Stimulating Methodological and Theoretical Innovation in Population Health Intervention Research

Workshop Report

Toronto ON
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We gratefully acknowledge the contributions of all IPPH staff.
Introduction

Overview

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, Accelerating Population Health Intervention Research to Promote Health Equity, in Toronto on November 29 and 30, 2010.

The Symposium raised a number of methodological issues related to population health intervention research (PHIR), including the advantages and disadvantages of different study designs. In order to delve more fully into these issues and help foster advances in theories and methods related to PHIR, the CIHR-IPPH and PHIRIC hosted a workshop immediately following the symposium.

Approximately 60 researchers from Canada, the United States, the United Kingdom, France, and Australia met in Toronto on December 1, 2010, for the event, entitled Stimulating Methodological and Theoretical Innovation in Population Health Intervention Research.

Participants were encouraged to come to an understanding of the range and mix of methods needed to address important questions and to contribute to the development of a consensus statement on the meaning of PHIR.

The workshop was organized with the guidance of an expert Planning Committee and sponsored by the CIHR-IPPH, the Public Health Agency of Canada (PHAC), and the CIHR Institute of Nutrition, Metabolism, and Diabetes.

It had two main objectives:

- to create a forum to contrast, debate, and discuss the different theoretical and methodological underpinnings of PHIR in order to advance the science of population health interventions; and,
• to identify priority areas for theoretical and methodological development in PHIR.

This report contains highlights of the discussions that took place during the workshop as well as brief summaries of the presentations—the full PowerPoint versions of which are available on the IPPH website.

**Welcoming Remarks**

Dr. Nancy Edwards, Scientific Director of IPPH, welcomed participants and told them she was looking forward to the opportunity to have a more fulsome discussion about some of the methodological issues raised at the PHIR symposium earlier in the week. She noted that one of IPPH’s strategic research priorities was to stimulate advances in theories and methods related to PHIR, as they not only underlaid all work in the area but also influenced how quickly the field could advance. She said that innovations in the field were needed because existing paradigms for the study of population health interventions were being reshaped and shifted. She expressed her intention to bring forward some of the priority ideas raised during the workshop’s discussions.

**Session 1: Evaluating the Effectiveness of Population Health Interventions**

The workshop was organized into three sessions, each of which focused on a different aspect of PHIR and specific questions for consideration. Each session was led by a chair, whose role was to ensure that the discussion flowed, stayed on topic and time, and allowed an equal, meaningful, and respectful exchange of ideas and opinions. Expert presenters opened the sessions by framing some of the methodological and theoretical challenges researchers faced in assessing the impact of population health interventions. Discussants then responded to the presentations with their own complementary and contrasting perspectives and identified key issues to stimulate the ensuing discussion.

**Opening Remarks**
Applied Public Health Chair, Dr. Alan Shiell, of the University of Calgary, chaired the first session of the workshop on *Evaluating the Effectiveness of Population Health Interventions*. Two key questions were addressed in the session:

- Is it possible to retain the benefits of randomization and yet allow interventions to be adapted to a local context? If so, how do we maintain and assess fidelity?
- How do we generalize from intensive case studies?

Dr. Shiell noted that past analyses of peer review processes had found that, while certain review panels focused on the track record of the lead investigator and the feasibility of research, population and public health peer reviewers tended to get bogged down in one another’s methods. He stressed the need to move beyond this and come to an understanding of the range and mix of research methods needed to address important questions.

Dr. Shiell explained that one of the workshop’s objectives was to develop a clear consensus statement on the meaning of PHIR. He added that explaining to peer review panels the plurality of methods would result in more successful applications. Workshop discussions, he said, were to focus on methods, and participants were encouraged to offer constructive comments on both their own ideas and those of others in order to create a forum in which people thought, argued, debated, and left themselves open to a change of mind.

