

CIHR Institute of Population and Public Health (IPPH)

Symposium on Accelerating Population Health Intervention Research to Promote Health and Health Equity

Summary Report

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Introduction

Population health intervention research (PHIR) uses scientific methods to produce knowledge about policy and program interventions that have the potential to affect health at the population level. Evidence from PHIR influences decision making and is vital to addressing the population health problems facing nations today.

A funders' forum held in Toronto in 2009 identified a number of structural impediments to conducting and using PHIR—including a lack of diverse funding mechanisms, infrastructure, incentives and drivers, and a forum for generating “big picture” questions.

Funders raised a number of key challenges to PHIR, including the number of players needed to achieve success, the difficulty of translating routinely collected data into strong causal stories, challenges related to scaling-up interventions and replicating them from one context to another, and the tendency for some interventions to amplify health disparities.

To address these issues and help stimulate the quality, quantity, and use of PHIR, the Canadian Institutes of Health Research–Institute of Population and Public Health (CIHR-IPPH) and the Population Health Intervention Research Initiative for Canada (PHIRIC) held an inaugural symposium on PHIR—entitled *Accelerating Population Health Intervention Research to Promote Health Equity*—in Toronto on November 29 and 30, 2010.

More than 130 researchers, decision-makers, and other experts in the field from Canada, the United States, the United Kingdom, France, Portugal, and Australia attended the symposium, which was sponsored by the CIHR-IPPH, the Public Health Agency of Canada (PHAC), and the CIHR Institute of Nutrition, Metabolism, and Diabetes.

Objectives

- to identify issues relevant to advancing the science of PHIR;
- to identify emergent PHIR priorities and related data infrastructure requirements; and
- to showcase PHIR examples from Canada and other countries.

Processes and Methods

The symposium took a three-pronged approach to discussing current issues, challenges, and opportunities related to PHIR:

1. a series of expert presentations designed to illustrate different perspectives of PHIR;
2. an interactive poster session showcasing examples of PHIR from Canada and other countries; and,
3. frequent opportunities for comment and discussion, both in plenary and small groups.

Presentations

There are a number of significant barriers to PHIR: it is not popular with researchers; it is methodologically challenging; it is regarded as “evidence-based” and “biomedical” and the idea of a hierarchy of evidence is widely misunderstood; it is often considered politically unacceptable or unhelpful; and there is no guarantee that the findings will be used.

Dr. Mark Petticrew, London School of Hygiene and Tropical Medicine

Health Equity Matters: How Equity and Interventions Collide

Dr. Nancy Edwards, CIHR-IPPH

Existing population health interventions are not necessarily the right ones and may not be reaching the right populations because of the many contextual influences at play. Pervasive and structurally embedded, these influences include historical contexts that have produced ongoing health inequities, global contextual forces, and socio-political structures.

Three distinct prongs of PHIR must be pursued to address these and other issues:

1. discovery research
2. impact research
3. implementation research.

Driving Agendas in Support of PHIR: Lessons Learned from Canada, the US, and the UK

Dr. Eduardo Simoes, Prevention Research Centers Program, US Centers for Disease Control

The Prevention Research Centers Program has been in place for 26 years and involves nearly 40 American universities with preventive medicine residency programs. Over this time, the program budget—which awards funding to the Centers for core research, pilot projects, infrastructure, and community engagement activities focused on building capacity for prevention research, nurturing research diversity, and conducting intervention research—has increased from \$1.5 million to about \$41 million per year. In an effort to share information on best practices related to PHIR, the US Centers for Disease Control has evaluated a number of interventions to date and posted the 20 “most promising” (based on such criteria as acceptability, effectiveness, feasibility, and sustainability) on its website at www.cdc.gov.

Dr. Peter Craig, UK Medical Research Council’s Population Health Sciences Research Network (PHSRN)

The Population Health Sciences Research Network comprises 13 research centres that promote methodological knowledge transfer and the identification, refinement, and dissemination of best practices in population health sciences. One of its current projects is focused on developing guidance on the use of natural experiments in evaluating population health interventions. Natural experiments are used for a variety of reasons, including to identify causes of disease or changes in population health and to evaluate the impacts of public health and non-health interventions. Essential to their usefulness is the application of methods to eliminate potential bias.

Natural experiments work best when the following criteria apply:

- the size or nature of the intervention's effects are uncertain;
- it is impractical, unethical, or politically unwelcome to introduce the intervention as an experiment;
- relevant data are obtainable from an appropriate study population; and
- the intervention or its principles have potential for replication, scalability, or generalizability.

