

**Perspectives on Funding Support for
Population Health Intervention Research:
Background and Report on Key Informant Interviews**

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Executive summary

The Population Health Intervention Research Initiative for Canada (PHIRIC) is an informal alliance of organizations and individuals from government, academic and non-governmental sectors that aims to increase the quantity, quality and use of population health intervention research in Canada through a strategic and deliberate alignment of initiatives by key organizations responsible for population and public health research, policy and practice.

Population health intervention research is increasingly seen as vital to providing answers about what works and under what circumstances in population and public health. In the face of a growing chronic disease burden and considerable evidence of the power of social and environmental factors to impact health both negatively and positively, this kind of knowledge is crucial to investing resources wisely and nurturing a health-supporting environment in Canada. At the same time, there is currently a lack of capacity and research funding support for generating this kind of evidence, and building a strong population health intervention evidence base in Canada will require the collaboration and creativity of not only researchers, but also research funders, public health organizations, policy makers and others.

On April 23, 2009, PHIRIC is hosting a Funders Forum for health research funders, public health decision makers, and researchers to explore systemic issues relating to improving and aligning support for population health intervention research. In advance of the meeting, this background paper summarizes key challenges, opportunities and funding practices relevant to supporting population health intervention research, based on a review of selected documents and websites, and interviews with 30 key informants including health research funders, public health organization representatives, and population health intervention researchers in Canada and abroad.

Key informant perspectives: defining population health intervention research

In general, key informant participants agreed with PHIRIC's working definition of population health intervention research (PHIR), which is as follows:

“Population health intervention research involves the use of scientific methods to produce knowledge about policy and program interventions that operate within or outside of the health sector and have the potential to impact health at the population level.”

Other terminology that participants used when discussing PHIR included: “public health intervention research”, “mission driven”, “policy relevant”, “impact oriented research”, “research about what works”, and “research to policy and practice.” Some respondents noted that it is useful to have a definition and/or indicated that if this is the formal definition used by PHIRIC and/or the Canadian Institutes of Health Research (CIHR), they would also adopt it.

PHIR funding goals and related activities

All of the key informants' organizations were involved to some degree in funding and/or other activities related to supporting PHIR. This includes funding that is highly targeted to PHIR, such as applied public health research chairs, a strategic research initiative on the built environment, and rapid response funding to support research on "natural experiments", specifically rapidly unfolding programs, events, and/or policy initiatives/changes with the potential to impact population health, healthy living and/or chronic diseases in Canada. Other funding programs highly relevant to PHIR but broader in scope includes infrastructure funding for population health networks, Knowledge to Action Grants, and seed funding open to health services and population health researchers. Funding for public health interventions and community capacity building provided by the Public Health Agency of Canada through programs such as the Innovation Strategy and the Healthy Living Fund are also a highly relevant resource for potential alignment with efforts to build research capacity or conduct PHIR studies.

In addition to providing a variety of funding mechanisms, research funders and other organizations are engaged in related activities that support PHIR (and/or broader areas that are inclusive of PHIR). These include: involvement in PHIRIC; providing researcher workshops; supporting grant writing skill development; promoting the development and use of common measures and evaluation frameworks; outreach to other disciplines (e.g., urban planning, geography, economics) regarding PHIR and funding opportunities; developing/designing policy and program interventions; evaluating and refining PHIR funding support; facilitating linkages between researchers from a variety of disciplines and decision makers to collaborate on activities such as setting research priorities, integrating research into intervention design and implementation, and interpreting and facilitating the application of results; integrating research into other program areas (e.g., health promotion, the education sector, policy development and advocacy); promoting awareness and use of research results; developing program evaluation networks and tools; building community intervention capacity and infrastructure; fostering innovation and collaboration in public/population health interventions; and, identifying and disseminating best practices in population health interventions.

Challenges and opportunities related to PHIR funding

A key message conveyed by both researchers and funders is that PHIR differs significantly from other types of health research, and that there is often a poor fit between PHIR and general health research funding practices, for example – long grant application review timelines versus fleeting opportunities to embed research within emerging policy and program initiatives. PHIR is also seen as an underdeveloped area in terms of funding tools, infrastructure, resource allocation, research capacity, profile, volume of research evidence, and the development of necessary coordination and linkage mechanisms. Additional challenges identified include: peer review issues; a lack of dedicated PHIR funding, and a lack of coordinated intervention funding.

Potential strategies for improving funding support for PHIR include:

- Raising the profile of PHIR by communicating its strengths and increasing understanding of its underlying theories and methodologies.
- Increasing opportunities for knowledge translation and decision maker involvement in research and funding processes.
- Creating alternate funding streams that support both research and intervention development/implementation.
- Creating PHIR-specific funding streams within health research funding portfolios.
- Using funding tools that take into account the unique considerations for effectively supporting PHIR.
- Addressing research capacity issues.
- Improving peer review of PHIR funding applications.
- Innovating, evaluating and evolving tailored funding approaches.

Opportunities to align efforts

Participants were very positive about the benefits of exploring further collaboration and alignment across funding and organizational mandates to better support PHIR and knowledge exchange. For many participants, a key strategy and starting point is to learn more about each others' mandates and activities as they relate to PHIR. Additional areas that present opportunities for alignment include:

- Funding for interventions
- Linking intervention and research funding
- Linking population health intervention researchers and decision makers
- Bringing researchers and decision makers together to develop new PHIR initiatives in high priority substantive/policy/program areas
- Identifying partners outside the health sector
- Raising the profile and increasing understanding of PHIR
- Sharing best practices respecting funding processes
- Creating opportunities for information exchange and forward planning.

Participants also identified a number of relevant funding tools and programs that they considered to be successful or promising approaches to supporting PHIR.

The Funders Forum will provide an opportunity to further explore and add to the issues and opportunities described in the paper. In particular, participants are invited to consider the question of what needs to happen to strengthen and connect PHIR with the programs, policies and issues that can benefit most from evidence based knowledge of “what works” and under what circumstances in improving population health in Canada.

Background

About PHIRIC

The Population Health Intervention Research Initiative for Canada (PHIRIC) is an informal alliance of organizations and individuals from government, academic and non-governmental sectors that aims to increase the quantity, quality and use of population health intervention research in Canada through a strategic and deliberate alignment of initiatives by key organizations responsible for population and public health research, policy and practice¹.

PHIRIC was developed in recognition of the increasing demand for, yet relative lack of, population health “research that goes beyond the mere description of health problems towards the identification of solutions appropriate to different contexts”². This demand for policy- and program- relevant intervention research evidence is fuelled by the need to address complex health and social problems, as well as the need to invest resources wisely and accountably³. While some efforts to support population health intervention research are underway, there are significant capacity gaps and challenges to be overcome, and a greater coordination of efforts is still required to bring about the kinds of systemic changes needed to build the necessary momentum^{4,5}.

Key milestones in PHIRIC’s evolution have been: a national workshop in Banff, Alberta in September 2006 to explore ways to increase capacity for population health intervention research in Canada; the development of a strategic plan; a peer reviewed publication consisting of a set of seven papers about the Initiative in a supplement to the *Canadian Journal of Public Health*; and the creation of several working groups. Through the efforts of the working groups, PHIRIC is developing a communication plan, an evaluation and training framework, peer review guidelines for population health intervention research and strategies to facilitate discussion of potential collaborative population health intervention research funding activities⁶. PHIRIC has also developed the following working definition: “*Population health intervention research involves the use of scientific methods to produce knowledge about policy and program interventions that operate within or outside of the health sector and have the potential to impact health at the population level.*”

Purpose of this background paper

On April 23, 2009, PHIRIC is hosting a Funders Forum in Toronto for health research funders, public health decision makers, and researchers to explore systemic issues related to improving and aligning support for population health intervention research of relevance. The meeting is supported financially by the Public Health Agency of Canada, and is being organized by the Canadian Institutes of Health Research (CIHR) Institute of Population and Public Health (IPPH) (the secretariat for PHIRIC). The purpose of this background paper is to outline some of the key challenges, opportunities and funding practices relevant to supporting population health intervention research as background and for further discussion at this meeting. The time and participation of the key informants who

were interviewed for this paper are gratefully acknowledged, as are the advice and expertise provided by PHIRIC Planning Committee members. The preparation of this background paper has been made possible through the Public Health Agency of Canada's support for the PHIRIC Funders' Forum.

Information sources

The main information source for the development of the paper was a series of key informant interviews with health research funding organizations, public health organizations and population health intervention researchers, many of whom are participating in the Funders Forum. Additional information was gathered from a review of key PHIRIC documents and selected additional documentation, and the websites of various health research funders.

Organization of this report

The remainder of the report outlines the themes emerging from the key informant interviews, conducted with PHIR researchers and funders in Canada and abroad. Appendix A to this report also provides examples of funding tools and approaches to supporting population health intervention research, most of which were identified by key informants as examples of successful or promising approaches.

Key informant perspectives on PHIR funding

Approach to key informant interviews

Key informant interviews were conducted in March 2009, using a semi-structured interview process, developed in consultation with the Funders Forum planning committee. For research funders and other organizations, questions related to:

- how the organization defines PHIR
- its goals, funding tools, collaborations and other activities related to funding PHIR
- successes, challenges and opportunities in PHIR funding support
- examples of best practices in supporting PHIR
- potential strategies for aligning efforts across organizations
- suggested information sources.

For researchers the questions were similar and focused on:

- defining PHIR
- key challenges related to funding support for PHIR
- examples of successful PHIR funding models/practices
- opportunities for improving PHIR funding support
- how funders and other organizations could align their PHIR related efforts
- suggested information sources.