**Presentations**

Presenter Dr. Michael Oakes, of the University of Minnesota, stressed the importance of exercising caution in evaluating the effectiveness of group interventions. He cited one benefit of randomization being the production of exchangeable counterfactual substitutes—which facilitated the identification of intervention effects if the sample size was sufficiently large. In PHIR, he said, more emphasis needed to be placed on ruling out competing hypotheses through well-executed experiments and case studies. He explained that there were three elements to effect identification: positivity (probability of exposure), exchangeability, and consistency (similar treatment across subjects).
Dr. Oakes aimed to be provocative and said that the gold standard for population health interventions (PHIs) was randomized group or community trials (i.e., that exploited intact social groups). He noted, however, that they could be expensive and difficult to manage and replicate. While it was beneficial to tailor interventions to local groups, “perfect tailoring” meant there was no replication, while “no tailoring” meant that the intervention was possibly inappropriate for some communities.

Case studies are the foundation for the way we think about most things, yet they are vastly underutilized in PHIR.

With regard to generalizing from intensive case studies, Dr. Oakes said case studies were the foundation of most thinking, yet they were vastly underutilized in PHIR. He expressed the need for more well-researched and well-documented case studies, noting that critical thinking and the marshalling of evidence to draw credible inference was essential but often overlooked in the age of regression modelling. Rather than regard generalizability as the “average effect”, he recommended thinking of it in terms of replication and transferring an intervention that worked in one place to another. He closed by saying that care should be taken in generalizing from case studies and that knowing and incorporating local details was essential to success.

Discussant Louise Potvin, of the University of Montréal, proposed that randomized control trials (in the form of cluster-randomized trials) were not a proper gold standard for population health interventions. She said that randomization was an imperfect approximation of an experimental counterfactual that required assumptions, and that the constant effect assumption it required could not be met. She explained the fundamental problem of causal inference, noting that causality was impossible to directly observe due to differences in potential effects resulting from exposure to particular causes (i.e., interpreting a main effect in the presence of an interaction effect). Rather, causality was inferred based on scientific work or statistical theory.

The effective component of an intervention is located in the interaction with contextual characteristics.
Dr. Potvin maintained that the effective component of an intervention is located in the interaction with contextual characteristics (the context of both practice and intervention) and that the phenomenology of interventions and their effects varied across units in a population of clusters. Locally, she said, the proper counterfactual for causal inference was a long series of pre-intervention observations. She concluded that much larger collections of interventions and intervention studies were needed to develop theories and methods for a proper science of population health interventions.

References

- Murray, David M. Design and analysis of group-randomized trials: Volume 29; Volume 1998. 467 pages

Discussion Synthesis

The plenary discussion that followed the presentations was intended to raise methodological conundrums. Discussion points have been synthesized under key themes.

**RCTs**

- Only three of 37 randomized control trials (RCTs) have shown benefit in HIV prevention, yet the epidemic is being controlled in many parts of the world. So some interventions are working but cannot be evaluated. Insufficient effort has gone into finding out if competing hypotheses could explain outcomes. Greater consideration of proof of concept and a better understanding *a priori* are needed to show causal pathways.
• With regard to the use of cluster RCTs in public health, the capability may not exist to link context to outcomes; however, the RCT enables the examination of a dose-effect approach. There are ways to reconcile generalizability with selectivity and other control and bias issues if we go beyond a dialectic approach.

• Analyzing data from an RCT normally involves subtracting intercorrelation effects, yet that is the very thing we are trying to study. Every design has flaws.

• RCTs are useful for structural interventions; for agentic interventions, where social theory comes into play, an understanding of why people are changing or not is required.

Other Methodologies

• There is a wide range of study methods available for PHIR, many of which are underutilized or have failed simply because they were not appropriate to the situation or the mindset for using them was not there.

• In parallel with developing new theories and methods, there is a need to redefine innovation and challenge existing values.

• Interventions that aim to prompt interaction effects should be examined more closely, because feedback has to be amplified to change a complex system and see how it reorganizes. Methods interrogation will lead to re-theorizing about the interventions themselves.

• There will never be consensus on the gold standard. When the choice is made to conduct a certain kind of survey or study, it is due to things like personal preferences, context, funding opportunities, and the research question itself.

