



# Strengthening Primary Health Care through Primary Care and Public Health Collaboration

Final Report for CHSRF

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**NOTE:** Appendices can be found at the following link:

**Appendix A:** Summaries of Ten Case Studies of Primary Care and Public Health Collaboration

<http://fhs.mcmaster.ca/nursing/documents/case-study-summaries.pdf>

**Appendix B:** Partnership Self-Assessment Tool (PSAT) Scores for Synergy, Partnership's Leadership, Efficiency of Partnership, Effectiveness of your Partner's Administration and Management, Sufficiency of Your Partnership's Resources, Partnership's Financial and Other Resources by Case

<http://fhs.mcmaster.ca/nursing/documents/psat-scores.pdf>

**Appendix C:** Partnership Self-Assessment Tool (PSAT) Results on Satisfaction by Case

<http://fhs.mcmaster.ca/nursing/documents/psat-results-on-satisfaction-by-case.pdf>

## Key Messages for Decision-Makers

- Interest in collaboration between primary care (PC) and public health (PH) and how it can improve the health of populations and quality and effectiveness of health care systems has grown substantially over the past four years.
- Evidence supports the benefits of collaboration between PC and PH in the following areas: maternal-child programs, communicable disease prevention and control, health promotion and health protection, chronic disease prevention and management, youth health, women's health, and working with vulnerable populations.
- Collaboration between PC and PH increases accessibility to health promotion and illness prevention programs and services and decreases the cost of immunization programs through reduced wastage.
- Social ecological theory, upon which our conceptual framework for collaboration is based, would suggest that determinants of collaboration at one level of the framework can enhance or suppress determinants at another level (systems, organizational, interpersonal, and intrapersonal levels). This means that when developing strategies to facilitate collaboration, not only do we need to base strategies on factors from various levels of the framework, but we need to do this in an integrated way. The effectiveness of collaboration will be increased when actions are coordinated across the levels of influence in the ecological framework.
- For collaboration to be successful, it is important for PC and PH to have clearly articulated and well understood separate and shared mandates within the health care system.
- Collaboration between PC and PH is facilitated when the vision and goals are jointly determined and systematically communicated across all levels from executive directors to senior managers to front line practitioners.
- More formalized approaches, including policies, are needed to support and endorse collaboration between PC and PH so that collaboration is a deliberate action rather than one that occurs on an ad hoc basis.
- Organizational cultures that have inclusive, transparent communication and decision-making processes facilitate collaboration.
- Collaboratively developed work plans that incorporate a mix of population and individual approaches can work synergistically to address local community health needs.
- Champions to initiate and sustain collaboration need to be identified and supported at system, organizational, and interpersonal levels.
- Specified financial, information, material, space and human resources need to be allocated, reallocated or shared to initiate as well as to maintain collaboration.
- Investments in shared information technologies across health sectors should include PC and PH particularly with respect to immunization, well child care and aspects of chronic disease prevention and management.
- Fee-for-service remuneration can deter health care providers such as family physicians and family practice nurses from participating in collaboration. Compensation models need to be considered that support PC physicians and nurses in collaborative work.
- Educational institutions and accreditation bodies can influence the preparation of professionals for collaboration between PC and PH.
- Ongoing evaluation of collaborations are important to ensure an ongoing quality improvement process.

## Executive Summary

A primary health care-based health system ensures universal coverage and access to services that are both equity-enhancing and acceptable to the population. It is widely believed that primary health care systems can be enhanced by building stronger collaborations between primary care (PC) and public health (PH) sectors<sup>1</sup>. A recently released report from the Institute of Medicine in the US states that “the integration of primary care and public health could enhance the capacity of both sectors to carry out their respective missions and link with other stakeholders to catalyze a collaborative, intersectoral movement toward improved population health”<sup>2</sup> (p. 1)

The objectives of this four and a half year program of research were to: explore structures and processes required to build successful collaborations between PC and PH; understand the nature of existing collaborations in Canada; and, examine roles that nurses and

other providers played in collaborations. The research team represents academic researchers and decision-makers from British Columbia (BC), Ontario (ON) and Nova Scotia (NS), as well as national leaders in PC and PH. By gaining a stronger understanding of the nature of existing collaborations and the structures and processes that support and hinder their success, this program of research has begun to answer how to create and enhance future PC and PH collaborations.

Five distinct, and consecutive research projects as noted in Table 1 formed this program of research. The projects varied in the main questions being addressed, and the research methods and data sources being used. The use of multiple methods and sources increased the rigor of the research as each successive project validated the previous study results, added new information and identified gaps to be addressed in the next project.

**Table 1: Five Projects that Addressed the Nature, Structures, and Processes that Influence Collaboration between Primary Care and Public Health: Focus, Design, Sampling and Approach**

Study Focus	Design	Sample	Approach
1. What is known from the literature about: nature, structures and processes required to build successful collaborations between public health (PH) and primary care (PC); Outcomes of PC and PH collaborations; and markers of successful collaboration	Scoping literature review (including papers between January 1988 to May 2008)	The search strategy yielded a total of 6,125 papers. Of these, 114 were included.	Established methods for a scoping literature review were used. <sup>3,4</sup>
2. Gathering baseline information about the provincial contexts of PC and PH that could contribute, positively or negatively to PC and PH collaboration.	Three Provincial Environmental Scans: British Columbia (BC), Ontario (ON), and Nova Scotia (NS)	PC and PH sectors in the provinces of BC, ON and NS	Key informant consultations; published and grey literature searched
3. Canadian key informant perceptions of structures and processes that have and/or could influence collaboration between PC and PH and the nature of existing collaborations	Interpretive Descriptive Study	74 PC and PH key informants (17 direct service providers, 14 senior program managers, 11 executive officers, 10 middle managers)	Interviews
4. Identifying common viewpoints held by key stakeholders in Canada regarding PC and PH collaboration	Q-Sort methodology	25 researchers, policy-makers, directors and managers, and providers representing federal agencies and institutions from BC, ON and NS	Q-Sort activity: participants sorted 44 statements informed by Study 3 according to their level of agreement.
5. Develop a stronger understanding of the nature of existing collaborations in depth and from multiple sources. Validate the factors influencing collaboration that were identified from the key informant interviews as well as potentially reveal new factors.	Multiple case study	10 case studies: 4 in ON including a pilot; 3 each in BC and NS	Interviews Focus groups Photovoice Partnership Self-Assessment Tool (PSAT) Document analysis



The culmination of this work has resulted in the development of an ecological framework that represents the nature of collaboration and factors that can influence the development and maintenance of successful collaborations. The nature of collaboration, which is found at the core of the framework, is the structure and context around which the collaboration is formed. It includes the organizational structure, the players, the activities conducted in the collaboration as well as the ways that players work together within the context of their environment. The ways of working together in a collaboration ranges on a continuum. Himmelman's conceptualization<sup>5</sup> of collaboration has captured the ways of working together in a collaboration, which includes: networking (exchanging information for mutual benefit), coordination (exchanging information and altering activities for mutual benefit and to achieve a common purpose) cooperation (exchanging information, altering activities, and sharing resources for mutual benefit and to achieve a common purpose), and collaboration (exchanging information, altering activities, sharing resources, and enhancing the capacity of another for mutual benefit and to achieve a common purpose). As Himmelman explains, none of these ways

of working are more important than the other; rather, each strategy is more or less relevant depending on the context of the work that needs to be done. Results from our key informants indicated that all ways of working together can be found in collaborations, and they can evolve over time and as the needs which precipitated the development of a collaboration change or are met. The success of the collaboration at its core can be greatly influenced by the factors at the systemic, organizational, interpersonal and intrapersonal level. Adding to the complexity of understanding successful PC/PH collaborations, these factors influence one another within and between levels. More analysis is currently being conducted to identify the relationships between these factors and their impact on the core and the success of the collaboration. Further, since collaborations evolve over time, a crosscutting factor of research and evaluation of collaboration outcomes and processes has been added to the framework; research and evaluation processes in a collaboration can help ensure that collaborations are maintained and adjusted as needed to be effective. The ecological framework can be found on page 44 in the report.

## Overview of the Program of Research

A primary health care-based health system ensures universal coverage and access to services that are acceptable to the population and equity-enhancing. It is widely believed that primary health care systems can be enhanced by building stronger collaborations between public health (PH) and primary care (PC) sectors, which will lead to better integration of systems and ultimately improved health outcomes.

In this four and a half year program of research, we explored structures and processes required to build successful collaborations between PC and PH at the systemic, organizational and interactional levels. The research team represents academic researchers and decision-makers from BC, ON and NS, as well as national leaders in PC and PH. By gaining a better understanding of structures and processes that support and hinder the development and maintenance of successful collaborations and the extent to which and in what settings they exist, this program of research begins to answer how to create and enhance collaborations between these sectors. Our program of research is also committed to support the training of health services and policy researchers through the active involvement of graduate students as well as the development of training materials focused on collaboration.

We took a socio-ecological perspective in our approach, guided by an evolving framework by San-Martin-Rodriguez et al<sup>6</sup> that identifies three determinants for collaboration. These include: *systemic determinants* (outside the organization) in the environment where the collaboration takes place; *organizational determinants* (conditions within the organization); and *interactional determinants* (interpersonal interactions between team members).

Researchers from across BC, ON and NS representing PC and PH participated in five projects that made up our program of research. Our research objectives were to explore structures and processes required to build successful collaborations between PC and PH, to understand the nature of existing collaborations in Canada and to examine roles that nurses and other providers played in collaborations.

### Definition of Terms

In our program of research we differentiated the terms primary health care and primary care, as have others.<sup>7,8</sup> Primary health care is a broad term conceptualizing an approach to health policy and service provision to individuals and populations that includes health services provided by both PC and PH. Definitions of primary health care, primary care, public health, collaboration and partnership that were used to conceptualize this program of research can be found in Table 2.

**Table 2: Definition of Terms**

<p><b>Primary Health Care</b></p> <p>As per the definition from the Alma Ata Declaration<sup>7</sup>, we defined Primary Health Care as:</p> <p>"...essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process. Primary health care has been used to describe both a philosophical approach to care delivery and differentiate the types of health services delivered. It can encompass various social institutions, different sets of scientific and professional disciplines and technologies, and different forms of practice."<sup>9</sup> (p.1)</p>
<p><b>Primary care</b></p> <p>Primary care can be considered one of primary healthcare's core services. We used Barbara Starfield's definition of primary care.<sup>8</sup> She defines the key features of primary care as being: "the first point entry to a health care system; the provider of person-focused (not disease-oriented) care over time; the deliverer of care for all but the most uncommon conditions; and the part of the system that integrates or co-ordinates care provided elsewhere or by others."</p>
<p><b>Public health</b></p> <p>Similar to primary care, public health can also be considered one of primary healthcare's core services. As per the Public Health Agency of Canada, we defined public health as: "...an organized activity of society to promote, protect and improve, and when necessary, restore the health of individuals, specified groups, or the entire population. It is a combination of sciences, skills, and values that function through collective societal activities and involve programs, services, and institutions aimed at protecting and improving the health of all people. The term "public health" can describe a concept, a social institution, a set of scientific and professional disciplines and technologies, and a form of practice. It is a way of thinking, a set of disciplines, an institution of society, and a manner of practice. It has increasing number and variety of specialized domains and demands of its practitioners [and] increasing array of skills and expertise"<sup>10</sup> (p.13)</p>
<p><b>Collaboration</b></p> <p>We used the Public Health Agency of Canada definition of collaboration, a recognized relationship among different sectors or groups, which is formed to take action on an issue in a way that is more effective or sustainable than might be achieved by the public health sector acting alone.<sup>10</sup> (p. 9)</p>
<p><b>Partnerships</b></p> <p>As per the Public Health Agency of Canada core competency document, partnerships were defined as collaboration between individuals, groups, organizations, governments or sectors for the purpose of joint action to achieve a common goal. The concept of partnership implies that there is an informal understanding or a more formal agreement (possibly legally binding) among the parties regarding roles and responsibilities, as well as the nature of the goal and how it will be pursued.<sup>10</sup> (p.12)</p>

# Studies Within the Program of Research

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# Study 1: A scoping literature review of primary care and public health collaboration

## Context

Worldwide, health systems are struggling to determine the best ways for PC and PH to collaborate.<sup>1</sup> Health Canada's report "Canadian Public Health and Primary Health Care Workshop" stated that, since examples of successful collaborations between PC and PH exist, future research needs to document what has worked and lessons learned.<sup>11</sup>

### *Purpose:*

To determine what is known from existing primary studies, literature reviews and descriptive accounts about:

- structures and processes required to build successful collaborations between PC and PH;
- outcomes of collaborations between PC and PH; and
- markers of successful collaboration between PC and PH.

