Can the Canadian Heart Health Initiative Inform the Population Health Intervention Research Initiative for Canada?

Barbara L. Riley, PhD,¹ Sylvie Stachenko, MD,² Elinor Wilson, PhD,³ Dexter Harvey, EdD,⁴
Roy Cameron, PhD,¹ Jane Farquharson, MSc,⁵ Catherine Donovan, MD,⁶ Gregory Taylor, MD²

ABSTRACT

Objectives: The aim of the Population Health Intervention Research Initiative for Canada (PHIRIC) is to build capacity to increase the quantity, quality and use of population health intervention research. But what capacity is required, and how should capacity be created? There may be relevant lessons from the Canadian Heart Health Initiative (CHHI), a 20-year initiative (1986-2006) that was groundbreaking in its attempt to bring together researchers and public health leaders (from government and non-government organizations) to jointly plan, conduct and act on relevant evidence. The present study focused on what enabled and constrained the ability to fund, conduct and use science in the CHHI.

Methods: Guided by a provisional capacity-building framework, a two-step methodology was used: a CHHI document analysis followed by consultation with CHHI leaders to refine and confirm emerging findings.

Results: A few well-positioned, visionary people conceived of the CHHI as a long-term, coherent initiative that would have impact, and they then created an environment to enable this to become reality. To achieve the vision, capacity was needed to a) align science (research and evaluation) with public health policy and program priorities, including the capacity to study "natural experiments" and b) build meaningful partnerships within and across sectors.

Conclusion: There is now an opportunity to apply lessons from the CHHI in planning PHIRIC.

Key words: Heart health promotion; population health intervention research; health research system; research capacity

La traduction du résumé se trouve à la fin de l'article.

Can J Public Health 2009;100(1):120-126.

Despite aspirations for evidence-based public health, relevant knowledge is not being applied optimally,¹⁻³ and not enough of the research being produced is relevant to population-based programs and policies⁴ (see the article by Di Ruggiero and colleagues in this issue). The aim of the Population Health Intervention Research Initiative for Canada (PHIRIC) is to address these issues. PHIRIC's goal is to build capacity to increase the quantity, quality and use of population health intervention research. The purpose of such research is to improve the design, implementation and outcomes of policies and programs and, thus, to improve the health of Canadians. But how do we create an environment that supports this aspirational vision? What capacity is required, and how should capacity be created?

There may be relevant lessons to be learned from the Canadian Heart Health Initiative (CHHI). The purpose of the CHHI, akin to the aim of PHIRIC, was to develop and disseminate programs and policies that would improve health at a population level. Building capacity to better link research and evaluation with public health policy and practice was central to CHHI, as it is to PHIRIC. Like PHIRIC, the CHHI was pan-Canadian and involved both health and non-health sectors.

The CHHI was groundbreaking in its attempt to bring together researchers and public health leaders to jointly plan, conduct and act on relevant evidence. It mobilized a productive and cohesive community of researchers, policy-makers and practitioners who were jointly engaged in studying and improving population approaches to (heart) health promotion. Understanding the challenges and successes of the CHHI in mobilizing a community and stimulating innovative, solution-oriented research may inform PHIRIC.

The present study focused on what enabled and constrained the ability to fund, conduct and use science in the CHHI. These foci are intended to align with key issues that must be addressed to attain the PHIRIC vision. The authors include founding members of the CHHI, individuals involved in key leadership positions within a province or nationally, and government, non-government and academic sectors.

An overview of the CHHI is followed by the study framework, methods, results and possible implications for planning PHIRIC.

Overview of the CHHI

The CHHI was created by the federal government (Health Canada) in partnership with provincial governments and the Heart and Stroke Foundation of Canada (and respective provincial founda-

Author Affiliations

1. Centre for Behavioural Research and Program Evaluation, University of Waterloo
2. Public Health Agency of Canada
3. Health Canada
4. Canadian Cancer Society Manitoba Division, Heart and Stroke Foundation of Manitoba
5. Heart and Stroke Foundation of Nova Scotia
6. Memorial University of Newfoundland

Correspondence and reprint requests: Barbara L. Riley, Canadian Cancer Society's Centre for Behavioural Research and Program Evaluation, University of Waterloo, Lyle S. Hallman Institute North, Waterloo, ON N2L 3G1, Tel: 519-888-4567 ext. 37562, Fax: 519-886-6424, E-mail: briley@healthy.uwaterloo.ca

Acknowledgements: Thanks to Louise Potvin for editorial guidance, and Kim Raine, Kerry Robinson and Gilles Paradis for comments on earlier drafts of the paper. Thanks to Heather McGrath for her research and technical assistance. Barbara Riley's contributions were supported by a personnel award (Andres Petrasovits Fellowship) jointly offered by the Heart and Stroke Foundation of Canada and the Canadian Institutes of Health Research. The authors dedicate this paper to the late Andres Petrasovits for his visionary and facilitative leadership, passion and tenacity, which provided the "glue" within the Canadian Heart Health Initiative.

