A Scoping Literature Review of Collaboration between Primary Care and Public Health

A Report to the Canadian Health Services Research Foundation
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Executive Summary

Purpose:
The purpose of this scoping review was to determine what is known from existing primary studies, literature reviews and descriptive accounts about:

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

Worldwide, health systems are struggling to determine the best ways for primary care (PC) and public health (PH) to collaborate. 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.

Our approach followed established methods for a scoping literature review. Consistent with these methods, we did not evaluate the methodological quality of studies. While our literature review focused on collaboration between PC and PH internationally, it was beyond the scope of the review to describe or examine health care systems of countries in detail. Rather we sought to understand collaboration between PH and PC within the context of the health care system as described by the authors of various papers. The review was guided by an evolving framework by Martin-Rodriguez, Beaulieu, D’Amour, & FerradaVidel. It identifies three determinants for collaboration including: 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).

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 elected to focus our literature review on papers that were about collaboration between PH and PC in North America, Western Europe, Australia and New Zealand. Our search was retroactive to 1988 having made the assumption that after this time it was reasonable to expect to see publications about interventions related to the primary health care principles set out at Alma Ata in 1978.

Data from all abstracted papers were coded using NVivo version 8 and themes were identified. The coding structure was developed by the first two authors in consultation with the research team and was based on the research questions. The focus of analysis for the papers was the collaboration between PC and PH. Team meetings with co-investigators, decision makers, research associates and project staff were held to obtain their perspectives on emerging themes from the N-Vivo analysis, implications for Canada and the remainder of the program of research.

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

Overall findings:

- The number of papers on PC and PH collaboration in North America, Europe, New Zealand and Australia has grown steadily since the mid to late 1990s, with the largest growth since 2003.
- The majority of the papers originated from the UK (n=43) and the US (n=39). Canada ranked third (n=22).
- Of the 18 Canadian sources that reported on specific PC and PH collaborations, Ontario had the most papers (n=11), followed by British Columbia (n=2), Alberta (n=2), Quebec (n=1), the Northwest Territories (n=1) and Newfoundland (n=1).
- Eighty papers reported on specific collaborations. Where settings for collaborations could be surmised, 27 were in urban environments, followed by 16 in rural, 5 in mixed urban and rural, and 3 in remote environments.
- By far the most common type of paper was a descriptive report of collaboration. Thirty four papers were research studies, which most often reported on cross sectional surveys, mixed methods or qualitative methods. Program evaluations were also often reported.
- The majority of papers did not identify use of any theory or theoretical framework. Notable exceptions were papers using teambuilding theory, the Community Oriented Primary care (COPC) model, and one developing theoretical framework for collaboration between medicine and PH by Lasker. This model of community health governance hypothesizes that effective problem solving requires
collaborative processes to achieve outcomes of individual empowerment, bridging social ties and synergy, and that to achieve these outcomes certain characteristics and kinds of leadership and management are needed.

- Eighty papers that described collaborations were classified by type of model of collaboration based on Lasker’s six models of collaboration reported as synergies.8

  - Synergy III—*Improving the quality and cost effectiveness of care by applying a population perspective to medical practice* — was the most common type reported.
  - Synergy IV—*Using clinical practice to identify and address community health problems* — was the next largest group.
  - These were followed by; Synergy I—*Improving health care by coordinating services for individuals* and Synergy VI—*Shaping the future direction of the health system by collaborating around policy, training and research.*

**Major precipitators of collaborations** included:

- Values and beliefs, such as belief in the value of collaboration, prevention and health promotion.
- Nursing and medicine faculties’ desires to plan service initiatives.
- The need to change and broaden medical and nursing education in response to changing health needs and professional roles.
- Health care systems reforms.
- Trends to collaborate.

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

- Common biomedical issues were chronic diseases, communicable disease control and immunizations.
- Common behavioural issues were smoking cessation, screening and other preventive activities.
- Common socio-environmental issues were poverty, community development and disaster response planning.
- Access to health care for underserved or vulnerable populations.

**Activities carried out in collaborations** included:

- Community activities, joint health promotion, health education and prevention initiatives, provision of numerous 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 were taking precedence over local priorities in communities; reform also caused a great deal of uncertainty with how PH and PC sectors would function within newly created structures and governance processes.
- Rapid and constant change within organizations created by national initiatives affected the capacity of PC and PH to collaborate creating “policy overload.”9
- A lack of stable funding, versus intermittent or one-off funding, for collaborative projects.
- Nurse practitioner and PH roles were both reported to be under funded.
- Fee for service physician payment models.
- Lack of adequate funding for evaluation of collaboration innovations.
- Inequities in financial support with a focus on an illness paradigm and corresponding lack of funding for health promotion activities including inadequacies in the numbers of PH staff and other non physician providers.
- Separate entrenched bureaucracies for PH and medical services.
- The power of hospital secondary care over primary health care at a systems level.
- Health care providers' concerns over loss of autonomy and control.
- The lack of an information structure limited the ability to adjust to the underlying risk of populations and share and compare.
- In Canada, the lack of an integrated surveillance system limited reporting between health sectors.
- The need for more evaluations, population health needs assessments, relevant clinical data and an evidence base for health promotion and cost-effective PH interventions.

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

- The ‘fit’ of supports for collaboration between PH and PC.
• Importance of collaboration between levels of government, for example in an emergency, and for coordination and priority setting.

• Relevant policy development such as in the UK, the reorganization of fiscal and structural resources to create Primary Care Groups and Trusts and the development of unified budgets enabling services to be commissioned.

• Government endorsement of the value of PH and PC collaborations in the community, emphasizing the potential benefits of collaboration.

• Researchers were identified as “early adopters” and reported to influence the readiness of the practice environment to support collaboration.

• 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.

• Alternative payment plans other than fee for service enabled physicians to delegate tasks to their teams, allowing them to provide services for more complex patients and focus on more community based care. For NPs on the other hand, having opportunities to bill for their services was a factor enabling their involvement in PC and PH collaboration.

• Collaborations benefited from resources available through 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.

• A focus on individuals and short term results in PC versus the focus on populations and long term view of PH.

• Devaluing of key PH activities, such as prevention, population needs assessments and community development.

• 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 at the organizational level.

• 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 related to local and state laws and policies as well as mechanisms to provide health care, management capabilities, and deficiencies in expertise related to PH skills in PC.

• Lack of capacity to coordinate and manage disparate, diverse and large teams.

• Need for practitioners who understand health and community to work with communities in assessing needs and developing effective responses.

• Suboptimal utilization of the existing workforce, e.g. public health nurses were identified to be in a unique position to be able to contribute more to population needs assessments but were tied up doing immunizations and well baby assessments.

**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:

• Development of community-based committees or boards with diverse membership.

• Involvement of multi professionals.

• Joint planning by PH, PC and the community.

• Organizational 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; mentorship programs for new employees; clear lines of accountability; job descriptions requiring collaboration, and supportive and accessible managers.

• Smaller teams with diverse skills and backgrounds and stable teams with a higher proportion of full-time staff.

• Co-location of PH and PC organizations and team members.

• Use of a standardized, shared system for collecting data and disseminating information and linked electronic records to enhance access to quality medical information and 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.
• Devaluing and a lack of understanding of PH roles and, to a lesser extent, PC nursing roles.
• Philosophical differences in approaches to care.
• Competing priorities and agendas.
• Poor rapport between PC and PH, with the community, and among various community nursing roles.
• Inadequate understanding of specific roles and interdisciplinary teamwork.

**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.
• Shared similar philosophies of care, valuing of the impact of collaboration on community health and acknowledgment of the importance of health improvement and health inequalities.
• Positive relationships were related to previous experiences, sharing feedback between partners and having patience and time to nurture relationships.
• Trust, tolerance and respect of partners.
• Effective team communication including regular staff meetings, attention to process, involvement of the whole team, consensus building and joint planning and listening to community partners.

**Markers of Successful Collaboration**

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

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

The benefits of successful collaboration differed for each partner. Outcomes of collaboration were categorized according to health care system outcomes, health professional outcomes and health benefits for individuals and populations. Health care system outcomes included: improved population health and public health approach; funding and resource enhancements; health service delivery improvements; improved health service delivery process; and new program development and innovation. Health professional outcomes included: improvements with partnerships and team functioning, health professional development and educational improvements.

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 there were 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.

**Recommendations:**

• Policy discussions should occur with governments to determine implications for building PC and PH collaborations with the aim of improving health outcomes; policy changes need to be considered at the provincial level.
• 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 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 practitioner “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.
Background

6 Background

Why Primary Care and Public Health Collaboration is Important?

Worldwide, health systems are struggling to determine the best ways for primary care (PC) and public health (PH) to collaborate, “a process through which parties who see different aspects of a problem can explore constructively their differences and search for solutions that go beyond their own limited vision of what is possible.” In 2001, the managed care approach to PC taken by the United Kingdom (UK) led to a relocation of public health staff from district health authorities to Primary Care Trusts (PCT). New Zealand announced changes to its health care system in 2000 with establishment of Primary Care Organizations for the delivery of PC and 22 District Health Authorities with responsibility for public health and PC.