## Implications

- Policy discussions should occur with governments to determine implications for building PC and PH collaborations with the aim of improving health outcomes.
- Collaboration appears to be one way of addressing the determinants of health. In the absence of solid evidence supporting any collaborative activities, the type of activities revealed in the review appear to be appropriate and are likely to have a positive impact on health care services and health outcomes.
- Important activities included in collaborations that should be considered include: population health needs assessments; promotion of evidence-based practice; educational initiatives; developing information systems for joint work; social marketing; community activities including community engagement; management functions and team activities to

strengthen team work; and quality assurance.

- For those considering PC and PH collaborations, it is important to facilitate practitioners to "buy in" to collaboration. It must be perceived to be of benefit for each sector professionally and of benefit to the clientele that they serve.
- There is a need to develop a collaboration framework building on existing primary health care models and frameworks.

## Approach

Our approach followed established methods for a scoping literature review.<sup>2,3</sup> Consistent with these methods, we did not evaluate the methodological quality of studies. The search strategy involved: i) an electronic database search; ii) a web site search; iii) a hand search of relevant journals; iv) key informant contacts; and v) a search of reference lists of literature reviews on the topic. To ensure health care system comparability and applicability of research findings, we focused our literature review on papers that were about collaboration between PC and PH in North America, Europe, Australia and New Zealand, and published between 1988 and May 2008. Data from all abstracted papers were coded using NVivo version 8 and themes were identified. The coding structure was based on the research questions, and developed by the lead investigator with a co-investigator in consultation with the research team. Team meetings with co-investigators, decision makers, research associates and project staff were held to obtain their perspectives on emerging themes. A paper outlining the methods in much more detail has been published for interested readers.<sup>12</sup>

## Results

The combined search strategy yielded a total of 6125 papers. Of these, 114 met the inclusion criteria.

The number of papers on PC and PH collaboration has grown steadily since the mid to late 1990s, with the largest growth since 2003. The majority of papers originated from the United Kingdom (n=43) and the United States (n=39). Canada ranked third (n=22). By far the most common type of paper was a descriptive report of collaboration (n=41). Thirty four papers were research studies, which most often reported on cross sectional surveys, mixed methods or qualitative methods. Program evaluations (n=25) were also often reported. Seven literature reviews were identified on this topic.

Below are highlights of the major findings. Further details are available from this scoping literature review in a publication.<sup>13</sup>

**Major precipitators of collaborations** included:

- Values and beliefs, such as belief in the value of collaboration, prevention, health promotion.
- Nursing and medicine faculties' desires to plan service initiatives.
- Need to change and broaden medical and nursing education in response to changing health needs and professional roles.
- Government mandated development of teams/partnerships, and health care systems reforms.
- Trends to collaborate.

**Key health issues being addressed by collaborations** included:

- Biomedical issues - commonly chronic diseases and communicable disease control including immunizations.
- Behavioural issues - smoking cessation, screening and other preventive activities.

- Socio-environmental issues - poverty, community development and disaster response planning.
- Access to health care for underserved or vulnerable populations.

**Activities carried out in collaborations** included: community engagement and development, joint health promotion, health education and prevention initiatives, provision of health services, sharing of information systems, social marketing and communication, development of evidence-based tools, advisory and steering committee functions, completion of needs assessments, quality assurance and program evaluations, support of teamwork and joint management activities, as well as the development and implementation of professional and academic educational initiatives.

**Major barriers for collaboration at a systems level** included: policy, funding, power and control issues, and information infrastructure. Highlights included:

- Health care reform where national priorities take precedence over local priorities and where reform causes uncertainty with how PC and PH sectors would function within newly created structures and governance processes.
- A lack of stable funding, versus intermittent or one-off funding, for collaborative projects.
- Separate entrenched bureaucracies for PH and medical services.
- Lack of an information structure (e.g. integrated surveillance system) limiting the ability to adjust practice to the underlying risk of populations and share and compare data.
- Lack of population health needs assessments, relevant clinical data and an evidence base for health promotion and cost-effective PH interventions, including effectiveness of collaborations.

**Major facilitators for collaboration at a systems level** included, government involvement and fit, funding, and education and training. Highlights included:

- Government involvement including the ‘fit’ of supports for collaboration between PC and PH, and the endorsement of the value and benefits of collaboration in the community.
- Relevant policy development (e.g. the reorganization of fiscal and structural resources).
- Technical, informational and financial support to teams for the purpose of promoting integration, such as adequate funds for administrative functions and project implementation.
- Sustained government funding.
- Pooling and sharing of resources, volunteer and in-kind contributions.
- Professional education emphasizing a “system-wide” approach for working collaboratively and training in public health work.

**Major barriers for collaboration at an organizational level** included lack of a common agenda, resource limitations, and a lack of knowledge and skills. Highlights included:

- Lack of a common agenda or vision as well as dominating and competing agendas.
- Divergent focus of sectors (e.g. individuals and short term results in PC versus populations and long term outcomes in PH) and devaluing of key PH activities.
- Deterrents to buy-in from PC included physician workload issues, lack of joint planning and challenges with multiple stakeholder engagement.
- Role confusion in PH, and overall lack of clarity and variation in PH roles between sites.
- Resource limitations, including human (resources for team building and change management), time (required for community mobilization or evaluation), financial and space resources.
- Lack of knowledge and skills including management capabilities to manage diverse teams, and deficiencies in expertise related to PH skills in PC.

**Major facilitators for collaboration at an organizational level** included leadership management and accountability issues, geographic proximity of partners, and protocol tool and information sharing. Highlights included:

- Leadership development of community-based committees or boards with diverse membership to facilitate joint planning.
- Involvement of multi professionals.
- Structures and processes that support: team communication, autonomy, minimizing of competition, and opportunities for nurses and NPs to function at their full scope of practice.
- Contractual agreements, parallel reporting and common governance structures.
- Use of a standardized, shared system for collecting data and disseminating information and linked electronic records to support effective interdisciplinary care.
- Shared protocols for multi-disciplinary, evidence-based practice and quality assurance; strategies and processes of care.
- Disseminating information and evidence-based toolkits and decision support tools.

**Major barriers for collaboration at an interactional level** included attitudes and beliefs, and relationship challenges. Highlights included:

- Stereotypical views of PC and PH roles and a lack of trust or belief in the value of PH activities.
- Resistance to change and refusal to participate in planned activities.
- Lack of understanding of PH roles and interdisciplinary teamwork.
- Competing priorities and agendas.
- Poor rapport between PC and PH and communication issues.

**Major facilitators for collaboration at an interactional level** included role clarity, shared purpose, philosophy and identity, developing and maintaining good relationships, effective communication and decision-making strategies. Highlights included:

- Clear roles and responsibilities for all partners.
- Better knowledge of each other's roles, skills and agencies enhanced the speed and nature of decision making among teams.
- Positive relationships including trust, tolerance and respect of partners.
- Effective team communication including regular staff meetings, involvement of the whole team, consensus building and joint planning and listening to community partners.

#### **Markers of Successful Collaboration**

Indications of successful collaboration were sparse and tended to be broad such as, new and sustained programs, improved access to health services, improved health related outcomes, health-related knowledge, attitudes and/or behaviours, team work, as well as increased capacity and expertise.

#### **Outcomes of Successful Collaboration between PC and PH**

The benefits of successful collaboration differed for each partner. Health care system outcomes included: improved population health and public health approach, funding and resource enhancements, health delivery improvements, improved health care delivery process, and new program development and innovation. Health professional outcomes included: improvements with partnerships and team functioning, health professional development and educational improvements. A wide range of health benefits for individuals and populations were also reported in the literature.

Some negative outcomes were also reported such as, anxiety related to skills mix required for nursing, fear of being marginalized in integrated teams, few gains

in behavioral risk factor reduction, little opportunity for nurses to discuss patients with physicians, PH skills were spread too thin, and modest gains overall. Risks included the expense of supporting collaborations, the loss of time with patients as more time is needed to collaborate and the loss of critical mass of PH staff and expertise with dispersion across Primary Care Trusts.

### **Future Research**

Based on the results of the scoping literature review, it was evident that more research and program evaluation is vital to the development of the science of collaboration. Future research needs to:

- Use rigorous designs to evaluate the effect and demonstrate the value of collaborations;
- Identify what models of collaboration work best for which health issues;
- Explore the collaboration among PC and PH nurses;
- Search for commonalities of barriers and facilitators of collaborations across similar types of collaborations, or across collaborations conducted for similar purposes;
- Investigate the risks and costs to collaboration;
- Develop indicators of successful collaboration.



## Study 2: Three Provincial Environmental Scans

### Context

Three environmental scans, which included information up to May 2009, related to PC and PH were completed in BC, ON, and NS in order to get a baseline understanding of each province and also to assist the research team as well as decision-makers to learn about a sector in which they may not have much familiarity. The purpose of the environmental scans was to provide up-to-date information about the provincial context of PC and PH that could be contributing, either positively or negatively, towards their integration and or collaboration. The scans were also intended to help identify where collaboration may or may not make sense and where there were opportunities within existing provincial structures that could build collaboration. In each province, investigators reviewed the grey literature, including various service delivery plans (e.g., health authority, Health Ministry), reports, and websites. Working with decision-maker partners we conducted informational interviews. Data were examined for structures and processes that could either support or create barriers to PC and PH collaboration.

### Implications

- Common to all the environmental scans, registered nurses made up a significant proportion of the workforce in both PC and PH. Given nurses educational training around teamwork with others and within nursing, and the large numbers working in PC and PH, they are an obvious health human resource to be deployed to strengthen collaboration where it makes sense.
- Different PC and PH funding structures and underfunding of resources for creating environments conducive to collaboration are barriers.

- Interprofessional training where health care professionals learn to work with each other, and in particular, across sectors currently does not exist in BC, ON, or NS and needs to be strengthened.
- Directors and Managers in PC and PH are strongly encouraged to provide more clinical placement learning opportunities for students from all health professions in their workplace settings.
- Policy makers need to look at ways to provide compensation for supporting education in particular in PC settings.

### Results

**BC:** With the exception of some dual provider functions such as immunization, screening and treatment for sexually transmitted infections (STIs) or HIV, prenatal and well baby care, and chronic disease prevention, PC and PH were mainly delivered by different sectors of the health care system. There are structures in BC that can enhance collaboration between PC and PH:

- Health authority structures and now, Divisions of Family Practice can promote or encourage integration between PC and PH; The Ministry of Health is actively encouraging integration of primary and community care as one of its “Key Results Areas”.
- Organizational structures already exist, such as community health centres, in which PC and PH functions are already integrated.

