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DEVELOPMENT

Rural interprofessional primary health care team development and sustainability: establishing a research agenda

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Primary health care (PHC) plays a pivotal role in health system reform locally and globally. The use of well functioning interprofessional primary health care (IPHC) teams is recognized as a key strategy in widespread health system reform across global, national, and provincial jurisdictions. IPHC teams contribute to the improvement of the health and well being of the population. These teams engage in issues that are a priority for citizens, such as: providing good evidence-based care; supporting the efforts of individuals, families, and communities in leading healthy lives; actively and deliberatively involving citizens in decisions affecting their health and health care system; and addressing the systemic social, economic, and political causes of health disparities, such as poverty, violence, and rural isolation. Many jurisdictions have begun to experiment with and implement major changes in the delivery of PHC. This has required that health care managers and practitioners reconsider the ways in which they have traditionally worked. However, although many innovative PHC services were developed, the notion of how to best develop and sustain the service delivery team itself and within what contexts could have used more deliberate attention. There are no documented best practices for rural IPHC team development and sustainability in the scholarly literature. This paper presents the results of a literature review, including the empirical and conceptual evidence regarding team development, team sustainability, and the role of rural context in IPHC team development. An argument for advancing PHC research that focuses on rural IPHC team development and sustainability is posited.

Key words: context; interprofessional team development; interprofessional team sustainability; primary health care research; primary health care renewal; rural primary health care

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This development discussion informs a new area for research that has evolved from an identified primary health care (PHC) policy and practice gap in Nova Scotia, Canada. In this paper, we present an argument for advancing PHC research that focuses on rural interprofessional primary health care (IPHC) team development and sustainability. This focus is important because of the known role that PHC plays in health system reform locally and globally, and because there are relatively few documented best practices for IPHC team development and sustainability in the scholarly literature. This paper presents the PHC developmental context in Nova Scotia and the results of our literature review, including the

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empirical and conceptual evidence regarding team development, team sustainability, and the role of rural context in IPHC team development.

The Nova Scotia PHC context

The use of well-functioning IPHC teams is recognized as a key strategy in widespread health system reform across global, national, and provincial jurisdictions (Borgatti and Foster, 2003; Pan American Health Organization, 2003; Barrett *et al.*, 2007; Curran, 2007; Chan, 2008). IPHC teams contribute to the improvement of the health and well being of the population. These teams engage in issues, which are a priority for Nova Scotians, such as: providing good evidence-based care; supporting the efforts of individuals, families, and communities in leading healthy lives; ensuring the wise and fair management of resources; actively and deliberatively involving citizens in decisions affecting their health and health care system; and addressing the systemic social, economic, and political causes of health disparities, such as poverty, violence, and rural isolation.

In Nova Scotia, we have begun to experiment with, and implement, major changes in the delivery of PHC. This system reform was supported in part by a federal funding transfer in the form of a Primary Health Care Transition Fund, which sent millions of dollars to the Canadian provinces and territiories between 2000 and 2006 (Health Canada, 2007). This fund specifically provided funding for transitional costs associated with introducing new approaches to PHC delivery. In addition to direct support to individual provinces and territories, the transition fund also supported various pan-Canadian initiatives to address common barriers, and offered the opportunity for participation by health care system stakeholders. Although the federal transition fund itself was time-limited, the changes that it supported were intended to have a lasting and sustainable impact on the health care system. Collaboration among federal, provincial, and territorial governments, and agreement on five common objectives for the fund was an important element of its design and implementation.

The Nova Scotia Department of Health used the federal fund opportunity to develop three transitional initiatives to support the provincial vision for PHC: (1) implementation of enhancements to PHC services and create new ways to develop sustainable PHC networks or organizations; (2) support for costs associated with change that encourages collaborative groups of PHC professionals to work in new or strengthened PHC networks or organizations; and (3) support for the PHC system transition to an electronic patient record (Province of Nova Scotia, 2003). The provincial Department of Health and the regional District Health Authorities, most of which were responsible for delivery of health services to rural communities, collectively planned and carried out a range of activities to support this work. The initiatives flowing from the federal Primary Health Care Transition Fund strengthened the PHC capacity of Nova Scotia's district health authorities in a number of critical ways, including increased capacity for local PHC renewal planning, the development of sustainable PHC models, implementation of Nurse Practitioner and midwifery programs, the development of the first provincial guidelines for culturally sensitive PHC delivery, increased attention on chronic disease management within PHC principles, and developmental work related to electronic health record implementation (Health Canada, 2006).