After three decades of little change in Canadian primary health care, a seminal author in the field, Hutchison, reported: “Clearly the policy logjam is now broken. Canadian primary healthcare has leapt forward in the last several years and is still gathering momentum.” To facilitate continued progress, Hutchison advocated for key policy initiatives: “Governments, ministries of health and health authorities need to articulate a clear primary healthcare policy direction at the regional, and provincial/territorial levels based on a collaborative process of policy development that engages key stakeholders and is guided by considerations such as: consistency with health system objectives and the public interest; relevance, quality and strength of evidence; acceptability of required resources; and availability of required resources; and availability or potential to develop needed technology and infrastructure. Such policy roadmaps need to be developed from the perspective of primary healthcare as a system rather than simply the sum of its parts, taking into account the existing and potential relationships among its components and its relationship to other sectors.”

There has been a strong call to strengthen and renew Canada’s public health infrastructure largely as a result of incidents such as SARS, the tainted blood scandal, and water contamination in Walkerton, Ontario and North Battleford, Saskatchewan. In response to these public health threats, the provincial, territorial and federal governments have committed to improving health human resources planning and management, including the public health workforce. Public health reforms are also occurring at the provincial level. For example, Ontario’s Capacity Review Committee’s report outlined the need to revitalize the public health workforce, demonstrate accountability and measure performance, build stronger health units, secure stable and predictable funding, strengthen research and knowledge exchange and ensure quality governance in a province-wide system. In British Columbia, four public health core functions—health improvement, disease injury and disability prevention, environmental health, and health emergency management—have been identified which represent the minimal services required for a renewed and modern public health system.

Reforms to date have not considered how these two sectors can collaborate to improve health. In 2005, a pan-Canadian workshop on “Public Health and Primary Health Care Collaboration” called for the Public Health Agency of Canada to facilitate stronger collaboration between PC and PH. This need was further supported by the Ontario Capacity Review Committee’s report on the state of PH in Ontario. Furthermore, a Health Canada report from a 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. This scoping review of the literature began to address this question.

Lasker, Weiss and Miller present the notion of the connective power of collaboration, arguing that it can be used to strengthen and combine actions for communities to identify and address health issues. Actions refer to strategies such as clinic services as well as those that put emphasis on population interventions such as community screening programs and public education campaigns. Lasker further argues that partnering population based strategies with individual clinic services can result in better access and tailoring of services to meet community needs as well as a stronger understanding of and ability to manage underlying causes of health problems. Partnering has also been found to strengthen health promotion and protection efforts through community campaigns. It is believed that partnerships can create synergy that result in something new and valuable that is greater than the sum of its parts.

7 Definition of Terms

We defined commonly used key terms, which could be interpreted in multiple ways. We distinguished between primary health care and primary care, not to resurrect old debates, but to make clear, as others have done, that 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.

Primary Health Care

As per the definition from the Alma Ata Declaration, we defined Primary Health Care as:

“...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.”

Primary care

Primary care can be considered one of primary healthcare’s core services. We used Barbara Starfield’s definition of primary care. Starfield believes that primary care is the crucial foundation of a health care system, and defines the key features of primary care as being the first point of entry to a health care system, the provider of person-focused care (not disease oriented) over time for all but the most uncommon conditions and the part of the system that integrates or co-ordinates care provided elsewhere or by others.

Public health

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 involves [sic] 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”.

Collaboration

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.

Partnerships

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.25 (p.12)

In addition, to help us understand the international literature, particularly from the UK, we used the glossary of terms provided by Hill, Griffiths and Gillam in their book, Public Health and Primary Care: Partners in Population Health.26 Some of the commonly used terms in the papers included in the review are defined here to facilitate reading of the report.

**Community-oriented primary care (COPC)**
A strategy where elements of primary health care and public health are systematically developed and brought together in coordinated service.26 (p. xvii)

**Health visitor**
 Qualified and registered nurse or midwife who has undertaken further (post-registration) training in order to be able to work as a member of the primary health care team. The role of the health visitor is about the promotion of health and prevention of illness in all age groups.26 (p. xix)

**Health impact assessment (HIA)**
An assessment process to look at the impact on health of government policies on health or other actions completed or projected.26 (p. xviii)

**Local Area Agreements (LAA)**
Agreements between government, the local authority and its major delivery partners, in an area (working thorough the Local Strategic Partnerships). They simplify the number of additional funding streams from central government going into an area, help join up public services more effectively and allow greater flexibility for local solutions to local circumstances.26 (p. xix)

**Local Strategic Partnerships (LSP)**
Bodies based on local authority boundaries, bringing together public, private, community and voluntary sectors, tasked with tackling those issues which require the involvement of several agencies to solve. The LSPs support their local authorities’ community strategies and the new initiatives called Local Area Agreements.26 (p. xix)

**Practice-based commissioning**
Practices are provided with the resources and support to become more involved in commissioning decisions. They receive information on how patients use health services which they can use for the redesign of services.26 (p. xx)

**Primary Care Trust**
Local National Care Trust health authorities in England charged with improving health and commissioning health care.26 (p. xx)

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### 8 Purpose/Objectives

The purpose of this scoping review was to determine what is known from published studies, literature reviews and descriptive accounts about:

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

### 9 Methods

#### 9.1 OVERALL SEARCH STRATEGY

Our approach followed established methods for a scoping literature review.2-4 Consistent with these methods, we did not evaluate the methodological quality of studies.2-5 While our literature review focused on collaboration between PC and PH internationally, it was beyond the scope of the review to describe or examine the health care systems of countries in detail. Rather, we sought to understand the collaboration between PH and PC within the context of the health care system as described by the authors of the various papers. Throughout the review, we retrieved a number of papers not directly relevant to our topic, which nevertheless provided background or related analysis to add to our understanding of the topic.

This literature review is the first study in a four year program of research investigating PH and PC collaboration in a western, eastern and central Canadian province. The results of the literature review will inform subsequent studies in the research program including an environmental scan, key informant contacts in PH and PC, case studies and a national survey. The literature review was guided by an evolving framework by Martin-Rodriguez et al 6 that identifies three determinants for collaboration: system determinants (outside the organization) in the environment where the collaboration takes place; organizational determinants
A Scoping Literature Review of Collaboration between Primary Care and Public Health

(conditions within the organization); and interactional determinants (interpersonal interactions between team members). The framework was used to guide the data extraction and assist in organizing codes in the analysis.

The search strategy involved five separate search activities including: 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.

9.2 ELECTRONIC DATABASES

Relevant databases (Table 1) were searched for literature published between 1988 to May 2008 using MeSH Headings and free text key words that were applicable to the three areas of interest—PH, PC and collaboration—in combinations using the Boolean operators ‘AND’ and ‘OR’ (Table 2). Two librarians developed a search strategy independently and, after comparing results, agreed on a single strategy. The librarians were given a copy of the reviews published by Ciliska, Ehrlich and Deguzman27 and Stevenson Rowan, Hogg and Hussey28 to assist with determining key words from primary studies.

<table>
<thead>
<tr>
<th>Table 1. Electronic Databases Searched for Scoping Review</th>
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<tr>
<td>MEDLINE (especially PubMed with Special Queries – recent development that specifically searches for health services research and qualitative research)</td>
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<td>CINAHL</td>
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<td>Cochrane, including DARE</td>
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<tr>
<td>Dissertations International</td>
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<tr>
<td>EPOC (Effective Practice and Organization of Care)</td>
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<td>EMBASE</td>
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<td>McMaster University’s Program in Policy Decision-Making and the Canadian Cochrane Network and Centre, have created an inventory of systematic reviews of governance, financial and delivery arrangements within health systems from two sources: 1) a manual search of the Cochrane Library (Issue 3, 2007); and 2) an overview of reviews being led by members of the Cochrane Collaboration’s Effective Practice and Organization of Care (EPOC) review group (with the search completed up to February 2004 and an updated search currently in progress). A paper describing their methods and findings, including scope notes for taxonomy, is currently under review. Visit <a href="http://www.researchtopolicy.ca/search/reviews.aspx">http://www.researchtopolicy.ca/search/reviews.aspx</a></td>
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<tr>
<td>PsycINFO</td>
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<tr>
<td>Sociological Abstracts</td>
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9.3 WEBSITE SEARCH

Fifty-two websites from various governments, associations, research networks and repositories known to the research team and suggested by key informants were hand searched for relevant papers (Appendix A). In addition, a general internet search using GOOGLE was conducted.

9.4 HAND-SEARCHING OF KEY JOURNALS

A hand search of 18 journals, identified by the research team as key journals likely to publish on this topic, was conducted independently by two members of the research team (Table 3). The hand searches were restricted to the six months prior to June 2008 for journals that were published monthly and one year prior for journals published quarterly. If relevant papers were found in a journal, then the hand search was extended to three years for monthly journals and five years for quarterly journals.
9.5 **KEY INFORMANTS**

Key authors in the fields of primary care and public health collaboration in Canada and the United States were contacted to suggest key papers for inclusion in the review (P. Brower, L. Chambers, J. Haggerty, J. R. Lasker, M. Stewart, M. Barnes and B. Hutchison).