• If the question is about whether an intervention can work, experiments are usually more useful; if it is about whether it does work, that is usually easier to determine through observation. If there is significant pre-intervention information, very robust measures are possible.

• If a process can be adapted across contexts and there is good measurement and knowledge of its key processes and active ingredients, it may be replicable even if it looks different in different contexts. This highlights the importance of multi-method intervention studies.

• Old paradigms have widely accepted methods, questions, and entities; new ones introduce new ways to think about problems. Recent work on the use of models
to define what would happen in the absence of treatment and replicate what we see in the real world has led to multiple new methods (e.g., systems testing and design, qualitative efforts). Setting boundaries around what defines optimal PHIR locks research into quantitative methods and randomized trials.

- Because population health interventions are often events in a system, part of the researcher’s work is to unpack the actual results of the intervention and how it is transformed in the system. Using this kind of orientation, it is possible to come up with a list of competing hypotheses; the question is finding appropriate methods to prioritize or dismiss them.

- A variety of designs have been used to test programs for teen smoking cessation in the US. An early study that used a matched control design resulted in no baseline differences, few drop-outs, tight matches, and no clustering issues. A recent, five-year randomized group trial had almost the opposite result and was a much bigger struggle.

- Even though a great deal of capability exists through the use of statistical software and modeling, no model can begin to comprehend the complexity of a group of people because so many contextual factors cannot be controlled for (e.g., social, emotional, cultural, historical). Not being able to control for uncertainty or fully understand interactions without a similar case study and mixed methods is why many effective interventions, when implemented elsewhere, do not work or are not sustainable. Other methods, especially natural experiments combined with strong, qualitative case studies, are much better for PHIR.

- From a systems perspective, multi-level interventions start at the highest level (shifts in paradigm) and include goals within a system, structural elements, feedback, and the reorganization inspired by that feedback.

- Interventions should be thought of more broadly as levers for change in a population. Feedback from surveys and dialogue with different groups will help shift the mindset at the level of paradigms.

**Interactions**

- There is interaction between treatment and context; the question is how idiosyncratic the context is.
• Causal effect over heterogeneous units is still of interest to policy makers (e.g., reducing the number of deaths caused by air bags).
• There will always be people in the population who will be worse off as the result of a policy than they were beforehand. It is an additional research agenda to figure out who they are and to try and buffer them from adverse effects. Even no policy is a policy.
• The distribution of those adverse effects is systemic, not random.
• Something that increases well-being overall is very different from dealing with something that could kill people, as the latter requires a much higher bar of evidence. It depends on the values of the policy maker, and most would want to know how many people would be worse off as a result of their policy.

Session 2: Health Equity Considerations in PHIR

Opening Remarks

Dr. Jeannie Shoveller, Applied Public Health Chair at the University of British Columbia and co-chair of PHIRIC, chaired the second session on Health Equity Considerations in PHIR. There were two key questions addressed in the session:

• How can health equity considerations be embedded in our research designs to study population health interventions?
• What theoretical and methodological developments are needed to generate the required empirical evidence about how population health interventions effectively reduce inequities?

Presentations

Presenter Dr. Margaret Whitehead, of the University of Liverpool, discussed current thinking around measuring and monitoring reductions in health inequities. She explained that Europe was in a similar situation to Canada with regard to peer review panels and whether they were actually up to the job of assessing the breadth of PHIR. She said the European Union issued a research call in July 2010 for the development of
methodologies to reduce inequities in determinants of health that covered many of the same themes raised at the PHIR symposium; however, the question remained what traditional clinical reviewers would do with the proposals.

**Three main approaches to reducing inequities are to improve the health of the most disadvantaged, narrow the health divide, and reduce the social gradient in health throughout the population.**

Dr. Whitehead explained that Hilary Graham categorized three main approaches to reducing inequities: improving the health of the most disadvantaged, narrowing the health divide, and reducing the social gradient in health throughout the population. Each had distinct implications for monitoring and different underlying concepts. She said that national and regional strategies in Britain tended to focus on the first two approaches and rarely targeted the wider social gradient—tending, instead, to drift downstream toward individual lifestyle interventions and away from upstream approaches on wider social determinants. This reduced the potential effectiveness of the strategies.

