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Contexts and Models in Primary Healthcare and their Impact on Interprofessional Relationships

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KEY MESSAGES

- Nationally and internationally, the need to effectively coordinate provision of care to meet the needs of patients and to make optimal use of resources have been identified as health system priorities.
- Effective Primary Health Care (PHC) systems can provide the foundation for comprehensive, coordinated health services delivery. Consideration of context matters in development of these PHC models.
- In Alberta, Primary Healthcare Networks (PCNs) were designed to improve patient access, provide round-the-clock primary care services, increase emphasis on health promotion, disease and injury prevention, and care for patients with chronic diseases and medically complex problems, as well as to better coordinate care and to foster team approaches to primary health care delivery.
- Commonalities within the contexts described across cases within this study as well as across studies reviewed for the comparative analysis:
  - In the changing policy context within Alberta, the influence of policy uncertainty had a negative impact on initial engagement of physicians within PCNs;
  - Strong leaders were able to both facilitate relationships and mobilize the resources required to effectively implement programs;
  - In all PCNs, interprofessioal relationships seemed to be facilitated by co-location but co-location in and of itself was not sufficient to foster good interprofessional working relationships. Strong interprofessional relationships were required to allow quality improvement initiatives and other practice changes to proceed within the physicians' offices. Challenges of bringing new professionals into physicians' work environments included lack of training and work processes but these were successfully overcome when trusting relationships were built between individuals;
  - Communication within and across PCNs and with other organizations, greatly influenced implementation of programs; and
  - PHC initiatives across Canada are just beginning to measure outcomes using indicators developed from the Canadian Institute for Health Information (CIHI) Pan-Canadian Primary Heath Care Indicator Development Project.
- Differences in geographic locations of the PCNs created different health needs and local PCN priorities because of population demographics (e.g. rapidly expanding urban communities underserved by primary care physicians, neighbouring communities such as First Nations reserves, or distance from specialty care in rural PCNs).
- Resource shortages due to Alberta's economic boom affected the resources available to the PCNs when they were forming. Although funding was available, other resources such as office space and staff were in short supply due to competition from the industry and other PCN partners.
- Examination of the development of PCNs in Alberta yields important lessons that can inform the improvement of PHC systems in other parts of the country and other jurisdictions.

EXECUTIVE SUMMARY

Health systems in Canada and around the world are experiencing fundamental change, driven by the need to more effectively coordinate the provision of care to meet the needs of patients and to make optimal use of resources (Romanow, 2002; AMA, 2003; Govt of AB, Backgrounder, 2003; Premier's Advisory Council, 2001; Scott & Hofmeyer, 2007; Smith, 2001). There is growing recognition that effective Primary Health Care (PHC) systems provide the foundation for comprehensive, coordinated health services delivery. Reform efforts geared toward strengthening primary health care often feature the establishment of new contractual arrangements between physician groups and health service organizations and the implementation of integrated systems of service delivery (Primary care working group 2003; Govt of AB, PCI agreement, 2003; Solberg, Kottke, Brekke, 1998).

This report examines Alberta's experience in the development of Primary Care Networks (PCNs) over the period 2007 to 2011. Alberta's PHC reform was guided by an agreement between the Alberta Medical Association (AMA), Alberta Health and Wellness (AHW), and Alberta's Regional Health Authorities (now Alberta Health Services), which through the Primary Care Initiative (PCI) includes incentives for physicians to form alliances in the form of Primary Care Networks (PCNs) in collaboration with Alberta Health Services (AHS) (Scott & Hofmeyer, 2007). PCNs were designed to improve patient access, provide round-the-clock primary care services, increase emphasis on health promotion, disease and injury prevention, and care for patients with chronic diseases and medically complex problems. In addition the networks are intended to better coordinate care and to foster team approaches to primary health care delivery. The Alberta approach to primary care reform offered flexibility in the development of PCNs in order to promote local solutions to local health issues. PCNs vary in their physical configuration (e.g. the degree of co-location or geographic spread of physicians in a given network and catchment area), the programs implemented to address population health needs, and the governance model. Between 2007 and 2011 the number of PCNs operating or under development rose from 18 to 40, and by mid-2011, 79% of eligible family physicians were operating as part of a PCN.