A copy of the interview guides appears in Appendix C.

Interviews were conducted with a total of 30 key informants, with a breakdown by category and location shown in the table below. A list of key informants is provided in Appendix B.

	Funding and other Organizations*		Researchers	
	# Individuals	# Organizations	# Individuals	# Organizations
Canada	17	10*	6	n/a
U.S.	3	3		n/a
UK			3	n/a
Australia			1	n/a
Total	20	13	10	n/a

*Includes 2 public health organizations. Note: CIHR Institutes and Portfolios are counted as one organization.

Defining population health intervention research

In general, participants agreed with PHIRIC’s working definition of population health intervention research (PHIR), which is as follows:

“Population health intervention research involves the use of scientific methods to produce knowledge about policy and program interventions that operate within or outside of the health sector and have the potential to impact health at the population level.”

For some key informants, this definition had particular resonance and is similar to concepts and mission statements that they use in their organization. Some respondents also noted the usefulness of having a definition and/or indicated their willingness to adopt the definition if it has been formalized by PHIRIC and/or CIHR.

Given the recognized importance of social and environmental policies, several participants noted that the reference to “outside the health sector” is particularly useful. However, there were also two comments noting the need to exercise some caution around a focus outside the health sector, due to their organizational mandate.

There were four comments expressing concern that the term “scientific methods” may be interpreted too narrowly, and that “scientific” methods are commonly seen as prioritizing RCTs and excluding or giving low priority to qualitative and social science oriented methodologies. The term “interventions” was seen by some as potentially problematic as well, because it could be seen as including clinical interventions that operate at a population level (such as blood pressure screening). Other participants noted that “intervention” tends to be associated with researcher designed interventions as opposed to community-based interventions and natural experiments.

Participants from outside Canada often noted that they use the term “public health” as opposed to “population health” but that otherwise the definition is consistent with the concepts and terminology they would use to describe this area of research.

Other concepts noted as being relevant to conceptualizing the field of PHIR (some of which were suggested as potential additions/refinements to the definition) included:

- The feasibility of implementing the interventions, i.e., the “potential to impact *as seen by people within the system in a position to implement the interventions*”
- In addition to “production” of knowledge, the “sharing and assisting in the implementation of knowledge”, as well as “synthesizing” and “contextualizing” knowledge
- Community development and partnerships
- Mixed methods
- Focus on equity
- Relevance and impact, i.e., terms such as: “mission driven”, “policy relevant”, “impact oriented research”, “research about what works”, and “research to policy and practice”.

PHIR-related funding goals and activities

All key informants from organizations with a funding role indicated their organizations were involved to some degree in funding and/or other activities related to supporting PHIR. Most of their organizations offer some funding that is highly targeted to PHIR, with some actively seeking to fund more PHIR. Of these organizations, some expressed a near term interest in finding partners to collaboratively fund PHIR projects on topics related to their strategic priorities. Other organizations have highly relevant programs but have not specifically identified increasing PHIR as a specific funding goal. There were also two organizations that indicated they fund PHIR projects, programs or infrastructure but only on the basis of “excellence” within more broadly targeted funding programs. The number of organizations within each category is shown in the table below.

Degree of specificity regarding PHIR funding goals	Organizations*
Organization offers funding that is highly targeted to PHIR	8
PHIR is not treated as a specific funding goal, but is seen as particularly relevant to organizational priorities and certain funding programs and/or activities.	3
Funding is allocated on the basis of ‘excellence’ across all areas – PHIR is not necessarily seen as more relevant than any other area.	2

*This reflects the number of organizations as opposed to number of key informants (for some organizations multiple key informants were interviewed).

The following are examples of initiatives highly targeted to PHIR and its use (some of which are one-time initiatives while others are recurring):

Intervention Research Grant with Rapid Review: Healthy Living and Chronic Disease Prevention, which supports the prompt initiation of intervention and evaluation research on rapidly unfolding programs, events, and/or policy initiatives/changes with the potential to impact healthy living and/or chronic disease prevention at the population level. Led by the CIHR Institute of Nutrition, Metabolism and Diabetes (INMD) and involving several other CIHR institutes and external partners. See Appendix D for examples of projects funded through this initiative.

Request for Applications (RFA) on the Built Environment, Obesity and Health, launched in 2006 to support research on “how the built environment (defined as the outcome of community planning, design and implementation)—in the context of contributing to obesity— is influenced by, and/or impacts on obesity and well-being; policies and standards for community planning, design and implementation; physical activity levels and/or nutrition; social, economic, and policy environment; socioeconomic status, gender, ethnicity and age; individual choices and behaviour.” Led by the Heart and Stroke Foundation of Canada (HSFC) in partnership with six CIHR Institutes.

Applied Public Health Chairs competition (2007), which specifically identified support for “high quality and focused programs of policy and program intervention research of national relevance to public health” as a key objective of the program. Led by CIHR-IPPH and the Public Health Agency of Canada (PHAC) in collaboration with other CIHR institutes, the HSFC, the Centre de recherche pour la prévention de l’obésité, FRSQ and the Québec Ministry of Health and Social Services.

CIHR Centres for Research Development, which are jointly governed by research-users and researchers, with a focus on understanding and addressing the impacts that physical and social environments have on health. The centres are designed to maximize the practical application of research and the development of new policies and programs that will lead to population-health benefits, engage policy makers and community leaders, and build research capacity to better understand and address the impacts of programs and policies that help to improve the quality of physical and social environments. Funded by CIHR-IPPH in partnership with the Canadian Lung Association; Association pulmonaire du Québec; L’Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST), and the CIHR Strategic Initiative in Rural and Northern Health Research.

CPHI Pilot Project in Intervention Research in which previously funded researchers were invited to submit proposals for building on their existing CPHI research by evaluating specific programs and policies.

The Centre for Behavioural Research and Program Evaluation (CBRPE) is funded by the Canadian Cancer Society and is a collaborative enterprise

that integrates research and evaluation with policies and programs to accelerate improvements in the health of the population. To fulfill its mission, CBRPE pursues research and evaluation, provides training and mentoring to build capacity in these areas. Evaluation activities focus on Canadian Cancer Society programs.

Active Living Research (a program of the Robert Wood Johnson Foundation (RWJF)). This program supports research into the environmental and policy influences on active living, and is part of a \$55M suite of linked RWJF programs that work synergistically to generate active living evidence and speed its application in policy and practice. The five other programs in the suite are: *Active for Life Increasing Physical Activity Levels in Adults Age 50 and Older*, which tests evidence-based programs aimed at changing individual behaviour in adults age 50 and older; *Active Living Resource Center*, which supplies information and technical assistance to communities; *Leadership for Healthy Communities: Advancing Policies to Support Healthy Eating and Living* which provides expertise and technical support to government leaders; *Active Living Network*, which supplies information and technical assistance to professionals in non-health fields, and *Active Living by Design*, which funds community partnerships that work upstream, midstream, and downstream to make their towns or cities more activity friendly⁷.

Early assessment of programs and policies on childhood obesity in which the Robert Wood Johnson Foundation (RWJF) has funded a systematic process to pinpoint an intervention/innovation that is appropriate for a full scale, rigorous evaluation, and fund that study. (This is one of the Foundation's many initiatives that is highly targeted to PHIR).

The Prevention Research Centers funded by the Centers for Disease Control (CDC) in the United States work as an interdependent network of community, academic, and public health partners to conduct prevention research and promote the wide use of practices proven to promote good health.

Some funding is highly relevant to but does not prioritize PHIR. Rather, it targets a broader field of research applicants or research activities, such as population health research, integrated knowledge transfer and exchange, or interventions broadly defined. Some examples from the key informant organizations include:

Health of Populations Networks Awards Program (Michael Smith Foundation for Health Research), which provides networking infrastructure funding to eight population-based health research networks in BC. The extent to which PHIR is a focus within the broader category of population health research is determined by the network.

CIHR Knowledge to Action Grants to fund teams of research and knowledge users to apply a body of knowledge in a local context and assess implementation.

Mental Health in the Workplace: Delivering Evidence for Action RFA to support the creation of new or emerging teams of researchers undertaking action-oriented multidisciplinary research in collaboration with workplace stakeholders leading to improved mental health in the workplace.

Heart and Stroke Foundation of Ontario Seed Funding/Pilot Project Grants in health services research, population health research, or ethnocultural/aboriginal research (across pillars).

Other infrastructure and capacity building funding that fits well with PHIR, such as research chairs, team building grants, and salary support that are open to, but that from a funding perspective does not prioritize PHIR research or PHIR capacity building over any other area.

Funding for public health interventions and community capacity building provided by the Public Health Agency of Canada through programs such as the Innovation Strategy and the Healthy Living Fund are also a highly relevant resource for potential alignment with efforts to build research capacity or conduct PHIR studies.

Other funder/organizational activities that support PHIR

In addition to providing a variety of funding mechanisms, funders and other organizations are engaged in other activities that support PHIR (and/or broader areas that are inclusive of PHIR). Examples provided by key informants include:

- Providing researcher and multi-sectoral workshops on PHIR related skills and methodologies, such as an INMD meeting to begin a multi-sectoral discussion on cost-effectiveness analyses for the prevention of obesity, and the 2007 CIHR (IPPH and IHSPR) Summer Institute on population health intervention research (IPPH).
- Supporting grant writing skill development (e.g., through the Heart and Stroke Foundation of Ontario's webinar focused on preparing high quality health services/population health grant applications).
- Promoting the development and use of common measures and evaluation frameworks, for example Active Living Research's promotion of common measures of built environment characteristics related to physical activity.
- Promoting new PHIR-related fields (e.g., built environment and health) across disciplines through presentations, conferences, and workshops.
- Creating databases of policies, programs and interventions.
- Evaluating the success of PHIR-oriented funding programs (e.g., the CTCRI capacity building lessons learned workshop⁸; the six year evaluation of Active Living Research⁹).