9.6 **CHECK OF REFERENCE LISTS OF LITERATURE REVIEWS ON PH AND PC COLLABORATION**

Relevant papers were selected from the bibliographies from two review articles, in which the papers aimed to answer research questions that were specifically related to collaborations between PC and PH retrieved using the above methods.\(^{27,28}\)

9.7 **INCLUSION / EXCLUSION CRITERIA AND REVIEW PROCESS**

For papers retrieved from the electronic database search, there were three levels of review using inclusion/exclusion criteria (Table 4). To ensure health care system comparability and applicability of research findings, we elected to focus our literature review on papers that were about collaboration between PH and PC in North America, Western Europe, Australia and New Zealand. Our search was retroactive to 1988 having made the assumption that after this time it was reasonable to expect to see publications about interventions related to the principles set out at Alma Ata in 1978. Reference Manager was used to file and manage retrieved papers and record decisions of reviewers.

<table>
<thead>
<tr>
<th>Table 3. Hand-Searched Journals</th>
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<tbody>
<tr>
<td>American Journal of Public Health</td>
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<tr>
<td>Annals of Family Medicine</td>
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<tr>
<td>Canadian Family Physician</td>
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<tr>
<td>Canadian Journal of Public Health</td>
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<tr>
<td>Canadian Medical Association Journal</td>
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<tr>
<td>Health Affairs</td>
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<tr>
<td>Healthcare Policy</td>
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<tr>
<td>Health Promotion International</td>
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<tr>
<td>International Journal of Evidence-Based Health Care</td>
</tr>
<tr>
<td>Journal of Family Medicine</td>
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<tr>
<td>Journal of Family Practice</td>
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<tr>
<td>Journal of Health Services Research and Policy</td>
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<tr>
<td>Journal of Public Health Management and Practice</td>
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<tr>
<td>Journal of Health Promotion Practice</td>
</tr>
<tr>
<td>Milbank Quarterly</td>
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<tr>
<td>Primary Health Care Research and Development</td>
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<tr>
<td>Social Science &amp; Medicine</td>
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<tr>
<td>Journal of Public Health Medicine</td>
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<th>Table 4. Inclusion/Exclusion Criteria for Scoping Review Papers</th>
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<tbody>
<tr>
<td><strong>Inclusion Criteria</strong></td>
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<tr>
<td>Published in English</td>
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<tr>
<td>Published between 1988 and 2008</td>
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<tr>
<td>Addressed Canadian, US, UK, Australian, New Zealand or Western European health care systems</td>
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<tr>
<td>Addressed at least one of the following:</td>
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<tr>
<td>- Structures to build collaboration between PH &amp; PC (e.g. models, settings, roles, policy, education, legislation, regulation)</td>
</tr>
<tr>
<td>- Processes to build collaboration between PH &amp; PC (e.g. communication, skills, linkages, outreach, facilitators and barriers)</td>
</tr>
<tr>
<td>- Outcomes of collaboration between PH &amp; PC (e.g. accessibility, quality of care, satisfaction, cost)</td>
</tr>
<tr>
<td>- Markers of successful collaboration between PH &amp; PC</td>
</tr>
<tr>
<td>Was a published or unpublished primary study, thesis or literature review using any type of method; to be inclusive we included papers that offered descriptive accounts of collaboration without an explicit study design.</td>
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| **Exclusion Criteria**                                        |
| Published in language other than English                      |
| Published before 1988                                         |
| Addressed health care systems other than Canadian, US, UK, Australian, New Zealand or Western European systems |
| Does not address structures or process for or outcomes or markers of collaboration between PH and PC |
| Article only addresses PH                                      |
| Article only addresses PC                                     |
| Article is book review, commentary, or editorial              |

Through a series of teleconference or face to face meetings, team members participated in training sessions for each stage of review for relevancy for inclusion. In the first level of review, each title and abstract of papers retrieved from the library database search were independently evaluated by two members of the research team (n=8). Reviewers included papers when they were in doubt about the relevance of the content or there was not enough information to make a judgment. Because of the complex nature of the content, and the varied terminology used by each nation to describe their health care systems and collaborations (e.g. community oriented primary care, Primary Care Trusts, Community Health Centres, Health Authorities), it was not surprising that there was some
disagreement in relevancy ratings. Therefore, to ensure that as many relevant papers as possible proceeded to the next level of review, papers assessed as relevant for inclusion by at least one team member progressed to the next level of review.

The next stage consisted of a full text review of each paper and independent ratings by two research team members. Where there was disagreement at this stage, the first two authors (RMM- an expert in primary care and RV- an expert in public health) reviewed the papers and reached consensus regarding their relevance for inclusion.

Papers retrieved from websites, hand searching, bibliography review and key contacts' suggestions went through a similar process whereby they were assessed independently by two members of the research team. Except for the bibliography review, full texts of papers were available, and therefore required only one level of review. Reviewers compared results and reached consensus where there were disagreements. As in the library search, where there was disagreement at this stage, the two authors (RMM & RV) reviewed the papers and reached consensus regarding their relevance for inclusion. When full papers were not available at the first level of review (i.e. bibliography review), the second stage of relevancy testing was conducted as in the library database review described above.

For all relevant papers, in the third stage, nine members of the research team extracted data from relevant papers using a common data extraction form previously piloted on three papers by two authors- RMM & RV (Appendix B). When the relevancy of a paper was questioned at the extraction stage, the two authors (RMM & RV) reviewed the papers and came to consensus on whether the paper should be included.

9.8 ANALYSIS

Data from all extracted papers were coded using NVivo version 8 and themes identified. The coding structure was developed by the first two authors in consultation with the research team and was based on the research questions. The focus of the analysis for the papers was the collaboration between PC and PH.

A compiled list of the data from all of the extractions as well as the detailed NVivo coding structure was shared with all members. Team meetings were held by audio and or web-conferencing with co-investigators, decision makers, research associates and project staff. The purpose of these meetings was to obtain team members’ perspectives on emerging themes from the data as well as implications for Canada and the remainder of the program of research. Each meeting lasted 90 minutes, was audio-taped and subsequently transcribed to assist the two authors in the interpretation of the results and the implications.

10 Results

10.1 SEARCH STRATEGY RESULTS

The combined search strategy yielded a total of 6,125 papers (Fig.1). Of these, 114 met the inclusion criteria for the scoping literature review.

![Fig. 1: Results of the Search Strategy](image)

10.2 OVERALL DESCRIPTION OF RELEVANT PAPERS

As Fig. 2 illustrates, the number of papers on primary care and public health collaboration in all countries included in this review has grown steadily since the mid to late 1990s, with the largest growth from 2003 to the present. Note that only five months of published literature have been captured in 2008. (Fig. 2)
Results

The majority of the papers originated from the UK (n=44). There were a considerable number of papers from the US (n=38). In contrast, other countries had much fewer publications. Canada ranked third with 22 papers followed by Australia with seven papers, and 1 each from New Zealand, Finland and an international group of authors (Fig. 3).

Of the 18 Canadian sources that reported on primary care and public health collaborations, Ontario had the most papers (n=11) followed by British Columbia (n=2), Alberta (n=2), Quebec (n=1), the Northwest Territories (n=1), and Newfoundland (n=1) (Fig. 4). The remaining four papers by Canadian authors were either literature reviews or discussion papers.

Excluding literature reviews, discussion papers and other research papers, there were 80 papers that reported on specific collaborations (Fig. 5). The settings for these collaborations were explicitly noted or could be surmised for 51 cases. Most collaborations were located in urban settings (n=27) followed by rural (n=16), mixed urban and rural (n=5) and remote environments (n=3).

10.3 RESEARCH METHODS AND THEORIES USED

By far the most common type of paper was a descriptive report of collaborations (n=41)(Fig. 6). Research studies accounted for 34 papers and program evaluations (n=25) were also found. There were a small number of literature reviews (n=7) as well as discussion papers (n=7) pertaining to the topic. A number of papers reported on intervention studies, which were focused on prevention. For example, interventions were aimed to: promote better mental health in preschoolers; increase immunization rates; improve performance of seven preventative practices through the use of nurse prevention facilitators; and incorporate respiratory infection control practices in PC offices through a public health nurse intervention.
10.4 Types of Collaboration

Of the 80 papers that reported on specific collaborations, each paper was categorized according to Lasker’s models of medicine and public health collaboration. Categories were chosen based on the predominant aim of the collaboration according to Lasker’s 6 models of synergies. These models are described in Table 5. In Lasker’s models, medicine is conceptualized broadly to include long-term care and hospital sectors rather than primary care alone. However, we found that the descriptors were very relevant for most primary care and public health collaborations. It is also important to note that in this scoping review, collaborations were included in synergy II which aimed to address access to health care for low income populations when universal health care was not provided.

| Table 5: Models of Medicine and Public Health Collaboration (Lasker p. 51) |
|-----------------------------------|------------------|
| **Synergy**                      | **Models**       |
| Synergy I: Improving health care  | • Bring new personnel and services to existing practice sites |
| (coordinating services for individuals). | • Establish one stop centres |
| Synergy II: Improving access to | • Establish free clinics |
| care by establishing frameworks to | • Establish referral networks |
| provide care for uninsured.      | • Enhance clinical staffing at public health facilities |
| Synergy III: Improving the quality | • Shift indigent patients to mainstream medical settings |
| and cost-effectiveness of care by | • Use population-based information to enhance clinical decision-making |
| applying a population perspective to | • Use population-based strategies to “funnel” patients to medical care |
| medical practice.                | • Use population-based analytic tools to enhance practice management |

The majority of papers did not identify use of any theory or theoretical framework related to collaboration. Of those that did, few used theories specific to collaboration. Notable exceptions were papers using teambuilding theory, community oriented primary care (COPC) model, and a developing theoretical framework for collaboration between medicine and PH. This model of community health governance hypothesizes that effective problem solving requires collaborative processes to achieve outcomes of individual empowerment, bridging social ties and synergy, and that to achieve these outcomes certain characteristics and kinds of leadership and management are needed.