Challenges in BC that can create barriers to collaboration include:

- Differing funding structures, particularly fee-for-service remuneration, and variations in amounts

that each health authority invests in PC and PH can create structural barriers to collaboration.

- Training of PC and PH professionals remains discipline specific. There are no programs that create multiple and sustained opportunities for inter-professional training.

**ON:** Similar to BC, in ON PC and PH are delivered by different sectors of the health care system. Some dual provider functions exist, including: immunization, screening and treatment for STIs or HIV, prenatal and well baby care, and lifestyle advice and counseling for smoking cessation, increased physical activity and improved diet. There are structures in ON that could enhance collaboration between PC and PH:

- The Ontario Public Health Standards provide the impetus for building local collaborations through the Foundation Standard which promotes building partnerships and collaborations with other sectors.
- Some CHCs (Community Health Centres) and Family Health Teams have already built collaborations with PH. These types of models, along with nurse practitioner-led clinics, encourage inter-professional functioning and inter-organizational partnerships.
- Dieticians, with their extensive experience in training and practice in PC and PH, could be a widespread exemplar on the opportunities and challenges in PC and PH collaboration.

Challenges in ON that inhibit collaboration:

- Within the provincial government, PC and PH are administered under the lead of different Assistant Deputy Ministers and under separate divisions and branches with no formal linkages between them.
- Implementation of interprofessional training and practice among PC and PH remains poorly understood. There are no programs that create multiple and sustained opportunities for interprofessional training.

- Most physician remuneration models do not financially recognize the costs of building and maintaining collaborations. There are no funding mechanisms to hire coordinators to support building and maintaining collaborations.

**NS:** The environmental scan in NS revealed the same finding as BC and ON, that PC and PH are delivered by different sectors of the health care system with the exception of the aforementioned dual provider functions. Structures in NS that could enhance collaboration between PC and PH include:

- The establishment of the Department of Health Promotion and Protection provided a mechanism for greater emphases on prevention and health promotion, and recognition of the multiple sectors involved in this work. Moreover, there was a need for collaboration and coordination between the Primary Health Care Division in the NS Department of Health and Public Health Division in the Department of Health Promotion and Protection. Note that since the scans were completed, the Department of Health and the Department of Health Promotion & Protection merged into the Department of Health & Wellness in 2011.
- Community health centres, as in other jurisdictions, are organizational structures that are promising for exploring collaboration.

Challenges in NS that inhibit collaboration:

- The concept of linkages between PH and other organizations is understandable and implementable (organization to organization). Yet, the same is not doable between the diffuse entity of PC and other organizations.
- PH is not considered a component of primary health care within the government structures of NS. Therefore, there is no structural link between PH and the primary health care section in the NS Department of Health.

- There are misunderstandings of PC and PH roles among frontline staff and organizational and provincial leaders.

Common to all the environmental scans, registered nurses were found to work in both PC and PH. Given their training and numbers working in PC and PH, they could be a health human resource that could be deployed to strengthen collaboration where it makes the most sense. Different PC and PH funding structures and underfunding of resources for creating environments conducive to collaboration are barriers. Finally, interprofessional training where health care professionals learn to work with each other and across sectors currently does not exist in BC, ON, or NS.

## Future Research

As with any environmental scan, the information becomes outdated as new policy and programs are implemented. Future work could provide an update of how collaboration has changed within each province. More work is needed to examine where collaboration between PC and PH is successful and what structures could be changed if the goal was increased collaboration.

## Study 3: Key Informant Interviews

### Context

The scoping literature review and environmental scans provided valuable information about PC and PH collaboration internationally and in Canada, although it was limited in providing any depth around current collaborations in the provinces. This interpretive descriptive research study explored perceptions of key informants nationally and within BC, ON, and NS. Through face-to-face and telephone interviews, investigators explored their experiences and perceptions of the structures and processes required to build and maintain successful collaborations between PC and PH as well as the nature of existing collaborations and roles of professionals in them. Open-ended questions were created based on a face-to-face meeting, teleconferences, and web conferencing with a core group including researchers and as many decision-makers as possible.

#### *Research Questions:*

1. What do people generally hope to achieve from collaborations between PC and PH? What precipitates collaboration?
2. What factors foster and hinder collaborations between PC and PH?
3. What are markers of successful collaborations?
4. What roles could and do health care professionals play in building and maintaining collaborative relationships between PC and PH?
5. What successful collaborations currently exist between PC and PH?

### Implications

- Supported by results from the scoping literature review, the health issues most often addressed in collaborations in all provinces included: communicable disease control, chronic disease prevention and management, parent-child programming, youth and health promotion programs, and women's health programs.
- The above topics suggest where it makes sense to collaborate and where investment should be encouraged for appropriate resourcing.
- More work is needed to study outcomes for collaborations in the above areas to validate perceptions.
- Common reasons for collaboration included providing better quality care; achieving improved methods of service delivery; reducing duplication of services; leveraging complementary approaches used in PC and PH; improving access to accurate information (e.g., updates on immunization schedules) and meeting identified community needs.
- Numerous factors acted as facilitators and barriers to collaboration at systems, organizational, interpersonal, and intrapersonal levels and relationships between these factors and within and between these levels. Therefore, the complexity of collaboration needs to be understood along with the importance of coordinating mandates, communication mechanisms, and resources across the various levels of aggregation.
- Nurses were found to be significant players in collaborations where they fulfilled many critical roles ranging from sharing information and knowledge, facilitators, communicators, informal and formal leadership and acting as change agents.
- Nurses need to be supported by management and leadership to continue acting as leaders and change

- agents in collaborations.
- Some respondents saw physicians' roles in collaboration as leaders, service providers and consultants in collaborations; however, almost a quarter of informants indicated that physicians play very limited roles in collaborations and some indicated that they showed little interest. This finding was related to a lack of vision and willingness to collaborate, as well as a lack of knowledge and experience in collaboration. Physicians also face challenges not being compensated for team work.
  - More work is needed to consider ways to incorporate team-oriented work in training programs, especially for physicians.
  - Alternative mechanisms for compensation are needed to support the work carried out by the teams such as salaried positions.

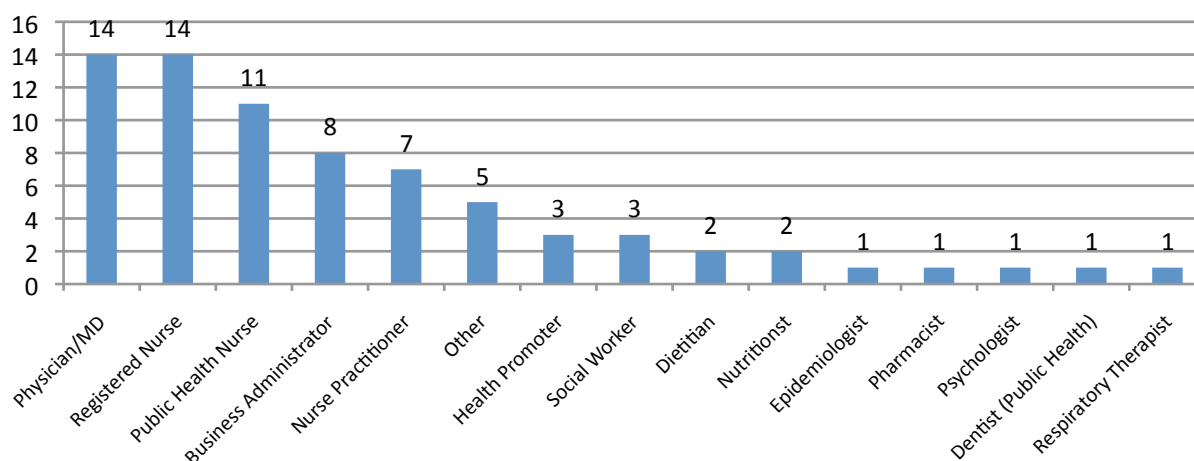
## Approach

Stratified purposive sampling was used to recruit participants who represented policy-makers, managers, and inter-professional providers. Participants were identified by the large research team, including decision-making partners representing a variety of PC and PH agencies and institutions as well as co-investigators from four universities. Following the development of an initial list, a snowball technique was used where key informants were asked about other potential informants. Eligibility criteria for participants included: having experience in or being knowledgeable about PC and PH collaboration. Interviews were audio-recorded, transcribed, and cleaned of all identifying information. Data were coded using NVivo version 8 and then 9. The coding framework was created based on investigators reading and re-reading the transcripts and arriving at consensus on final codes. All procedures were approved by the appropriate ethics boards (provincial and university boards).

## Results

Sixty-nine in-depth interviews were conducted with a total of seventy-four participants. Of them, 58 were females and 16 were males. They represented professionals from three provinces [BC (n= 20; 27.0%), ON (n= 19; 25.7%); NS (N= 21; 27.0%)]. The remaining 14 participants (18.9%) were professionals who were working in or knowledgeable about collaborations who were located in other provinces or were working at a national level. Participants also represented the primary care sector (n= 32; 43.2%) the public health sector (n=31; 41.9%), both sectors (n= 8; 10.8%) or neither sector (n= 3; 4.1%). Those who were representing neither sector were health services researchers or educators. Those who represented both, were in positions where they were responsible for, or had had experience in both sectors.

Participants ranged widely in the type of roles they played, the largest groups being direct service providers (n= 17) senior program managers (n= 14), executive officers (n= 11), and middle managers (n= 10).

**Figure 1. Participants by Profession (n=74)**

By profession, most participants were physicians (n= 14; 18.9%) registered nurses (n= 14; 18.9%), public health nurses (PHNs) (n= 11; 14.8%), business administrators (n= 8; 9.6%), or nurse practitioners (NPs) (n=7; 9.5%). Others included health promoters (n=3), social workers (n=3), dietitians (n=2), nutritionists (n=2), an epidemiologist, pharmacist, psychologist, public health dentist and respiratory therapist (Figure 1).

### **An Evolving Ecological Framework of PC and PH Collaboration**

The key informants provided extremely rich information about collaborations. Building on the scoping literature review and environmental scans added with results from the key informant interviews, a draft ecological framework of collaboration was developed. The nature of collaboration - which is found at the core of the framework- is the structure and context around which the collaboration is formed. It includes the organizational structure, the players, the activities conducted in the collaboration as well as the ways that players work together within the context of their environment. The ways of working together in a collaboration ranges on a continuum. Himmelman's conceptualization<sup>5</sup> of collaboration has captured the

ways of working together in a collaboration, which includes networking (exchanging information for mutual benefit), cooperation (exchanging information, altering activities, and sharing resources for mutual benefit and to achieve a common purpose), coordination (exchanging information and altering activities for mutual benefit and to achieve a common purpose) and collaboration (exchanging information, altering activities, sharing resources, and enhancing the capacity of another for mutual benefit and to achieve a common purpose). As Himmelman explains, none of these ways of working are more important than the other; rather, each strategy is more or less relevant dependent on the context of the work that needs to be done. Results from our key informants indicated that all ways of working together can be found in collaborations; they can evolve and change over time and as the needs that were precipitators of collaboration are met or change. The core of the collaboration can be influenced positively or negatively by factors at the systemic, organizational, interpersonal and intrapersonal level. These factors influence one another within and between levels. More analysis is currently being conducted to identify the relationships between factors and their impact on the core. Since collaborations evolve over time, a cross-

cutting factor of research and evaluation measuring collaboration outcomes and processes has been added to the framework. Research and evaluation results can help to identify which structures and processes in collaborations need adjustment for quality improvement and to assess if the collaboration is meeting its goals. A diagram of a refined version of this ecological framework with the 'core' being reflected as successful collaboration can be on page 44. Refinements occurred at the end of the program of research based on analysis of subsequent studies and discussions with decision-makers and practitioners in the field.