- Facilitating linkages between researchers and decision makers, such as:
 - Workshops with researchers and decision makers to develop research priorities and questions, design RFAs, and build a stronger basis for collaboration (e.g., *Addressing Obesity in Canada: A Think Tank on Selected Policy Research Priorities*”, in October 2005 hosted by HSFC, CIHR, CPHI and PHAC).
 - Meetings to explore the implications/applications of research findings on specific topics.
 - Meetings of researchers and policy makers/practitioners to explore integrating PHIR into relevant interventions.
 - Knowledge translation funding and initiatives that treat researchers and decision makers as equal applicants/partners.
- Integrating research into other program areas such as health promotion, education, policy development and advocacy.
- Promoting awareness and use of research results through websites, lay summaries, decision maker oriented briefs and reports, literature reviews and syntheses, e-modules, provision of technical support, etc.
- Developing program evaluation networks and tools (e.g., PHAC Centre of Excellence for Program Evaluation and Design, Project Evaluation and Reporting Tool (PERT), Program Data Collection and Analysis System (PDCAS), and Population Health Evaluators Network (PHEN).
- Building community capacity and infrastructure for interventions, data collection and evaluation.
- Fostering innovation and collaboration in public/population health interventions.
- Identifying and disseminating best practices in population health interventions (e.g., the PHAC Canadian Best Practices Portal for Health Promotion and Chronic Disease Prevention; The RWJF Leadership for Healthy Communities program).
- Participating in PHIRIC — providing in kind resources; involvement in PHIRIC working groups (e.g., PHIR peer review guidelines, PHIRIC evaluation framework, PHIR training strategy development).

Challenges related to PHIR funding

Both researcher and funder/organization key informants were asked to describe key systemic challenges relating to the provision of PHIR funding support. A key message is that PHIR differs significantly from other types of health research, and that there is often a poor fit between PHIR and general health research funding practices. PHIR is also seen as an underdeveloped area, in terms of funding tools, infrastructure, resource allocation, research capacity, profile, output and the development of necessary linkages and mechanisms for coordination and collaboration.

Limited fit with mainstream funding tools and processes

Both funders and researchers noted that open grants competitions (as opposed to targeted or strategic competitions) do not work well for attracting and funding high quality PHIR applications. Some of the characteristics of PHIR that were cited as making short term, typical operating grant funding of limited use for PHIR are:

- Long timeframes required before health impacts of complex interventions are discernable. This was said by some key informants to be at least five years, as opposed to the common three year time frame of an operating grant funding.
- The shifting environments and opportunities associated with interventions and natural experiments require researchers to be able to act quickly, which in turn requires systems to be in place and operating funds to be quickly accessible when opportunities arise. PHIR studies need to be built in early and once an intervention is underway, it is typically too late. Alternatively, researchers need the flexibility to be able to scale down projects that are not going as expected, which is more likely to occur in the complex, 'real world' settings of population health interventions.
- PHIR involves different kinds of costs than other types of research projects. For example the costs of:
 - The interventions themselves (where they are a part of the study)
 - Interaction and relationship building with policy and program decision makers
 - Community capacity building that may be required
 - Data collection (e.g. baseline data; creation of ongoing data collection frameworks and systems)
 - Assembling "purpose built teams".
- Some co-funding partnership models are poorly suited to intervention research where the decision makers are poorly resourced community based organizations.

Infrastructure challenges

PHIR requires significant infrastructure to be in place in order for researchers to be positioned to capitalize on natural experiments and other intervention research opportunities. This includes:

- Teams – due to the nature of complex interventions and the mixed methods required to study them, PHIR requires teams of researchers and decision-makers combining a range of skills and disciplines.
- Data infrastructure – for example, standardized data collection across jurisdictions can enable comparative studies of natural experiments, such as tobacco control programs or school-based policies.

PHIR's low profile

Both researchers and funders cited the low profile or "lack of credibility" associated with PHIR. This was attributed to:

- A poor understanding of what PHIR is/involves.

- Lack of consensus amongst population health intervention researchers as to what the key issues are and how best to support capacity building and knowledge generation in the area.
- A tension between science and relevance – where tight methodological control (e.g., randomization) is valued over and is frequently at odds with issues of feasibility and policy and program relevance.
- An emphasis by funders and the media on “discovery research” which is more ‘exciting’, while PHIR is harder to ‘sell’.
- A view of funded PHIR as lower quality due to the fact that low application pressure in strategic funding streams can result in lower cut-off scores than other more competitive streams.
- Poor metrics for capturing and measuring the success of funding and research in this area – for example, only using ‘number of peer reviewed publications’ is problematic due to the longer timelines that it takes for PHIR to yield publishable findings, while the value of decision maker oriented knowledge translation and publications may not be given much weight.
- The impact potential and mission/strategic relevance of PHIR to funders may not always be obvious when it is discussed in terms of its underlying theories or methodologies as opposed to in more concrete terms relating to tackling specific substantive areas (e.g., obesity, chronic disease prevention, mental health, tobacco control, health inequities).

Peer review issues

There are specific challenges related to the peer review of PHIR, including:

- A shortage of peer reviewers due to a limited number of researchers in the field, combined with the high number of potential conflicts of interest arising from the frequency with which researchers are on teams together, and the difficulty finding peer reviewers who understand PHIR and the mixed methods involved.
- An emphasis in peer review on randomization and standardization, which can be at odds with the plurality of PHIR approaches.
- PHIR applications are often allocated to peer review committees on the basis of topic as opposed to methodology and as a result end up with committees that do not have the expertise to review them.
- Application of inappropriate review criteria to assess PHIR.

Lack of dedicated funding and lack of coordinated intervention funding

While PHIR is eligible for funding within open streams, both funders and researchers noted that PHIR is disadvantaged if competing directly with biomedical, clinical, health services, or even other population health research, and that dedicated funding streams are needed if more PHIR is to be funded.

At the same time, there is a lack of coordination between research funding and intervention funding. This can require researchers and intervention partners to manage complex partnership negotiations, and juggle competing administrative processes and timelines.

One researcher noted that there is no real system for scaling up innovative interventions found to be effective. For this reason, those who fund interventions may be unwilling to invest in new kinds of interventions even if there is evidence to suggest they could be effective. This can act as a barrier to obtaining funding for the intervention component of a potential study, and limits the ability to develop new evidence on the intervention's potential to advance achieve population health goals.

Research capacity and output issues

For funders, low application pressure from population health intervention researchers is perceived to suggest a lack of research capacity. Researchers also noted there are “few people” working in this area, and there are many disincentives to recruiting trainees and new investigators. Some obstacles to increasing capacity include:

- University tenure promotion frameworks that reward numbers of academic publications and short research timeframes, while not recognizing knowledge translation oriented non-academic publications or interactions with research users, or taking into account the longer timelines associated with intervention research.
- Barriers to publishing PHIR (including non randomized study designs, lower output due to longer timelines, and lack of interest on the part of academic journals to publish information of relevance to decision makers, such as intervention context).
- Disincentives/barriers to recruiting young researchers, including the above points (university tenure; barriers to publishing) as well as a lack of ‘prestige’ associated with the area, the longer timelines associated with training and research, and the challenge of training in mixed methods.
- Underdeveloped outreach to other disciplines (e.g., geography, economics)
- Concern about recruiting new investigators and trainees if there is not sufficient future funding to support their career paths in PHIR.

Challenges to linking PHIR researchers with decision makers and other sectors

Some of the challenges related to linking researchers and decision makers around population health intervention research include:

- A need for greater alignment of research studies and decision maker priorities (projects still tend to be researcher driven).
- Difficulty of getting health and other sectors to ‘buy in’ to the need for scientific evaluation of programs and policies, with evaluation procedures and baseline data collection built in from the beginning.
- The demands of linking with decision makers can be challenging and labour intensive for researchers and may not be well supported by funding mechanisms or academic institutions.
- Not all researchers have well developed skills for engaging with decision makers.

- Organizational silos that discourage government departments and other organizations from working together to address the population health impacts of policies and programs outside the health sector and a lack of mechanisms for doing this.

Lack of community capacity or relevance

Some key informants noted that communities may not have the capacity to be involved in rigorous evaluations. This can include a lack of resources, data collection infrastructure and expertise. In addition, some key informants suggested that those working in public health are very focused on implementing interventions and may not see involvement in ‘scientific’ or ‘basic’ intervention research as a part of their role.

Improving funding/organizational support for PHIR

This section outlines a number of approaches that respondents suggested could be used to strengthen funding and organizational support for PHIR. In many cases, similar strategies were described by both researcher participants and funder/organizational participants. A key message from both researchers and funders was the need for better linkages between decision makers and researchers to better align PHIR with priority issues and facilitate the inclusion of systematic PHIR within important policy and program initiatives that have potential for impact on population health.