References:
- Cross sectional surveys, 22, 35, 36, 44, 47, 49, 51, 52, 53, 55, 56, 57, 63, 70, 85, 91, 96, 108, 115, 124, 126, 136
- Mixed Methods, 20, 40, 42, 43
- Qualitative Descriptive Methods, 31, 39, 40, 45, 66, 67, 119
- Other, 20, 104, 130, 132

Of the papers that reported on research studies (n=34), the methods used were varied (Fig. 7). Cross sectional surveys (26%), mixed methods (21%), and qualitative descriptive methods (21%) prevailed. The “other” category is made up of two case reviews, a case study, rapid appraisal, grounded theory, action research, and a historical cohort study. Other less frequently used methods were before and after studies and an RCT.
Table 5: Models of Medicine and Public Health Collaboration (Lasker p. 51)20

<table>
<thead>
<tr>
<th>Synergy</th>
<th>Models</th>
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<tr>
<td>Synergy IV:</td>
<td>Using clinical practice to identify and address community health problems.</td>
</tr>
<tr>
<td>- Use clinical encounters to build community wide databases</td>
<td></td>
</tr>
<tr>
<td>- Use clinical opportunities to identify and address underlying causes of health problems</td>
<td></td>
</tr>
<tr>
<td>- Collaborate to achieve clinically oriented community health objectives</td>
<td></td>
</tr>
<tr>
<td>Synergy V:</td>
<td>Strengthening health promotion and health protection by mobilizing community campaigns</td>
</tr>
<tr>
<td>- Conduct community health assessments</td>
<td></td>
</tr>
<tr>
<td>- Mount health education campaigns</td>
<td></td>
</tr>
<tr>
<td>- Advocate health-related laws and regulations</td>
<td></td>
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<tr>
<td>- Engage in community-wide campaigns to achieve health promotion objectives</td>
<td></td>
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<tr>
<td>- Launch “Health Communities” initiatives</td>
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<tr>
<td>Synergy VI:</td>
<td>Shaping the future direction of the health system by collaborating around policy, training and research</td>
</tr>
<tr>
<td>- Influence health system policy</td>
<td></td>
</tr>
<tr>
<td>- Engage in cross-sectoral education and training</td>
<td></td>
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<tr>
<td>- Conduct cross-sectoral research</td>
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</table>

Of the 80 papers that reported on collaborations, Synergy III—Focusing on improving the quality and cost effectiveness of care by applying a population perspective to medical practice—was the most common type reported (22.5%). Synergy IV—Using clinical practice to identify and address community health problems—was the next largest group (17.5%) followed by Synergy I—Improving health care by coordinating services for individuals (15%)—and Synergy VI—Shaping the future direction of the health system by collaborating around policy, training and research (15%). The “other” category is represented by collaborations that focused on integration and/or collaborations aimed at quality improvement (8.8%).

The models of collaboration were also compared by country of origin. Synergy II—Improving access to care by establishing frameworks to provide care for uninsured—was reported only in US papers. Papers in the “other” category, which related mostly to building integrated teams and team work for quality improvement, largely came out of the UK and focused on improving health care services in Primary Care Trusts. The other models of collaboration were reported across most countries, including Canada. Canada had a greater percentage of collaborations that were classified as Synergy V—Strengthening health promotion and health protection by mobilizing community campaigns—compared to other countries. Except for the U.S., Canada also reported on a higher percentage of Synergy I collaborations—Improving health care by coordinating services for individuals—than other countries.

Fig. 8: Percentage Distribution of Models of Collaboration using Lasker’s20 Classification (n=80)

Fig. 9: Percentage Distribution by Type of Collaboration (According to Lasker’s Classification) and Country (n=80)
All collaborations were also categorized based on the scope or reach of the collaboration including: national, provincial, territorial or state, multiple regions or counties, region or county, and local (Fig. 10). Local collaborations (neighbourhood or city) (n=41) were most frequently reported. Collaborations operating in multiple regions or counties were next most popular (n=18) followed by single region or county collaboration (N=13). Collaborations described as having a national (n=4) or provincial/state (n=4) reach were rare.

Fig. 10. Scope of Collaborations (n=80)

The most common type of reported collaborations were academic partnerships (n=13)10;76-78;81;82;84;86;93;95;101;114;129 Some academic partnerships were developed to provide opportunities for student learning and improve population health. Examples include pediatric residents at the University of British Columbia collaborating with community dental personnel to improve the oral health of Aboriginal children,116 nurse-led community based health centers,78;84;93 and outreach services to vulnerable populations.86 Partnerships involving academic medicine focused on improving service delivery through program development and implementation,10;76;82 and fostering mutual understanding between PH and PC.81 Another focus for academic partnership was continuing education of PC physicians.129,77,129

The Primary Care Trust (PCT) model of collaboration implemented in the UK’s National Health Service was reported in numerous papers,31;36;45;47;52;60;63;65;66;68;69 Four papers identified integrated nursing teams as a type of collaborative partnership among nurses with PH and PC roles in PCTs in the U.K.41;58;59;56 In addition, two papers reported on integration of nurse practitioners in public health units in Ontario,124;126 Multi-agency partnerships were identified in 10 papers,52;88;90;91;97;98;102;120;132;143 and COPC model partnerships in five.30;32;33;105;140 There were a number of papers each describing a configuration of different health care provider collaborations. For example, these included the following: PC physicians, public health nurses and pharmacists;113 PC physicians, community nurses and a sexual health counselor;130 health visitor offering specialized services in a PCT;61 health visitors working in geographic teams collaborating with PCTs;63 medical care epidemiologist and PCT;39 community nurses and nurse practitioners (NPs);37;107 public health nurses or health visitors and PC physicians;43;108-111 and a public health doctor and PC team.36 Other papers described collaborations been various organizations or departments responsible for PH and PC,29;71;73;74;79;83;89;94;127;134

10.5 PRECIPITATORS OF COLLABORATION

Many of the collaborations between PH and PC were driven by values and beliefs; the most common of which was a belief in the value of collaboration between PH and PC34;37;50;57;63;72;73;81;113;128 and the importance of teamwork for enabling effective coordinated care.48;54 Belief in the value of prevention20;72;77;87;112 and health promotion57;93;112 were also common motivators for collaboration.

Government mandated the development of teams and partnerships20;54;64;66 and various health reform initiatives, for example, the GP purchaser agreement48 and a variety of others.30;33;41;49;51;52;55;62-65;67;69;87;112;121;123 In Canada, government initiatives included changes to an influenza program119 and federal and provincial research funding.120;122 A range of health issues were motivators for collaboration, the common ones being communicable disease control, including immunizations143;71;92;96;109;110;123;133;144 and chronic diseases.1;61

Other precipitating factors included determinants of health focused initiatives, for example on reducing health disparities,20;102;145 migrant family needs55;102;126 and the health care needs of remote and rural populations.118;126 Several health service delivery issues prompted development of collaborations; the most common of these were financial pressures,73;85;89 improving quality of care to underserved populations41;83;85;86;101;107;114 and addressing the need for more evidence such as health needs assessments.29;30;42;60;90 Emergency response relief was another precipitator for collaboration.96-98

Academic partnerships were most commonly found between faculties of nursing78;95 and medicine76 and PC/PH collaborations. Most of these collaborations were
initiated by the academic partnership for the purposes of planning service initiatives. Another reason for academic collaborations was the need to change and broaden medical\textsuperscript{20} and nursing\textsuperscript{93} education in response to changing health needs and professional roles. Related to this, providing opportunities for medical residents to practice in collaborative settings with underserved populations enhanced the likelihood of their caring for such patients after residency.\textsuperscript{114}