Rationale for the PHC research in a rural context

Following this intensive period of PHC renewal activity in Nova Scotia, a review of the operations of the Nova Scotia health system was conducted in 2007. The review report specifically highlighted the need for an emphasis on PHC and interprofessional teams in health system transformation (Corpus-Sanchez International Consultancy, 2007). The PHC renewal experiences afforded by the Primary Health Care Transiton Fund required that health care managers and practitioners reconsider the ways in which they have traditionally worked. Health system policies nationally and provincially have generally called for PHC interprofessional team 'implementation' (Province of Nova Scotia, 2003; 2008; Ontario Ministry of Health and Long-Term Care, 2009; Government of Alberta, 2010). As a result, many innovative PHC services were developed, some of which utilized interprofessional teams. However, the notion of *how* to best develop the service delivery team itself

could have used more deliberate attention in Nova Scotia. Ideally, an effective and well-functioning team would be developed before services are drastically reformulated. In reality, IPHC team development often occurs concurrently with service development, and sometimes team development and sustainability issues are not focal points at all.

IPHC team development and sustainability is even more complex when the various challenges associated with rural health service delivery are added to the mix, such as human resource recruitment and retention issues, and geographical barriers. Rural IPHC team development has significant implications for program planning and transferability of learnings to other contexts within our province. Many Nova Scotia system-based decision-makers and PHC experts agreed that we needed empirical and conceptual evidence that was particular to our primarily rural contexts so that the policy and practice complexities of rural IPHC team development and sustainability would be guided by best practices in the field. Well developed rural IPHC teams in Nova Scotia was a dominant discourse, but they were a rarity in reality.

To support continued evidence-informed PHC policy and programming in Nova Scotia, a research team was developed consisting of five researchers from Nova Scotia, Ontario, and Alberta, and nine system collaborators/decision-makers from local, regional and provincial contexts in Nova Scotia. The meaningful participation of the system decision-makers was central to developing an appropriate research response to the key rural PHC policy and practice questions. They brought key practice and policy gaps, challenges and successes to the discussions. The researchers came from three different provinces based on past collaborative research partnerships and current PHC research activity so that lessons learned in this type of research could be shared across jurisdictions. Our aim was to develop a rural PHC research project that explored matters consistent with priorities identified through extensive consultation and communication with government, community health boards, organizations, and citizens of Nova Scotia. The proposed research question was: How are rural IPHC teams developed and sustained? Subquestions considered contextual influences on IPHC team development and sustainability, such as issues related to rural contexts.

Establishing our PHC research agenda purposefully aimed to address priorities of the newly launched 3-year *Health Transformation* action plan for Nova Scotia (Province of Nova Scotia, 2008). The research agenda was intended to support the required philosophical and structural systemic changes inherent in progressive PHC policy and practice reform. A secondary aim of our proposed project was to develop iterative and ongoing knowledge linkage and exchange strategies to further enhance academic-public system partnerships and capacity to support PHC system and policy decision-making. These advances are key in developing a responsive health research community that is a central and integral component of our primary and broader health care system.

Key concepts

What do we mean by IPHC team development? What is the difference between factors affecting collaboration and team development? What is IPHC team sustainability? These questions are embedded within the notion of interprofessional health care teams and the work that they do. Xyrichis and Ream (2008) provided a useful definition of *teamwork in health care*:

> …a dynamic process involving two or more health care professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning, or evaluating patient care…accomplished through interdependent collaboration, open communication and shared decision-making, and generates value-added patient, organizational and staff outcomes. (p. 238)

The Nova Scotia-based development described here focused on empirically questioning *how* such interprofessional health care teams actually develop and sustain themselves within our rural PHC settings. This is a timely policy and practice relevant question within the context of provincial, national, and global PHC renewal efforts. We saw *team development* in terms of a developmental trajectory in the lifespan of the IPHC team, adopting Chisholm's (1998) conceptualization of development, which built on Trist's (1983; 1985)

socio-ecological frame. Chisholm considered development to be a recursive, emergent growth and maturing period in the life of an organization and, in this application, in the life of the IPHC team. According to Chisholm, the development process was envisioned to take place in a manner similar to human growth and development; as a process of natural progression in maturation from an early stage to a later, more mature stage. In our IPHC team context, development was understood to start at implementation or the envisioning of a team and to run the entire life span of the team. Thus, we would be looking for factors that support or inhibit IPHC team development early in its development as well as in later development.