The research adopted a comparative case study approach to describe how contextual influences act together with the different characteristics of the PHC models in Alberta to influence outcomes, with a particular emphasis on the role of inter-professional relationships. A maximum variation sampling approach was adopted to select the cases. Cases were first examined to ensure they were at a sufficient stage of model development and then were selected to capture a range of contextual influences (e.g. urban/rural location), and PHC models (governance structure, structure of professional relationships, leadership and management, communication, outcomes, and economic circumstances). Research data was collected using individual and group interviews, network surveys, narrative research, document review, and observation.

The objectives of the research were to document a range of primary health care models, identify their common characteristics, develop an understanding of the interaction between contextual influences and the development and implementation of particular PHC models, and document a range of inter-professional relationship structures across different models. Other objectives included to develop an overarching framework for model development adaptable for different contexts, and to describe the application of a participatory, deliberative process for combining different sources of evidence to guide health systems decision-making.

The authors set out to address the following overarching research questions:

1. How do contextual influences interact with models of PHC reform to produce varying outcomes?
2. How does a deliberative process facilitate or impede the use of different sources of evidence for decisions regarding PHC services reform?

The focus of the paper is on the lessons learned with regard to the first research question. The results suggest that context matters in the development of PHC models and that there is no one way to develop a PHC model that will meet the needs of patients and providers across all contexts. There are, however, commonalities within the contexts described across cases within this study as well as across studies reviewed for the comparative analysis (see page 36):

1. Governance: In the changing policy context within Alberta, the influence of policy uncertainty had a negative impact on initial engagement of physicians within PCNs.
2. Leaders: The importance of administrative and clinical leaders cannot be over emphasized. Leaders create the environments within which people can work toward common goals, advance creative solutions to long-standing practice issues and work through differences. Strong leaders can both facilitate relationships and mobilize the resources required to effectively implement programs.
3. Connections and relationships: Relationship development and maintenance require ongoing support and facilitation. There is a common assumption that co-location will overcome relational woes; however, co-location itself is insufficient to ensure effective interprofessional working relations. Effective communication strategies, whether face-to-face or virtual, are essential if trust, respect and common understanding are to be achieved. Without these, no amount of resourcing will be sufficient to achieve desired outcomes.
4. Communications: Over the evolution of the PCNs in Alberta, people working within PCNs consistently mentioned their desire for more opportunities to share what they were learning across the province to inform the development of their models. Communication within and across PCNs and with other organizations, greatly influenced implementation of programs.
5. Outcomes: PHC initiatives across Canada are just beginning to measure outcomes using indicators developed from the Canadian Institute for Health Information (CIHI) Pan-Canadian Primary Heath Care Indicator Development Project. Some outcomes of interest are: re-configured inter-professional relationships, access, quality of care and services, integration and collaboration, and scope of services and holistic care. Researchers undertaking this study did not attempt to measure outcomes within this study.
6. Future Research: Combined methods approaches demonstrated great value in highlighting not only what is working and what is not, but why things are the way they are.

Other important factors that were evident from the research included geographic location and economic circumstances. Differences in geographic locations of the PCNs often created different health needs and network priorities due to varying regional demographics. Rural areas reported greater difficulty in recruiting and retaining staff. Moreover, when teams within the PCN were geographically dispersed, or PCN initiatives were clinic-based, there was initially less coordination of programs within networks unless there was strong support for facilitation across programs. Alberta's economic boom affected the resources available to the PCNs when they were forming. PCNs competed with industry for resources such as office space and staff. Resource shortages sometimes encouraged physicians to join the PCN to take advantage of the office supports offered to the PCN physicians.

Individual PCNs demonstrated the importance of contextual factors unique to their own circumstances and how these could be addressed. For example, when faced with resource challenges, the role of the health region can be a liaising role to help allocate resources to the PCN. Moreover, where issues of trust may emerge between the PCN and the region as a whole, local treatment requires representatives to help build trust. PCN1 and PCN5, which operate in an urban and rural context, found the health region to be instrumental for development. In addition, for the geographically dispersed area of PCN5, building trust with physicians was important in order to engage them within the PCN. The physicians in PCN4 are co-located within one clinic, serve communities that surround the town, and practice within the local hospital and long-term care centre. Within this PCN local patient care needs across the continuum of care are evident to the physicians and can be directly impacted through services provided.

In summary, a great deal is known about factors that contribute to the success of PHC reform, but less guidance is available for implementation of such change. Closely working with decision-makers, clinicians, administrators and front-line staff was integral to generating knowledge about what works (and what does not) in PHC reform. Lessons learned from the primary networks in Alberta can inform the improvement of PHC systems.