Dr. Whitehead noted the difficulty of explaining the difference between relative and absolute reductions in inequalities to politicians and the public, saying that she believed that both kinds of information were important to policy making. For example, England, at the end of the 1990s, set 10-year targets to reduce gaps in infant mortality and life expectancy in disadvantaged groups compared to the rest of the population. While there were absolute reductions in infant mortality and increases in life expectancy in all groups over that time, the gap between the disadvantaged and the population as a whole widened in relative terms.

**In England, while there have been absolute reductions in infant mortality and increases in life expectancy in all groups in recent years, the gap between the disadvantaged and the population as a whole has been widening in relative terms.**

She closed by explaining the technical, conceptual, and strategic issues involved in measuring and monitoring health inequalities strategies and advocating for increased
visibility of health inequities and differential impacts of policies; the intelligent application of targets and performance indicators; goals that level up and not down; the use of logic models for strategies; and realistic timescales for achieving targets.

Discussant Dr. Jason Robert, of Arizona State University, spoke about the way evidence and values played into the policy process. He argued that public and population health research was fundamentally an exercise in uncertainty that faced the dual challenge of incomplete knowledge and dynamic populations. He said that it did not matter if data and evidence were perfect if people did not care (e.g., about health inequities). Rittel and Webber claimed that all policy and planning work involved “wicked” problems and that there were many possibilities for uncertainty (e.g., goals, means, systemic, values, morals) that did not usually fall at either end of the spectrum. Technocratic solutions were not sufficient, said Dr. Robert, because mere evidence that health inequities existed did not say anything about them. Achieving outcomes required more than new evidence because if and when science came into play it did so alongside other values and factors in the decision-making context.

Advocacy and lobbying are needed to influence policies and achieve public health action—and while such action should be informed by evidence, decisions depend on prevailing values and priorities.

In Canada, detailed descriptions of patterns of inequality or disparity in health had led to an ethical imperative to address them, yet there were people who regarded such efforts as above and beyond their responsibility, misguided, wasteful, or otherwise. The question, said Dr. Robert, was what a morally appropriate response would be to that description of patterns. He cited the World Health Organization Commission on social determinants of health report, which showed dramatic differences in life expectancy both within and between countries—the implied judgement being that social injustice was killing people and had to be addressed. Yet, he said, not everybody saw social justice in the same way. An article by Rychetnik, Hawe, and colleagues in the Journal of Epidemiology and Community Health also suggested that advocacy and lobbying were needed to influence policies and achieve public health action—and that while such action should be informed by evidence, decisions depended on prevailing values and priorities. The question, he said, was how to influence people to motivate interventions
when, in a pluralistic democracy, there might be few or no universally shared ethical values. The Frameworks Institute (www.frameworksinstitute.org), which worked to change the public conversation about social problems, suggested the need to frame things differently (e.g., by using fairness to advance healthcare reform in the US context)—in particular, to frame fairness in terms of disparities between places rather than people. Dr. Robert closed by noting that such skeptical challenges demanded collaborative and sustained efforts in the area of empirical assessment and normative and political work.

Discussion Synthesis

An active dialogue was facilitated and helped to identify priority areas for advancing theoretical and methodological capacities, in particular, advances pertaining to ethical considerations. Discussion points have been synthesized under key themes.