10.6 **KEY HEALTH ISSUES BEING ADDRESSED**

A broad range of biomedical, behavioral and socio-environmental issues were addressed. The most common biomedical issues were chronic diseases,\textsuperscript{9,10,29,30,37,43,55,76,85,90,92,113,130} communicable disease control,\textsuperscript{31,71,73,92,109,110,129} and immunizations.\textsuperscript{5,32,70,90,96,110} Smoking cessation,\textsuperscript{30,90} screening and other preventive activities,\textsuperscript{5,43,90,92,114,116} were examples of behavioral issues, while poverty,\textsuperscript{91-93,101} community development,\textsuperscript{30,31,35,40} and disaster response planning\textsuperscript{74,98} exemplified socio-environmental health issues. Target groups included mothers and babies,\textsuperscript{29,43,75,78,91} seniors,\textsuperscript{37,41,76,82} children and youth,\textsuperscript{76,78,85} and migrants.\textsuperscript{57,95}

10.7 **ACTIVITIES CARRIED OUT IN COLLABORATIONS**

A broad range of activities were carried out in PH and PC collaborations (Fig. 11)

- **Community activities** included community engagement,\textsuperscript{31,35,38,46,53,75,76,78,82,90,101,107,127,130,140} community development\textsuperscript{31,35,52} and multi-sectoral involvements.\textsuperscript{9,35,95}

- **Joint PH-PC health promotion**,\textsuperscript{31,36,37,43,55,57,64,85,93} health education,\textsuperscript{43,74,82,84,86,89,108,117,118,140} and prevention\textsuperscript{20,28,31,31,43,66,70,86,101,111,113,114,116} initiatives of various types were reported.

- **Three principal health services** offered by PH and PC collaborations were chronic disease management including screening,\textsuperscript{1,55,65,74,84,86,89,107,113,118,146} immunization,\textsuperscript{65,70,71,82,84,86,89,96,108,119,140} and emergency response preparedness.\textsuperscript{52,65,97,98,115} Other papers described partnerships to improve health service access and coordination using outreach to specific populations\textsuperscript{44,85,92,93,97} and facilitating linkages among health care providers and services.\textsuperscript{67,79,83,84,86,95,101,107,108}

- **Steering and Advisory Functions** included participating on advisory boards and committees.\textsuperscript{75,78,107}
Finally, social marketing and communication, especially informing the public about health issues\textsuperscript{20,71,73,116} was another activity carried out in PH and PC collaborations.

10.8 BARRIERS AND FACILITATORS TO COLLABORATION BETWEEN PH & PC

This section presents systemic, organizational and interactional\textsuperscript{6} barriers and facilitators to collaboration between PH and PC determined through this scoping review. Fig. 12 presents the major themes identified in the review which represent barriers and facilitators for PC and PH collaboration.

Systemic Barriers and Facilitators to PH and PC Collaboration

Health Policy

Applying the principles of primary health care and public health was reported to create both opportunities and challenges for a population and public health approach to health and social services and policy.\textsuperscript{123} Similarly, administrative and policy challenges were identified in relation to providing interdisciplinary clinical services.\textsuperscript{101} Health care reform was an identified barrier to collaboration between PH and PC for two reasons. As a result of reform initiatives national priorities were taking precedence over local priorities in communities.\textsuperscript{38} Secondly, there was a great deal of uncertainty as to how PH and PC sectors would function within newly created structures and governance processes stemming from health care reform.\textsuperscript{27} The rapid and constant change within organizations\textsuperscript{60,80} created by national initiatives affected the capacity of PC and PH to collaborate creating "policy overload".\textsuperscript{9}

Funding Barriers

A number of funding issues were identified as restrictions for collaboration between PH and PC. The most commonly reported barrier was a lack of stable funding versus intermittent or one-time funding for collaborative projects.\textsuperscript{6,27,33,36,40,42,48,60,78,124} In addition, funding for the time required for collaboration was not supported, nor were PH activities within PC.\textsuperscript{29,35,56} There were several systems level human resource funding issues. Nurse practitioner\textsuperscript{101,124} and PH roles\textsuperscript{1,29,60,92} were both reported to be under-funded. In regard to physicians, fee for service was reported to be a barrier to PH and PC collaboration\textsuperscript{136} and one UK paper reported suspicion among GPs that those in collaborative models were generating greater income and were therefore a threat to GPs' independent contract status.\textsuperscript{67} The challenges created by these funding inadequacies were accentuated by the increased demands on community care occurring as a result of shorter hospital stays for patients.\textsuperscript{41} Another area of financial concern was the lack of adequate funding for evaluation of innovations, for example in demonstration projects.\textsuperscript{102}

Inequities in financial support were a related concern, principally the focus on an illness paradigm\textsuperscript{101} and corresponding lack of funding for health promotion activities\textsuperscript{28,43,87} including inadequacies in the numbers of PH staff\textsuperscript{1,29,60} and other non physician providers.\textsuperscript{101} Consequently, performing PH activities in PC relied on the willingness of committed professionals to do this work on top of their regular responsibilities.\textsuperscript{35} Finally,
one paper identified that health promotion interventions were chosen based on their potential for financial gain to PC general practice.10

**Funding Facilitators**

Technical, informational and financial support to teams for the purpose of promoting integration facilitated PH and PC collaboration. 30 The literature verified that successful collaborations also required adequate funds to support administrative functions and project implementation.20 Sustained government funding was a significant enabler of collaboration.88;98;118;126 With sustainable funding, the focus in a collaboration shifted from 'will there still be a program?' to 'how should the program be developed'?118 Support from provincial funds for collaboration27 and for initiatives carried out by PH and PC collaborations was an important facilitator of PC and PH collaboration. Two specific examples of such support were funding for the cost of vaccines 82 and funding for emergency disaster response planning.82;98 Other funding related facilitators were associated with payment of health care providers. Alternative payment plans other than fee for service enabled physicians to delegate tasks to their teams, allowing them to provide services for more complex patients and focus on community based care.118 For NPs on the other hand, having opportunities to bill for their services was a factor enabling their involvement in PC and PH collaboration.97 Other financial supports facilitating collaboration for PC physicians were funded education130 and payment of insurance premiums87 to help overcome the malpractice liability problem, particularly in relation to providing obstetrical care.91

Not all funding facilitators were from new money. In some cases, a lack of funds facilitated collaboration.20 Collaborations also benefited from resources available through pooling9 and sharing of resources.81;98;106 Volunteer and in-kind contributions were valued resources that supported PC and PH collaboration.103;20;91

**Power and Control Issues**

An overarching general barrier to collaboration between PH and PC was the separate entrenched bureaucracies for PH and primary care.136 The power of hospital secondary care over primary health care at a systems level was a reported barrier to collaboration between PC and PH in two papers, one from New Zealand and the other the UK.89;134

Collaboration created concerns for health care providers who feared loss of autonomy and control.118 GPs in the UK were not supportive of clinical governance policy because of the threat to professional autonomy.36 For nurses the GP fund-holding structure in PC was reported to be a threat because it gave GPs power over nursing and nurses’ roles.54 Territorial37;107;117 and ownership9 conflicts and the distribution and redistribution of power and control96;57;83;117 were common concerns at the systems and organizational levels. Lengthy credentialing requirements were blamed for the exclusion of some providers from teams84 and the creation of autonomous teams for conflict with physicians.54

**Information Infrastructure**

The lack of an information infrastructure in PC was a significant barrier limiting the ability of PC practice to adjust for the underlying risk of populations and share and compare data in the UK.36 In Canada, the lack of an integrated surveillance system limited reporting between health sectors.28 Related to this was a strongly expressed need for more evaluations and an evidence base for health promotion in PH.28;43;45;48 The lack of available population health needs assessments28;112 and evidence of cost-effective PH interventions45 limited PC and PH collaboration. Issues related to the confidentiality of health data posed limitations to data sharing,23;73 and the poor quality of information systems were additional barriers to collaboration.20;46 Examples of structures and processes to facilitate information sharing were development of a shared health information system, including listservs and communities of practice,27 a registry of resources,115 linked electronic records,122 and a virtual network for communication.115

**Government Involvement and Fit**

Government involvement, including the ‘fit’ of supports for collaboration between PH and PC, was identified as a significant facilitator.39;47;122 The importance of collaboration between levels of government, for example in an emergency,97 and coordination and priority setting97 to enhance PH and PC collaboration were stressed. What was especially emphasized was the importance of relevant policy development. For example, in the UK, the reorganization of fiscal and structural resources to create PCGs facilitated collaboration50 and the development of unified budgets enabled services to be commissioned.49 The opportunities for community health center development in the wake of government mandated hospital closures was another example of policy enabling PH and PC collaboration.89 Other key roles for government were endorsing the value of PH and PC collaborations in the community, emphasizing the potential benefits
of collaboration, for example, the potential to attract health care personnel, facilitating commitment and fostering community pride in PH and PC collaborative initiatives. Researchers were identified as "early adopters" and facilitators of health care reform who had their finger on the pulse of emerging health issues. Their leadership was reported to influence the readiness of the practice environment to support collaboration and extend the influence of partnerships.