INTRODUCTION

Primary healthcare systems are undergoing significant change around the globe. In Alberta, Primary Care Networks have developed exponentially over the past six years. In this final report we describe lessons learned from this development with the goal of contributing to the continued improvement of primary healthcare within the province and across Canada. The results of this program of research resonate with the work of other researchers around the world. A great deal is known about factors that contribute to successful primary healthcare reform; however, less guidance is available for implementation of such change. Through this participatory research process, we have had the privilege of working closely with decision-makers, clinicians, administrators and front-line staff who demonstrate their passion for change on a day-to-day basis. In capturing the work that they are doing and sharing these results with others, we are making a contribution to knowledge regarding what works and what doesn't in primary healthcare reform.

SETTING THE CONTEXT

About CoMPaIR

The program of research

Through this program of research we have described how contextual influences act together with PHC models to generate varying outcomes, with particular focus on the role of inter-professional relationships. We have done this by comparing the adoption of differing PHC models across different regional, provincial and national contexts. The name of the program, CoMPaIR, was derived from the areas of focus (i.e., Context and Models of Primary healthcare and their impact on Interprofessional Relationships) but also a play on words related to the research approach (comparative case-study).

The focus for this program of research evolved over a two-year period through relationships that were developed in the mid-2000s between the Research Team Lead, decision makers and clinicians who were involved with Primary Care Networks, and researchers whose areas of interest all overlapped with topics of relevance to primary healthcare reform and specifically with the focus this program of work. At the time that the program was developed, it was anticipated that the program team composition would change as projects are completed and new projects are developed. Throughout the program, the range of disciplinary backgrounds of team members provided complementary perspectives required to implement this research.

The context in which CoMPaIR unfolded[i]

National and International

Health systems around the globe are experiencing fundamental change. Motivations for these changes are many and varied but the rationale that is central to many emphasizes the need more effectively coordinate the provision of care to meet the needs of patients as well as an economic imperative to make optimal use of resources (Romanow, 2002; AMA, 2003; Govt of AB, Backgrounder, 2003; Premier's Advisory Council, 2001; Scott & Hofmeyer, 2007; Smith, 2001). Primary health care (PHC) redesign has become increasingly central to these change initiatives with growing recognition that effective primary healthcare systems provide the foundation for comprehensive, coordinated health services delivery (Cullingham, Scott, Lagendyk, 2008; Scott & Hofmeyer, 2007; Starfield, 2008).

[i] For the purposes of this report, the former Health Regions will be initially be referred to by the names that existed when CoMPaIR was initiated in 2007, e.g., Calgary Health Region, Chinook Health Region. In 2008, all regions were merged into one health care organization, Alberta Health Services (AHS). Depending on the context we will use either the Regional name or AHS to refer to these entities.

Strategies to strengthen primary healthcare focus primarily on the establishment of contractual arrangements between physician groups and health service organizations and on the implementation of integrated systems for the delivery of services (Primary care working group 2003; Govt of AB, PCI agreement, 2003; Solberg, Kottke, Brekke (1998). These strategies are reflected in the Primary Care Networks in Alberta (Scott & Hofmeyer, 2007).

Provincial

Across the Canadian provinces and territories, there has been continuous experimentation with the configuration of health service organizations (Casebeer, Scott& Hannah, 2000). In Alberta, fundamental health systems reorganization began in the early 1990s when approximately 200 separate hospital boards were consolidated into 17 Regional Health Authorities (RHAs) which were to provide the operational counterpart to the health ministry (Alberta Health and Wellness – AHW). In 2003, the number of RHAs was reduced to 9 and in 2008, all RHAs were consolidated into one Health Board (Alberta Health Services).

Primary Care Networks in Alberta

Since 2003, primary healthcare reform in Alberta has been guided by the groundbreaking Trilateral Master Agreement among the Alberta Medical Association (AMA), Alberta Health and Wellness (AHW), and Alberta's Regional Health Authorities (now Alberta Health Services). The Master Agreement outlines four strategic physician agreements, one of which is the Primary Care Initiative Agreement (PCI). The PCI Program provides incentives for physicians to form alliances (i.e., Primary Care Networks) in collaboration with the Alberta Health Services (AHS) (Scott & Hofmeyer, 2007). The objectives of the PCNs as outlined in PCI documents and communications are described in Table 1.