Values in Decision Making

- Instead of asking people’s opinions on slogans about equity, which are manufactured by those who would benefit from a policy going a certain direction, it is better to ask them about their values, as they are more likely to endorse equity from that perspective.
- Distribution of health is a reflection of our collective living arrangement. As public health researchers, our role is to highlight the consequences of our choices and how they affect our lives. Whether one takes a utilitarian perspective to increase overall health or an equitable perspective that health be redistributed more equitably, it is all a question of values.
- Sometimes we are successful in communicating the importance of a problem in a way that gets people doing the right things for the wrong reasons (e.g., pity or misplaced compassion rather than values anchored in social justice). We have to ask if we are prepared to accept this, because if we are it will affect the way in which we communicate messages.
- Equity discussions have focused mainly on reducing disparities among the most disadvantaged. More attention needs to be paid to asking what we are doing to
ourselves collectively, the kind of society we want to live in, and how much we would pay to reduce inequities and feel safe in our homes, etc.

- We live in a diverse society, so talking about what “we” collectively know or value is impossible when “we” are different classes with different interests.
- Evidence does not necessarily give rise to solutions. People do not dispute the fact that they want to live in an egalitarian society, but they oppose the means of achieving it (e.g., needle swap programs to reduce HIV rates).
- People are more concerned about their community if it affects their well being.

**Relative and Absolute Risk**

- With regard to relative and absolute measures, if we think about both groups moving in parallel toward lower risk but growing apart a bit in the process, most people would regard that as a positive outcome. What matters are absolute differences.
- We need to do away with the concept of relative risk, because the better things get, the worse they look—until there is an infinite gap. We need to start a dialogue on real rates and trends of real rates and potentially talk about risk differences as more correct visually than relative risk. The book *Nudge* has some interesting observations on social distribution and encouraging people to make the right/easy choice in Libertarian society.
- In reflecting on how we measure inequities (absolute or relative), it is important not to get too hung up on goal setting, which is really about what *more* to do once you reach an objective. Stratification means more effort may be needed to achieve the same target in different sub-groups.
- There is very little fluidity through the social stratification index, which is essentially a “marching column”. So why would we expect much different in the health realm?

**Methodological Issues**

- Some epidemiologists think we are advocating massive epidemiological malpractice as we dredge for all these interaction effects. One solution is to
ensure that potential effects within sub-groups (e.g., sex, place, ethnicity) are pre-specified and theoretically driven.

• Social inequality is rooted in an epidemiologic tradition that tries not to incorporate judgments and values into conclusions, but the measurement of equality or inequality does not indicate if a policy is good or bad. The only way to go beyond a distributive approach is to advocate not only to incorporate normative dimensions but also other ways of thinking informed by other disciplines in our approach to conceptualizing inequalities, because they are needed to build evidence. As long as we stop at the stage of identifying the gap, we cannot address the issue of evidence in terms of equity.

• Research is focused on the environment and things we can measure at that level or on individual-level behaviours. If we thought of more complex, location-based variables (e.g., relational ones), it would be more helpful.

• At what point should we be bringing in community members to help us define research priorities and answer questions about the most appropriate unit of randomization or the most meaningful cluster to look at, and what inequity means to them? Everyone here is either a researcher or an agency representative, so that voice is missing and needs to be brought in.

• It would be good to develop some ideas about how to encourage epidemiologists to build in health equity considerations into their work.

• We need to distinguish between maximizing health and economic advancement and put more thought into how each affect the other.

**Priority Setting**

• Canada has not done a good job of explicitly incorporating the notion of policy, program, and funding implications of population-attributable risk or global burden of disease into prioritizing PHIR—yet that will have a major impact on how global health dollars are spent and which interventions are implemented. We need to engage in a more fulsome way in this discussion and embed notions of equity as explicit measures in terms of priority setting.

• As we try to be more explicit about equitability we risk the reverse concern of policy-makers looking at all these holes and saying there is not sufficient evidence to fund them. Being thoughtful up front about what is being examined
can highlight important areas, steer attention away from those where there is a
dearth of information, and help prevent funding from being misdirected.