Figure 1. A comprehensive approach to (heart) health promotion

tions). Its goal was to deal with the problem of premature cardiovascular disease (CVD) in a new way. The CHHI introduced a public health and partnership approach with the aim of lowering risk factors, such as high cholesterol and blood pressure levels, at a *population level*. The CHHI was based on a comprehensive intervention model (Figure 1), which was to be implemented through intersectoral collaboration (government, non-government, academic) with leadership from public health.

The CHHI aimed to achieve its health goals through building capacity for health promotion and (chronic) disease prevention, primarily within the public health system. This capacity included integrating policy, research and action.⁵ The CHHI was a 20-year, multi-phase, pan-Canadian initiative. It started by creating a policy context for action (phase 1), then did provincial heart health surveys to motivate action (phase 2), then moved to demonstrating the feasibility of implementing a partnership and public health approach (phase 3), then to evaluating lessons from these demonstrations (phase 4), and lastly to focusing on the capacities required to disseminate good practices and to integrate them into existing institutions (phase 5).⁶⁻¹⁵ Beyond these five phases, a deployment phase was envisioned but did not materialize (for reasons described later). See Table 1 for a more detailed description of the five phases. All 10 Canadian provinces participated in the CHHI, with staggered entry of provinces into each phase.⁶

A provisional capacity-building framework

The analytic framework for this study of the CHHI draws on three emerging bodies of literature that pertain to development of capacity to generate and use solution-oriented research. First, the literature on capacity building for health promotion suggests that capacity has multiple dimensions, such as leadership, knowledge, skills, structures, processes, resources, context;^{17,18} that capacity has multiple levels (e.g., individual, organizational, community); and that it is the interplay among these dimensions and levels that produces change.¹⁵ A second body of literature explores capacity building for health research systems.^{19,20} Although this literature focuses on international development, the goals and concepts may be relevant to underdeveloped areas of health research (including population intervention research) in developed countries. This literature

Figure 2. A provisional capacity-building framework

*Adapted from Potter & Brough, 2004 and the International Heart Health Singapore Declaration^{18,20}

contributes the concept of *systemic* capacity and a systems approach that emphasizes the importance of dynamic and interdependent capacities.²¹ Third, the growing literature on knowledge translation and utilization may be instructive.^{22,23} This literature emphasizes linkage and exchange among research producers and research users and the dynamic interaction among information, values and the decision-making context that influence knowledge use.^{24,25} The need to fully integrate knowledge generation and knowledge use is also increasingly recognized.²⁶

Perspectives and concepts from these three sources are synthesized into a provisional capacity-building framework for the generation and use of intervention research (Figure 2). See definitions for each of the capacity development domains in Table 5.

METHODS

The aim of this study was to understand what enabled and constrained the ability to fund, conduct and use intervention research within the CHHI. Specific research questions (Table 2) examined both the successes and the challenges faced by the CHHI. The provisional capacity-building framework (Figure 2) calls attention to an initial set of capacities (at individual, organizational and system levels) to explore in the present study.

A two-step approach was used to address the research questions. In brief, step one involved CHHI document analysis, and step two involved consultation with CHHI leaders to refine and confirm findings. These steps are described below.

Step one involved an analysis of a subset of peer-reviewed and gray literature from the CHHI. Documents selected for inclusion were synthesis and review papers that provided overviews of one or more phases of the CHHI. These documents often integrated various sources of data (e.g., documents, key informant interviews and survey data) and were done by scientists and public health professionals involved in the CHHI: the current paper draws as much as possible on their thinking at the time rather than presenting an original synthesis that might impose a retrospective bias. A total of six secondary sources were used (Appendix A).

Documents were coded according to a three-level coding scheme (*purpose, theme, direction of influence*) and entered into N-Vivo qualitative software. The *purposes* were to fund, conduct or use science.

Table 1. Phases of the Canadian Heart Health Initiative (CHHI)

Phase	Years	Purpose
Phase 1: Policy Development	1986-1987	To set the agenda for the CHHI. Provincial consultations informed a policy document <i>Promoting Heart Health in Canada</i> . ¹⁶
Phase 2: Provincial Heart Health Risk Factor Surveys	1985-1992	To engage provinces and increase their interest in and commitment to the CHHI. Each province conducted a standardized risk factor survey, including health measures. Results of the surveys were pooled into the Canadian Heart Health Database, and data were published in 1992.
Phase 3: Demonstration Projects	1989-1997	To determine the feasibility of implementing a partnership and public health approach at provincial and community levels in diverse health systems. The CHHI supported 10 provincial and 311 community demonstration projects.
Phase 4: Evaluation	1994-1998	To consolidate lessons from the demonstration phase and plan for the dissemination phase. A main product of this phase was the report <i>Canadian Heart Health Initiative – Process Evaluation of the Demonstration Phase</i> . ⁶
Phase 5: Dissemination	1994-2005	To study capacities required, mostly within the formal public health system, to disseminate and integrate good practices into existing institutions. Nine provinces participated in this phase.