Raise the profile of PHIR

Raising the profile of PHIR is important for a number of reasons, including increasing decision maker involvement, improving stakeholder understanding of the methods and opportunities PHIR involves, and increasing interest in funding, conducting and utilizing PHIR. Some suggestions for doing this include:

- Develop a strong business case for supporting PHIR, with an emphasis on impact on the health of populations.
- Capture and disseminate PHIR success stories, e.g.,
 - Create a communications position to be filled by someone with science writing/journalism experience, to “tell the story” of PHIR successes and impacts.
 - Highlight PHIR successes in future Knowledge Translation (KT) casebooks.
- Promote the potential of PHIR to support organizational missions and mandates; explore how it can be applied in priority content areas, which can be a rallying point.
- Generate interest by tying in PHIR with the World Health Organization report: *Closing the gap in a generation: Health equity through action on the social determinants of health* (2008).
- Promote the KT aspects of PHIR as a benefit; leverage the strong current interest in KT.

- Educate funders and peer reviewers about the need to strengthen the theoretical and methodological underpinnings of PHIR.

Increase KT and decision maker involvement in research and funding processes

Several comments focused on ways to better integrate KT and decision maker involvement, in order to improve research relevance, interest in PHIR, early integration of a PHIR component within relevant policy and program initiatives, and the use of PHIR research evidence in policy and practice. To do this, funders could:

- Involve advocacy, policy and program decision makers in the development of research priorities and strategic funding initiatives.
- Focus on the potential impact and value to decision makers when planning PHIR funding initiatives.
- Include more 'directive', or demand-driven approaches to funding PHIR research. For example, determine what evidence is needed for decision making, and allocate funding towards generating that evidence.
- Bring PHIR researchers and decision makers together through think tanks, workshops and other events to explore PHIR opportunities in specific policy and program areas.
- Facilitate dialogue, networking and collaboration between PHIR researchers and decision makers.
- Require KT plans within funding applications – including the planned research user/decision maker involvement over the course of the project and the planned approach to disseminating results in a timely way.
- Take an active role in promoting research use – for example, through website resources, syntheses, lay summaries, presentations and so on.
- Improve researcher access to funding for “early KT” activities, such as meeting with policy and program stakeholders to discuss potential PHIR opportunities.
- Support the development of comprehensive strategies for linking researchers and policy makers in a more systematic and proactive manner, in order to be positioned to incorporate PHIR into policy and program initiatives at an early stage.

Create alternate funding streams that support both research and interventions

A key challenge faced by PHIR researchers relates to a disconnect between research funding and intervention funding, as well as the high costs associated with the intervention component. Some participants suggest that a dedicated, integrated, government funding stream should be created that provides for linked intervention and research funding opportunities, as well as support for natural experiment studies relating to government policies and programs that may have population health impacts. Such funding could potentially be accessed by a range of researchers based within and outside the academic sector.

Create PHIR-specific funding streams within health research funding portfolios

A number of comments by both researcher and funder participants focused on the need for dedicated, separate funding streams for PHIR research. The rationale for this relates to the difficulty PHIR has competing directly with more established, conventional research, the need to develop research capacity, and the significant potential of PHIR to contribute to policy and program planning. Some of the areas suggested for targeted investment include:

- Natural policy experiments
- PHIR infrastructure funding
- PHIR capacity building
- Strategic initiatives on priority topics

Use funding tools that take into account the unique considerations for effectively supporting PHIR

Funding tools that researcher key informants would like to see more of include:

- Research program funding (five year or longer time frame) that includes enough flexibility for researchers to respond to changes and opportunities in the policy and program environment and build relationships and linkages with decision makers.
- Research chairs (such as the Applied Public Health Research Chairs).
- Centre funding (creates an entity that endures in the community).
- Salary support for investigators.
- Team building funding.
- Longer term trainee and fellowship awards.
- Network funding (researcher networks; researcher-decision maker networks).
- Funding to support long term follow up related to interventions.
- Funding to build networks, data systems and common evaluation frameworks across the country, to enable cross-jurisdictional comparisons.
- Quick access to operational funding, such as rapid response funding mechanisms for natural experiments.

Address research capacity issues

Both researchers and funders discussed the small numbers of researchers working in PHIR in Canada and elsewhere. Suggestions for building capacity include to:

- Offer longer term fellowships to take into account the longer timeframes required for PHIR.
- Create incentives to counterbalance the recruitment disincentives (long timeframes; labour intensiveness; methodological complexity; likely slower and smaller academic publishing output potential; disincentives in academic promotion and tenure frameworks).
- Recruit new investigators from other disciplines (but use appropriate eligibility criteria to ensure they are really doing PHIR).
- Provide grant writing support to PHIR applicants.

- Offer opportunities (e.g. workshops) and support for developing key skills, such as KT, partnership development and working in teams.
- Increase outreach to researchers and decision-makers (consult, listen and build relationships).

Improve peer review of PHIR funding applications

Potential strategies for improving peer review include:

- Use guidelines specifically designed for reviewing PHIR proposals, such as those currently in development by PHIRIC.
- Ensure that PHIR proposals go to the ‘right’ committees, with the necessary expertise.
- Expand the pool of qualified reviewers by collaborating with other countries.

Innovate, evaluate and evolve tailored funding approaches

Both researcher and funder/organizational participants acknowledged that there is more to learn about how best to support PHIR and its application, and that new approaches need to be developed, evaluated and refined. Specific actions suggested in this regard include to:

- Investigate the reasons for low numbers of grant applications from PHIR researchers. (Is the issue one of capacity? The timing of the review? The level of funding offered? The composition of the peer review panel?)
- Find out what additional tools are needed to support the study of natural experiments.
- Consult PHIR researchers on how they can best be supported.
- Evaluate the impact of new funding approaches, such as mandating KT and partnerships within funding applications.
- Be willing to invest in non-traditional approaches, evaluate the results (using appropriate metrics), and allocate more money to the approaches that are demonstrated to be effective.

Opportunities to align efforts

Participants were very positive about the benefits of exploring further collaboration and alignment across funding and organizational mandates to better support PHIR. The following table provides an overview of suggestions as to where such efforts could potentially focus. For many participants, a key starting point is to learn more about each others’ mandates and activities as they relate to PHIR, and many also indicated that the Funders Forum is a welcome opportunity to do this.

Funding issue	Suggested options for collaboration
Linking intervention funding with research funding	<ul style="list-style-type: none"> • Find ways to share the cost of the interventions/research across the sectors and disciplines that have an interest. • Increase the coordination of these two types of funding, for example through a dedicated fund that covers both research and intervention costs.
Linking population health researchers and decision makers	<ul style="list-style-type: none"> • Develop ways to increase decision maker involvement in PHIR, in order to improve research relevance, interest in PHIR, early integration of a PHIR component within relevant policy and program initiatives, and the use of PHIR research evidence in policy and practice.
Developing PHIR in new substantive/policy/program areas	<ul style="list-style-type: none"> • Bring PHIR researchers together with others doing intervention research in other disciplines and sectors, e.g., the transportation sector. • Explore ways to expand the CIHR rapid response RFA for natural experiments beyond its current emphasis on obesity, healthy living and chronic disease prevention. • Convene more researcher/decision maker workshops/think tanks to explore potential opportunities for collaborating on PHIR to address various substantive areas. • Identify PHIR opportunities related to major government policies and programs. • Stimulate more PHIR at a broader, macro level (e.g., examining the health impacts of national policies through comparative studies with other countries).
Identifying partners outside the health sector	<p>Identify ways to collaborate with potential partners outside the health sector such as:</p> <ul style="list-style-type: none"> • SSHRC. • Voluntary organizations outside the health sector (e.g., those with social policy mandates). • Government departments such as transportation or housing.

Funding issue	Suggested options for collaboration
Promoting PHIR	<ul style="list-style-type: none"> • Create a PHIR science journalist position to promote the PHIR story (share the position across CIHR Institutes and/or organizations)
Funding processes	<ul style="list-style-type: none"> • Develop international collaborations to expand the pool of PHIR peer reviewers. • Coordinate timing of funding cycles.
Information exchange and forward planning	<ul style="list-style-type: none"> • Provide an ongoing forum/coordinating mechanism for joint forward planning. • Learn about each others' mandates, strengths, activities, etc. • Identify gaps as well as potential duplication in funding support. • Share learning and best practices. • Design inventories of policies/programs that could be the focus of PHIR. • Identify common priorities to address through joint funding. • Pool funds to support the conduct of larger studies. • Identify gaps in funding support.

Conclusion

This paper has been developed as a starting point for discussion. The Funders Forum will provide an opportunity to further explore these issues, and consider what needs to happen to strengthen and connect PHIR with the programs, policies and priority issues that can benefit most from evidence based knowledge of “what works” and under which circumstances in improving population health in Canada.

Appendix A: PHIR-related funding examples (Canada and international)

The following table describes selected examples of funding practices related to supporting PHIR (either because they have been used to support PHIR or they are a tool that would be potentially useful for doing so). Most of the examples here were identified by key informants as successful or promising approaches. Please note that the descriptions are derived from publically available websites and documents, but to date have not been further validated.

Funding Category	Program/Organization Name	Description
Building PHIR capacity	Fellowships in Global Health (priority announcement) CIHR - IPPH (lead)	The purpose of this Priority Announcement was to improve Canada's ability to investigate and intervene on those underlying forces that challenge global health, by enhancing, in a sustainable manner, the capacity of national and international researchers and research-users to collaboratively develop and apply global health knowledge for evidence-based public health practice.
	Fellowships in Public Health (priority announcement) CIHR-IPPH and PHAC	The purpose of this Priority Announcement was to strengthen public health research capacity thereby supporting the next generation of public health researchers, and stimulating public health policy- and practice-relevant research across the country.
	Applied Public Health Chairs Program CIHR-IPPH	Jointly issued by the CIHR-Institute of Population and Public Health (IPPH), the PHAC-Office of Public Health Practice (OPHP) and the Centre de recherche en prévention de l'obésité (CRPO), the purpose of this Applied Public Health Chairs Program was to strengthen population-level and community-level policy and program intervention research, mentoring and education capacity by supporting public health faculty in Canada. It is expected that this targeted investment will lead to increased national capacity for effective research, mentoring, education, knowledge translation and application of research evidence of relevance to the public health system.
	Population Health Scientist Fellowship Medical Research Council (UK)	This new fellowship competition is designed to support MRC priorities for the field. A key aim is to understand how and why ill-health varies within and between populations and across the life course, and how to improve the health of the public through clinical or public health interventions including those that may be delivered outside conventional health services. Pre- or post-doctoral entry level.