Health Inequity Issues

- It would help for us to stop talking about social determinants of health and talk
  instead about social determinants of health inequities (e.g., inequitable access to
good education and what can be done at different levels based on sex, race, etc.).
- PROGRESS and PROGRESSPLUS identify some 300+ different categories of
  equity, which is a lot to juggle into a cost-effectiveness framework.
- If we start specifying or singling out sub-areas of deprivation, we may forget that
  some people experience oppression at multiple levels.
- There are many interventions that improve health but are expensive. So where
do we set the boundary between improving health and improving health equity?
  Which ones do we discard because they increase health inequities? Do we need *a
  priori* hypotheses about universal programs (e.g., immunization) through which
  we might inadvertently create inequities?
- It is great that very successful interventions have benefitted some of us (e.g.,
  smokers who wanted to quit) but they have had little impact on those who are
  not ready to quit or who live in circumstances that do not enable them to quit.

Dr. Robert summed up by noting that it was not sufficient to ask people what they
thought; they also needed to be asked *why* they thought that way and perhaps why to
consider thinking another way. He said people with vested interests and perspectives to
share had to be brought to the table to create a deliberative space in which they could
say what they thought and felt and also “be pushed a bit”. He recognized the
importance of comments about drawing on other literature (e.g., Kelly Murphy’s project
on knowledge exchange and power) to inform discussions and the importance of
probing people’s values more deeply in order to understand and affect what they
actually believe. He closed by saying there was a lot of work to be done but also many
reasons to be hopeful.

*It is not sufficient to ask people what they think; they also need to be asked why
they think that way and perhaps why they should consider thinking another way.*
In her closing comments, Dr. Whitehead cautioned that the perceived shift from diseases of poverty to diseases of affluence was misleading, because so-called diseases of affluence also had a higher prevalence among poor people—who still bore an unequal burden of disease globally. She noted that nobody was advocating to increase death rates in one group (leveling down) in order to reduce inequalities—an argument she called a “straw man” put forth by economists. She stressed that in public health there were two concurrent objectives: to improve overall population health and to reduce inequalities in health by leveling up. With regard to equity vs. efficiency, she called efficiency a means to an end rather than an end in itself—stressing that the actual goal was to reach equitable objectives in the most efficient way possible. While she believed in aspirational targets, she noted that initiatives to reach them at all costs could have distorting effects and divert efforts away from what was actually trying to be achieved.

There are two concurrent objectives in public health: to improve overall population health and to reduce inequalities in health by leveling up.

References

Session 3: Perspectives from Research Funders

Response Panel Presentations

Dr. Mark Petticrew (London School of Hygiene and Tropical Medicine) offered remarks prepared by Dr. Peter Craig (MRC-UK); Dr. Eduardo Simoes (US CDC); Dr. John McCallum (NHMRC, Australia); and Dr. Jean-Baptiste Herbet (Institut national du cancer, France)

Dr. Shawna Mercer, of the US Centers for Disease Control (CDC), chaired the response panel session on Perspectives from Research Funders. Members of the panel provided their perspectives on three key questions:

- Based on what you heard today, which research areas does your organization see itself supporting to further methodological and theoretical underpinnings in population health intervention research? What makes these research areas more compelling priorities?
- How might we best encourage international collaborations to advance such novel developments in PHIR?
- Where do you see the field of PHIR five years from now?

Dr. Herbet explained that France was a newcomer to this area of research, having issued its first call for applications in PHIR on cancer prevention last summer, which resulted in eight submissions and three pre-selected projects on letter of intent. Efforts were being carried out under a comprehensive government action plan focused on three main areas, one of which was to reduce inequalities in health (social inequalities, in particular). France’s national cancer institute, he said, was funded by the national department of health and research, so it was in a good position to provide input to politicians on what worked and what did not. Dr. Herbet said the symposium and workshop were a step toward promoting international collaboration in such areas as peer review. He hoped that collaboration would make policy makers more aware of what public health researchers around the world were building together and would strengthen links between them and researchers.
Dr. McCallum provided some background on the health and welfare system in Australia, with particular reference to similarities to Canada’s system. He said that epidemiological studies received the largest proportion of funds in that country, and that a new preventive health agency was being established to focus on social and translational research. He noted that Australia was pleased to be involved in Canada’s efforts and wanted to collaborate on large, complex interventions optimizing impacts on a range of structural changes without widening socio-economic gaps (in particular, Aboriginal). He said that Canada, Australia, and New Zealand were already collaborating on public health research and had agreed to expand into the area of peer review, with possible benefits arising from sharing panel members and having common training opportunities. He encouraged further international partnerships in the area of public health research, citing recent multi-national collaborations in the area of the cancer genome and epigenetics as examples of such efforts. He closed by expressing his confidence in seeing a number of advances in the near future, including public health researchers providing training and advice to panelists, chairs, assessors, and reviewers; the bottom moving up into health performance in marginalized groups; and significant findings in epidemiological research being implemented through the sort of work discussed at the workshop.