Table 2. Research Questions for CHHI Case Study

Funding Intervention Research

What capacities at individual, organizational and system* levels enabled the launch of the CHHI? What were challenges to overcome? What was the funding mechanism that enabled intervention research, and how was it implemented? What were any challenges to be overcome?

Conducting Intervention Research

What capacities at individual, organizational and system levels enabled intervention research? What aspects constrained the research? What were the main strengths and shortcomings of the intervention research undertaken?

Using Intervention Research

What capacities at individual, organizational and system levels enabled the use of CHHI research? What were any challenges to be overcome?

* Includes factors at an inter-organizational (i.e., network) level and within research, public health practice and policy environments that go beyond individual organizations.

Table 3. Conditions for the Federal-Provincial Co-Funding Agreements

- Matching the federal funding with provincial dollars
- A focus on a public health approach
- The setting up of provincial intersectoral coalitions to support program development and implementation
- Evaluation of the process of intervention as an essential component
- Review of the intervention and the evaluation protocols by a scientific team in site visits arranged by the National Health Research and Development Program

Table 4. Knowledge and Skills Required by CHHI Provincial Teams²⁷

- Research**
- Needs assessment
 - Evaluation, research, surveillance and monitoring
 - Action research/participatory action research
 - Working with the public health system
- Practice**
- Evidence-based planning and goal-setting
 - Program and policy development and implementation
 - Applying best practices
 - Community mobilization and working in partnership
 - Primary prevention
 - Recruitment and retention of volunteers
 - Accessing critical resources (e.g., leveraged funds)

Themes corresponded to the capacity development domains in Figure 2. *Direction of influence* was to enable or constrain. Findings reported are those that a) addressed the research questions most directly and b) were found most consistently across data sources.

The second step involved a review of a preliminary draft of this paper by 11 key informants who were involved in the CHHI (including the authors of this paper). Informants were selected according to their deep knowledge of the CHHI, including its strategic positioning, main developments and lessons across all phases of the Initiative. They were also selected to include research, policy, practice and funding perspectives. The review by informants was to ensure, as much as possible, that the results were accurate and complete and the interpretation sound. A semistructured process was

used. Written and verbal responses were received. New information and insights were incorporated with most weight given when similar comments came from more than one informant.

RESULTS: LESSONS FROM THE CHHI

Findings are reported as they relate to a) funding, b) conducting and c) using public health intervention research.

Funding intervention research

Initiating, launching and building the momentum of the CHHI were made possible through a combination of leadership, vision and resources. Championship from national and provincial organizational leaders was vitally important. Initial leadership was provided by strategically positioned senior officials in Health Canada and influential leaders in provincial public health systems.

These initial champions started by building pan-Canadian consensus on a population approach to CVD prevention. This consensus was reported in *Promoting Heart Health in Canada*,¹⁶ which positioned premature CVD as a significant public health problem and therefore encouraged a focus on population-level solutions. At the time, population-level disease prevention and health promotion were underdeveloped in public health, but interest was growing with the release of the seminal *Ottawa Charter for Health Promotion* in 1986. The policy approach in *Promoting Heart Health in Canada* was adopted by the federal and provincial ministers of health. This institutional support set the stage for moving to implementation.

Federal-provincial co-funding agreements enabled implementation. These agreements included standard conditions (Table 3) related to funding, partnership, evaluation and peer review; yet they allowed for flexible implementation tailored to the provincial context.

Federal funding to provinces was made possible through discretionary funding and the former National Health Research and Development Program (NHRDP), both within Health Canada. The NHRDP was an internal government mechanism that funded policy-

Table 5. Critical Success Factors for Capacity Development Domains

Domain	Critical Success Factors
Vision A value proposition; a preferred future that is better than the status quo (e.g., population approach to prevention of premature cardiovascular disease; integration of science, policy and action)	<ul style="list-style-type: none"> • Leading edge • Builds on past work • Aligned with current policy directions and goals • Shared • Compelling
Leadership Champions for a cause; the initiators and mobilizers of collective action focused on a particular goal	<ul style="list-style-type: none"> • Well-positioned champions at all levels • Federal-provincial partnership • Leadership from research and public health sectors • Facilitative leadership • Consistent and strong leadership at all levels • Organizational credibility and support
Resources Human, financial and in-kind contributions that are dedicated to achieving the vision	<ul style="list-style-type: none"> • Multiple sources of funding and other contributions • Organizational level commitment • Flexibility in use of resources and timing • Long-term funding commitments (ensuring that there is continuity of human resources, partnerships, programs and research)
Infrastructure and Partnerships Refers to the structures, processes and relationships that support the generation of relevant research and evaluation studies and their use by practitioners	<ul style="list-style-type: none"> • Mechanism that integrates funding for research and interventions • Teams that include scientists and decision-makers • Science relevant to policy and practice to support provincial and local action • Flexible implementation • Appropriate and supportive peer review process • Collaborative planning, and enabling structures and networks at multiple levels • Use of existing structures, processes and relationships • Viable research and public health systems
Competencies Knowledge and skills needed to conduct and use relevant intervention studies	<ul style="list-style-type: none"> • Technical assistance and training • Reflective practice • Strategic, technical and interpersonal skills
Tools and Methods Theory, methods (e.g., intervention research designs, quantitative and qualitative approaches, knowledge synthesis), indicators and data systems that are appropriate for intervention studies and their use	<ul style="list-style-type: none"> • An appropriate data infrastructure to support learning from practice • Indicators of success that are realistic and compel action • Evaluation methods that are flexible • Common evaluation frameworks