We looked to Oandasan *et al.* (2006) for distinctions among key concepts related to IPHC team development, including *teamwork* and *collaboration*. They suggested that no one definition of teamwork exists because health professionals, researchers, and decision makers all have their own understanding and perspective about what teamwork actually is. Yet, if team-based practice is to develop and be supported by an appropriate policy framework, then it is crucial that the distinctions between teamwork and collaboration as concepts be understood, and that an understanding about how they differ from IPHC team development be drawn.

In their policy synthesis document Oandasan *et al.* (2006) used Poulton's (2003) view of teamwork, noting that teams are one way of collaborating in which members share goals and are mutually accountable to provide patient care. 'Collaboration is the process of interactions and relationships between health professionals working in a team environment' (Oandasan *et al.*, 2006: 4). However, they also emphasized that professionals can collaborate with others without being part of a defined team. Collaboration is defined by the relationships and interactions that occur among co-workers (D'Amour *et al.*, 2005) and this implies collective action toward a common goal. This line of reasoning suggests that teamwork is one of the process aspects of team development and that teamwork may be one form of collaboration, while acknowledging that not all collaboration is necessarily done in teams (Henneman *et al.*, 1995). For example, in primary care a nurse practitioner, a family physician, and a dietician may provide care to an individual, yet they may not see themselves as a 'team' working collaboratively with the patient. Therefore, the notion of team development may have several associated yet distinct aspects: teams need to be developed, collaboration may be used to help develop the team, and teamwork may be a product of that collaboration within the developing team. Our gaze is on the development of the team itself, which can then provide an environment and mechanism for collaboration to occur. Therefore, using this definitional framing, there may be differences between factors that support team development versus factors that support team collaboration.

The other key concept that we were interested in was IPHC team *sustainability*. Developing teams is one hurdle, but actually sustaining them and under which circumstances are key policy and practice questions. A useful way of viewing IPHC team sustainability focuses on the productive long-term survival of the team, including its activities. Pluye *et al.*'s (2004) concomitancy conceptualization with its structural and temporal elements was adopted to support this view. Sustainability can be seen as an ongoing process throughout the team's life span – a process that starts at the beginning of team development. We particularly focus on the potential recursive and reflexive nature of sustainability, as described by Pluye and colleagues, and the ever-adjusting processes that may shape it.

Examining the literature

This section presents the results of our literature review in preparation for a health research grant application that focused on an examiniation of rural IPHC team development and sustainability. This was not a systematic literature review by definition. Our search strategy followed standard literature review practices to facilitate our search across the empirical and conceptual health literature, covering bibliographical, and data-base searches of published and unpublished literature. Databases such as CINAHL, OVID, Pubmed, Cochrane Library, PsychInfo, and Canadian Health Research Collection were used. Literature from major health organizations such as Health Canada, the Government of Nova Scotia, and the World Health Organization, and relevant Canadian

working papers, including government and professional association reports, were also included. Searches were limited to publications between 1999 and 2009.

Literature-based argument for interprofessional collaboration in PHC

Systemic change is required as we strive towards equitable access to health care services in small rural communities (Ministerial Advisory Council on Rural Health, 2002; Nagarajan, 2004; Canadian Institute for Health Information, 2006; McGibbon *et al*., 2008). Collaborative working arrangements have been increasingly recognized as a requirement in systemic change to address complex and contextually laden issues and systems that impact upon the health of Canadians requiring PHC (Begun *et al*., 2003; Westley *et al*., 2006; Casebeer, 2007; Lamothe and Denis, 2007; McPherson, 2008). Interprofessional team collaboration, as a specific strategy, is integral to PHC.