In the next section, high level results which describe findings pertaining to the core of existing collaborations, as well as factors influencing them at each layer of the framework are presented in a chart. In-depth papers on the core - or nature of collaboration- as well as the factors influencing successful collaborations are currently being prepared for peer-reviewed publications.

#### ***What do people generally hope to achieve from collaborations between PC and PH?***

The top reasons for collaboration were seen as a strategy for: providing better quality care; achieving improved methods of service delivery; reducing duplication of services, leveraging complementary approaches used in PC and PH, improving access to accurate information (e.g., updates on immunization schedules) and meeting the needs identified by communities. Finally many held the belief that change cannot be achieved working alone. As noted by one PC nurse, *"we do need to work together for that continuum, so that clients in the community are more effectively served."* Similarly, a PH dentist noted, *"[collaboration] shows you the potential, when you have what appears to be intractable problems, that can be overcome with a collective. This brings [together] the clinical, the social, and the preventive."*

#### ***What factors foster and hinder collaborations between PC and PH?***

Numerous factors were identified that acted as barriers and facilitators of collaboration at a systemic level, organizational level, interpersonal and intrapersonal level. Although San-Martin and colleagues<sup>6</sup> defined determinants at three levels (systemic, organizational and interactional), our findings suggested that a fourth level should be included - the intrapersonal level- as it had an influence on collaboration success. Intrapersonal level factors are personal attributes of individuals that can act as a barrier or enabler of collaboration. We, therefore, chose to refer to interactional level determinants as interpersonal and intrapersonal to describe the factors found in our data. The factors were first derived based on results of this study involving interviews with key informants. These factors were later validated and refined based on a subsequent study (see Study 5) which explored 10 cases of collaboration. The final factors are presented in Table 3 by the level of influence and with key characteristics listed for each.

Each factor can be described by its characteristics. For example, one of the intrapersonal level factors, *personal values, beliefs, and attitudes* of individuals working in a collaboration can act as a barrier or facilitator. An individual who demonstrates qualities of willingness to collaborate and responsiveness to the needs of patients and the community, will be a facilitator. Whereas a practitioner who may be used to working in solo practice and is unwilling to work within a team environment can present as a barrier to collaboration. For most factors, barriers and facilitators were identified. Barriers were typically the reverse quality of the facilitator as was shown in the above example of willingness and lack of willingness to collaborate. In our framework, we have presented characteristics highlighting positive qualities with the hope that the framework will support building successful collaborations. The other intrapersonal factors were *personal qualities, knowledge, and skills*.



At the interpersonal level, there were five factors found to influence collaboration. For example, one factor was *role clarity*. *Role clarity* between providers was an essential factor enabling successful collaborations. This involves understanding each others' roles and reaching agreement on them; in addition, being flexible and adaptable in partners' roles that adjust to changing needs in a collaboration was also helpful. Other factors included: *effective communication, trusting and inclusive relationships, shared values, beliefs, and attitudes, and effective clinical decision processes*.

At the organizational level, there were seven factors; an example is *collaborative approaches to programs and services delivery*. This factor involved the implementation of a variety of collaborative approaches in working within collaborations including: client-centred approaches, community engagement, interprofessional teamwork, and integrated or coordinated approaches to the provision of services by PC and PH. The other six factors included: *clear mandates, visions, and goals for collaboration; strategic coordination and communication mechanisms between partners; formal organizational leaders as collaborative champions; collaborative organizational culture; optimal use of resources; and optimal use of human resources*.

Similarly, there were seven systemic factors. *Governmental and regulatory policies and mandates* for collaboration was one example. This factor involved the expectation at a systems level that partnerships are essential. It also included the need for clear government policies mandating collaboration, consistency of standards around PC and PH collaboration. Finally, it also included expectations and accountabilities for reporting on collaborations supported by the use of quality indicators. The other six factors included the following: *harmonized information and communication infrastructure; formal systems leaders as collaborative champions; effective decision-making frameworks; funding models and financial incentives supporting collaboration; targeted professional education; and, health services structures that promote collaboration*.

Socio-ecological theory, upon which our conceptual framework for collaboration is based, would suggest that determinants of collaboration at one level of the framework can enhance or suppress determinants at another level. This means that when developing strategies to facilitate collaboration, not only do we need to base strategies on factors from various levels of the framework, but we need to do this in an integrated way. The effectiveness of collaboration will be increased when actions are coordinated across the levels of influence in the ecological framework.



**Table 3: Factors Influencing Successful Collaborations between Primary Care and Public Health**

 <b>INTRAPERSONAL</b>	 <b>INTERPERSONAL</b>	 <b>ORGANIZATIONAL</b>	 <b>SYSTEMIC</b>
<b>PERSONAL QUALITIES, KNOWLEDGE AND SKILLS</b> <ul style="list-style-type: none"> <li>• Experience/knowledge in collaboration</li> <li>• Leadership skills in collaboration</li> <li>• Health professionals' and other individuals' personal characteristics</li> </ul>	<b>ROLE CLARITY</b> <ul style="list-style-type: none"> <li>• Understanding/agreement of roles and mandates</li> <li>• Flexible roles/adaptability</li> </ul>	<b>CLEAR MANDATES, VISION, AND GOALS FOR COLLABORATION</b> <ul style="list-style-type: none"> <li>• Clear mandate for collaboration</li> <li>• Congruent focus</li> <li>• Formal agreements</li> <li>• Organizational structures that enable collaboration</li> <li>• Role delineation</li> </ul>	<b>GOVERNMENTAL AND REGULATORY POLICIES AND MANDATES FOR COLLABORATION</b> <ul style="list-style-type: none"> <li>• Expectation that partnerships are essential</li> <li>• Clear government policies, mandates for collaboration</li> <li>• Consistency of standards around collaboration for PC and PH</li> <li>• Expectations/accountability for reporting on collaborations using common quality indicators</li> </ul>
<b>PERSONAL VALUES, BELIEFS AND ATTITUDES</b> <ul style="list-style-type: none"> <li>• Willingness to collaborate</li> <li>• Responsiveness to patient and community needs</li> </ul>	<b>EFFECTIVE COMMUNICATION</b> <ul style="list-style-type: none"> <li>• Exchange of information</li> <li>• Facilitated, engaged dialogue</li> </ul>	<b>STRATEGIC COORDINATION AND COMMUNICATION MECHANISMS BETWEEN PARTNERS</b> <ul style="list-style-type: none"> <li>• Formalized communication processes</li> <li>• Strategic plan development by partners</li> <li>• Coordinated clinical/administrative services</li> <li>• Exchange of client/health information</li> </ul>	<b>HARMONIZED INFORMATION AND COMMUNICATION INFRASTRUCTURE</b> <ul style="list-style-type: none"> <li>• Clear and effective information and communication infrastructures</li> <li>• Interoperable PC and PH communication systems and electronic record systems (Electronic Medical Record; Electronic Health Record)</li> </ul>
	<b>TRUSTING AND INCLUSIVE RELATIONSHIPS</b> <ul style="list-style-type: none"> <li>• Positive relationship development and maintenance</li> <li>• Collaborative working styles</li> <li>• Trust and respect of others</li> </ul>	<b>FORMAL ORGANIZATIONAL LEADERS AS COLLABORATION CHAMPIONS</b> <ul style="list-style-type: none"> <li>• Ability to motivate towards common goal</li> <li>• Leadership buy-in to collaboration</li> <li>• Transformative leadership qualities and skills</li> </ul>	<b>FORMAL SYSTEMS LEADERS AS COLLABORATIVE CHAMPIONS</b> <ul style="list-style-type: none"> <li>• Identification and formalization of systems leader</li> <li>• Leadership for collaboration</li> <li>• Long-term strategy for collaboration</li> <li>• Leadership understanding of benefits of collaboration</li> </ul>
	<b>SHARED VALUES, BELIEFS, AND ATTITUDES</b> <ul style="list-style-type: none"> <li>• Openness and belief in collaboration</li> <li>• Values, attitudes, and philosophies related to change</li> </ul>	<b>COLLABORATIVE ORGANIZATIONAL CULTURE</b> <ul style="list-style-type: none"> <li>• Valuing work of the other sector</li> <li>• Organizational readiness for collaboration</li> <li>• Avoiding turf protection</li> </ul>	<b>EFFECTIVE DECISION-MAKING FRAMEWORK</b> <ul style="list-style-type: none"> <li>• Inclusive, transparent decision-making processes</li> <li>• Effective governance that defines the rules of engagement for collaboration</li> <li>• Optimal process for resource allocation</li> <li>• Effective mechanisms for resolving conflict between PH and PC</li> </ul>
	<b>EFFECTIVE CLINICAL DECISION PROCESSES</b> <ul style="list-style-type: none"> <li>• Practitioner problem solving</li> <li>• Practitioner decision making</li> </ul>	<b>OPTIMAL USE OF RESOURCES</b> <ul style="list-style-type: none"> <li>• Investment of resources to initiate collaboration</li> <li>• Funding mechanisms</li> <li>• Geographic proximity of partners</li> <li>• Time for working on collaboration</li> </ul>	<b>FUNDING MODELS AND FINANCIAL INCENTIVES SUPPORTING COLLABORATION</b> <ul style="list-style-type: none"> <li>• Increased/sufficient allocation of financial resources for collaboration</li> <li>• Alignment of funding models for PC and PH collaboration</li> <li>• Potential strategies of funding collaboration (e.g., secondments, fee codes)</li> </ul>
		<b>OPTIMAL USE OF HUMAN RESOURCES</b> <ul style="list-style-type: none"> <li>• Matched professional skills to needs</li> <li>• Professionals work to full scope of practice</li> <li>• Organizational mandates enable full scope of practice</li> <li>• Flexible, accommodating application of skill sets</li> </ul>	<b>TARGETED PROFESSIONAL EDUCATION</b> <ul style="list-style-type: none"> <li>• Educating new professionals for collaboration between PC and PH</li> <li>• Continuous professional development for collaboration between PC and PH</li> <li>• Education accreditation standards that include collaboration</li> </ul>
		<b>COLLABORATIVE APPROACHES TO PROGRAMS AND SERVICES DELIVERY</b> <ul style="list-style-type: none"> <li>• Engaged community</li> <li>• Inter-professional teams</li> <li>• Client-centered approach</li> <li>• Integrated or coordinated programs and services between PC and PH</li> </ul>	<b>HEALTH SERVICE STRUCTURES THAT PROMOTE COLLABORATION</b> <ul style="list-style-type: none"> <li>• Infrastructure to support collaboration (e.g. Information Technology, physical space)</li> <li>• Opportunities for PC and PH to transcend silos (e.g. inter-branch/divisions/department committees)</li> <li>• Shared PC PH portfolios</li> </ul>

**PC = Primary Care; PH = Public Health**

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***What are markers of successful collaborations?***

The main markers of collaboration success identified by key informants were: agreement on a common goal, collaborations that meet intended goals, improved quality of the partnership, patient and provider satisfaction, improved health outcomes, improved services, sharing of information and knowledge, growth in collaborative models of practice, improved communication, the existence of evaluation processes and markers, and full engagement of all partners.