relevant research and enabled directed calls to provinces (with the terms and conditions shown in Table 3). A senior public health leader was recruited as a champion in each province; this leader then recruited a provincial research leader and a representative from the Heart and Stroke Foundation provincial office. Together, these champions built a provincial CHHI team, which was funded to prepare a provincial proposal (a new proposal was required for each new phase of the CHHI).

The NHRDP used an innovative peer-review process. Proposals received a formative review by an international peer review panel convened specifically for the CHHI. Only one provincial proposal was reviewed at a time. The peer review panel provided constructive advice and feedback on plans and methods during this initial formative review. The provincial team then had up to one year of funding to develop and refine the proposal, which then went back to the review panel for final approval. The goal of the process was to ensure that the research questions identified as being of top priority by the province were addressed as rigorously as possible.

There were two main challenges with the funding mechanism. First, given that the CHHI was conceived as a long-term enterprise, the five-year funding commitments (coinciding with each CHHI phase) created uncertainty that compromised continuity of human resources, partnerships, programs and research. Second, sustainability of support from the federal government became increasingly difficult. Changes in the bureaucracy, shifts in government priorities, a lack of dedicated funding and the loss of the NHRDP funding mechanism with the creation of the Canadian Institutes of Health Research (this pre-empted a projected CHHI deployment phase) resulted in the loss of the federal funding.

Conducting intervention research

In addition to the domains of capacity already described, conducting research in the CHHI required new infrastructure, new knowledge and skills of provincial teams, and new research methods and tools.

A base requirement for meaningful participation in the CHHI was the presence and functioning of a public health infrastructure at provincial and local/regional levels. The need for this basic infrastructure was most readily apparent in the dissemination phase, since the plan was to use the system to drive dissemination. But this phase was compromised because it coincided with serious erosion of the public health infrastructure in Canada.

The CHHI was also facilitated by the diverse knowledge and skill sets of provincial teams (Table 4). This breadth was essential given that studies were embedded within the public health system, and study designs (e.g., mixed methods) had to accommodate this. This dynamic interplay of intervention and research was reinforced by provincial project representatives when interviewed for a situational analysis of the CHHI in 2001: "We've not only learned about what are good interventions but we've also learned about what is good research in this kind of context."²⁷

Health Canada played a unique and important role in supporting the development of this diverse set of knowledge and skills, and also in continuing to strengthen the CHHI community over time. The federal government provided networking opportunities (e.g., meetings of the Conference of Principal Investigators), strategic documents (e.g., on marketing heart health, heart health inequalities), technical assistance and training (e.g., evaluation guidelines, Canadian Heart Health Network meetings, training for common data collection) and conceptual frameworks (e.g., leadership in international heart health declarations). Provincial teams identi-

fied these supports and the facilitative leadership as invaluable. The connectivity and the collaboration within the CHHI community across sectors (research/policy-practice) and provinces were strong and highly valued.

Such connectivity and competencies within the CHHI enabled the development of new concepts, methods and tools. For instance, the CHHI pioneered work in the areas of organizational capacity and dissemination research.⁷⁻¹⁵ Other pioneering efforts were methods to synthesize lessons across the diverse provincial projects. These efforts included the national process evaluation in the demonstration phase⁶ and the Canadian Heart Health Dissemination Project in the dissemination phase.²⁸

Insufficient tools to support these new methods constrained the ability to conduct research in the CHHI. A case in point is under-developed data systems. Provincial heart health surveys were not repeated, and few data systems were developed that could measure meaningful and realistic outcomes for the timeframe and resources of the CHHI (such as setting-specific improvements in programs and policies).

Using intervention research

Use of CHHI research was influenced by a combination of capacity domains, including dissemination tools, competencies and partnerships.