PHC is the foundation of Canada's health care system (Health Council of Canada, 2005a; 2005b). There is robust theoretical and empirical evidence for the association between strong national PHC systems and improved health outcomes (Starfield *et al*., 2005; Lee *et al*., 2007; Russell *et al*., 2007; World Health Organization, 2008; WHO & PHAC Collaboration, 2008). PHC was intended to represent a deliberate effort to counter trends responsible for the gross disparities in the health of populations. Major initiatives have been undertaken globally (International Council of Nurses, 2008; World Health Organization, 2008), and in Canada (Weatherill, 2007; Health Council of Canada, 2008a; 2008b; 2009) and in other countries (Raymont and Cumming, 2003; Rees *et al*., 2004; Thylefors *et al*., 2005; Commonwealth of Australia, 2008; Kalucy *et al*., 2009; National Health Service, 2009) to strengthen PHC since its debut under the Declaration of Alma Ata in 1978 (WHO, 1978). These systemic initiatives take advantage of relatively unexplored interprofessional, interorganizational and cross-sectoral partnerships (McPherson, 2008), and represent a fundamental shift taking place in contemporary PHC, as we move away from simple forms of short-term uniprofessional partnerships towards an ongoing complex network of community- and team-based professionals. According to the World Health Organization (2008), current concerns of PHC reforms include service delivery, leadership, and public policy reforms, with a special emphasis on the unreached populations – 'those for whom service availability and social protection does little to offset the health consequences of social stratification' (p. xvi–xvii).

IPHC team development: existing empirical and conceptual evidence

In its broadest sense, IPHC team[1] collaboration refers to the process whereby professionals from different disciplines work and learn together in PHC settings to provide patient care (Suter *et al*., 2005). Diverse IPHC team collaboration is a fundamental principle of PHC renewal in Canada and is based on the assumption that collaborative teams are better able to address increasingly complex health care needs within a framework of social accountability (Stonebridge, 2004; Deber and Baumann, 2005; Health Council of Canada, 2005a; 2005b; 2006; 2008a; 2008b; Barrett *et al*., 2007). Greater interprofessional collaboration should result in more equitable and better health outcomes, improved service access, and better service quality as well as more efficient use of resources and better satisfaction for both service users and providers (Deber and Baumann, 2005; Nolte and Tremblay, 2005; Starfield *et al*., 2005; Curran and Sharpe, 2007; Hudson *et al*., 2007; Rygh and Hjorttdahl, 2007; Jansen, 2008; O'Neill and Cowman, 2008; Starfield, 2008; World Health Organization, 2008; Health Council of Canada, 2009; Reeves *et al*., 2009).

There was no empirical or conceptual literature that explicitly examined IPHC development.

[1] PHC interprofessional teams are defined as partnerships between two or more health and human service professionals who collaborate to achieve (a) shared decision-making according to client-centred goals and values; (b) optimization of the team's knowledge, skills, and perspectives; and (c) mutual trust and respect among all team members (Orchard *et al*., 2005; Jansen, 2008). The operational definition of 'multidisciplinary team' developed by Haggerty *et al*. (2007) stresses that: 'practitioners from various health disciplines collaborate in providing ongoing health care…intersectoral team is the extent to which the primary care clinician collaborates with practitioners from non-health sectors in providing services that influence health' (p. 340). In our definition, we also include often-unacknowledged team members, such as administrative assistants, who may have a role to play in IPHC team development and sustainability.

In Canada (Lyons and Gardner, 2001; Nagarajan, 2004; Hutchison, 2008a; 2008b) and in Australia (McDonald *et al*., 2006; Commonwealth of Australia, 2008) the working environments and conditions that attract, support, and retain PHC workforces, coupled with high-quality education and training arrangements, has been recognized. Sicotte *et al.* (2002) examined interdisciplinary collaboration within Quebec community health centers, linking work group internal dynamics as a main factor associated with interdisciplinary collaboration. Martin-Misener *et al.* (2009), in a Nova Scotia-based study, identified organizational structures, such as funding, leadership, and role clarity that supported innovative PHC models. Oandasan *et al.* (2009) reported that the quantity and quality of interprofessional communication and collaboration in Canadian PHC teams is significantly impacted by space and time issues. Xyrichis and Lowton (2008) reported that team structure (team location, size, and composition) and team processes (organizational support, team meetings, and clear goals/objectives) were the primary factors impacting IPHC teamwork. They clearly called for further research into IPHC team development at both the team and organizational level.

