to intervention(s). But one does not necessarily follow the other.

However, when people are involved in the early stages of a research process that shapes and designs a particular intervention, then this is part of PHIR. This is known as *formative research*. It is included in PHIR because that process has become part of the intervention already and may be part of the reason for its effect. Community-based participatory research practitioners would find it hard to separate the consultation processes from the design and evaluation processes. So the whole package would go under the PHIR umbrella.

These distinctions have been designed to distinguish PHIR from work done routinely to map and track epidemiological profiles of populations or to describe the in-depth experience of health problems or conditions in particular groups. This work is valuable, but it does not directly refine or test solutions.

What is the difference between PHIR and knowledge translation (KT)?
The design of interventions involves translating *some* pre-existing knowledge into action, so to that extent PHIR involves KT. But testing the reach, effect or other aspects of an intervention *makes new discoveries* as well. So PHIR is primarily classified as research. This distinction justifies keeping PHIR and KT separate. This is also important because 1) KT involves other processes, such as synthesis and dissemination (and PHIR may not); and 2) KT can refer to types of knowledge from all kinds of research (e.g., laboratory-based research), not just population health and not just PHIR. The distinct features of PHIR that create opportunities and challenges for KT and for KT research have been reported elsewhere.[23]

Who does PHIR?
Anyone asking PHIR questions – researchers in universities; practitioners and policy-makers in government departments; policy analysts in the non-governmental sector; communities driving inquiry processes of their own – although in this case the term community-based action research more closely captures the dynamic.

Who should fund PHIR?
Research funding agencies. Organizations designing and delivering interventions that impact on the health of the population. A lot of current PHIR work is embedded in ongoing planning and policy processes. It could benefit from being recognized and possibly renewed/developed. Are the methods appropriate? Are all the full benefits and costs being detected? Are effects being distributed equitably? Are enough resources going into the research to fully meet the knowledge needs? How are the results being disseminated and used? What is the public accountability for the policy and program impacts? What existing or new data systems could be constructed and harnessed to allow ongoing review of the reach, quality, impact and equity of policies and programs?

Is PHIR a new "paradigm"?
No. Not in the sense that the word "paradigm" is intended, i.e., to mean a giant shift in thinking.

A lot of what is being placed under the umbrella of PHIR has existed before. However, the establishment of PHIRIC and the alignment it is achieving will give the field unprecedented profile and a new lease on life. There is a sense of excitement and new territory because the development of PHIR as a field is an opportunity to incorporate new disciplines, perspectives and partnerships within and outside the health sector that may change the way we think about and research complex change processes in populations, drawing, for example, on newer developments in implementation science and systems science.

Should PHIR replace other terms?
Not necessarily. There are deep advantages to retaining phraseologies and meanings that are close to the cultural and practice frameworks of many current groups and sectors. Program evaluation and community-based participatory research are examples of this. But there is an advantage to growing the use of the term and the thinking it represents. PHIR endeavours to create a wide constituency, to pool insights and to improve contributions to population health by cross-learning. This is unlikely to happen if a shared platform – or umbrella – is not embraced.

Why has this set of questions on PHIR been put together now?
National and international collaborations would benefit from common understandings. The establishment of new funding streams in PHIR has meant that peer reviewers have had to critique PHIR research grant proposals and assess candidates for new PHIR training schemes. They have needed guidance on the topics that should be given priority under the PHIR definition. The main point here is that the definition of PHIR is broad and inclusive, but it privileges investigations of interventions that have the potential to change the underlying reasons for the distribution of health risk and to reduce health inequities.

We invite feedback and comment at ipph-ispp@uottawa.ca.

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RÉSUMÉ

La recherche interventionnelle en santé des populations doit être plus étroitement définie. Il y a des chevauchements et des différences entre ce type de recherche et les domaines bien établis comme l'évaluation, l'évaluation des incidences sur la santé, l'application des connaissances, la recherche sur les services de santé et l'analyse des politiques sociales et publiques. La valeur ajoutée de ce domaine en pleine croissance est qu'il a le potentiel d'attirer davantage de ressources, ainsi que divers savoirs, méthodes et modes d'acquisition des connaissances sous un même toit à un moment critique de l'histoire, alors que les interventions visant à réduire les iniquités en santé deviennent primordiales.

Mots clés : santé des populations; recherche d'intervention; évaluation