Peer-reviewed publications and technical reports were vehicles to promote use of CHHI research. Some of these publications had considerable impact: for instance, a special issue of the *Canadian Journal of Public Health* on dissemination research in 1996 served as a catalyst in this field internationally. Some provided opportunities for inter-sectoral collaboration, such as joint publications by clinical and public health leaders on the heart health risk factor surveys. When reflecting on CHHI assets and shortcomings, provincial leaders recognized these publications as important but reinforced the need to disseminate findings directly to policy and practice communities to enable contextually sensitive nuance to be conveyed.

Written products, of course, were not enough to facilitate the use of findings. Capacity-building strategies, such as training, consultation and networking, were also necessary. One of the most promising strategies was reflective practice, which involved facilitated sessions involving researchers and practitioners who were asked to make sense of research findings and develop action plans tailored to the local and provincial context. This reflective practice process as it evolved in Saskatchewan has been described in some detail.¹⁵

Another promising strategy was systematic synthesis, documentation and dissemination of best practices. The CHHI began working in this area with G7/G8 countries: a G7/G8 database was created to support dissemination. Some CHHI leaders built on this work as a way to facilitate useful synthesis, dissemination and use of findings.²⁹

Other work by champions is also building on the legacy of CHHI. For example, some provincial public health and health promotion strategy documents cite CHHI survey data and lessons.^{30,31} The Heart Health Risk Factor Survey was the precursor to the current Health Measures Survey. Other federal-provincial platforms were subsequently created, including the Integrated Strategy for Healthy Living and Chronic Disease (first-ever federal government Cabinet-approved comprehensive strategy) and the Canadian Diabetes Strategy. These Strategies deliberately built on the partnership and the multi-risk factor approaches of the CHHI, and some of the CHHI coalitions contributed to the provincial infrastructure by

expanding to become healthy living alliances. It is also likely no coincidence that some of the people advancing the PHIRIC vision were involved in CHHI. Participation in CHHI had an indelible and transformative influence on many participants, who became committed to aligning research, policy and practice to achieve impact.

DISCUSSION AND IMPLICATIONS FOR PHIRIC

This CHHI case study aimed to illuminate the approach taken to funding, conducting and using research to advance (heart) health promotion in diverse provincial public health systems.

The findings confirm the importance of the capacity development domains in the provisional framework (Figure 2): All domains were pertinent to funding, conducting and/or using science in the CHHI. Some critical success factors derived from the CHHI are summarized in Table 5.

This synthesis raises several questions related to PHIRIC.

What is a compelling value proposition for PHIRIC? In the CHHI, a compelling vision for reducing CVD risk factors was a powerful motivator. Might PHIRIC benefit from a vision that is compelling, at a minimum, to leaders in the domains of research funding, evaluation funding, surveillance, policy/practice and research? Given the potential of non-governmental organizations to move a sustained agenda forward through their research funding and influence on government funding, it may be especially important that the vision be compelling to health charities, so that they see support of the vision as a powerful means of advancing their missions.

Unlike the CHHI, PHIRIC has no disease-specific (or other substantive) focus, although it was motivated by a preliminary vision of a chronic disease (cancer, cardiovascular disease, diabetes, etc.) prevention system that integrates research. This vision was developed, along with facilitative leadership from a number of organizations involved in PHIRIC, by leaders in policy, research and practice.³² In essence, these leaders realized that they could begin to create an environment that would enable integration of research, policy and practice by aligning their work. They also realized that their organizations must work this way if individual organizations were to achieve their missions. For example, if the Canadian Institutes of Health Research is to deliver on its legislated mandate to improve the health of Canadians, it must continue to work with organizations involved in disease prevention to determine how to fund research that is needed by these organizations. Similarly, those organizations responsible for federal and provincial strategies related to risk factors (e.g., tobacco use, unhealthy eating and inactivity) and disease prevention may advance their goals by actively seeking to integrate research with their policy and program agendas to enhance their impact. PHIRIC is a vehicle for enabling this integration.

CHHI showed that leaders who have to be highly selective in their involvements will invest effort into linking research to action when it enhances their ability to make a positive difference in the world. PHIRIC partners must find a value proposition that justifies the time required to work together. The CHHI example provides a basis for optimism that such a value proposition can be found with appropriate focus. Such a proposition is required to attract the sort of committed influential champions and facilitative leadership that launched and drove CHHI.

What funding mechanisms might allow research to be aligned with the priorities of policy and practice decision-makers? Increasingly, research funding mechanisms (e.g., team

grants) are supporting the integration of team development, research and knowledge translation. Funding mechanisms that allow research to be conducted on major policy and program innovations are not as readily available. This is critical, since experimental population health interventions are often not implemented by researchers but, rather, by policy or program leaders who are trying something new (e.g., a multi-million dollar social marketing campaign or an income support policy to reduce poverty). Researchers do not have the money or the policy levers to implement such interventions. To learn what impact such social experiments have, we need to graft research onto the intervention.³³ Since the effects of such interventions are likely to be context specific, there is a need to do such research in Canada: we cannot rely on people in other countries to do this work for us.