Driving Social Change in the Face of Imperfect Evidence: Health Equity and PHIR

Dr. Margaret Whitehead, University of Liverpool

Concerted action is needed to tackle health inequities in European countries by evaluating and monitoring both wider population-level policies that influence social determinants of health and deliberate strategies and interventions aimed at tackling the determinants of health inequities. The availability of evidence, however, tends to vary inversely with the potential impact of an intervention. Remedying this requires conceptual and methodological development to assess the differential impact of population-wide policies; advocacy among researchers and research funders to support the most appropriate approaches; and the fostering of research-policy links to test and apply approaches to real-life policy changes of concern.

Several international studies have shown that universal policies can have a significant beneficial impact on poorer socioeconomic groups; however, more effort must be put into determining exactly who benefits, who pays, and the impacts on the most vulnerable. There is a need to look for evidence in different places and through different disciplinary lenses, using a range of methods; capture policy context and underpinning values when assessing population-wide and focused interventions; apply cross-country learning in evaluating natural policy experiments; and track the differential impacts of policies and interventions.

Shifting Gears: From Demonstration to Scale-Up

Dr. Jim Dunn, McMaster University

Powerful evidence has come out of natural experiments on interventions affecting population health. A few examples include income supplements from a new casino reducing formerly higher rates of certain psychiatric disorders among previously poor children, folic acid supplementation in foods reducing the rate of neural tube defects in babies, and indoor smoking bans reducing children's hospital admissions for asthma. The longitudinal aspects of natural experiments help to control for confounders, eliminate causal uncertainty, increase the ability to detect small changes, and improve understanding of the time it takes for change to occur and how long it lasts.

Several natural experiments are currently underway to look at the link between housing and health in Canada, one of them focused on the 10-year, \$1-billion Regent Park housing redevelopment in downtown Toronto. The study will look at the impact of moving from temporary housing into the first phase of the development on the mental and physical health of adults and children and the behavioral and developmental competencies of children. The first of its kind in Canada, it will help inform future redevelopment efforts across the country and in other parts of the world.

Dr. Geoffrey Fong, University of Waterloo

Tobacco use is a global problem, with 1.1-1.3 billion smokers worldwide. More than 80 percent live in low- or middle-income countries, and about 500 million will die of smoking-related diseases (with numbers expected to increase dramatically in the future). The WHO Framework Convention on Tobacco Control, the first-ever health treaty, was unanimously adopted in 2003 to address the problem. More than 170 countries are now Parties to the Convention, which obligates them to implement policies ranging from graphic health warnings and bans on advertising to smoke-free laws and higher tobacco taxation.

The International Tobacco Control Policy Evaluation Project (ITC Project) was launched in 2002 to evaluate how and why these policies are working across 20 countries (including Canada) that represent over 70 percent of the world's tobacco users. Among other things, ITC cohort surveys have provided evidence of the need to revise Canada's labeling efforts and to strengthen policies in China, which is home to 30 percent of the world's smokers. Data inform and support a variety of policy decisions related to global tobacco control, with future objectives to expand coverage of the existing survey, increase knowledge exchange, and apply the same paradigm in other population-health domains (e.g., obesity).

Ms. Marie DesMeules, Public Health Agency of Canada

PHAC funds both internal and external public health promotion and prevention programs across Canada and recognizes the need to enhance outcome evaluation, shift to larger initiatives to test interventions in a variety of settings and populations, and facilitate the link between research and practice. Equity (both health equity and equity across social determinants of health) is a core principle of PHAC's Innovation Strategy, which focuses on long-term funding for key public health issues, the high-quality evaluation and synthesis of results, and fostering innovative interventions with strong potential. Research priorities include exploring and strengthening key implementation issues, systematic analyses of the costs and cost-effectiveness of interventions, and assessment of the health outcomes of non-health interventions and the non-health outcomes of health-related interventions.

Where Two Roads Meet: Community-Based Participatory Research and PHIR

Dr. Chris Lalonde, University of Victoria

A study of the "epidemic" of suicide in Aboriginal communities in British Columbia has revealed tremendous variability in suicide rates among sites. Community-based participatory research projects undertaken to examine the impacts of various culture-continuity factors (e.g., self-government, land claims, education, health/emergency services, elder/youth interaction, women in government, cultural facilities) showed that communities with a greater cumulative number of any combination of these factors had lower suicide rates. In fact, those with six or more factors had no suicides at all. Establishing good practice as well as good guidelines for practice is vital in engaging Aboriginal communities in research of this kind.