***What roles could and do nurses and other health care professionals play in building and maintaining collaborative relationships between PC and PH?***

Nurses play an important and varied role in collaborations, which is not surprising given their high numbers in PC and PH and their skills working in teams. The most frequently reported role in collaborations includes sharing knowledge and information. As noted by one PH physician, *“they are the primary individuals involved in collaboration. So they are the people on the ground providing the services. ... Obviously, where there is that more formal collaboration, information sharing, they tend to be the key individuals that would be involved.”* They are also the facilitators, communicators, informal and formal leaders, and change agents in collaborations. They act as links to physicians and are providers of PC and PH services, conducting home visits, and providing chronic disease management. They refer and follow up, in particular with vulnerable populations. As described by one epidemiologist: *“I think nurses, in particular, are the interface between the two systems. They are the ones who need to know what both systems offer and how to move in between them. And I think they already do that, and I think they already do it well. Maybe nobody has asked them how they do it, and maybe nobody has asked them what they could do to improve that transition between the two. I think they need to do that.”*

Physicians also play critical roles in collaborations including providing leadership and clinic roles, consultations and advocating for the public. As one business administrator noted, *“at a professional level the models that have been successful have been the models where there’s been clear physician leadership and collegiality and it’s met a need for community.”* Although some participants reported that physicians are involved in working team-oriented collaborations, others often struggle to find their role within the team approach. As one PC physician explained, *“I think in terms of decision making, it’s very challenging for docs who have been used to sort of coping on their own as solo cowboys. It’s very challenging to then understand team-based decision making.”* A perceived challenge faced by physicians is compensation for team work. A PH business administrator explains it this way. *“It’s a much more team oriented situation that allows physicians to be a little less focused on the individual and more on the population and community and in the case, the family and such. And [the physician can] be more interested in prevention and those types of things. The fee-for-service schedule now doesn’t recognize a lot of what they call schedule A-- the clinically effective prevention maneuver.”* Almost a quarter of informants indicated that physicians actually play very limited roles in collaborations and some indicated that they show limited interest. This finding appears to be related to a lack of physician vision and willingness to collaborate as well as a lack of knowledge and experience in collaboration. *“I think they need a little practice in collaboration.”*

Other health professionals were also identified as having important roles in collaborations. Apart from nurses and physicians, dietitians providing clinic and broader community services were the most frequently named professionals in collaborations. Dietitians were followed by epidemiologists whose role was to provide health status and other data useful for collaborations. Less often mentioned were mental health and addictions professionals, community developers, social workers, pharmacists, community workers, and home care support workers. Many informants mentioned the importance of having

the right mix of professionals. As one PC physician noted, we need “each person using their skill set to contribute to the betterment of the whole. Because...there’s a shortage of family doctors and we’re trying to create models that complement or enhance the care or enhance the numbers of people that were able to provide care to them.”

### **What successful collaborations currently exist between PC and PH?**

#### **Forms of collaboration:**

There were many forms of PC and PH collaborations described by informants, with some differences by province. The most common collaborations noted by many informants were described in these ways:

- Interdisciplinary teams.
- PH services offered in a PC setting.
- PH as the initiators or facilitators of collaborations; whereas PC facilitating collaborations was noted much less often and only by BC informants and other informants from provinces other than NS or ON.
- PH providing clinical information to PC physicians, NPs or nurses.
- PC services offered in a PH setting was described less often than other forms of collaboration, and more often by BC respondents than others.

Collaborations noted by some informants were described in these ways:

- PH collaborations with CHCs were noted most often by informants from ON, but not from BC.
- PHNs working with PC nurses.
- Integrated health networks were noted by most BC informants.
- PC Family Health Teams were noted by ON informants; PHNs were reported as integrated in Family Health Teams by a small number of ON informants.
- PC NPs working with PH was noted by a few BC and NS informants.
- NPs hired in health units were reported by a few ON respondents.
- Co-location of PH and PH in collaborations was identified most often in BC, followed by NS and rarely in ON.

**Activities** reported by most respondents as being conducted in collaborations included: service delivery followed by joint research projects, initiatives, or coalitions. Almost a third of informants reported PH being a resource to PC around communicable disease or sexual health. Redesigning health services was reported less often as was joint committee work, policy development, or building client connections for follow up. Less often reported activities were education sessions provided by PH to PC, or participation in federal or provincial policy reviews or support group activities.

**Health issues** most often addressed in collaborations as noted by respondents in all provinces included: communicable disease control, chronic disease prevention and management, parent child programming, youth and health promotion programs, women’s health programs. Less frequently noted were seniors, mental health and addictions, tobacco related initiatives; rarely were issues of physical activity and obesity, Aboriginal or immigrant health mentioned. When asked where collaborations made the most sense, answers were aligned with the above list of health issues most often addressed in collaborations.

### **Future research**

Future research is needed to further explore markers or indicators of successful collaborations and collaboration outcome research should be focused on areas where collaboration is thought to make the most sense and is most often realized in practice (e.g., maternal child, chronic disease prevention and management, and communicable disease management services and programs). Also, our sampling of key informants was limited in that we recruited few informants who had a good understanding of collaborations in the Territories, First Nations and French speaking communities, thereby leaving a gap in our knowledge and pointing to an area for further study.

## Study 4: Q-Methodology: Viewpoints of Stakeholders about Primary Care and Public Health Collaboration

### Context

Study 1 and Study 3 indicated that improved collaboration between PC and PH health sectors can lead to a stronger understanding of the communities they serve and lead to more responsive and comprehensive delivery of health services. The purpose of this study was to explore the viewpoints of stakeholders regarding PC and PH collaboration. To do this, we used Q-methodology to identify common viewpoints held by participants who attended a national meeting in Canada to discuss PC and PH collaboration.

There is very little known about major viewpoints held by policy makers, managers and practitioners about building collaborative relationships between PC and PH in Canada. Understanding how stakeholders view collaboration can point to where conflicts between groups may exist, and what beliefs and attitudes may be barriers to or facilitators of PC and PH collaboration.

### Implications

- PC and PH policy makers, managers, practitioners and researchers hold a common view that a lack of vision for collaboration, where people are not clear on the end result of collaboration, can be a significant barrier to collaboration.
  - It is imperative that the vision of any collaboration be determined and communicated across all levels, from executive directors to front line staff.
- PC and PH decision-makers, practitioners and researchers, all strongly disagreed that “*politicians have research evidence to say that collaboration will save money so will put money behind it*”.
  - Evidence related to the outcomes of collaborations must be disseminated effectively to relevant policy makers, provincial and federal health leaders.

Three common viewpoints were identified: *System-driven collaborators*, *cautious collaborators* and *competent isolationists*. Implications are identified related to each viewpoint.

- *System Driven Collaborators* held common views that system level influences, such as provincial level policies mandating PC and PH collaboration, and PC payment models that support salaried physicians as in CHCs, can have a significant impact on PC and PH collaboration.
  - Policy makers need to develop policies mandating PC and PH collaboration.
  - Policy makers need to encourage expansion of salaried physician payment models.
- *Cautious Collaborators*, who were all from ON, strongly agreed that although we need better aware-

ness of what collaborations might be possible, would be beneficial, and already exist, we need to be cautious. This group was concerned about the threat of a reduction of PHs' already over-stretched resources which are focused on population health approaches. In addition, this group was concerned about being swallowed up by the PC sector which is primarily focused on individual health. They did not feel that provincial mandates to collaborate will be helpful.

- Managers in PC and PH are advised to collaboratively develop work plans where a mix of population and individual approaches can work synergistically to address local community needs. For example, PH could work to increase PC capacity related to chronic disease prevention, such as smoking cessation or obesity prevention.
- A small group of *Competent Isolationists* held strong beliefs that PC and PH sectors need to clearly understand differences between their roles; each sector was viewed as having separate and distinct roles (population and group based versus individually based). This group believed that multi-disciplinary professionals would not see value in collaboration, since they did not share educational programs, nor will collaboration work without stable funding. They did not believe there is evidence of long term health benefits to be gained from collaboration.
  - Managers and policy makers should be aware that some stakeholders are skeptical about collaboration and will likely only buy in if evidence of collaboration effectiveness is demonstrated and if sustainable funding is provided for it.
  - Educators must ensure that interprofessional learning goes beyond understanding the roles of various disciplines, but need to include understanding of the roles of professionals in various sectors which are often ignored or minimally covered in health professional curricula.

## Approach

The study was conducted in two phases; in Phase 1, development of an instrument, a Q-sort table (Figure 2), and a short demographic questionnaire to be used in Phase 2 for data collection. Q-methodology is used to identify unique viewpoints, as well as commonly shared views on a topic of interest. It is particularly useful in exploring human perceptions and interpersonal relationships. It has been described as a combination of qualitative and quantitative techniques that allows researchers to identify groups of participants with similar viewpoints where the goal is usually to identify different patterns of thought rather than their numerical distribution among a larger population.

Phase I built on Study 1 and 3 where we conducted a scoping literature review as well as completed interviews with key informants who had experience with or knowledge of PC and PH collaborations. The findings, which were complementary, were then summarized in short statements. To have a representative sample of statements (called the Q-sample) to be used for Phase 2 of the project, 44 statements were carefully selected by a smaller team of researchers, which represented key ideas from all the emerging themes about collaboration between PC and PH.

After assembling the Q-sample, a grid or Q-sort table was developed with 44 cells equal to the number of statements in the Q-sample (see Figure 2). The Q-sort table consisted of 44 empty boxes in eight rows and eleven columns of differing lengths. Anchors of -5 (*least agree or disagree*) and +5 (*most agree*) were assigned to the extreme scores of the Q-sort table.

**Figure 2: Q-sort table**

<i>Least Agree (Disagree)</i>					<i>Most Agree</i>					
-5	-4	-3	-2	-1	0	1	2	3	4	5

In Phase 2 we asked delegates who attended a national meeting to complete the Q-sort. The participants included researchers, policy-makers, directors and managers, and practitioners (e.g., nurses, family physicians, dietitians) from federal agencies and institutions, as well as individuals from NS, ON and BC. Each consenting participant received a package including detailed instructions and an example of a completed Q-sort. Then, participants were asked to read the statements and place the number of the statement into the empty cell that corresponded with the amount of agreement the respondent had with each statement. The Q-sort table was constructed such that only two statements could be placed under -5 and +5, three statements under -4, -3, +3, and +4, four statements under -2 and +2, six statements under -1 and +1, and finally eight statements under the central column 0. Participants were also asked to complete a short demographic survey.

Next using PQ Method 2.11 program a by-person factor analysis of the Q-sorts was conducted to identify groups (factors) of participants with similar viewpoints. Each individual with a significant loading p-value < 0.05) on one factor is counted as a member of the group loading on that factor.

**Results**

The study consisted of a total of 25 participants 5 from BC, 4 from NS, and 15 from ON; 1 participant did not identify their home province. They included policy-makers, directors and managers, practitioners, and researchers. Three factors (salient viewpoints) emerged, which included 23 individuals. Two participants did not load significantly on any of these three factors and were excluded from further comparative analyses. Factors were named based on their distinguishing state-



ments as: a) *System Driven Collaborators*, b) *Cautious Collaborators*, and c) *Competent Isolationists*.