So how can we study these “natural experiments”? This is a major issue facing PHIRIC partners. CIHR Institutes involved in PHIRIC have begun to provide modest funding to enable researchers to seize fleeting opportunities to study these natural experiments. The CHHI provides some leads about how this effort might be taken to the next level, even though the same funding mechanism may not be appropriate. In the CHHI, federal-provincial co-funding agreements were instituted to link research with policy and practice. These agreements facilitated institutional commitment and relevance of research to public health system needs. PHIRIC is aiming to build that same commitment today: to create an environment in Canada that ensures that the major interventions we are counting on to improve population health are studied, with a view to continual improvement in the policy and program agenda. What justification could we give to Canadians, who pay us and on whose behalf we work, for not attempting this?

What peer review process might enable intervention research that is both relevant and rigorous and helps to expand the field of intervention research? The CHHI peer review process was especially innovative (e.g., with formative reviews), being appropriate for the type of research and in tune with the capacity to design and carry out that research. The aim was to ensure that the important work was done and done in the most rigorous way possible. If provinces are rapidly losing fiscal capacity to support social programs and are calling for help in preventing chronic disease as a means to address this urgent situation,³⁴ is it acceptable to have peer review panels reject essentially sound studies that may have minor flaws but are perhaps critical to policy-makers? It would be worth considering a review process that enables urgent studies to be done, as rigorously as possible, without undue delay.

How can joint leadership from scientists and public health professionals be supported? In the CHHI, leadership from well-positioned, influential people within the public health system was especially critical to mobilizing a productive and deeply engaged pan-Canadian community. The people who became engaged were mission-driven people, fueled by a desire to make a difference. We have many people of this ilk in our midst. How do we engage them?

The Conference of Principal Investigators brought together provincial and federal CHHI leaders to create a mutually supportive, mission-driven community. It facilitated the exchange of plans, ideas and tools across provinces as well as inter-provincial peer consultation (e.g., provinces could draw on each other's experiences

and expertise during proposal development, implementation, analysis and write-up phases).

How can PHIRIC be built to last? Sustainability of an initiative does not necessarily imply that the same *entity* endures, but that the overall *intent* (or goal) is maintained. When formal commitments to the CHHI ended, so did the impetus for building health promotion capacity in the public health system, including embedding relevant research and evaluation. There was no compelling voice advocating the continuation and expansion of CHHI's work in communities and provinces across Canada: not from non-governmental organizations, corporations or the medical community, despite the partnership model.

Health charities may be especially important to help ensure that there is sustained commitment and funding. For instance, might they invest part of their research budget (perhaps leveraging government funding in the process) to support work explicitly aligned with the disease strategies (e.g., heart, cancer, diabetes) that they instigate? Might they give priority to advocacy of sustained government funding of impact-oriented, strategic research when this is under threat?

The creation of a community of mutually supportive leaders with a shared mission (e.g., through the Conference of Principal Investigators) was crucial for incubating collaborative relationships that endured when funding ended. Many of these leaders still work together to advance the goals of CHHI even though CHHI no longer exists. Creation of such an action-oriented community of leaders may support sustainability of mission-referenced effort.

CONCLUSION

Can a lesson be learned from the CHHI? A few well-positioned, visionary people conceived of the CHHI as a long-term, coherent initiative that would have impact, and then created an environment to enable this to become reality. When the enabling environment was in place, leaders were attracted. The Initiative gathered momentum as it leveraged key partnerships among the scientific, non-government and public health communities across Canada and globally. We learned that vision, partnership and persistence were key features of success. The institutional environment that supported the CHHI went through many changes and eventually dissipated. But there is now renewed opportunity in Canada to build on the legacy of the CHHI to advance population health. Is this not a moment in our history when we need champions and organizations to join forces to create the environment that lets us find ways to improve the health of Canadians? Might PHIRIC be the vehicle that enables these leaders to create the environment that is needed? Could they, for instance, build capacity to realize an emerging vision for a chronic disease prevention system that integrates research and evaluation with policy and practice?

REFERENCES

1. Lomas J, Culyer T, McCutcheon C, McAuley L, Law S. *Conceptualizing and Combining Evidence for Health System Guidance: Final Report*. Ottawa, ON: Canadian Health Services Research Foundation, 2005.
2. Kiefer L, Frank J, Di Ruggiero E, Dobbins M, Manuel D, Gully PR, et al. Fostering evidence-based decision-making in Canada: Examining the need for a Canadian population and public health evidence centre and research network. *Can J Public Health* 2005;96(3):I1-I19.
3. Speller V, Wimbush E, Morgan A. Evidence-based health promotion practice: How to make it work. *Promot Educ* 2005;Suppl 1:15-20.
4. Millward LM, Kelly MP, Nutbeam D. *Public Health Intervention Research – the Evidence*. London: Health Development Agency, 2003.