Funding Category	Program/Organization Name	Description
Building PHIR capacity (continued)	Centres for Research Development CIHR-IPPH, Canadian Lung Association; Association pulmonaire du Québec; L'Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST), and the CIHR Strategic Initiative in Rural and Northern Health Research	This initiative provided funding for seven centres, jointly governed by research-users and researchers, with a focus on understanding and addressing the impacts that physical and social environments have on health. The centres are designed to maximize the practical application of research and the development of new policies and programs that will lead to population-health benefits, engage policy makers and community leaders, and build research capacity to better understand and address the impacts of programs and policies that help to improve the quality of physical and social environments.
	Capacity Building Grants for Population Health and Health Services Research National Health and Medical Research Council (NHMRC) (Australia)	These grants provide flexible support to build groups of excellent population health and/or health services researchers. The program will seek to strengthen and grow teams with an established basis and a record of undertaking innovative, significant and internationally competitive research. Funds of up to \$2.5 M over 5 years can be used to: <ul style="list-style-type: none"> • Develop collaborative linkages or for career development • Increase the size or skills in a team • Recruit new senior researchers (including from overseas) • Foster more junior researchers to become independently competitive • Enable the development of emerging areas that are important to population health and/or health services practice and policy but are currently very underdeveloped in Australia • Further strengthen areas in which Australia has world-leading population health and/or health service research

Funding Category	Program/Organization Name	Description
Building PHIR capacity (continued)	Catalyst Grants CIHR	<p>The CIHR Catalyst Grant program provides seed money, on a short-term basis, to support health research activities representing a first step towards more comprehensive funding opportunities (e.g. operating grants, team grants), such as:</p> <ul style="list-style-type: none"> • the planning and execution of pilot projects or feasibility studies aiming to generate preliminary data, observations, or knowledge; • the planning and execution of novel projects which clearly demonstrate the potential for significant impact, but which are considered high risk in nature in that they may be unsupported by proof of concept / preliminary data; • development and / or validation of new inventions, tools, methodologies, protocols, theoretical models or frameworks; • planning and / or development activities of expert teams (multi-disciplinary, trans-disciplinary, etc.) to address health research priorities.
	Interdisciplinary Capacity Enhancement (ICE) grants CIHR	<p>ICE grants provide support for new or existing groups who can demonstrate that they are committed to engendering a trans-disciplinary research culture and to attracting into, engaging and mentoring junior researchers (faculty and post-doctoral fellows not otherwise funded) or established researchers who have not worked extensively in health research in the past, within teams or networks working on themes that align with the priorities identified by the Institutes participating in this RFA. Up to \$200,000 per team per year for five years; requests for additional funding but not to exceed \$300,000 per team (based on a 2002 RFA).</p>
	Strategic Training Initiative in Health Research CIHR	<p>The training programs are intended to improve the mentoring and training environment for health researchers in Canada; foster collaborative, team research across disciplines; and integrate training on the ethical conduct of research and related ethical issues, knowledge translation and professional skills such as communication, teamwork, project management and leadership. The training programs are anticipated to be an important source of Canada's next generation of health research leaders and creative agents for change. Grant funds are primarily targeted towards supporting research trainees through stipends. In addition, funds can be used for items such as developing the program and for travel between training sites. \$325,000 per annum for up to 6 years. One of the priority themes in the last round was population health intervention research.</p>

Funding Category	Program/Organization Name	Description
Building PHIR capacity (continued)	New Emerging Team (NET) Grants CIHR	New Emerging Team grants are intended to support the creation or development of teams comprised of investigators undertaking collaborative, multidisciplinary research. The program is intended to promote the formation of new and previously non-existent research teams or the growth of small existing teams of researchers in priority areas. Up to \$300,000 per annum including equipment, for 5 years, subject to a satisfactory progress review at 2.5 years.
	Interdisciplinary Capacity Enhancement (ICE) Team Grants CIHR	Aim to provide support for new or existing groups who can demonstrate that they are committed to engendering a trans-disciplinary research culture and to attracting into, engaging and mentoring junior researchers (faculty and post-doctoral fellows not otherwise funded) or established researchers who have not worked extensively in health research in the past, within teams or networks working on themes that align with the priorities for the RFA.
	Health of Populations Networks Infrastructure Funding Michael Smith Foundation for Health Research	Provides networking infrastructure funding to eight population-based health research networks in BC.
	PHIRN - Public Health Improvement Research Network (UK) Funded by the Wales Office of Research and Development in Health and Social Care (WORD) and the Public Health Improvement Division at the Welsh Assembly Government	A research network led by academics from Swansea, Bangor and Cardiff universities to increase the quantity and quality of public health improvement research by bringing together public health researchers, policy makers and practitioners in Wales. The intended outcome of PHIRN activities will be successful project grant applications to major research funders, and rigorous evaluations of new initiatives in policy and practice ('natural experiments').

Funding Category	Program/Organization Name	Description
Building PHIR capacity (continued)	<p>Public Health Research Centres of Excellence e.g., DECIPHer: Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement; University of Cardiff</p> <p>Funders: The British Heart Foundation, Cancer Research UK, Wellcome Trust, Economic and Social Research Council, Medical Research Council, Welsh Assembly Government, Clinical Research Collaboration Cymru (CRC Cymru), UK Clinical Research Collaboration (UKCRC).</p>	<p>The Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer) is one of five new UKCRC Public Health Research Centres of Excellence. DECIPHer will bring together leading experts from a range of disciplines to tackle public health issues such as diet and nutrition, physical activity; and alcohol, tobacco and drugs, with a particular focus on developing and evaluating multi-level interventions that will have an impact on the health and well-being of children and young people. The Centre will engage strongly with policy, practice and public user communities to translate the research results into practical outcomes.</p>
	<p>Capacity for Applied and Developmental Research and Evaluation (CADRE) program</p> <p>Canadian Health Services Research Foundation (CHSRF) and CIHR</p>	<p>The CADRE program is designed to build capacity in applied health services and policy research, including nursing. The primary goal – and the key to the program’s success – is to build and sustain solid partnerships between researchers and the decision-making community. Building on the Foundation's model of effective knowledge exchange, the program supports interaction between decision makers and researchers and results in mutual learning through the process of planning, disseminating, and applying existing or new research in decision-making.</p>

Funding Category	Program/Organization Name	Description
Building PHIR capacity (continued)	Network of Research Design Services National Institute of Health Research (NIHR) (UK)	The new network of NIHR Research Design Services (RDS) will help researchers to prepare proposals for submission to national funding competitions for applied health or social care research by providing expert advice on research design and methodology. Proposals to provide the services have been requested from organisations and consortia. It is estimated that the total value of each RDS contract will be between £800k and £1.03m annually for five years.
	Hubs for trials methodology research (HTMR) Medical Research Council (UK)	MRC funding for a Hub will support resources to enable the establishment of a regional focus for high-quality, cutting-edge methodology research in clinical trials. Each Hub will bring together and reinforce existing strengths in methodological research as well as fostering new lines of research. Note: includes public health research.
	Canadian Platform To Increase Usage of Real-World Evidence (CAPTURE) Canadian Partnership Against Cancer (CPAC)	This is a major new initiative, aimed at developing tools to capture what works and what doesn't in real-world settings. CAPTURE involves international experts and brings together stakeholders from across Canada. It will reach out to the broad chronic disease prevention community, engaging them to help develop and promote the use of common evaluation tools for assessing practices and policies.

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR	Intervention Research Grant with Rapid Review: Healthy Living and Chronic Disease Prevention CIHR-INMD (will likely next fall under the purview of CIHR-IPPH); CIHR-IPPH, HSFC, CPHI, Health Canada's First Nations and Inuit Health Branch, CIHR-IA; CIHR-IHDCYH.	Supports the prompt initiation of intervention and evaluation research on rapidly unfolding programs, events, and/or policy initiatives/changes with the potential to impact healthy living and/or chronic disease prevention at the population level. Has been led by the CIHR Institute of Nutrition, Metabolism and Diabetes (INMD), in partnership with other institutes and external partners.
	Active Living Research Robert Wood Johnson Foundation (US)	Active Living Research supports research into the environmental and policy influences on active living, and is part of a \$55M suite of linked programs that work synergistically to generate active living evidence and speed its application in policy and practice. The five other programs in the suite are: <ul style="list-style-type: none"> • <i>Active for Life Increasing Physical Activity Levels in Adults Age 50 and Older</i>, which tests evidence-based programs aimed at changing individual behaviour in adults age 50 and older; • <i>Active Living Resource Center</i>, which supplies information and technical assistance to communities; • <i>Leadership for Healthy Communities: Advancing Policies to Support Healthy Eating and Living</i>, which provides expertise and technical support to government leaders; • <i>Active Living Network</i>, which supplies information and technical assistance to professionals in non-health fields, and • <i>Active Living by Design</i>, which funds community partnerships that work upstream, midstream, and downstream to make their towns or cities more activity friendly.