Dr. Petticrew (speaking on behalf of Dr. Peter Craig), questioned whether new theory and methods were needed for PHIR or if existing ones should simply be put to better use—adding that radical changes were unlikely compared to small refinements made as a result of lessons learned. He suggested that, aside from methodological advances, clear thinking was needed to address complex interventions—and cited Dr. Penny Hawe’s paper *Theorizing Interventions as Events and Systems* as an example of how this kind of thinking had improved their understanding. He encouraged international collaboration as a way forward and called the International Tobacco Control policy a brilliant example and potential model for such efforts. Given differences in contextual constraints, Dr. Petticrew said collaborations should focus on developing common resources to support PHIR, including infrastructure that could be used internationally (e.g., shared datasets). He suggested that developing research priorities systematically using formal evaluation and implementation techniques and comparing the returns from different approaches might also yield interesting results.
Dr. Simoes recapped some of the information from his symposium presentation on the Prevention Research Centres (PRC) program at the CDC—which had distributed about $250 million over five years to 37 universities for investigator-initiated research. He said that the program’s research priorities included health promotion and disease prevention issues; policy and system-wide changes (cultural and political view); and continued funding for evidence-based prevention research. He noted that more than a dozen new and effective interventions had been developed through the PRC program, many of which had been adopted widely in the US. Another focus was stimulating the implementation of natural experiments of policy and environmental changes that, either intentionally or not, affected health outcomes—something, he said, was not always easy because policy makers did not like having their constituencies used as “guinea pigs”.

Five years from today, Dr. Simoes said he envisioned the development of innovative approaches in design and methods to more effectively and efficiently incorporate the complexity of intervention context interaction; the development of new metrics and indicators; and greater collaboration in PHIR implementation involving two or more countries. He noted his intention to follow up on the discussions with workshop participants from other countries.

An opportunity for people’s final thoughts on future directions for PHIR resulted in the following key comments:

- International collaboration is essential. There is a lot to be learned by trying similar things in different environments under controlled conditions.
- Perhaps the innovation we need is to spell out the kinds of considerations or principles that should go into strong PHIR.
- Any kind of natural experiment in which there is an intervention tells you much more theoretically than you can learn from a stable system. Perturbation of the system may tell you more about the causal mechanism.
- If you have a naturally developed intervention and look at it from a different lens provided by two or more distinct observational research methods, each method will try to measure the same phenomenon in a different way. If they all point the same direction in terms of outcome and intervention relationship, that is a strong indication of the possibility of an intervention effect. Also, because each distinct observational research method is individually capturing different aspects of the effect related to both intervention and context, their combined result may be
more externally valid. One possible next step, then, is to look for something more concrete and work backward from observational to more traditional research methods considered more rigorous and internally valid. This extra step “may” increase our understanding of the causal association between intervention and health outcome.

- Researchers can promote support for PHIR by serving on peer review panels, submitting grant applications, conducting high-quality studies and publishing results, and improving their ability to advocate and communicate effectively with decision makers—in particular, telling compelling stories, highlighting different perspectives (e.g., equity, economic lens), and speaking to different audiences is essential.
- The Australian granting process, in which grants are submitted to the peer reviewers for comment, go back to the researcher for a response, and then go to the panel for review, may be the kind of innovation needed here, because it would take pressure off creating the “ideal” review panel.
- In the US, health reform legislation has authorized a clinical prevention task force and a community preventive services task force, which are now required by Congress to report annually on research gaps. As such, a lot of good conceptual thought has gone into how to articulate population and public health and its needs.