5. Health and Welfare Canada. The Canadian Heart Health Initiative: A policy in action. *Health Promot* 1992;30(4):2-19.
6. Conference of Principal Investigators (COPI) of Heart Health. Canadian Heart Health Initiative: Process Evaluation of the Demonstration Phase. Ottawa, ON: Health Canada, 2001.
7. Elliott SJ, O'Loughlin J, Robinson K, Eyles J, Cameron R, Harvey D, et al. Conceptualizing dissemination research and activity: The case of the Canadian Heart Health Initiative. *Health Educ Behav* 2003;30(3):267-82.
8. Dressendorfer R, Raine K, Dyck R, Plotnikoff R, Collins-Nakai R, McLaughlin W, et al. A conceptual model of community capacity development for health promotion in the Alberta Heart Health Project. *Health Promot Pract* 2005;6(1):31-36.
9. Farmer T, Robinson K, Elliott S, Eyles J. Developing and implementing a triangulation protocol for qualitative health research. *Qual Health Res* 2006;16(3):377-94.
10. Plotnikoff R, Anderson D, Raine K, Cook K, Barrett L, Prodaniuk T. Scale development of individual and organizational infrastructure for heart health promotion in regional health authorities. *Health Educ J* 2005;64(3):256-70.
11. Anderson D, Plotnikoff R, Raine K, Barrett L. Development of measures of individual leadership for health promotion. *Leadersh Health Serv* 2005;18(2):1-12.
12. Anderson D, Plotnikoff R, Raine K, Cook K, Smith C, Barrett L. Towards the development of scales to measure 'will' to promote heart health within health organizations in Canada. *Health Promot Int* 2004;19(4):471-81.
13. Riley BL. Dissemination of heart health promotion in the Ontario public health system: 1989-1999. *Health Educ Res* 2003;18(1):15-31.
14. Riley B, Elliott S, Taylor M, Cameron R, Walker R. Dissemination of heart health promotion: Lessons from the Canadian Heart Health Initiative Ontario Project. *Promot Educ* 2001;(Supplement 1):26-30.
15. McLean S, Feather J, Butler-Jones D. *Building Health Promotion Capacity*. Vancouver, BC: UBC Press, 2005.
16. Federal/Provincial Working Group on the Prevention and Control of Cardiovascular Disease. Promoting Heart Health in Canada. Ottawa, ON: Health and Welfare Canada, 1987.
17. Goodman RM, Speers MA, McLeroy K, Fawcett S, Kegler M, Parker E, et al. Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health Educ Behav* 1998;25(3):258-78.
18. The Advisory Board International Heart Health Conference. The Singapore Declaration: Forging the Will for Heart Health in the Next Millennium. Singapore: Singapore National Heart Association, 1998.
19. Pang T, Sadana R, Hanney S, Bhutta ZA, Hyder AA, Simon J. Knowledge for better health: A conceptual framework and foundation for health research systems. *Bull World Health Organ* 2003;81(11):815-20.
20. Potter C, Brough R. Systemic capacity building: A hierarchy of needs. *Health Policy Plan* 2004;19(5):336-45.
21. Schacter M. "Capacity Building": A New Way of Doing Business for Development Assistance Organizations. Policy Brief No. 6. Ottawa, ON: Institute on Governance, 2000.
22. Walter I, Nutley SM, Davies HTO. What works to promote evidence-based practice? A cross-sector review. *Evidence & Policy* 2005;1(3):335-64.
23. Best A, Hiatt RA, Norman C. The Working Group on Translational Research and Knowledge Integration. *The Language and Logic of Research Transfer: Finding Common Ground*. Toronto, ON: National Cancer Institute of Canada, 2006.
24. Lomas J. Using 'linkage and exchange' to move research into policy at a Canadian Foundation. *Health Aff* 2000;19(3):236-40.
25. Lomas J. Connecting research and policy. *Isuma* 2000;1(1):140-44.
26. Best A, Riley B, Norman C. *Evidence Informed Public Health Policy and Practice through a Complex Lens: A Rapid Review*. Ottawa, ON: Public Health Agency of Canada, 2007.
27. Riley B, Feltracco A. *Situational Analysis of the Canadian Heart Health Initiative: Final Report*. Ottawa, ON: Health Canada, 2002.
28. Elliott S, Robinson K, Eyles J, Cameron R, Harvey D, O'Loughlin J. *Canadian Heart Health Dissemination Project: Final Report*. 2007.
29. Cameron R, Jolin MA, Walker R, McDermott N, Gough M. Linking science and practice: Toward a system for enabling communities to adopt best practices for chronic disease prevention. *Health Promot Pract* 2001;2(1):35-42.
30. Department of Health and Community Services. Healthier Together: A Strategic Health Plan for Newfoundland and Labrador. St. John's, NL: Government of Newfoundland and Labrador, 2002.
31. Department of Health and Community Services. Achieving Health and Wellness: Provincial Wellness Plan for Newfoundland and Labrador (Phase 1: 2006-2008). St. John's, NL: Government of Newfoundland and Labrador, 2006.
32. Asselbergs M, Connolly C. *A Vision for Integrated Research within an Integrated System for Chronic Disease Prevention in Canada*. Ottawa, ON: Chronic Disease Prevention Alliance of Canada, 2005.
33. Petticrew M, Cummins S, Ferrell C, Findlay A, Higgins C, Hoy C, et al. Natural experiments: An underused tool for public health? *Public Health* 2005;119(9):751-57.
34. Hazlewood A. *ActNow BC: Long Standard Presentation*. BC Ministry of Health, 2006.