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR (continued)	Bridging the Gap: Research Informing Practice and Policy for Healthy Youth Behavior Robert Wood Johnson Foundation (US)	A collaborative multidisciplinary, multisite initiative research initiative originally created to assess the impact of policies, programs, and other environmental influences on adolescent alcohol, tobacco, and illicit drug use and related outcomes. Its more recent focus is on the role of policies, programs, and other factors on adolescent obesity and the physical inactivity and dietary habits that contribute to this growing problem. (3 sites with grants ranging from approximately \$3M to \$16M over 4 years)
	Public Health Research Programme National Institute of Health Research (UK)	Evaluates public health interventions, providing 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. <u>Researcher-led calls</u> Applications are accepted throughout the year, with three peer review cut-off dates. Assessment criteria include: public health need; scientific quality; feasibility and value for money. <u>Commissioned research calls</u> Requests proposals that respond to specific research questions which have been prioritised by the Programme Advisory Board. <u>Obesity themed call</u> A joint initiative of The NIHR Health Technology Assessment (HTA) and Public Health Research (PHR) in the autumn of 2009.

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR (continued)	Prevention Research Centers Centers for Disease Control (CDC) (US)	<p>The Prevention Research Centers work as an interdependent network of community, academic, and public health partners to conduct prevention research and promote the wide use of practices proven to promote good health. The centers' activities include:</p> <ul style="list-style-type: none"> • Conducting research projects on health- or population-specific issues • Building research teams of multidisciplinary faculty • Seeking outcomes applicable to public health programs and policies • Creating research networks for priority health issues, such as healthy aging and cancer prevention and control • Building long-term relationships for engaging communities as partners in research • Conducting research in directions guided by advisory boards of community leaders • Developing public health researchers' skills for working with communities • Conducting additional research funded by other federal agencies, foundations, and non-profit organizations
	The Research for Patient Benefit (RfPB) programme (both health services and public health) (UK)	<p>This is a nationally co-ordinated funding stream for regionally commissioned research to support projects in Health Services Research and Public Health. Annual budget of £25 million per annum with up to £250,000 per project over 3 years. The aim is to fund projects that</p> <ul style="list-style-type: none"> • study the way that NHS services are provided and used • evaluate whether interventions are effective and provide value for money • examine whether alternative means for providing healthcare would be more beneficial in terms of cost and effectiveness • formally assess innovations and developments in healthcare which will benefit of patients.

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR (continued)	Early Assessment of Programs and Policies on Childhood Obesity Robert Wood Johnson Foundation (US)	This program utilizes a systematic process to identify and fund the study of a major intervention that is appropriate for a full scale rigorous evaluation. Through their process, the Foundation identified 282 promising programs, selected 25 for evaluability assessments (EA), and determined on the basis of those EAs which intervention ('innovation') will be evaluated through a full scale rigorous evaluation (about \$1M in funding).
	Medical Research Council Units, Centres and Institutes Medical Research Council (MRC) (UK)	<p><u>Units</u> provide a tailored environment in which long term support can flourish in the context of the MRC's overall mission.</p> <p><u>Centres</u> help universities develop and sustain centres of excellence with clear strategic direction in areas of importance for UK medical research. They are created to provide intellectually stimulating and well-resourced environments which not only are attractive to established researchers but will also encourage the most able young scientists to take up a career and remain in the UK.</p> <p><u>Institutes</u> offer maximum flexibility to engage in innovative, 'risky' research, avoiding traditional university-style departmental boundaries.</p>

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR (continued)	<p>The Centre for Behavioural Research and Program Evaluation (CBRPE)</p> <p>Supported by the Canadian Cancer Society and located at the University of Waterloo</p>	<p>CBRPE is a Canadian collaborative enterprise that integrates research and evaluation with policies and programs to accelerate improvements in the health of the population. To fulfill its mission, CBRPE pursues research and evaluation, and provides training and mentoring to build capacity in these areas. Evaluation activities focus on Canadian Cancer Society programs.</p> <p>CBRPE aligns its research and evaluation work with policy and program decision making to create impact at a population level. The Centre's researchers, evaluators and staff work closely with the Canadian Cancer Society and other organizations to bridge the worlds of science and practice to inform decision makers in the areas of cancer prevention in youth, tobacco control and quality of life. CBRPE's vision is to transform policies and environments for healthier Canadians.</p>
	<p>Research Centres and Groups [long term funding of ten and five years]</p> <p>Economic and Social Research council (ESRC) (UK)</p>	<p>Research Centres are major investments in one or more of the ESRC's key research challenges. They are funded for an initial period of ten years, subject to a satisfactory mid-term review. Research Groups are selected via the same competition as Centres but for an initial period of five years.</p> <p>Selection is based on a competition steered towards one or more of the themes, with peer and merit review processes involved.</p>
	<p>Program Grants</p> <p>National Health and Medical Research Council (NHMRC), Australia</p>	<p>The aim of the Program Grants scheme is to provide support for teams of high calibre researchers to pursue broad based, multi-disciplinary and collaborative research activities. Teams are expected to contribute to new knowledge at a leading international level in important areas of health and medical research. The scheme is available for all research approaches relevant to better health (i.e. biomedical, clinical, public health or health services research) and is typically for 5 years.</p>

Funding Category	Program/Organization Name	Description
Funding to conduct PHIR (continued)	National Collaborative on Childhood Obesity Research (NCCOR) A collaboration of the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH) and Robert Wood Johnson Foundation (RWJF)	NCCOR will aim to improve the efficiency and effectiveness of research on childhood obesity. It will evaluate new and existing prevention approaches, rapidly assess promising policy changes and speed the application of interventions that work. NCCOR will focus on efforts that have the potential to benefit children, teens and their families, and the communities in which they live. A special emphasis will be put on the populations and communities in which obesity rates are highest and rising the fastest: African-Americans; Hispanics; Native Americans; Asian/Pacific Islanders; children living in low-income communities. NCCOR's multiyear agenda includes: <ul style="list-style-type: none"> • a four-part webinar series on policy evaluation. • assisting researchers in identifying valid and reliable measures to be used in childhood obesity studies through the creation of a Web-based registry of measures; • developing a catalog of childhood obesity-related monitoring systems • identifying promising and effective interventions and programs • creating guidance for evaluating naturalistic experiments.
	Community University Research Alliance (CURA) and Community Alliance for Health Research (CAHR) program CIHR (older transitional program)	The CAHR program was intended to increase the responsiveness of Canadian health research to community needs; and to enhance mutual learning and collaboration among community organizations. Building on the Community-University Research Alliances (CURA) program operated by Social Sciences and Humanities Research Council of Canada (SSHRC), the program supported partnerships between researchers and communities, with the expectation that community partners would be full participants in all aspects of the research endeavour.

Funding Category	Program/Organization Name	Description
Supporting KT and the Use of PHIR	Professional Masters of Public Health Program Awards CIHR-IPPH; PHAC	Jointly issued by CIHR-IPPH and the PHAC Office of Public Health Practice (OPHP), the purpose of this awards program is to strengthen public health capacity in Canada, by supporting the current and next generation of public health policy makers and practitioners. The program will thus build capacity for effective knowledge translation and use of research evidence by the public health system.
	Coalitions Linking Action and Science for Prevention (CLASP) project Canadian Partnership Against Cancer; Partners: Heart and Stroke Foundation of Canada; Canadian Cancer Society	CLASP will seek to add value building on existing activities to improve the prevention of cancer and chronic diseases across Canada. The first step is a series of workshops focusing on the social/behavioural, clinical and environmental contexts for prevention. They will bring together researchers, practitioners and policy-makers with the goal of supporting expanded partnerships across disciplines, chronic diseases and provinces/territories and identifying common approaches to the prevention of cancer, as well as asthma, diabetes, heart disease and other chronic diseases.
	Leadership for healthy communities Robert Wood Johnson Foundation (US)	This \$10M national (US) program is designed to support local and state government leaders in their efforts to reduce childhood obesity through public policies that promote active living, healthy eating and access to healthy foods. It focuses, in particular, on policy efforts that can improve nutrition and increase physical activity among children at high risk for obesity, especially African-American, Latino, Native American, Asian American and Pacific Islander children living in low-income communities. Leadership for healthy communities works to support the Foundation's goal of reversing the childhood obesity epidemic by 2015, and has strong linkages with RWJF's Active Living Research and Healthy Eating Research programs.

Funding Category	Program/Organization Name	Description
Supporting KT and the Use of PHIR (continued)	CHSRF Executive Training for Research Application (EXTRA) program Canadian Health Services Research Foundation	<i>Note: this program focuses on health services research evidence, but was cited by a participant as a potential model for PHIR.</i> The EXTRA program develops capacity and leadership to optimize the use of research evidence in managing Canadian healthcare organizations, as a way to increase evidence-informed decision-making in the health system. The program targets health service professionals in senior management positions - nurse executives, physician executives, and other health administration executives.
	Placement Fellows Scheme Economic and Social Research Council (ESRC) (UK)	Jointly funded by the ESRC and a host 'partner organisation' (e.g., Government Department, Devolved Administration), this program allows for social science researchers to spend time in that organisation to undertake policy-relevant research and to upgrade the research skills of 'partner organisation' employees.
	KT Workshop CIHR	A workshop was held in Kelowna, BC, to support researchers' KT skill development.
	CIHR scientific café	This CIHR program provides for interaction between the public and experts in a given field at a café, a pub or a restaurant. Events are organized by CIHR or by non-profit organizations, universities, research centres, science centres and museums, which can receive up to \$3,000 to host a Café.
	INVOLVE Funded by the National Institute for Health Research (NIHR) (UK)	INVOLVE is a national advisory group that supports and promotes active public involvement in NHS, public health and social care research.