IPHC team sustainability: existing empirical and conceptual evidence

We recognized that many aspects of collaboration are embedded in the success of team sustainability. For example, the above discussion of the literature regarding collaboration emphasizes the need for development of long-term networks of community and team-based professionals, and the ongoing importance of systemic change to address complex issues such as health disparities. Collaboration is thus likely a core foundation of IPHC team sustainability. However, there was a paucity of empirical literature arising from our search strategy that explicitly examined IPHC sustainability. Thus, we examined the community health partnership literature and concluded that there is little evidence that would provide IPHC partnerships with clear guidance on long-term viability. Authors argued that, although community based programs are often evaluated to establish short-term effectiveness, there is little attention paid to whether, how, or why programs and the associated partnerships, systems changes, and direct services sustain themselves in the community over the long-term (O'Laughlin *et al*., 1998; Shediac-Rizkallah and Bone, 1998; Rootman *et al*., 2001; Alexander *et al*., 2003; Pluye *et al*., 2004).

Pluye *et al.* (2004) reviewed empirical studies regarding the health partnership and program sustainability concept. They discussed the structural and temporal dimensions of sustainability in what they termed a *concomitancy reconceptualization.* They argued that the processes of implementation and sustainability occur concomitantly at the beginning of program development, challenging the popular notion that sustainability occurs only at the final phase of development. They concluded that the stage models of sustainability (O'Laughlin *et al*., 1998; Shediac-Rizkallah and Bone, 1998; Butterfoss and Kegler, 2002) do not account for the recursive and reflexive nature of sustainability and the ever-adjusting processes that shape it. Shediac-Rizkallah and Bone (1998), Pluye *et al.* (2004), and Scheirer (2005) suggested that an empirical knowledge base regarding the factors determining health partnership sustainability is still at an early stage and that the health promotion program sustainability literature has not yet coalesced into a single research paradigm, a shared set of statistical methods, or even a common terminology.

Given that there was little empirical literature that specifically addressed IPHC team development and sustainability, we then broadened our literature review to possible related concepts. We considered issues such as factors impacting PHC collaborative care practices, teamwork, and primary care and PHC team effectiveness. Table 1 provides an overview of our literature review findings. We use Martin-Misener and Valaitis' (2008) categories of interpersonal, organizational, and systemic factors (barriers and facilitators) to primary care-public health collaboration heuristicallly to present the factors arising from our literature review. We acknowledge that many factors, such as interprofessional power and control issues, do not by their very nature fit neatly into discrete categories. However, they are clustered in this manner for presentation purposes. Significantly, possible team development and sustainability issues were recurring throughout this literature, such as respect for team members

Table 1 Factors related to interprofessional PHC team collaborations arising from literature review

Interpersonal factors	Organizational factors	Systemic factors
Individual team member leadership[1,2]	Organizational leadership all levels[1,2]	Governmental leadership and support[1,2]
Explicit focus on team processes and development[3,4]	Leadership management and accountability issues[6]	Overall funding: type, allocation, stability, predictability[1,6,15,24]
Clarity of roles and responsibilities[1,5,6,7]	Policy clarification of roles, boundaries and responsibilities[1,5,6,7,15,27]	Physician remuneration models[4,6]
Value collective learning[8–11]	Organizational understanding PHC principles/values[16]	Specific resources for team development, ongoing support, change management[14]
Respect for team members[4-7,12]	Competition/organizational differences[24]	Interprofessional education[1,6,8,25,15,26]
Internal dynamics of work group[6,13]	Organizational communication[7,13,16]	Information infrastructure[2,6,7,16,17]
Conflicting attitudes, values and beliefs[6,14]	Documentation: shared records and electronic medical records[2,6,7,16,17]	Integration of PHC model at higher administrative levels[14]
Shared accountability for health and team outcomes[16]	Development of collaborative culture with managerial support[1,5,7,14,17–19,32]	Complicated policy and care environments; unclear guidelines and objectives for PHC teams; conflicting policies[6,15,27]
Individual understanding of PHC principles and values[16]	Geographic proximity of partners, including ''co-location'' models[6,20–23]	Gap between central policy decision-making and local implementation[29,15,29]
Communication and decision-making strategies[6,7,13,16]	Interprofessional formalization countering traditional professional silos[13]	Systemic problems with evaluation and research processes[15]
Relationship challenges[6]	Knowledge of collaborative care practices (e.g. inclusivity)[6,7,13,16]	Professional power hierarchies – 'power and control issues'[6,22,30,31]
Shared purpose[6]	Lack of common agenda[6]	Fit between government and local needs[6]
Philosophy and professional identity[6]	Shared protocols and tools[6]	Culture of quality improvement[32]
Tacit influence peer-to-peer interactions[4]	Identify team skills and deficits[1,5,7]	