Dr. Sarah Flicker, York University, and Ms. Nyla Obaid, Toronto Teen Survey Advisory Committee

The Toronto Teen Survey is one example of community-based participatory research. The key to its success was the meaningful engagement of youth in the research process “every step of the way” and on their own turf through proactive outreach that utilized social media, community organizations, and youth centres. Significant academic, policy, and media outcomes have resulted from the project, which also involved partnerships with the Ontario Ministry of Education, Toronto Public Health, Planned Parenthood, and others to ensure that its results had an impact on both policy and practice. The process was of value to both the quality of the research and those involved, who cited such personal and professional benefits as lasting relationships with those involved and a better understanding of the impact of research in the real world.

Paving the Way: Built Environment and Health Equity

Dr. Mark Petticrew, London School of Hygiene and Tropical Medicine

A systematic review undertaken to identify interventions to promote a “modal shift” in transportation choices (e.g., from driving to walking or cycling) showed that targeted behavior change could be effective, while financial and engineering measures had no significant effect. In examining evidence from the various studies involved in the review (e.g., randomized control trials [RCTs], case studies, and different types of surveys), several conclusions were reached. One was that RCTs tended to assess the impact of individual-level interventions and non-RCTs the impact of area-level interventions. Therefore, synthesizing experimental evidence alone would have biased the review. Another conclusion was that evaluations of social determinants of health inequalities were often non-experimental because interventions were upstream and area-level.

Dr. Lise Gauvin, Université de Montréal

A research project was undertaken to examine the impacts of BIXI, a public bicycle-share program that involves the seasonal installation of some 4500 bicycles at 450 docking stations in Montréal. While approximately 72 percent of Montréalers knew about the program by the end of its first season, exposure was greater among those living near stations and those with higher education and income. The complexity of the intervention and joint effects of exposure and social inequalities are such that further analyses are needed to understand impacts on travel patterns, risk of injury, and public opinion about sustainable development. The methodology has evolved to include the addition of several measures on favourability to government changes in the neighbourhood environment (e.g., parking taxes), the use of helmets, and BIXI’s perceived impact on Montreal’s image.

Ms. Tina Atva, Vancouver-area planner

Urban planning and public health have a shared connection to the built environment and often overlapping mandates related to creating healthy environments and a better quality of life. Planners can benefit from public health research that is focused on elements of the built environment, and a number of good toolkits and guidebooks have been created by the health sector in recent years for use by planners. The more user-friendly these guidebooks are and the more graphics they contain, the more likely they are to be read. Health researchers are encouraged to engage a diversity of city-building

professions and decision makers (e.g., engineers, architects, planners) in their research, participate in planning conferences, submit articles to planning journals, and link with planners on an individual basis—as many are looking to work with researchers on planning projects.

Who's Left at the Side of the Road? Income Interventions and Inequalities

Dr. Evelyn Forget, University of Manitoba

MINCOME, a social experiment conducted in the 1970s, looked to alleviate poverty by providing residents of Dauphin, Manitoba, with a guaranteed level of income. Using health administration data and a retrospective, quasi-experimental design, a research project was launched to determine the impacts of the community-wide intervention. Results showed that hospitalizations for accidents, injuries, and mental health issues, along with physician contact for mental health complaints declined over the course of the experiment relative to a matched comparison group. In addition, more adolescents involved in the experiment stayed on to complete high school—resulting in a variety of other social benefits (including health benefits) that would last not only a lifetime but also into subsequent generations. The experiment also had a significant impact on Dauphin women: their fertility rates decreased; they had their first child later in life; and they had fewer children over their lifetime.

Dr. Tim Aubry, University of Ottawa

Reports suggest that there are between 150,000 and 300,000 homeless people in Canada. Serious mental illness, substance abuse, and suicidal behaviours are more common among the homeless than the general population, and many experiencing homelessness are marginalized or isolated from society. At Home/Chez Soi, which was launched in 2008 and is being funded over five years, is a demonstration project that supports research and services for mental health and homelessness in five major Canadian cities. A research project has been launched to study the impacts of the intervention, with a particular focus on addiction in Vancouver, Aboriginal health in Winnipeg, ethnocultural groups in Toronto, housing in Montreal, and rural areas in Moncton.