**Education and Training**

The need for professional education emphasizing a "system-wide" approach for working collaboratively, and training in PH ways of working was recognized. Retooled education programs in medicine and PH were identified as important strategies for bridging the gaps between PH and clinical care and preparing graduates to practice in an integrated system.

**Organizational Barriers and Facilitators to PC and PH Collaboration**

**Lack of a Common Agenda**

Lack of a common agenda or vision as well as dominating and competing agendas restricted PC and PH collaboration. The focus on individuals and on short term results in PC versus the focus on populations and long term view of PH, is an example of a difference in organizational cultures, which was another limitation to collaboration. Further to this, PC was also reported to devalue aspects of key PH activities, for example, prevention, population needs assessments and community development. Reported factors deterring buy-in to collaboration by the PC sector were physician workload issues, lack of joint planning and challenges with multiple stakeholder engagement. Finally, role confusion in PH at the organizational level was a restriction to collaboration. The overall lack of role clarity and the variation in PH roles between sites were reported barriers to collaboration.

**Resource Limitations**

Like at the systems level, the most commonly identified barrier to PC and PH collaboration at the organizational level was limited resources, including human, time, financial and space resources. Resources for team building and change management were lacking. Clinical consultants and facilitators of self-managed teams reported requiring more resources and supports to complete their mandate and PC physicians reported feeling isolated and unsupported in being able to accommodate the increased demands of PH functions. The time required for community mobilization, COPC and evaluation limited collaboration between PH and PC. A specific example of a time consuming activity created by PH and PC collaboration was finding and updating knowledge of community services for patients.

**Knowledge and Skills**

The lack of knowledge and skills related to local and state laws and policies as well as mechanisms to provide health care, management capabilities and deficiencies in expertise related to PH skills in PC were barriers to PH and PC collaboration. Management issues included a lack of capacity to coordinate disparate teams and reluctance of health staff to be supervised by social services staff and dysfunctional committees related to size and diversity. The need for practitioners who understand health and community to work with communities in assessing needs and developing effective responses was emphasized and at the same time the current limited capabilities to conduct quality population needs assessments. Related to this was the suboptimal utilization of the existing workforce. For example, PH nurses were identified to be in a unique position to be able to contribute more to population needs assessments but were to some extent tied up doing immunizations and well baby assessment. Other knowledge gaps included ineffective communication, for example, misreporting of infectious diseases by PC.

**Leadership Management and Accountability Issues**

Developing community-based committees or boards with diverse membership, and mandating an advisory steering function were identified as key leadership approaches to facilitate collaboration. Community representation on these structures was identified as essential to be responsive to community needs and facilitate joint planning by PH, PC and the community. Involvement of multi professionals was also important. Within organizations, it was important to create structures to support and increase team communication and autonomy, and minimize competition. Specific strategies to enable collaboration included: contractual agreements; parallel reporting and common governance structures; mentorship programs for new employees; clear lines of accountability; and job descriptions requiring collaboration.
The importance of supportive and accessible managers was noted. An important function of management was to ensure organizational structures and processes enabled nurses and NPs to function at their full scope of practice. For example, a study of the integration of public health nurses in family practices in Alberta, reported full scope of practice of the PH nurse, that is, leadership, evidence-based decision making, collaboration, participation, and population focused care, was crucial to the success of the project.

The literature also identified it was important to obtain adequate administrative support and to assist managers to develop knowledge and skills needed to support the work of collaborative teams. Small teams with diverse skills and backgrounds were more effective and enabled better team participation with more impact on patient care. Stable teams with a higher proportion of full-time staff and staff that had been working together longer worked more effectively as a team. Facilitating the development of networks to create critical mass among professionals that were geographically dispersed, for example public health staff, was reported to be a useful recruitment and retention strategy. Interpersonal skill development training in teambuilding exercise as part of continuous staff development with manager and supervisor participation was encouraged.

**Geographic Proximity of Partners**

Co-location of PH and PC organizations and team members was an important facilitator of collaboration. Geographic proximity of team members facilitated communication, information exchange, a sense of common purpose and high levels of trust between health care providers.

**Shared Protocols, Tools and Information Sharing**

The use of a standardized, shared system for collecting data and disseminating information enhanced access to quality medical information and supported effective interdisciplinary care. Shared protocols were reported useful for multi-disciplinary, evidence-based practice and quality assurance; strategies and processes of care; and collecting data and disseminating information. Other facilitators of collaboration were evidence-based toolkits and decision support tools.

**Interactional Barriers and Facilitators to PC and PH Collaboration**

**Attitudes and Beliefs**

The attitudes and beliefs of team members were considered to be significant barriers to collaboration. Such attitudes included stereotypical views of PC and PH roles and a lack of trust or belief in the value of PH activities such as prevention. Other attitudinal issues included resistance to change and refusal to participate in planned activities. Devaluing PH roles and lacking understanding of PH roles and, to a lesser extent, PC nursing roles created interpersonal barriers to collaboration, as did philosophical differences in approaches to care and competing priorities and agendas.

**Relationship Challenges**

A number of different relationship challenges created barriers to collaboration. Poor rapport between PC and PH with the community and among the various types of community nursing roles were identified. Further to these problems with relationships, various types of communication issues were identified. Finally, inadequate understanding of specific roles and interdisciplinary teamwork influenced the quality of relationships and the capacity of PH and PC team members to collaborate.

**Role Clarity**

Numerous authors reported on the importance of clear roles and responsibilities for all partners. Having a better knowledge of each other’s roles, skills and agencies enhanced the speed and nature of decision making among teams. Interagency collaborations that were designed to resolve health problems prevalent in a particular cultural groups worked together to adapt to the group’s needs and norms.
Developing and Maintaining Good Relationships

The quality of professional relationships was identified as a vital facilitator for PH and PC collaboration. The existence of previous positive relationships between PC and PH in a location enabled further development of collaborations. Specific strategies to develop team relations included providing partners with feedback; acquiring input often; having patience to nurture relationships; and realizing it takes time to build linkages. The personality, philosophy and commitment of team members and the willingness of physicians to participate in innovative activities to improve health services were important facilitators.

Effective Communication and Decision-making Strategies

Many authors discussed the importance of effective strategies for communication and promoting understanding between the community, PH and PC health care providers. Reported essential attributes of effective team communication were trust, tolerance and respect. Brief, unscheduled visits were thought by some to overcome the frequently cited barriers of time commitment and scheduling. Others identified the value of regular monthly staff meetings for promoting collaboration, enhancing communication and developing trust and mutual understanding. Attention to process, including open up-front communication about competition and control issues was advised while acknowledging the success of PH and PC collaboration was dependant on partners’ complementary differences in resources, skills and expertise.

Involvement of the whole team and joint planning were strategies that enabled teams to be accountable to various health related activities. Specific strategies included: giving and getting feedback from partners; listening to the community rather than telling the community what should be done; listening to primary care needs; empowerment of all team members; and letting go of rigid professional boundaries.

10.9 MARKERS OF SUCCESSFUL COLLABORATION BETWEEN PH & PC

Overall, there was sparse evidence in the literature on indications of successful collaborations. Successful collaboration was thought to have occurred when:

- there was a feeling of being part of the team
- there was full co-location of the team
- a health related outcome was improved
- access to health services was improved
- health-related knowledge, attitudes, and/or behaviours was improved
- capacity and expertise was increased
- new collaborative initiatives were started and programs were sustained

10.10 OUTCOMES OF SUCCESSFUL COLLABORATION BETWEEN PH & PC

The benefits of successful collaboration were different for each partner. A review of COPC in the UK found the outcomes of collaboration to include enhanced understanding of PC; increased community assessment and data collection and analysis skills; increased linkages with other agencies; improved support for multidisciplinary collaboration and team work. In addition to these outcomes, our review of the literature found collaboration between PH and PC resulted in health care system outcomes, health professional outcomes and health benefits for individuals and populations (Fig.13).