PHC = primary health care.
[1] Martin-Misener *et al.* (2009); [2] West *et al.* (2004); [3] O'Neill and Cowman (2008); [4] Geneau *et al.* (2008); [5] Rygh and Hjorttdahl (2007); [6] Martin-Misener and Valaitis (2008); [7] Fear and de Renzie-Brett (2007); [8] Curran and Sharpe (2007); [9] Bunniss and Kelly (2008); [10] Boudioni *et al.* (2007); [11] McNair *et al.* (2001); [12] Jenkins-Clarke and Carr-Hill (2001); [13] Sicotte *et al.* (2002); [14] Rees *et al.* (2005); [15] Murray *et al.* (2008); [16] Sargeant *et al.* (2008); [17] Bateman *et al.* (2003); [18] Hann *et al.* (2007); [19] Orchard *et al.* (2005); [20] Gabhainn *et al.* (2001); [21] Minns Lowe and Bithell (2000); [22] Kharicha *et al.* (2005); [23] Jesson and Wilson (2003); [24] Samuels *et al.* (2008); [25] Galvin *et al.* (1999); [26] West *et al.* (2003); [27] Nolan and Hewison (2008); [28] Lincoln (2006); [29] Stewart (2002); [30] Jansen (2008); [31] Grant *et al.* (2009); [32] Stevenson *et al.* (2001).

and communication (individual factors), role and responsibility clarification (organizational factors), and interprofessional education and power hierarchies (systemic factors).

Context and IPHC team development and sustainability: existing empirical and conceptual evidence

Again, since there was relatively little literature arising from our search that specifically addressed IPHC team development and sustainability, we maintained a broader search perspective for IPHC team contexts as well. We considered evidence related to concepts such as well-functioning IPHC teams and related contextual factors.

Over the past decade, scholars have identified multiple historical, political, economic, and social contextual challenges within a complex health and broader public service system that are associated with well-functioning collaborative interprofessional community-based teams (Scott *et al.*, 2000; Alexander *et al.*, 2003; Greenhalgh *et al.*, 2004; Arevian, 2005; Watson and Wong, 2005;

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Hogg and Ogilvie, 2006; Borgatti and Foster, 2003; Casebeer, 2007; Lamothe and Denis, 2007; Pluye *et al.*, 2004; Hogg *et al.*, 2008; McPherson, 2008; Sargeant *et al.*, 2008). IPHC team functioning is dependent on the base of a well-functioning PHC system at federal and provincial levels (Province of Nova Scotia, 2003; Health Council of Canada, 2005a; 2005b; Canadian Institute for Health Information, 2006; Barrett *et al.*, 2007; Rygh and Hjorttdahl, 2007). Freeman and Pech (2006: 408) reinforced the highly contextual nature of integrated partnerships: 'complex social interventions requiring enactment by individuals within specific contexts, typically involving many service changes against a turbulent policy background'. In a review of the literature, Xyrichis and Lowton (2008) cited the *contextual* nature of IPHC team working, focusing on system complexities surrounding teams. Rummery (1998) identified the benefits and challenges in PHC policy in the UK, highlighting the impact of the policy contextual environments in which PHC change has been taking place. Meads (2006a; 2006b) argued that each changing model of PHC belongs to its own particular cultural context. Thus, the basic conundrum for policy-makers – whether national, provincial, or regional – is to develop PHC programs capable of working in diverse settings with reasonable degrees of equity, efficiency and predictability (Watson *et al.*, 2004). This outcome is difficult enough to achieve in large urban settings, let alone when applied in rural and remote settings.