### Factor 1: System Driven Collaborators

Fifteen respondents loaded on this factor; four from NS, eight from ON, and three from BC. This group strongly believed that there is the need for having a clear mandate from the top to enable PH, PC and the rest of the health system to effectively work together and that people in different branches in the Ministry/ Ministries have to really believe in collaboration, support it, and write policies to have organizations work together. In addition, they strongly supported the statement that “I think we need models like community health centres which are globally funded (salaried physicians who work in a team setting with a range of health professionals – nurses, nutritionists, social workers). So the more we move into this kind of model, PC and PH collaborations might become richer”. On the other hand, they strongly disagreed that “differing mandates are a barrier to collaboration. PH can’t provide individual care because they are population health-based and group-based. For example, PH is working on healthy food policies and trying to work with schools”.

### Factor 2: Cautious Collaborators

Five individuals loaded on this factor, all from ON. They strongly agreed that, “we need to have a better consciousness-raising about what collaborations might be possible and would be beneficial, and also reflect on the collaborations that we already have”. They also highly agreed that “There are turf protection issues. PH wants to make sure that they don’t get swallowed up by PC issues. They want to deal with issues at a population level as opposed to an individual health level” and “Everybody feels that they are at capacity and there’s no room for anything more such as working on a

collaboration”. They strongly disagreed with having a clear mandate from the top to enable PC and PH collaboration. They also opposed the idea that for better communication there has to be availability of electronic communication mechanisms between PC and PH sectors (e.g. email listservs to share information about free mental health sessions in the community.)

### Factor 3: Competent Isolationists

Only three individuals loaded significantly on this factor (one from each province). They strongly believed that it is necessary for PC and PH sectors to spend time to make sure that both parties clearly understand the differences between their roles. They believed that physicians, nurses and social workers will not see the value in collaboration because they do not share educational programs. They also believed different mandates are a barrier to collaboration and that public health cannot provide individual care because they are population health-based and group-based. Also they believed that “Collaboration won’t work if people haven’t got the stable and sustainable funding to get it established, evaluated and carry it on”. On the other hand, they strongly disagreed that there is evidence about the benefits of collaboration related to long term health benefits for individuals in the population.

Finally, there were several statements that all of the participants equally agreed or disagreed with. For example, they all believed that lack of vision in collaboration is a barrier and that people are not clear on the end results of collaboration. They all strongly disagreed that “politicians have research evidence to say that collaboration will save money so will put money behind it”.

## Study 5: 10 Case Studies of Primary Care and Public Health Collaborations in British Columbia, Ontario and Nova Scotia

### Context

Although the key informant interviews in Study 3 helped us understand participants' perceptions of past experiences and views around collaborations, case studies helped us better understand current existing collaborations in greater depth using multiple sources embedded in current collaborations including front line staff to directors. Case studies were also useful to help validate the results of the nature of collaboration as well as the factors influencing collaboration identified from the key informant interviews. They could also be helpful to potentially reveal new factors.

#### *Case Study Research Questions:*

1. Under what contexts are collaborations occurring? (setting; population served; history; systems drivers; goals; power; funding models; functions).
2. For what health issues does working together make sense?
  - a. How do partners work together (i.e. cooperation, coordination, collaboration, integration) for various health issues?
3. What are the precipitators and motivators of collaboration?
4. What structures and processes lead to the development as well as help to maintain collaborations?
5. What roles do various players have in collaborations?
6. What are the intended outcomes (process as well as other short-, intermediate-, and long-term outcomes) of collaborations and how well are these reached?
7. What risks are inherent in building and maintaining collaborations and how are these managed?
8. How, if at all, is the community engaged in the collaboration?



## Implications

- It is often a particular challenge for PC to work on collaborations due to the financial payment models which do not compensate physicians to work to develop and maintain collaborations.
- Policy makers are encouraged to support salaried payment models in PC which will permit time spent on development. PC nursing staff are well positioned and have the skills to work collaboratively at the intersect of PC and PH collaboration and thus compensation models should be adjusted to support PC nurses in this work.
- Effective *ongoing* communication of the vision and goals for collaboration must be shared with partners at all levels from senior managers to front line practitioners. This can involve using a myriad of communication strategies such as regular structured meetings, emails, phone calls, joint training, and sharing of program documents. Determining communication flow and structures (distribution lists) were also helpful.
  - Directors and managers are encouraged to provide *all* staff with ongoing and regular communications about collaboration plans or changes, for example, vision, work plans, changes in focus, evaluation results. Be sensitive to changes in the workforce involved in a collaboration by ensuring orientation to the vision and goals of the partnership with new staff. Find creative strategies, for example, ‘lunch and learns’, to communicate with PC staff physicians, who are more challenging to connect with, due to busy schedules. Using strategies found to be effective in academic detailing may also be helpful.<sup>14</sup>
- Cross-sectoral planning, implementation and coordination functions were key strategies to maintaining strong successful collaborations.
  - Directors and managers are encouraged to co-create and design planning and coordination tools with all partners involving staff at all levels. For example, this can include co-creation of operational plans, work/action plans, establishing and maintaining teams and committees, establishing clear roles of team members, and developing and disseminating formalizing tools such as partnership agreements and terms of reference and or a project charter.
- Funding support from external sources to support collaborations was found to be a strong facilitator. Two areas most often needing more work were related to *financial and other capital resources* and *partnerships’ administration and management*.
  - Specified financial and human resources need to be allocated or reallocated to initiate as well as maintain collaboration. Assignment of a collaboration coordinator may be helpful to support administration and management issues. Collaborations require a sufficient and consistent staffing that can withstand changing workforce demands, evolving community needs, and required diversion of human resources. Sharing of people, information and material resources, as well as space resources are highly encouraged.
- Although the majority of respondents felt that the benefits outweighed the drawbacks of collaboration, all cases identified some areas for improvement and were generally assessed to be in a work zone, where more effort was needed to maximize the partnership’s collaborative potential .
  - Ongoing evaluation of collaborations are highly encouraged to ensure an ongoing quality improvement process. The case studies served as a positive intervention in a number of cases influencing partners to reflect on ways to improve their collaboration. The Partnership Self-Assessment Tool<sup>15</sup> was a useful tool for this purpose and can be used by collaboration partners to track progress.

## Approach

### Case Selection and Boundaries of the Case

A descriptive multiple case study approach was used and the unit of analysis was the collaborative partnership that involved a PH and a PC organization(s). Eligibility criteria are listed in Table 4. Other agencies could also be involved in the collaboration and were included within the boundaries of the case where relevant. Each provincial team completed three case studies; ON conducted a fourth case study which was a pilot. In order to increase the rigour of the research we used multiple data sources and methods in our study; four data collection methods were used including focus groups, Photovoice, document analysis and completion of a 67 item survey- Partnership Self-Assessment Tool.<sup>15</sup> Managers, front line professionals, and support staff from PC and PH and other organizations, where relevant, were recruited to obtain information from all partners in the collaboration.

*Table 4: Eligibility Criteria for the case studies:*

- The collaboration must include a PH and a PC organization that **continually work together to develop and modify strategies to achieve their service delivery goals.**
- Collaborations must have begun to act on their plans.
- Collaboration that involve multiple organizations, in addition to PC and PH, can be included.
- The collaboration must have been in existence for at least 1 year (since initial start up of the collaboration services).
- Cases providing services in the collaboration on a full or part time basis are eligible (e.g. a collaborative service offered either daily or twice a week)
- Collaborations which are working well or not very well could be included.
- The collaboration must have at least 5 active participants; this was required for the Partnership Self-Assessment Tool (PSAT)<sup>15</sup> to be valid. (Note: Participants are defined as individuals working together in the partnership and have a good knowledge of the partnership; they can include managers, practitioners, support staff, etc.)

### Data Collection Tools

#### ***Partnership Self-Assessment Tool Questionnaire:***

Collaboration is a process where individuals view problems differently and work together to achieve solutions collectively as a group<sup>16</sup>. A high functioning partnership is synergistic; it involves the effectiveness of leadership, administration and management, the efficiency of the partnership, and the sufficiency of the partnership's resources. Partnership is key in public health where multiple organizations work together

to deliver complex population-based programming. Often, the effects of public health interventions are not seen within the population for many years. The success of these interventions relies on the commitment of many organizations and sectors. The “Partnership Self-Assessment Tool” (PSAT) [<http://partnershiptool.net/>] was developed using the “Partnership Synergy Framework”<sup>16</sup> to provide a measurement of the key indicators for successful collaboration and level of synergy. Eleven sections deal with the following topics: synergy, leadership, efficiency, administration and management, non-financial resources, financial and other capital resources, decision making, benefits of participation, drawbacks of participation, benefits and drawbacks of participating in the partnership, and satisfaction with participation. Each section uses a Likert scale and/or yes and no questions. A Coordinator’s Guide is the main instructional resource for this tool. The National Collaborating Centre for Tools and Methods in Public Health has rated this tool as methodologically strong<sup>15</sup>.

**Focus group A:** PSAT results were presented to the participants in a focus group and they were asked to answer the following: How does this score resonate with what you perceive about this collaboration? Why do you think your collaboration received this score? PC and PH participants were generally mixed in focus groups: Directors and managers were separated where possible from front line staff to encourage openness.

**Focus Group B:** Questions explored the processes and structures in the collaboration not covered in the other focus group. For example, some questions addressed: If the collaboration has reached consensus on goals and how? Who was involved? How was the community involved in identifying goals? What impact did client/community members have on the development of goals? How were roles and scope of practice of various PC and PH players in the collaboration determined? Participants were grouped as in the first focus group where possible.

**Photovoice:** Photovoice was first developed in the early 1990s by Dr. Caroline Wang<sup>17</sup> and is now used around the world. This process that gives ‘voice to photos’ is a methodology often used in the field of education and community development which combines photography with grassroots social action. Subjects are asked to represent their situation or point of view by taking photographs. Photovoice was intended to give insight into how participants conceptualized their circumstances. As a form of knowledge transfer, Photovoice attempts to bring the perspectives of those who live the experience, in this case the collaboration. The purpose of Photovoice in the case study was to assist in understanding collaboration structures and processes. Consent was requested for use of these photographs for 1) inclusion of the data for the case study; 2) development of a future online toolkit for collaboration; and 3) news, publicity, and research dissemination purposes.

**Content Analysis of Documents:** A variety of documents were collected from the collaboration for content analysis purposes. Documents can provide rich information about collaborations. For example, mission and vision statements can represent the aims of the collaboration; memoranda of understanding or other agreements can provide information about resource use, terms of reference can describe processes of decision-making in the collaboration; evaluation reports can provide data on outcomes of the collaboration; and logic models can describe the activities, inputs and outputs. Such documents were identified by the organizations, and analyzed with the focus groups and Photovoice captions using an interpretive descriptive approach.

## Results

### The Core of Collaboration

Our case studies validated our findings from the key informant interviews and the ecological framework of successful collaboration. Each case study is summarized in Appendix A highlighting the nature of each collaboration, the precipitators, goals, factors influencing it, impacts and outcomes, community involvement and the extent of research or evaluation activities.

Table 5 illustrates the wide variety of activities conducted in collaborations which included: community betterment/engagement, provider capacity building, enabling access to care/services, health promotion, prevention and protection, harm reduction, health education, surveillance, joint program and service delivery, outreach, sharing of information and resources, acute/episodic care and chronic disease management. A mix of activities was conducted in each case study, with no one case focusing on one area alone. Cases have been categorized into four main types according to the main focus of the collaboration: These include cases that focus on: 1) provider capacity building; 2) regional vaccine/immunization management; 3) community-based health promotion programming; and, 4) increasing access to care through outreach programs and services. A high level overview of each case follows to provide readers with a sense of the breadth and variety of existing collaborations.