Mr. Jean-Pierre Voyer, Social Research and Demonstration Corporation

Governments and community organizations can collaborate to address poverty and income inequality issues. For example, high unemployment in the Cape Breton Regional Municipality of Nova Scotia provided the rationale for the Community Employment Innovation Project (CEIP), an active re-employment strategy that took the form of a “community wage” for unemployed individuals who volunteered to work on locally developed community-based projects. A project evaluation showed that the CEIP resulted in a sustained reduction in the percentage of households with incomes below 75 percent of the low-income cut-off (from 63.8% to 49.1%) and increased employment levels. There was an observed improvement in job quality, with a 10 percent increase in participants in high skill-level positions. While the social resources developed over the course of the program diminished after it ended, a cost-benefit analysis showed that the program resulted in \$1.39 in net benefits per dollar spent on income-assistance recipients.

Poster Session

The IPPH, in partnership with the CIHR-Institute of Nutrition, Metabolism, and Diabetes, hosted an interactive poster session to showcase PHIR examples from Canada and other countries. The session covered a broad range of topics focused on the effects of such population-level initiatives on different aspects of physical and mental health. Examples included the impacts of physical activity on adolescent smoking cessation, home visits on new mothers, walkable neighbourhoods, school nutrition programs, subsidized housing, and community approaches for homeless adults with concurrent disorders.

Discussion

The final session at the symposium involved question and answer and table discussions to address how researchers, knowledge users, and research funders can collectively help advance PHIR, the infrastructure needed to support PHIR, and the needs of research users. These discussions yielded a number of suggestions, which are summarized under key headings.

Collaboration

- Involve knowledge users (e.g., policy makers, politicians, community members, private sector, disadvantaged or marginalized groups) from the outset. Others who should be at the table include health economists, political scientists, peer reviewers, and journal editors.
- Interpret findings collaboratively.
- Establish guiding principles for community/citizen engagement and document how input is utilized and the outcomes of collaborations.
- Build trust and strengthen relationships with other groups.
- Develop links to the business community and enlist it in promoting research.

Priority Setting

- Identify research priorities that bridge the gap between the needs identified by researchers and communities. Set priorities based on sustainable issues.
- Create a conceptual framework for setting goals and priorities for PHIR that is forward-thinking.
- Take into consideration the potential magnitude of the impact of interventions when prioritizing their evaluation.

Research Design

- Consider every kind of research design when moving from efficacy to translation (e.g., RCTs, natural experiments, quasi-experiments).
- Conduct more research on social norms and how they can be changed.
- Develop a methodological approach that accepts a range of intended and unintended health and non-health outcomes.
- Conduct more longitudinal analyses.
- Develop common measures and indicators, so outcomes can be compared.
- Collect and analyze data in such a way that results can also be analyzed by sex and gender.
- Consider social justice as a principle of PHIR.

- Study the higher and middle end of socio-economic status as well as the lower end.
- Randomize the lagged implementation of policies to provide comparison groups.
- Conduct research to provide some answers quickly while stressing the need for investment in longer term research.

Knowledge Translation

- Conduct research on how policy-makers take up research and effective strategies for encouraging this.
- Produce and translate knowledge/evidence so decision-makers and members of the public can relate to and act on it.
- Take advantage of opportunities to bring research to the fore at resonating moments.
- Conduct more research on values to achieve buy-in for policy options.
- Engage in more robust analysis to promote an all-of-government approach and identify optimum policy linkages.
- Create a systematic description of the ingredients of “scaling-up”.
- Do away with the term “intervention” because it has a negative connotation
- Improve understanding of actionable evidence.
- Do more public relations work around achievements in public health.
- Build knowledge translation into research.
- Use innovative communication vehicles (e.g., breakfast on the Hill).
- Create easily accessible, user-friendly health databases.
- Develop innovative ways to communicate information to the public
- Develop and convey powerful, evidence-based stories to influence policy-makers and media messaging—taking into consideration the importance of cost drivers to decision-makers

Funding

- Provide long-term funding to support all aspects of PHIR (e.g., data collection, development of databases and websites, collaboration and engagement with community, knowledge exchange, communication, and to promote teamwork and collaboration).
- Promote applications for operating grants.

Data

- Work with regional, national, and international partners to establish surveillance networks and multi-level databases.
- Create accessible repositories of information/evidence from research findings for decision makers and communities.
- Bring back the census long form as a source of information.

Capacity Building

- Train other disciplines in public health.
- Provide greater incentives for academics to participate in PHIR, work on multi-disciplinary teams, and conduct applied research.