References


Wrap-Up and Forward Agenda

Dr. Edwards thanked participants for their enthusiasm and the excitement generated by the discussions that took place. She promised to pursue consideration of the many ideas and suggestions raised and highlighted the collective commitment made to building the field of PHIR within Canada and through international collaborations. She noted that CIHR had discussed building the base of empirical evidence related to peer review, and that the workshop’s outcomes would be brought not only to its attention but also to the
attention of other interested bodies, such as PHIRIC and the Global Alliance on Chronic Disease. She encouraged all population and public health researchers to take advantage of the growing opportunity to work more closely with groups such as the Heart and Stroke Foundation of Canada, who were moving further into this area of research.

In closing, Dr. Edwards called for ongoing discussion about the methods and theories underpinning PHIR, to which Dr. Shiell responded by suggesting a follow-up dialogue in Melbourne, Australia, in 2012. He stressed the need for a consensus statement to validate, value, and legitimize the wide plurality of methods applied to PHIR—and urged further thinking about how to proceed in crafting such a statement.
Appendices

Appendix I: Agenda

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<tr>
<th>TIME</th>
<th>AGENDA ITEM</th>
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<tr>
<td>08:00</td>
<td>Registration and Breakfast  Windsor Ballroom Foyer</td>
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<td>08:45</td>
<td>Welcoming Remarks/Introductions  Windsor Ballroom BC  Dr. Nancy Edwards, Scientific Director, CIHR-Institute of Population and Public Health</td>
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| 09:05  | Session 1  Evaluating the Effectiveness of Population Health Interventions  
**Session Chair:** Dr. Alan Shiell, University of Calgary  
**Presenter:** Dr. Michael Oakes, University of Minnesota  
**Discussant:** Dr. Louise Potvin, University of Montréal |
| 10:00  | Discussion will surface methodological conundrums  (facilitated by Dr. Alan Shiell) |
| 11:50  | Closing Remarks (discussant/presenter) |
| 13:00  | Session 2  Health equity considerations in population health intervention research  Windsor Ballroom BC  
**Session Chair:** Dr. Jeannie Shoveller, University of British Columbia, co-chair PHIRIC  
**Presenter:** Dr. Margaret Whitehead, University of Liverpool |
Discussant: Dr. Jason Robert, Arizona State University

Session 2 Questions
How can health equity considerations be embedded in our research designs to study population health interventions?

What theoretical and methodological developments are needed to generate the required empirical evidence about how population health interventions effectively reduce inequities?

13:30 Session 2 Discussion will begin to identify priority areas for advancing theoretical and methodological capacities, particularly regarding advances pertaining to ethical considerations

13:50 Discussion – All participants
(facilitated by Dr. Jeannie Shoveller)

15:00 Closing Remarks (Discussant / Presenter)

15:30 Session 3
Response Panel: Perspectives from Research Funders Windsor Ballroom BC

Session Chair: Dr. Shawna Mercer, CDC
Panelists: Drs. Peter Craig, UK MRC Population Health Sciences Research Network/ Mark Petticrew, London School of Hygiene & Tropical Medicine, Eduardo Simoes, US CDC, John McCallum, NHMRC (Australia) and Jean-Baptiste Herbet, Institut national du cancer (France)

Session 3 Questions
Based on what you heard today, which research areas does your organization see itself supporting to further methodological and theoretical underpinnings in population health intervention research (PHIR)? What makes these research areas more compelling priorities?

How might we best encourage international collaborations to advance such novel developments in PHIR?
Where do you see the field of PHIR five years from now?

16:15 **Wrap-Up & Forward Agenda:** Drs. Alan Shiell and Nancy Edwards
## Appendix II: List of Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliation</th>
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<tbody>
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Stimulating Methodological and Theoretical Innovation in Population Health
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