Two cases related to provider capacity building interventions in PC interprofessional teams. One involved a liaison PHN working closely with a nurse practitioner to provide training for comprehensive tobacco cessation in a PC practice located in a largely rural community with a number of satellite sites. The second involved a PHN secondment to a PC practice with multiple practice sites located in a large urban setting: It focused on building PC provider capacity related to an enhanced 18 month well baby assessment.

Two cases that served regions were both focused on increasing immunization rates. The first involved the development and application of an electronic health record and appointment system to support the coordination of the H1N1 regional flu campaigns. A unique aspect of this case was that it was a large PC organization in a northern community which served most residents in the region. This environmental context was found to be a facilitator for coordination efforts in the collaboration as most providers had previous relationships. The second case centred on PC and PH exchange of paper-based immunization records in a mixed urban-rural region. The principal staff member who supported this case was a PH ‘vaccine delivery driver’ and the PHNs in the communicable disease program. The driver delivered vaccines to participating PC practices, exchanged immunization records, and inspected for cold chain breaks in most PC practices in the region. Telephone consultations were provided to PC by PHNs.

Three cases were related to the provision of community-based health promotion programming. The first was a geographically dispersed rural setting for the community health initiative which involved a physician in a solo practice working with many community agencies including PH and many others. This included researchers, a community-based steering committee, community members, local and regional governments, national and local non-governmental organizations (NGOs), First Nations communities, parks and recreation. The focus of the collaboration was the provision of supports for youth health, mental health, food security and addressing the social determinants of health. A community based steering committee with community members and service providers were critical to supporting the collaboration. Two other rural community-based cases focused on improving access to health promotion and illness prevention for specific populations. In one case the emphasis was on adolescent and adult women living in rural and remote communities. A unique feature of this case was the involvement of a non-gov-

ernmental organization which facilitated collaboration between PH, PC, and other partners through leadership in program planning and implementation and by sharing space. The final community-based case focused on improving access to health promotion and illness prevention for children and youth, and improving the efficiency of immunization services. In these cases a range of services were offered by family physicians, PHNs, NPs, registered nurses, and licensed/registered practical nurses, administrators, and managers, as well as, other professional and community members.

Three cases focused on increasing access to care through outreach programs and services. One urban outreach case was centred on improving immunization of a street-involved population against influenza and H1N1. In this collaboration, PHNs gained access to a marginalized population through the PC nurses, who are trusted in the community and work with the population every day. The partnership was driven by a core group of PC nurses, family and PH physicians, PHNs, managers, and administrators who shared a passion for equity and social justice. A second urban outreach case focused on communicable disease control case which also served a street-involved population. A coalition of community organizations supported this population with integrated PC and PH services. In the third case, the focus was urban child health promotion and family outreach with the collaboration providing access to services for marginalized populations in a large urban centre. The collaboration was unique in that it involved a tertiary care centre involving specialist services and also had academics involved in a formal research study. PC NPs offered 'one stop shop' services at various community locations (i.e. schools) to families with children and referred to PH and other social and health services as needed.

**Table 5: Overview of Case Studies: How Primary Care and Public Health Work Together**

Major Focus of Collaboration	+ Minor Focus		++ Moderate Focus		+++ Major Focus					
	Cases Focusing on Provider Capacity Building		Cases Focusing on Regional Vaccine/Immunization Management		Cases Focusing on Community-based Health Promotion Programming			Cases Focusing on Increasing Access to Care through Outreach Programs and Services		
	Enhanced 18 Month Well Baby	Comprehensive Tobacco Cessation	Regional E-Health for Immunization Management	Vaccine Management and Information Exchange	Rural Community Health Initiative	Women's Health	Rural Health Promotion	Urban Child Health Promotion and Family Outreach	Inner City Outreach	Street Health Outreach
Community betterment/engagement		+			+++	++	++	+++		
Provider capacity building	+++	+++	++	++	+		++	+	++	+
Enabling access to care/services	++	++	+++		++	+++	+++	+++	+++	+++
Health promotion	++	+			+++	++	+	++	++	
Prevention	+++		+++		+			+	+++	++
Protection							+		+++	+++
Harm reduction		+++							+++	+
Health education	+++	+++			++		+	++	++	
Surveillance	++		+++	+++			+	+++	++	
Joint program and service delivery			+++	+++	+	+	++	++	+++	+
Outreach						++		++	+++	+++
Sharing of information										
Resources	+++	++	+++	+++	+++	++	+	+++	++	++
Acute/episodic care								++	+++	
Chronic disease management	+				+				++	

## Precipitators of Collaborations

In general, there were many precipitators for collaboration. Often collaboration partners saw problems to be solved or issues to overcome, such as identifying barriers and gaps in services or addressing community needs. In other cases, partners had a common vision and saw solutions to problems. Partners also often perceived that working together could have greater potential impact. This could be related to using resources differently, solving community problems or identifying ways that PH can reduce PC problems or vice versa. In some cases, collaborators saw opportunities to increase effectiveness and/or maximize efficiencies, since they often worked with the same populations. For example, they were able to pool resources to improve immunization and vaccine wastage.

There were tipping points that enabled action on collaboration; for example, when funding was made available from provinces for new initiatives such as the establishment of innovative primary care delivery models or when changing directions in PH occurred. For example, a PH focus on equity, population health or working with community partners enabled collaborations with PC. Other examples of tipping points were Primary Health Care Transition funding and financial incentives for PC physicians, such as those for tobacco cessation interventions and flu immunizations. Collaborations were developed when factors aligned, there was dedication to a cause, or when partners had previous working relationships.

## Populations Served in Collaborations

Many populations have been served by partners in our case studies. All populations had issues related to accessing both PC and PH and were vulnerable due to multiple intersecting determinants of health including: lack of stable housing; living in poverty; being affected by racism, discrimination, and stigmatization; and suf-

fering from mental health, trauma, or violence issues. Many different disciplines were involved including: PHNs, nurse practitioners, family practice nurses, PC physicians, Medical Officers of Health/Medical Health Officers, mental health workers, administrators/managers, occupational therapists, speech therapists, social workers, midwives, information technology specialists, and others. It is important to note that clerks, receptionists, and other office and operations staff were also vital players.

## Goals in Collaborations:

Many goals were identified for collaboration that focused on improving access to services; addressing population needs and/or gaps; improving work processes; providing client centred care to target populations; providing equitable treatment; providing health promotion, prevention and harm reduction programs; increasing efficiencies; improving information sharing systems; advocating for or creating public policy; providing evidence based care and strengthening the collaboration/partnership itself. Agreements were reached regarding goals in response to community needs and by having many conversations, meetings, and closely working together. Working together through strategic plans, participating in yearly goal setting, prioritizing together and working with steering committees also helped in goal development. In a few cases, goals were identified more organically. It was not unusual in some cases for the collaboration's goals to be unclear at first and later adjusted. It was also not uncommon for goals to evolve and collaborations to change over time. One participant described the evolution of their collaboration: *"The partnership has changed very much over time. When it first started, it was really looking at the lack of mental health services in the community and looking at a way to show that there is actually a demand out here. That is how it first started. Then as it became successful in that, it morphed into looking at broader health issues in the community. From the beginning, it*



*isn't a program with staff, it isn't an organization with staff and programs. It's a collaboration of people who could look at what issues are being identified and deciding who's the best to take those on."*

### What Roles do Players Have in Collaborations?

Although the analysis of roles that various providers play has not yet been completed, initial impressions support results from the key informant interviews (Study 3) that there are many health and social service providers, clerical staff, administrators and technical support staff who work together to ensure collaboration success. Team approaches are key and roles in them are varied. It is therefore not surprising that role clarity was found to be a critical factor for successful collaboration.

### Impacts and Outcomes of Collaborations

*Crossing the Quality Chasm; a New Health System for the 21<sup>st</sup> Century*<sup>18</sup>, created a new framework for defining and evaluating health care quality. The report outlined six aims that can serve as core values for all health care services. Health care should be safe, effective, efficient, patient-centered, timely, and equitable. Collaborations were found to address many of these values to varying degrees.

Safer care was achieved through improvements in outbreak management and enhanced community capacity for harm reduction. Quality of services was increased and clients benefited directly from care received from services in collaborations. Enhanced sharing of information through information technology or manual systems was realized, as were improved models of service delivery and program expansion. Continuity, reliability and responsiveness of service was another positive. There were improvements in work processes. For example, networks of supports were developed,

access to resources was improved, and communication with partners was enhanced. There were a few cases that increased efficiencies (such as through the development of shared electronic health records [EHRs] or the delivery of needed vaccines to PC offices based on use). Increased trust in providers, as well as stronger relationships with clients and providers were achieved in some cases pointing to achievement of more person-centred care. Timeliness was seen through reduced waiting times for vaccinations. Increased access to marginalized populations and reduced health inequities was another critically important outcome.

One of the primary outcomes that was common among many cases was increasing access to care. This was achieved through a variety of activities such as referrals, implementation of new and more efficient services such as jointly delivered immunization programs, and improved reach and outreach to clients.

There were also positive impacts on partner organizations and individuals within them. For example, there were improved relationships among organizations and individuals as well as increased valuing and recognition of the partnership and individuals in it. There were also a variety of spin offs that occurred with other agencies as well as between PC and PH. Knowledge and skills of staff were increased which included stronger understanding of partner roles and functions as well as evidence informed practice.

There were also a variety of economic benefits seen such as cost savings through better resource allocation, reduced vaccine wastage, leveraged partner information systems, reduced workloads for some partners, and the development, sharing and use of various resources.



## Drawbacks of Collaborations

Few drawbacks were identified from collaborations. In some cases, collaborations were felt to be one-sided where some partners benefited more than others. It was difficult to evaluate the impact of some collaborations in particular when they were focused on goals related to prevention. Participants commented that collaborations can divert resources from other services and that there can be added workload for practitioners to participate in collaborations. Results from the partnership self-assessment tool indicate however, that benefits were seen as outweighing drawbacks.

**Results of the Partnership Self-Assessment Tool** are illustrated in the Kiviat graphs found in Appendix B for each case. Elements included: the effectiveness of the partnership's leadership; the efficiency of the partnership; the effectiveness of the partnership's administration and management; and the sufficiency of the partnership's resources. Generally, all of the cases were in the "work zone" for most elements. "Work zone" means that more effort is needed in the area to maximize the partnership's collaborative potential. Scores ranged for each element as seen in Table 6.