Funding Category	Program/Organization Name	Description
Intervention Funding and Community Capacity Building	PHAC Innovation Strategy	<p>The Innovation Strategy (IS) addresses priority public health issues through strategic and innovative action on the underlying determinants of health. The objective is to provide support for the identification, design, development, implementation, and evaluation of innovative population health interventions in various settings and contexts across the country. A fundamental component of the IS will be to test promising/best practices interventions in various settings and or vulnerable populations across Canada and to focus on the exchange of practical information on their implementation and outcome results. A systematic approach to share learnings from the implementation of these interventions and promote their use across Canada will ensure enhanced reach of programs and initiatives.</p>
	PHAC Centre of Excellence for Program Evaluation and Design, Project Evaluation and Reporting Tool (PERT), Program Data Collection and Analysis System (PDCAS), and Population Health Evaluators Network (PHEN)	<p>The Population Health Evaluation Network (PHEN) is a network of regional and national evaluators and program consultants from across PHAC population health programs. The network provides a platform for staff interested in evaluation to share best practices and to review, discuss, and make recommendations on common evaluation issues.</p> <p>The Program Data Collection and Analysis System¹ (PDCAS) allows PHAC to systematically assess program data and improve results-based reporting across the Agency. It is being used to streamline and integrate the reporting process to permit common data collection, analysis, management, and reporting, as well as provide other tools and sources of information to assist in project evaluation.</p> <p>The Project Evaluation and Reporting tool (PERT), is an online data collection questionnaire that funded organizations complete at various stages of their project.</p>

¹ Public Health Agency of Canada (PHAC). Update on the Project Evaluation and Reporting Tool (PERT) and the Program Data Collection and Analysis System (PDCAS). *Health Evaluation Newsletter: The Newsletter of the Health Evaluation Network (HEN) in Saskatchewan*. July 2007. Available at: <http://www.health.gov.sk.ca/hen-newsletter-july-2007>.

Funding Category	Program/Organization Name	Description
Intervention Funding and Community Capacity Building (continued)	Chagnon Foundation in partnership with the Québec government <ul style="list-style-type: none"> • “Société de gestion du Fond pour la promotion de saines habitudes de vie” • Québec enfants 	<p>The “Société de gestion du Fond pour la promotion de saines habitudes de vie” is a fund of \$400 million over 10 years with a focus on community intervention related to the development of children between 0 and 17 years old, and funding allocated as follows:</p> <p style="padding-left: 40px;">75% allocated to Québec en forme – to fund community mobilization projects linked to developing the physical and mental well-being of children in under-privileged families, through the vehicles of the school system and of community organizations across the province.</p> <p style="padding-left: 40px;">25% allocated to promotion at a broader level involving part or all of the population. They target major projects that focus priority themes including: food supply; active transportation and physical activity; advertising to children and teens; healthy community design.</p> <p>The Québec enfants Fund is also \$400M over 10 years, with a focus on healthy living for children aged 0-5 from low socio-economic backgrounds. Many of the projects are based in early childhood centres.</p>

Appendix B: List of key informants

Funders and other organizations

<p>Tim Murphy Senior Vice President Michael Smith Foundation for Health Research</p>	<p>Dr. David McQueen Director for Global Health Promotion National Center for Chronic Disease Prevention and Health Promotion Centers for Disease Control and Prevention</p>
<p>Linda Piazza Director, Research Heart and Stroke Foundation of Canada</p>	<p>Kim Gaudreau Associate Institute Strategic Initiatives Institute of Population and Public Health Canadian Institutes of Health Research</p>
<p>Lisa Sullivan Manager Canadian Population Health Initiative Canadian Institute for Health Information</p>	<p>Paul Belanger Assistant Director Institute of Nutrition, Metabolism and Diabetes Canadian Institutes of Health Research</p>
<p>Dr. Marie Chia Director Canadian Tobacco Control Research Initiative</p>	<p>Pierre Turcotte Assistant Director Partnerships and International Relations Institute of Human Development, Child and Youth Health Canadian Institutes of Health Research</p>
<p>Dr. Michael Wosnick Vice-President, Research Canadian Cancer Society</p>	<p>Barbara Beckett Assistant Director Institute of Neurosciences, Mental Health and Addiction Canadian Institutes of Health Research</p>
<p>Dr. James Sallis Director Active Living Research (National program of the Robert Wood Johnson Foundation)</p>	<p>Melissa Phipers Assistant Director Institute of Neurosciences, Mental Health and Addiction Canadian Institutes of Health Research</p>
<p>Dr. Jon Kerner Chair, Primary Prevention Action Group Senior Scientific Advisor for Cancer Control & Knowledge Translation Canadian Partnership Against Cancer</p>	<p>Michelle Gagnon Director Knowledge Synthesis and Exchange Knowledge Translation Branch Canadian Institutes of Health Research</p>

Marc Dumont, Evaluation Expert la Fondation Chagnon	Rashmi Joshee Manager Population Health Section Regional Director's Office - Edmonton Office Public Health Agency of Canada
Dr. Marie-France Raynault Board Member Fonds de la recherche en santé du Québec	Keith Walls Manager, Grants and Contributions Administration and Advice Grants and Contributions Administration and Advice Section Public Health Agency of Canada
Dr. C. Tracy Orleans Distinguished Fellow and Senior Scientist Robert Wood Johnson Foundation	Larry Flynn Regional Director Regional Director's Office - Winnipeg Office Public Health Agency of Canada

Researchers

Jean-Pierre Voyer President and Chief Executive Officer Social Research and Demonstration Corporation	Dr. Kim Raine Professor, Centre for Health Promotion Studies Co-director, Healthy Alberta Communities University of Alberta
Dr. Louise Potvin Professor, Social and Preventive Medicine Faculty of Medicine University of Montreal	Dr. Elizabeth Waters Professorial Fellow: Public Health and Health Equity McCaughey Centre: VicHealth Centre for the Promotion of Mental Health and Community Wellbeing Melbourne School of Population Health University of Melbourne
Dr. Roy Cameron Executive Director, Centre for Behavioural Research and Program Evaluation Professor, Applied Health Sciences, University of Waterloo	Dr. Mark Petticrew Professor of Public Health Evaluation London School of Hygiene and Tropical Medicine University of London
Dr. Penny Hawe Professor, Department of Community Health Sciences Director, Population Health Intervention Research Centre University of Calgary	Dr. Jennie Popay Professor Professor of Sociology and Public Health School of Health and Medicine Division of Health Research Lancaster University (Lancaster, UK)

Dr, Ron Plotnikoff Professor Director, Physical Activity and Population Health Research Lab Co-director, Healthy Alberta Communities	Dr. Helen Roberts Professor Social Science Research Unit Institute of Education University of London
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Appendix C: Interview guides

a) Interview guide for funders and other relevant organizations

Introduction	<p>The Population Health intervention Research Initiative for Canada (also known as PHIRIC) was established to address an identified need for increasing the quality and quantity of population health intervention research and its application in program interventions and healthy public policies. The purpose of these interviews is to identify relevant funding practices and issues, to help inform discussions at the upcoming Funders Forum on population health intervention research.</p> <p>In the paper, we won't attribute comments to specific individuals, however, it is expected that the organization related to some of information will be recognizable – for example, specific funding initiatives of a particular organization. We also plan to list the organizations and individuals contacted for the purpose of the research - would you have any objection to us including your name in the key informant list in the paper?</p> <p>Do you have any questions before we begin?</p>
Definition	<p>The first question is about defining population health intervention research. The definition PHIRIC has adopted is as follows: <i>“the use of scientific methods to produce knowledge about policy and program interventions that operate within or outside of the health sector and have the potential to impact health at the population level”</i>. How does this definition resonate with you/your organization? How does it compare to the definitions, concepts, etc. used in your organization?</p>
PHIR funding goals	<p>Has [name of organization] identified strengthening population health intervention research as a specific goal in relation to its research funding activities? (please explain)</p>
Funding tools	<p>What types of funding initiatives, programs or policies does [name of organization] have in place that support PHIR or PHIR capacity building? (Please describe)</p>
Other than funding	<p>Apart from funding mechanisms, are there other ways your organization is involved in strengthening PHIR?</p>

Collaborations	Do you currently partner with other organizations to support population health intervention research? If yes, please describe.
Successes	What would you say have been the organization's most successful initiatives, programs or policies in relation to supporting PHIR?
Challenges	What are the key systemic challenges you've experienced or identified in relation to funding population health intervention research and/or building capacity in this area?
Examples (other organizations)	Are you aware of other funding models related to increasing the quality, quantity or use of population health intervention research that might be considered best practices? (If yes, please describe and explain why you view this/these as best practices.)
Opportunities	In your view, what are key strategies that funders could implement to more effectively support population health intervention research and its application?
How to align	Do you have any thoughts on how organizations such as health research funders could more effectively align their efforts across organizations and/or sectors to support PHIR?
Information sources	Are there any documents or websites that you would recommend I consult in the development of this background paper?

b) Interview guide for researchers

Introduction The Population Health intervention Research Initiative for Canada (also known as PHIRIC) was established to address an identified need for increasing the quality and quantity of population health intervention research and its application in program interventions and healthy public policies. The purpose of these interviews is to identify relevant funding practices and issues, to help inform discussions at the upcoming Funders Forum on population health intervention research.

In the paper, we won't attribute comments to specific individuals, however, it is expected that the organization related to some of information will be recognizable – for specific funding initiatives of a particular organization. We also plan to list the organizations and individuals contacted for the purpose of the research - would you have any

objection to us including your name in the key informant list in the paper?