Rural[2] health care providers face a unique set of contextual challenges. The development of collaborative forms of interaction is particularly relevant in providing integrated services in rural areas (Rygh and Hjorttdahl, 2007). The influence of geography is increasingly being acknowledged as central to a comprehensive understanding of health (Burge *et al.*, 2005; Leipert and George, 2008; Canadian Institutes of Health Research, 2009; McGibbon, 2009). Rural communities have associated population health indicators, specific workforce characteristics, and health and other public service challenges of importance to IPHC team providers, such as access to secondary care facilities, to centers of decision-making, and to professional education and support (Pong, 2000; Rygh and Hjorttdahl, 2007). Rural PHC is underpinned by a number of organizational and philosophical features that require understanding when considering the implementation of initiatives developed in an urban working environment (West *et al.*, 2004). Competition and organizational differences are frequently cited barriers to rural PHC innovation (Samuels *et al.*, 2008). Kamien (2009) called for a re-examination of evidence-based policy for the realities of rural health care, arguing that there is a gap between central urban developed policies and contextually dependent rural implementation sites. There needs to be a recognition of how rural health contexts impact upon PHC service provision and the constraints limiting health service responses (Humphreys, 2009).

Establishing the research agenda

PHC, in its broadest sense, has made considerable advances in its research capacity and productivity over the past 40 years, and the academic research community is experiencing great change and opportunity (Lester and Howe, 2008). However, according to the Health Council of Canada (2009), 'we still have a long way to go towards developing good systems of PHC, and even in understanding what all of the right ingredients are' (p. 34). Wakerman (2009) examined the literature pertaining to innovative PHC models in rural and remote areas to identify areas where knowledge is lacking and to describe future research priorities. He reported that there is generally a dearth of rigourously collected information regarding rural health service delivery, and a need for more rigorous health services evaluation focusing on a number of issues including supports for team practice and the optimal range and mix of providers. This is also within a context of concerns regarding the sustainability of healthcare workforces in rural settings (Hunsberger *et al.*, 2009). In a study commissioned by the Canadian Health Services Research Foundation evaluating Canada's PHC

[2] There is no universally accepted definition of rural/rurality for rural health research. Various definitions emphasize different criteria, such as population size, density, and context. We adopt the Statistics Canada (duPlessis *et al.*, 2002) definition of 'rural and small town'. This is the population living in towns and municipalities outside the commuting zone of larger urban centres or Census Metropolitan Areas (with populations of 100 000 or more) and Census Agglomerations (with populations of 10 000–99 999).

research capacity (Russell *et al*., 2007), widespread deficiencies in the sustainability and coordination of Canadian PHC research were reported. The author argued that many provinces are beginning to make major changes in the delivery of PHC, and that 'these changes necessitate PHC research and evaluation that can inform decision-making by policy makers, health system managers, practitioners, and members of the community' (p. 3). Further, PHC researchers are often isolated in their own organizations and regions, few have close links with policy makers, and many are challenged by the requirements of knowledge translation and exchange. In its 2007–2008 corporate annual report, the Health Council of Canada (2008c) highlighted several issues among the gaps in knowledge needed to inform us about the progress of health care renewal in Canada, including the issue of sustainability of PHC models and systems, and a focus on best practices and dissemination of this knowledge.

Leaders in PHC renewal in Canada suggest that we still have a long way to go towards achieving the renewal goals (Barnes and MacLeod, 2008; Hutchison, 2008a; 2008b; Katz, 2008; Nicklin, 2008; Starfield, 2008; Swerissen, 2008; van Soren *et al*., 2008), a conclusion recently reaffirmed by the Health Council of Canada (2009). Several authors contend that we have yet to create a culture and a system that supports IPHC team development (Orchard *et al*., 2005; Fear and de Renzie-Brett, 2007). IPHC team implementation methodologies remain elusive (Leese *et al*., 2001; Jansen, 2008), and as PHC evolves through reformed delivery models, it is important to examine its structural and organizational features, because these are likely to have a significant impact on performance (Hogg *et al*., 2008). Within our Nova Scotia context and well beyond, increasing our understanding of how to best develop and sustain IPHC teams is fundamental to solid service and policy development, and ultimately to equitable health access and outcome improvement.

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