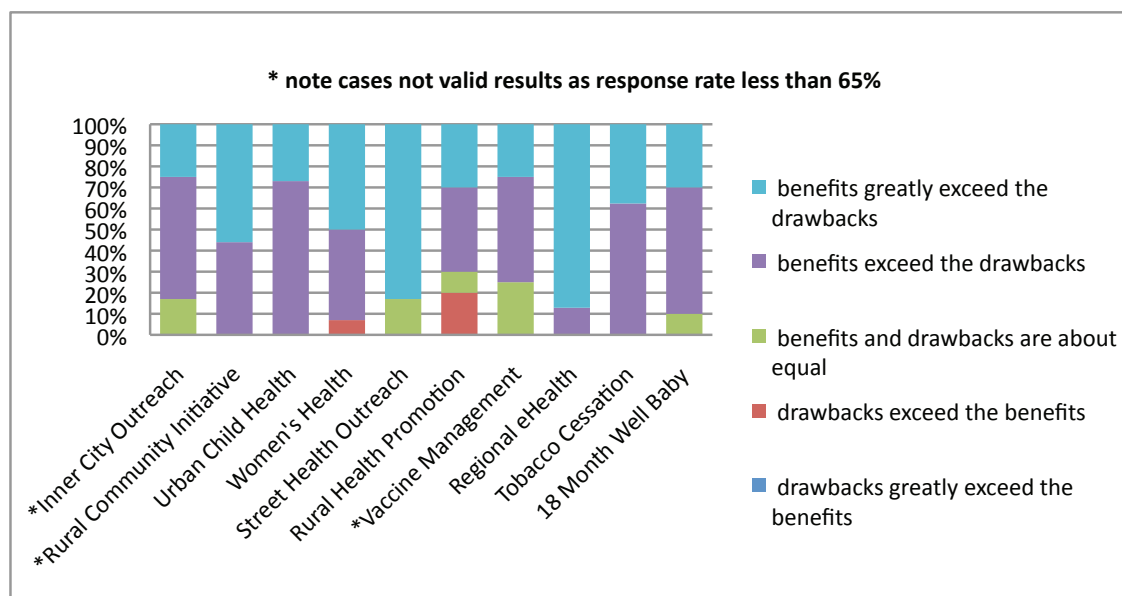
*Table 6: Ranges of Scores for Partnership Self-Assessment Tool for Cases with Valid Responses (n=7)*

Range of Scores (1 lowest- 5 highest) N= 7; cases excluded if less than 65% RR	
Overall Synergy ("extent to which the partnership can do more than any of its individual participants".)	3.2- 4.1
Effectiveness of the partnership's leadership	3.1 - 4.0
Efficiency of the partnership;	2.8 - 3.9
Effectiveness of the partnership's administration and management	2.6 - 4.0
Sufficiency of the partnership's financial and other capital resources	2.9 - 3.9
Sufficiency of the partnership's non-financial resources.	3.3 - 4.0
Note: A valid response requires 65% participation from participants in a collaboration	

In the majority of cases, elements of the partnership that seemed to be working less well were related to financial and other capital resources and partnership's administration and management. This finding may be explained by the fact that most collaborations were working with no, or limited, funding supports other than in-kind contributions from partners. Two cases (comprehensive tobacco cessation and enhanced 18 month well baby) that had staff in liaison or secondments scored high scores for financial and other capital resources. None of the cases had a collaboration coordinator, which might have helped to increase partnership's administration and management scores.

When asked about benefits versus drawbacks of collaboration, respondents in all cases felt that "benefits exceeded the drawbacks" or "greatly exceeded the drawbacks" (Figure 2); in two cases a few respondents felt that drawbacks greatly exceeded the benefits. The majority of respondents identified the following items as having the greatest benefit from collaboration (Table 7): development of valuable relationships, enhanced ability to meet the needs of my constituency or clients, ability to make a greater impact than I could have on my own, ability to make a contribution to the community, and enhanced ability to address important issues. Two items that helped explain the drawbacks were time diverted from other activities and frustration or aggravation (Table 8). Figures in Appendix C illustrate that most participants felt generally satisfied (completely or mostly) in their collaboration in relation to satisfaction in working together, with role, with influence and with plans. One exception was the rural health promotion case which had 20% of participants indicating that drawbacks exceeded benefits. This result was attributed to a high turnover of staff, and PH providers, which constituted the majority of participants in the focus groups, being unsure of their role in the collaboration.

Figure 2: Benefits versus drawbacks of participation



\* See response rates in Table 7 by case

Table 7: Benefits of Partnership (Percentage by Case)

	Increasing Access to Care through Outreach Programs and Services			Community-based Health Promotion Programming			Regional Vaccine Immunization Management		Provider Capacity Building	
	*Inner City Outreach (RR 36.4%)	Street Health Outreach (RR 77.8%)	Urban Child Health (RR 78.6%)	Women's Health (RR 82.4%)	*Rural Community Health Initiative (RR 64.2%)	Rural Health Promotion (RR 100%)	*Vaccine Management (RR 53.3%)	Regional eHealth (RR 88.9%)	Tobacco Cessation (RR 66.7%)	18 Month Well Baby (RR 66.7%)
* invalid results as response rate less than 65%										
Enhanced ability to address important issues	92	100	82	86	78	82	75	88	88	89
Development of new skills	92	86	55	71	78	55	50	88	75	89
Heightened public profile	75	83	64	86	67	18	50	100	100	44
Increased utilization of my expertise or services	83	83	73	86	89	73	50	100	63	70
Acquisition of useful knowledge about services, programs, or people in the community	92	100	82	77	100	45	75	100	100	80
Enhanced ability to affect public policy	58	33	36	36	44	9	13	63	38	33
Development of valuable relationships	92	100	100	100	100	91	75	100	100	90
Enhanced ability to meet the needs of my constituency or clients	100	100	91	93	78	82	75	88	88	80
Ability to make a greater impact than I could have on my own	92	100	100	93	89	82	88	100	100	90
Ability to make a contribution to the community	75	100	91	93	100	73	88	88	75	100
Acquisition of additional financial support	33	0	27	29	44	18	0	38	63	22

**Table 8: Drawbacks of Partnership (Percentage by Case)**

	Increasing Access to Care through Outreach Programs and Services			Community-based Health Promotion Programming			Regional Vaccine Immunization Management		Provider Capacity Building	
	*Inner City Outreach (RR 36.4%)	Street Health Outreach (RR 77.8%)	Urban Child Health (RR 78.6%)	Women's Health (RR 82.4%)	*Rural Community Health Initiative (RR 64.2%)	Rural Health Promotion (RR 100%)	*Vaccine Management (RR 53.3%)	Regional eHealth (RR 88.9%)	Tobacco Cessation (RR 66.7%)	18 Month Well Baby (RR 66.7%)
* invalid results as response rate less than 65%										
Diversion of time and resources away from other priorities or obligations	67	27	0	64	67	55	38	63	50	60
Insufficient influence in partnership activities	50	45	0	14	11	64	25	25	0	38
Viewed negatively due to association with other partners or the partnership	8	9	0	14	0	9	14	25	0	0
Frustration or aggravation	58	45	17	64	33	40	38	50	13	50
Insufficient credit given to me for contributing to the accomplishments of the partnership	25	0	0	7	0	36	29	25	0	10
Conflict between my job and the partnership's work	33	0	0	21	33	18	13	38	13	40

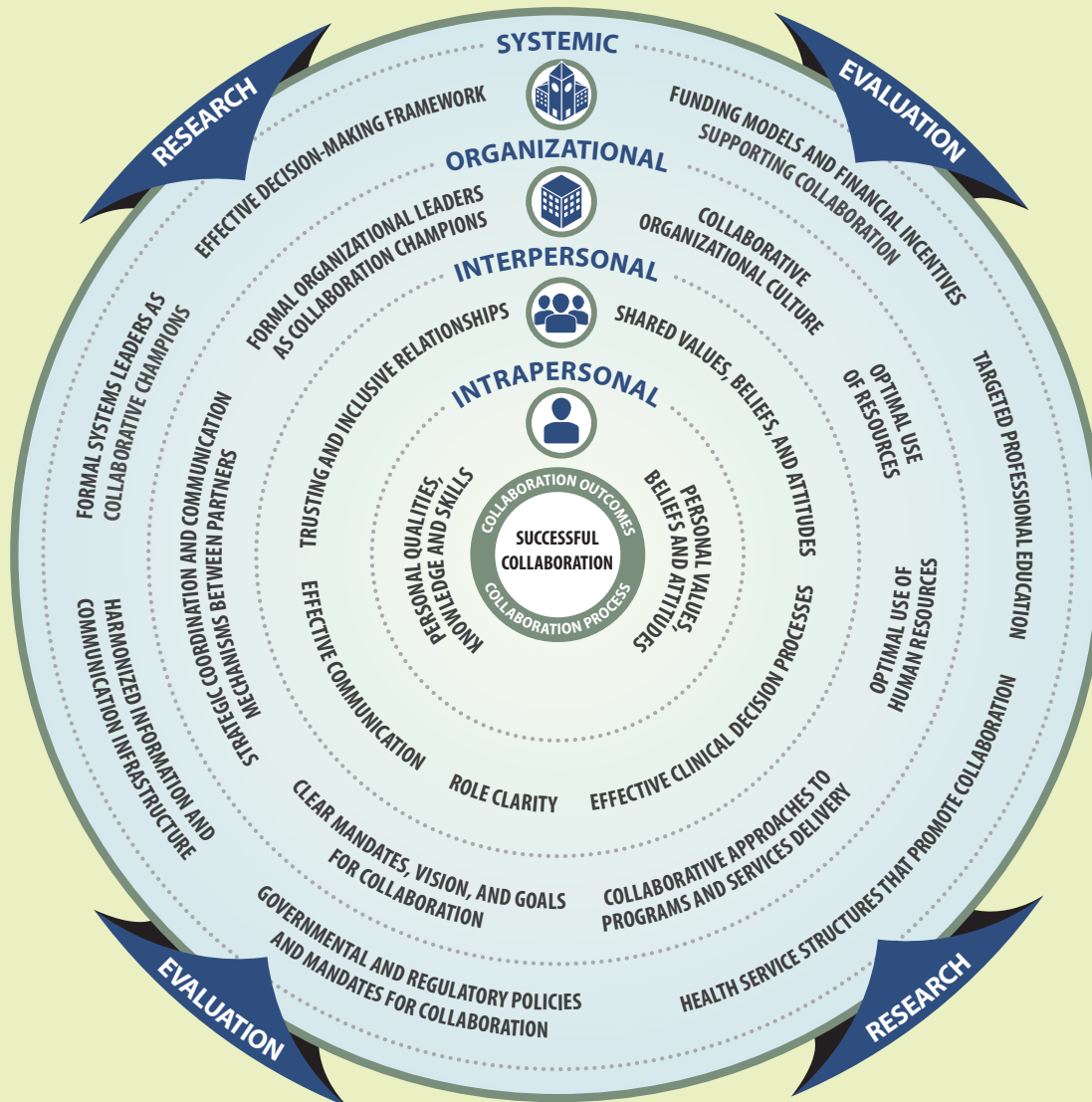
## Ecological Framework of Primary Care and Public Health Collaboration

An ecological framework was developed that was informed by this program of research. Study 3 was particularly useful to develop a first version of the ecological framework which identified the nature of collaborations and factors that influenced collaboration at four levels - intrapersonal, interpersonal, organizational and systemic. Version 1 of the collaboration framework was presented at each of three think tanks held in BC, ON, and NS. They were attended by over 200 stakeholders including decision makers on our team as well as invited guests. Guests included PC and PH front line practitioners, managers, directors, provincial policy makers, researchers and senior executives of relevant professional organizations and associations. Feedback was received on the framework and was later reviewed

by the research team during a two-day team retreat. The result was a refined socio-ecological framework. The framework was revised from the first draft to guide users towards taking action to develop and maintain successful collaborations, which is in the centre- or at the core of the collaboration. The final image of the framework can be found on page 44. Refer to the text boxes on page 25 which provide more detail about the characteristics of each factor.



# An Ecological Framework for Building Successful Collaboration between Primary Care and Public Health



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## Future Research

Future research needs to focus on identifying indicators of successful collaborations as well as measuring process and outcomes of collaboration. Our case studies were selected based on our knowledge of them and PC and PH partners' willingness and consent to participate in the research. Although the cases were varied in nature, they are not meant to report on the full spectrum of possible collaborations that exist. It would be useful, although methodologically challenging, to determine the extent of existing collaborations in Canada and, in particular, in provinces and territories which were not explored in this program of research.

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