Appendix A Annotated data sources

Cameron R, Brown KS, Best JA. The dissemination of chronic disease prevention programs: Linking science and practice. *Can J Public Health* 1996;87:S50-S53. Reflecting on their experiences in multiple studies, the authors highlight the need for the establishment of a national working group of researchers and providers for the dissemination of programs and the establishment of a shared set of research priorities and mechanisms.

Cameron R, Walker R, Gough M, McDonald P. Linking public health science and practice: An example from the Canadian Heart Health Initiative. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 2000;13:i-vii. This article describes the dissemination phase of the CHHI, focusing on the link between research and practice, and the provision of timely and relevant information to public health practitioners.

Stachenko S. Case study: the Canadian Heart Health Initiative. In: Rootman I, Goodstadt M, Hyndman B, McQueen DV, Potvin L, Springett J, et al. (Eds.), *Evaluation in Health Promotion: Principles and Perspectives*. Denmark: World Health Organization, 2001;463-73. A case study written by one of the CHHI champions within the federal government that describes the demonstration phase of the federal and provincial heart health programs.

Conference of Principal Investigators (COPI) of Heart Health. *Canadian Heart Health Initiative: Process Evaluation of the Demonstration Phase*. Ottawa, ON: Health Canada, 2002. This report, presenting the findings of the process evaluation from the demonstration phase, provides an overview of the CHHI (including inputs, processes and impacts), as well as reflections from the provincial principal investigators.

Riley B, Feltracco A. *Situational Analysis of the Canadian Heart Health Initiative: Final Report*. Submitted to Dr. Gregory Taylor, Director, Disease Intervention Division, Population and Public Health Branch. Ottawa, ON: Health Canada, 2002. This situational analysis was conducted to explore how the assets of the CHHI can contribute to health policy, research, surveillance and practice in a new and dynamic public health environment in Canada following the CHHI dissemination phase.

Elliott S, Robinson K, Eyles J, Cameron R, Harvey D, O'Loughlin J. *Canadian Heart Health Dissemination Project: Final report*. 2007. This report captures the findings from the Canadian Heart Health Dissemination Project, providing an overview of the project, summarizing the major findings and implications, and highlighting capacity building and dissemination activities.

RÉSUMÉ

Objectifs : L'Initiative de recherche interventionnelle en santé des populations du Canada (IRISPC) a pour but de développer les capacités d'accroître la quantité, la qualité et l'utilisation de la recherche interventionnelle en santé des populations. Mais quelles sont les capacités requises, et comment les développer? Il pourrait y avoir des leçons intéressantes à tirer de l'Initiative canadienne en santé cardiovasculaire (ICSC), qui s'est échelonnée sur 20 ans (1986-2006) et a été la première à rassembler des chercheurs et des responsables de la santé publique (issus des gouvernements et des organisations non gouvernementales) afin de planifier et d'exécuter de la recherche pertinente et d'en mettre les résultats en pratique. La présente étude porte sur les facteurs qui ont habilité ou limité le financement, la conduite et l'utilisation de la recherche scientifique dans le cadre de l'ICSC.

Méthode : En nous guidant sur un cadre provisoire de renforcement des capacités, nous avons opté pour une méthode en deux temps : nous avons analysé les documents de l'ICSC, puis consulté les dirigeants de l'ICSC pour peaufiner et confirmer les résultats de l'analyse.

Résultats : L'ICSC est le fruit du travail de quelques visionnaires idéalement placés, qui envisageaient une initiative influente, cohérente et de longue durée et qui ont créé l'environnement nécessaire pour la concrétiser. Pour cela, il fallait développer a) la capacité de faire concorder la science (la recherche et l'évaluation) avec les priorités des politiques et des programmes de santé publique, notamment la capacité de mener des « expériences dans des conditions naturelles » et b) la capacité de créer des partenariats constructifs entre différents secteurs d'activité et au sein de ces secteurs.

Conclusion : Il est maintenant possible d'appliquer les leçons de l'ICSC à la planification de l'IRISPC.

Mots clés : promotion de la santé cardiovasculaire; recherche interventionnelle en santé des populations; réseau de recherche en santé; capacité de recherche