Health care system outcomes included: improved population health and public health approaches, funding and resource enhancements, health service delivery improvements, improved health care delivery process, and new program development and innovation. Health professional outcomes included: improvements in partnerships and team functioning, and in health professional development and educational improvements. Most reported outcomes were positive and are listed below followed by a presentation of negative outcomes and risks associated with collaboration.
Results

Health Benefits for Individuals and Populations

HEALTH CARE SYSTEM OUTCOMES

- Health Service Delivery Improvements
- New Program Development/Innovation
- Improved Health Service Delivery Process

HEALTH PROFESSIONAL OUTCOMES

- Educational Improvements
- Improved in Partnership and Team Function
- Health Professional Development

Funding and Resource Enhancements

- Economic and community development
- Enhanced economic performance, leverage and efficiency
- Financial incentives for medical groups to achieve benchmarks
- Improved use of health education materials
- Increased funding support and enhanced sustainability as a result of collaboration among formerly competing organizations
- Increased use of community health workers as a resource for high risk patients
- New positions created
- Policy level changes re organization and financing of care
- Resource sharing and pooling of resources and expertise

Health Service Delivery Improvements

- Collaboration filled the gaps in service and meeting needs of high risk populations
- Improved ability of PC to modify risk behaviours and underlying causes of disease
- Improved communication
- Improved effectiveness
- Improved efficiencies through elimination of duplication of services
- Improved links to other organizations
- Improved quality of care
- Increased access to care
- Increased number of visits

- Increased patient contacts
- Increased referrals to services
- Increased service utilization
- Greater continuity in care
- More responsive health services
- More risk taking
- Patient community satisfaction
- Public health brings valuable supports re public education

Improved Health Service Delivery Process

- Improved coordination of care
- Diabetes solidified as a priority
- Geographical approach had positive effect
- Health delivery strategies appropriate for community context
- Identification of nursing priorities
- Improved referral processes
- Increased needs assessments
- Needs assessment set context for PC PH collaboration
- PH provided essential needs assessment for region
- Increased support for quality improvement
- More accurate immunization records for children
- PH provided up to date relevant information to PC
- Physicians are an effective way to reach young children regarding dental caries
- Proactive versus reactive decision-making model
- Projects contained evaluative components
- Reminders, feedback activities and incentives important for physicians
- Surveillance system for mass gatherings had high sensitivity and specificity rates

Improvement in Population Health and PH Approach

- Determinants of health are on the agenda
- Engagement of multiple organizations
- Increased focus on populations rather than individuals
- Increased focus on prevention and promotion
- Increased knowledge of communicable disease control by GPs
- Increased value in bottom up approach
- PH brings valuable supports re HP campaigns
- PH knowledge transmitted to mainstream clinical practice
- PH perspective brought to PC
A Scoping Literature Review of Collaboration between Primary Care and Public Health

Protocol development supported by population based care
Staff more confident to discuss prevention topics
Valuing of PH by community and health professionals
Vision allowed a ready acceptance of PH approach

**New Program Developments and Innovations**
- Collaboration is a model for others
- Collaboration resulted in innovations
- Creation of Academic Office of PC Initiatives
- Development of a rural mobile clinic
- Increased resources staff and services
- More cost efficient programs
- More nurse led programs
- New programs developed
- New research fostered
- PH network has developed PH standards, educational programs
- Telephone advice line created

**Health Professional Outcomes**

**Educational Improvements**
- Development of new academic programs
- Enhanced educational experiences for students
- Increased PC office educational session by PH
- PC gained new skills
- Public health nurses supported knowledge translation
- Re infection control

**Health Professional Development**
- Comprehensive nursing model resulted in more collaboration with physicians to discuss care of the client
- Greater autonomy and decision-making
- Greater awareness of dental needs
- Greater health care provider satisfaction
- Improved understanding of each other’s roles
- Improvements in collaboration between practice nurses PC and community nurses PH
- Increased patient and physician communication with pharmacists
- Increased staff retention
- Increased use of evidence
- MDs pleased with public health nurse follow up
- More commitment to collaboration
- Nurses have increased influence and confidence in PC decisions and services
- Public health nurse took on new leadership roles
- Public health nurses seen as mentors not monitors in PC
- Positive correlation between NP job satisfaction and satisfaction with collaborating MDs
- Relationships with PCG/PCT and Health Authority improved
- Stronger team working relationships

**Improvements with Partnerships and Team Function**
- Encouragement to expand collaboration with other programs
- Increased contact between PC and PH
- Most nurses feel part of the team less so for midwives
- Partnership created with community
- Partnerships between and within disciplines created
- PC had better understanding of PH issues and knowledge
- PH gained better understanding of PC relationship with community
- Pilot program to build self empowered community teams successful
- Electronic flagging of diabetes patients
- Improved information sharing
- Increased access to clinical information
- Lost health records recreated after disaster

**Health Benefits for Individuals and Populations**
- Better birth outcomes
- Improved body weights with specialist home visitor intervention
- Improved chronic conditions
- Improved dental health
- Improved immunization rates
- Improved infection control
- Improved management of TB and reduced infection
- Improved self care
- Improved surveillance and infectious disease data management
- Improved youth self esteem
- Improvements in healthy maternal child lifestyles: intervention group women were significantly more to use contraceptives, not smoke tobacco, have a safe and stimulating home environment for their children
- Increased patient retention
- Increased screening for smoking, lead poisoning, hypertension and colon cancer
- Increased uptake of prenatal care
• Early adoption of risk-reduction practices that later became integrated into standard practice elsewhere in the state\textsuperscript{103}
• Reduced child emotional and behavioural problems\textsuperscript{132}
• Reduced hospital and ER use\textsuperscript{70,78}
• Reduced need for MD visits\textsuperscript{122}
• Reduced teen pregnancies\textsuperscript{78}
• Improved genetics counseling\textsuperscript{99}

10.11 NEGATIVE OUTCOMES OF COLLABORATION
• Anxiety related to skills mix required for nursing\textsuperscript{46}
• COPC not seen as central to work of team\textsuperscript{30}
• Evidence scant on how to integrate PH and PC\textsuperscript{28}
• Fear of being marginalized in integrated teams\textsuperscript{46}
• Few gains in behavioural risk factor reduction\textsuperscript{30}
• Financial incentives can create conflict with professional ethos and could lead to loss of goodwill\textsuperscript{45}
• Health visitors and midwives felt little engagement as team members\textsuperscript{64}
• Little engagement with community or partners\textsuperscript{30}
• Little opportunity for nurses to discuss patients with physicians\textsuperscript{64}
• Lack of participation from physicians in flu program due to too many barriers in program implementation\textsuperscript{119}
• Modest gains overall in COPC approach\textsuperscript{33}
• No change in health promotion activities\textsuperscript{65}
• PH skills spread too thin\textsuperscript{45}
• Potential to marginalize GP work through team work with other professionals\textsuperscript{54}
• Questions remain about how to embody PH leadership in PCTs\textsuperscript{52}
• School nurses need better marketing of their services\textsuperscript{50}
• Sustainability a problem\textsuperscript{32}
• Tempered enthusiasm with potential to address broad PH agenda\textsuperscript{31}
• Unattached professionals can be isolated\textsuperscript{50}
• Underused immunization and Pap screening services\textsuperscript{65}
• Negative correlation between job satisfaction and number of orientation events attended, barriers in relationships with community MDs\textsuperscript{124}

10.12 RISKS OF COLLABORATION
• COPC values at odds with traditional training in medicine\textsuperscript{28,30}
• Expensive to support collaboration\textsuperscript{130}
• Less time with patients as more time needed to collaborate with other professionals\textsuperscript{46}
• Dispersion of PH staff across Primary Care Trusts may result in lack of a critical mass with risk of loss of PH expertise\textsuperscript{46}
• Need to develop more capacity as PH orientated organizations broaden the breadth, depth and opportunity to apply public health skills\textsuperscript{31}

10.13 OTHER OUTCOMES OF COLLABORATION
• The main areas of overlap between PC and PH are health surveillance, health promotion and prevention of disease and injury. These areas have the greatest potential for integration\textsuperscript{28}
• Is a lack of clear boundaries between PH approach and PH advocate role\textsuperscript{128}
• Reports of successful collaboration need to be disseminated via means in addition to publication\textsuperscript{35}
• Evaluation is rarely completed and difficult to conduct\textsuperscript{35}
• Family physicians do not feel ready to respond in a PH crisis\textsuperscript{115}
• Impacts on physician practice:
  • Aging workforce requires expansion of multidisciplinary roles\textsuperscript{128}
  • Bioterrorism and emerging diseases offer GPs opportunity to expand their PH role\textsuperscript{128}
  • Are other changes in GP roles and functions ie not only integration of PH\textsuperscript{128}
  • GP role in screening and immunization have a significant impact on the health of Australians\textsuperscript{128}
  • GP impact on promoting healthy lifestyle change is more limited\textsuperscript{128}
  • GPs are seen as the most credible source of preventive advice by rural patients in Australia\textsuperscript{128}
  • Scope for GP role expansion to include PH roles depending on the interest of the physician and community needs\textsuperscript{128}
  • Physicians willing to collaborate with PH during outbreak\textsuperscript{115}
  • Fund-holding not seen as critical for creating a unified PC system\textsuperscript{65}
  • Health system reform has impact of the experiences
• The health system’s interest in collaborations with PH.
• Philosophical movements that have influenced the uptake of the principles of primary health care and to meet the goal of “health for all” as outlined in the Alma Ata Declaration. The purpose of this scoping literature review was to determine what was known from existing primary studies, literature reviews and descriptive accounts about the structures, processes and outcomes of successful collaborations between PH and PC.

As the first of five studies in a four-year program of research focused on PH and PC collaboration, the review aimed to determine the breadth of research in this area and the implications for Canada and our program of research. The results of our initial search strategy yielded many more papers than we had anticipated, a phenomenon we believe occurred because of the overlap in our focus of interest with closely related areas such as community intervention research, health promotion and community participation. Though our review found few research studies about collaboration between PH and PC, the descriptive literature conveyed a strong belief in the value of collaboration between PH and PC reflecting the uptake of the principles of primary health care enunciated in the 1978 Declaration of Alma-Ata. Social medicine, COPC, preventive medicine and initiatives to broaden medical education and training are other philosophical movements that have influenced the health system’s interest in collaborations with PH.