Do you have any questions before we begin?

Definition	The first question is about defining population health intervention research. The definition PHIRIC has adopted is as follows: <i>“the use of scientific methods to produce knowledge about policy and program interventions that operate within or outside of the health sector and have the potential to impact health at the population level”</i> . How does this definition resonate with you/your organization? How does it compare to the definitions, concepts, etc. used by you in your research/by your organization?
Challenges	What would you say are the most significant systemic challenges that researchers face in terms of funding support for PHIR?
Examples of success	Are you aware of successful programs or practices that health research funders are using to increase the quality, quantity or use of PHIR?
Opportunities	In your view, what are the key things that funders could do to strengthen capacity for PHIR and its application in Canada?
Ways to align	Do you have any thoughts on how organizations such as health research funders could more effectively align their efforts across organizations and/or sectors to support PHIR? Do you know of any examples where funders have done this?
Information sources	Are there any documents or websites that you would recommend I consult in the development of this background paper?

**Appendix D: Examples of projects funded through the RFA:
*Intervention Research Grant with Rapid Review:
Healthy Living and Chronic Disease Prevention***

RFA Partner(s)/Collaborator(s)

The CIHR Institutes of Nutrition Metabolism and Diabetes, Aging, Human Development, Child and Youth Health, and Population and Public Health, the Heart and Stroke Foundation of Canada, CIHI's Canadian Population Health Initiative, and Health Canada's First Nations and Inuit Health Branch.

Overview of the RFA

The purpose of this funding opportunity is to support the prompt initiation of intervention and evaluation research on rapidly unfolding programs, events, and/or policy initiatives/changes with the potential to impact healthy living and/or chronic disease prevention at the population level. Note that for the purpose of this document, "population-level" encapsulates any defined group of individuals sharing some set of characteristics in common. Communities, workplaces, schools and ethnic groups would all be considered examples of "populations". This funding opportunity strongly encourages close collaboration between program implementers and researchers but it will not support situations where the implementer and the researcher are the same person/ entity.

Examples of projects funded to date

The "new generation" participACTION: A baseline assessment of knowledge, awareness, understanding and the physical activity of Canadians

This research proposal addresses the need for rapid review by taking advantage of the unique, time-limited data collection opportunity associated with the launch of a "new generation" ParticipACTION - "a leading, national catalyst, communicator of practical physical activity information, and motivator of coordinated partnership actions which encourage healthy, active living for all Canadians". Our investigation will capture baseline data to study the influence of ParticipACTION as a natural intervention, by gathering robust time-sequenced, assessments associated with this national social marketing initiative. Using the existing physical activity data collection infrastructure of the Canadian Fitness and Lifestyle Research Institute, a questionnaire module assessing the knowledge, awareness, understanding and behaviours of a nationally representative sample of Canadian adults will be administered. This essential information will provide future assessment opportunities to examine the efficacy of a national physical activity communications strategy on healthy living promotion and chronic disease prevention in Canada.

Siska traditional food use patterns: Assessing change in diets and perceptions resulting from environmental contaminant study

The Siska Salmon and Human Health project (SSHHP) is a health intervention underway in Siska Band, NlakaꞤpamux First Nation, British Columbia that will communicate the following results to the Siska community in March 2008: environmental contaminants (PCBs, pesticides, etc.) in two species of local-caught salmon; chemical stability of contaminants after cooking; effects of contaminants on

salmon health, reproduction and habitat. This knowledge translation of SSHHP results has the potential to affect dietary behaviours and health outcomes in Siska Band. This is a unique one-time opportunity to evaluate how Siska traditional food use patterns and/or perceptions may change as a result of research into environmental contaminants. We propose a participatory Siska dietary assessment before and after the intervention to distinguish any significant changes in dietary patterns/perceptions as a result of the intervention. This will be the first ever baseline data on Nlaka'pamux diets; and it will be used with SSHHP data to estimate nutritional benefits/risks and contaminant exposure levels from salmon. Outcomes from this research will contribute to a Nlaka'pamux Traditional Food Guide, and to scientific knowledge about contemporary diet and nutrition of Canadian Aboriginal populations.

Effects of the Regent Park Housing Redevelopment on mental health and healthy child development

Built 50 years ago, Regent Park is one of the oldest and largest concentrated public housing communities in Canada. Currently, a portion of the community is being demolished and re-built, and tenants are living in temporary housing. The redevelopment will replace about 70% of the existing aging rent-geared-to-income (RGI) units with new ones. The new community will be socially mixed: 40% of units will be RGI and 60% will be owner-occupied or market rentals. This proposal seeks to investigate the effects of the Regent Park redevelopment on adult mental health and children's mental health & development. This study will be the first of its kind in Canada.

Evaluating the diffusion process of Action Schools! BC: Characteristics of schools, teachers and innovation that impact level of uptake and sustainability

The prevalence of obesity is widespread among industrialized nations and Canada is no exception to this trend. Action Schools! BC (AS! BC) is a comprehensive school-based model being undertaken in BC that aims to promote physical activity, healthy eating and healthy weight in children. The model was first implemented in 2003 among 10 schools and is currently being adopted by 1,228 (75%) elementary schools in BC. In previous evaluations, AS! BC effectively increased physical activity opportunities and improved children's cardiovascular risk factors and bone health. The rapid uptake of the AS! BC program creates a critical window to evaluate factors that affect the quality of uptake and sustainability of the model. The overall goal of our study is to: (1) evaluate the extent to which schools are implementing components of AS! BC; and (2) identify core factors that significantly influence the diffusion of AS! BC around the province. Uniquely, this study aims to examine characteristics of AS! BC at the level of teachers, schools, and school districts that are likely to affect its uptake and sustainability. We will survey 535 teachers, 120 principals and 30 school district superintendents to examine factors that may affect the uptake and sustainability of AS! BC. Findings from this research will allow the province of BC to make evidence-based course corrections where necessary and provide evidence for continued investment in school-based approaches. Results will also inform other jurisdictions in Canada that are just embarking on school-based strategies to improve children's health. Programs such as AS! BC are critical initiatives as they promote strategies to improve physical activity and nutrition and target the burgeoning problem of childhood obesity. Effective roll out of the model would maximize the reach and effectiveness of this innovative model and ultimately result in a broader population level impact.

Appendix E: List of abbreviations used

CBRPE	Centre for Behavioural Research and Program Evaluation
CIHR	Canadian Institutes of Health Research
CIHR-IA	Canadian Institutes of Health Research – Institute of Aging
CIHR-IHDCYH	Canadian Institutes of Health Research – Institute of Human Development, Child and Youth Health
CIHR-IHSPR	Canadian Institutes of Health Research – Institute of Health Services and Policy Research
CIHR-INMD	Canadian Institutes of Health Research – Institute of Nutrition, Metabolism and Diabetes
CIHR-IPPH	Canadian Institutes of Health Research – Institute of Population and Public Health
CJPH	Canadian Journal of Public Health
CPHI	Canadian Population Health Initiative (of the Canadian Institute for Health Information)
CTCRI	Canadian Tobacco Control Research Initiative
HSFC	Heart and Stroke Foundation of Canada
KT	Knowledge Translation
NHS	National Health Service (UK)
PHAC	Public Health Agency of Canada
PHIR	Population Health Intervention Research
PHIRIC	Population Health Intervention Research Initiative for Canada
RCT	Randomized Controlled Trial
RWJF	Robert Wood Johnson Foundation
SSHRC	Social Sciences and Humanities Research Council

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- ¹Population Health Intervention Research Initiative. Population Health Intervention Research Initiative for Canada Strategic Plan 2007-2017. January 2009.
- ²Di Ruggiero E, Rose A, Gaudreau K. Canadian Institutes of Health Research Support for Population Health Intervention Research in Canada. *Canadian Journal of Public Health*. Jan./Feb. 2009, 100(1): I15-I19
- ³Population Health Intervention Research Initiative for Canada. Population Health Intervention Research Initiative for Canada Workshop Report. September 26-27, 2006. Banff Centre, Banff Alberta.
- ⁴Di Ruggiero E et al. *CJPH* Jan./Feb. 2009, 100(1): I15-I19
- ⁵Cameron R, Riley BL, Campbell HS, Manske S, Lamers-Bellio K. The imperative of strategic alignment across organizations: The experience of the Canadian Cancer Society's Centre for Behavioural Research and Program Evaluation. *CJPH* Jan./Feb. 2009, 100(1): I27-I30
- ⁶Sullivan L. Introduction to the Population Health Intervention Research Initiative for Canada. *Canadian Journal of Public Health*. *CJPH* Jan./Feb. 2009, 100(1):I5-I6
- ⁷Robert Wood Johnson Foundation. The Robert Wood Johnson Foundation Anthology To Improve Health and Health Care, Volume XI. 2007. Available at: <http://www.rwjf.org/files/research/022208mcgrathanthology.pdf>
- ⁸Canadian Tobacco Control Research Initiative. "The Magic is in the Mix": Capacity Building in Tobacco Control Research. Summary of a workshop convened by the Canadian Tobacco Control Research Initiative. (Prepublication Draft, February 2009).
- ⁹Sallis JF, Linton LS, Kraft MK, Cutter CL, Kerr J, Weitzel J, Wilson A, Spoon C, Harrison ID, Cervero R, Patrick K, Schmid TL, Pratt M. The Active Living Research Program: Six Years of Grantmaking. *American Journal of Preventive Medicine*. February 2009 Supplement (Vol. 36, No. 2S): Active Living Research: A Six-Year Report.