What little research conducted in Canada about PH and PC collaboration has originated mainly from Ontario, possibly in the wake of the SARS epidemic and the availability of research funding. The small number of papers from Québec was somewhat surprising given the longstanding implementation of system-wide centres locaux de services communautaires (CLSCs). However, it is possible that literature from Quebec on PC and PH collaboration was published in French only and therefore was excluded from review.

Using Lasker’s classifications to categorize the retrieved papers enabled us to analyze the types of collaborative synergies that prevail in Canada versus other countries. The majority of Canadian PH and PC collaborative synergies focused on strengthening health promotion and health protection and improving the coordination of health services for individuals. What we were not able to determine from the literature is why these types of collaborative synergies have emerged in Canada and, just as importantly, why other synergies have not. For example, improving the quality of PC health services by incorporating a population health approach was a prevalent type of collaborative synergy in the UK but much less so in Canada. A possible explanation is that the UK has policy structures in place mandating PH to work directly with PC organizations to improve the quality of their health services by assisting them to apply a population health approach by conducting population needs assessments and evaluating programs. Another possibility is that other types of collaborative synergies exist in Canada but have not appeared in the published literature and we will learn about them in subsequent stages of our program of research. Clearly there remain many opportunities for Canada to expand collaborative initiatives between PH and PC to achieve health service improvement objectives.

Many local collaborations, particularly in Canada and the US, were initiated by universities responding to unmet needs by offering service learning opportunities for students and leading evaluation activities. There were many papers about educational programs, mostly designed to enable physicians to learn about PH; there was less written about the process and skills required for collaboration across different sectors. The parameters of our review did not include all of the educational literature and further work should be done to understand the education required for PH and PC collaboration and how health professionals can work in multi-sector collaboration. As our program of research progresses, we will need to explore whether PH and PC collaboration is or should be occurring at regional, provincial or national levels and the challenges to realizing this collaboration.

Across countries most collaboration between PH and PC was initiated and implemented at a local level, probably, in some instances, reflecting the grass roots nature of innovation and change. Unmet health needs, gaps in health services, and potential solutions developed by local stakeholders would undoubtedly be more visible at a local level. Notably, in the UK though implemented locally, collaboration was encouraged and legitimized by strong policy incentives such as providing funds for collaboration, requiring collaboration as a job component and measuring and rewarding performance.
Recommendations

This contrasts sharply with Canada where collaboration between PH and PC remains highly fragmented, variable from province to province and reliant on the good will of those involved.

The PH and PC collaborative synergies we found in our review involved a broad range of health professionals practising in many different models of care. Though beyond the scope of this study, we recognize the potential impact different models of care could have on collaboration between PC and PH. For example, the taxonomy of primary health care models developed by Lamarche and colleagues highlights the differences between two community-based and two professional delivery models. Understanding the practice model and context of practice will be essential in the next stages of our research. It will also be important to understand if the barriers and facilitators to collaboration vary by practice model. Although PC and PH collaborations included many types of health care providers, it is not surprising that many of the collaborations were between physicians, nurses and NPs since they constitute the majority of the PC and PH workforce.

Many positive outcomes of collaboration were identified in our review leading us to conclude that collaboration between PH and PC had merit for further implementation in Canada. The reported factors enabling and impeding the success of PC and PH collaboration provide valuable learning for the Canadian context. Clearly there are structural and process-based barriers and facilitators to collaboration at systemic, organizational and interactional levels. What is less clear is how these factors interrelate and are influenced by one another. In the UK, for example, the decision to use the expertise of PH to assist PC with implementation of a population approach to health service delivery was found to have implications for the education of PH personnel and the capacity of the PH workforce to meet the need.

Notwithstanding the many positive outcomes of collaboration, there are some reported risks and costs to collaboration for both the PC and PH sectors that are important to acknowledge and further explore. We need to have a better understanding of the risks in a Canadian context and the strategies to ameliorate risks and measure costs associated with collaboration. Just as importantly, we need to better understand the conditions and contexts in which the potential gains from successful collaborative synergies outweigh the associated risks and costs. Furthermore, until the markers of successful collaboration between PH and PC are empirically identified, measuring the success of PH and PC collaboration will be limited. We believe that many of the barriers and facilitators uncovered in our literature review could be transformed into indicators of collaboration and aim to do so in subsequent phases of our research.

Finally, it is important to emphasize this scoping review is based largely on descriptive accounts, what CHSRF refers to as “colloquial evidence.” More primary research studies are vital to the development of the science. However, there are many challenges associated with carrying out research in this area. Resource allocation for evaluation purposes tends to be limited and long-term health improvements may not be measurable in the timeframes of most research studies. Thus an important focus of future work will be to advance an understanding of research methods to examine successful collaboration between PC and PH. Further, using well-defined and agreed upon theoretical constructs and frameworks for collaboration between PH and PC is important to guide research but also because professional core competencies of collaboration and partnership need to be supported by theoretical constructs. Given the growing interest in PH and PC collaboration there is an urgency to develop such frameworks. Future work should build on the work of Lasker as well as recent Canadian model and framework development relevant to primary health care. This scoping literature review has highlighted the importance of developing such a conceptual framework to guide the remainder of our program of research.

12 Recommendations

- Policy discussions should occur with governments to determine implications for building PC and PH collaborations with the aim of improving health outcomes; policy changes need to be considered at the provincial level.
- 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 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 strength team work; and quality assurance.

- For those considering PC and PH collaborations, it is important to facilitate practitioner “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.

- Considering that there is an absence of theory guiding collaborations between PC and PH, there is a need for theory development. Our program of research will include the development of a conceptual framework for building successful collaborations between PC and PH.

- 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 e.g. disaster relief, care for vulnerable populations, chronic disease management
  - explore the collaboration among PH and PC 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
Appendix A: Website Hand Search

- American Medical Association (AMA) http://www.ama-assn.org/
- American Nurses' Association (ANA) http://www.nursingworld.org/
- American Public Health Association (APHA) http://www.apha.org/
- Canadian Health Services Research Foundation (CHSRF) http://www.chsrf.ca/home_e.php
- Canadian Institutes for Health Information (CIHI) http://secure.cihi.ca/cihiweb/splash.html
- Canadian Institutes of Health Research (CIHR) http://www.cihr-irsc.gc.ca/
- Canadian Medical Association (CMA) http://www.cma.ca/index.cfm/cl_id/121/la_id/1.htm
- Canadian Nurses’ Association (CNA) (eg. Canadian NP Core Competency Framework) http://www.cna-nurses.ca/CNA/default_e.aspx
- Canadian Nurse Practitioner Initiative (CNPI) http://www.iciip.ca/
- Center for Health Economics and Policy Analysis (CHEPA) http://www.chepa.org/
- Center for Health Services and Policy Research (CHSPR) http://www.chspr.ubc.ca/
- Center for Public Health and Primary Care Research http://www.chs.med.ed.ac.uk/cphpcr/
- College of Family Physicians of Canada http://www.cfpca/global/splash/default.aspx?s=1
- Community Health Nurses’ Association of Canada (CHNAC) (e.g. Standards) http://www.chnac.ca/
- Community Toolbox: Bringing Solutions to Light: http://ctb.ku.edu/
- Effective Public Health Practice Project http://www.myhamilton.ca/myhamilton/CityandGovernment/HealthandSocialServices/Research/EPHPP/
- The European Observatory on Health Systems and Policies: http://www.euro.who.int/observatory
- Evidence for Policy and Practice Information and Coordinating Center (EPPI-Centre) http://eppi.ioe.ac.uk/cms/
- Evidence Network: The Focus Point for Evidence Based Policy and Practice Research in the UK (United Kingdom): http://www.evidencenetwork.org
- Graham Center for Policy Studies in Family Medicine (US) http://www.graham-center.org/
- Health Policy Guide: Evidence-Based Policies to Improve the Public’s Health: http://www.healthpolicycoach.org/default.asp
- International Union of Health Promoters and Educators (IUHPE) http://www.iuhpe.org/
- Ministries of Health Websites (provincial, territorial, national and international.. particularly Australia, New Zealand, UK and USA) regarding reports/strategy documents on primary care reform/renewal and public health reform/renewal
- MAPP: Mobilizing for Action through Planning and Partnerships [NACCHO (National Association of County and City Health Officials): http://mapp.naccho.org/mapp_introduction.asp
- National Primary Care Research and Development Center, Manchester, England http://www.npcrdc.ac.uk/
- North American Primary Care Research Group http://www.napcrq.org/
- Ontario Health Promotion Resource System (OHPRS) http://www.ohprs.ca/
- Primary Healthcare Research and Information Strategy (PHCRIS), Australia http://www.phcris.org.au/
- World Health Organization (WHO) http://www.who.int/en/
- World Health Organization: Regional Office for Europe: Evidence (Access to WHO’s Evidence-Based Information and Policy: http://www.euro.who.int/InformationSources/vidence/20010827_1
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