Table 1: Primary Care Initiative Objectives for Primary Care Networks

- Increase the number of Albertans with access to primary care services;
- Manage access to appropriate round-the-clock primary care services;
- Increase the emphasis on:
  - Health promotion
  - Disease and injury prevention
  - Care of patients with medically complex problems
  - Care of patients with chronic diseases;
- Improve coordination of primary health services with other health care services including hospitals, long-term care and specialty care services; and,
- Foster a team approach to providing primary health care (PCI website, June 25, 2011).

The wording of these objectives has undergone subtle changes over the past five years. Some of these changes and their implications will be discussed in the results section of this report.

In 2007, there were eighteen PCNs operating or underdevelopment (Scott & Hofmeyer, 2007). In 2011, there are 40 PCNS operating across the province with more under development. It is estimated that approximately 79% of eligible family physicians are currently working in PCNs (PCI, June 2011).

From their inception, emphasis has been placed flexibility for the development of PCNs. They have been encouraged to develop "Local solutions to local health issues " (PCI, June 2011).in order to meet the needs of patients. Flexibility is evident in many aspects of the PCNs from the physical configuration of the networks to the programs that have been implemented to address population needs. For example, some PCNs consist of single clinics where all physicians are co-located while others consist of groups of practices scattered across a geographic catchment area. While many have adopted a focus on chronic disease management (CDM), the ways in which CDM programs are delivered is determined by the population being served.

Selection of governance models was one area of limited flexibility. There were two governance models from which PCNs could choose. In each model, individual physicians established a non-profit corporation and this corporation entered into a joint venture agreement with the local AHS. The defining differences in these models relates to funding and employee hiring. In Legal Model #1, PCN funding goes to either the physician non–profit corporation or AHS and employees of the PCN are hired by either the physician non-profit or AHS. In Legal Model #2, the physician non-profit and AHS form a separate PCN non-profit corporation. In this model, PCN funding goes to the PCN non-profit and employees of the PCN are hired by the PCN non-profit (see Table 2 and Appendix A.)

Table 2: Alberta PCN Governance Models

Areas of difference	Legal Model #1	Legal Model #2
Funding	PCN funding to physician non-profit or AHS	PCN funding to PCN non-profit
Employee hiring	Staff hired by physician non-profit or AHS	Staff hired by PCN non-profit

Since the commencement of the PCNs, the PCI has facilitated regular face-to-face gatherings for representatives of the PCNs to learn of policy developments and share some of the work that they were doing. As the numbers of PCNs continued to grow, different mechanisms for sharing information have evolved (e.g., toolkits and other resources available on the PCI website – http://www.albertapci.ca/Resources/Pages/default.aspx).

In addition to support for business case development, the PCI has also provided guidance for evaluation through the Accountability Monitoring Evaluation Working group (2005-2006) and subsequently through the Evaluation Advisory Committee (EAC). The EAC is responsible for guiding implementation of evaluation of the PCI Program as a whole and for implementation of key performance indicators for PCNs. The report from a comprehensive Primary Care Initiative evaluation conducted between 2008 and 2011 was publicly released in the Spring of 2011 (http://www.albertadoctors.org/PresLetter/malatest_pci_eval). Results of this evaluation focus on nine key service dimensions including the PCI objectives as outlined in Table 1. The service dimensions identified for the evaluation were: design and implementation; access; 24/7 management of access; promotion and prevention; complex patients and patients with chronic disease; coordination and integration; multidisciplinary teams; system level design; and processes learning. Highlights from the results illustrate that: "relative to patients/populations not served by a PCN, the PCI generated considerable benefits to patients with respect to improved access, management of patients with complex or chronic medical conditions, coordination of care and support for the development and expansion of multidisciplinary teams" (p. 1).

The CoMPaIR context

Based on the brief description of the context of PCNs in Alberta, it is clear that the context within which this program of research evolved was ever-changing. The following changes have influenced the evolution of PCNs within the province and/or the ability of the research team to implement the research project:

- Changes in the health system
  - reconfiguration of nine RHAs to a single Health Board (Appendix B) resulting in:
    - changes in leadership within the health system;
    - changes in staffing within the health system;
    - changes in connections between the PCNs and their partners within the health system
  - changes in Health Ministers
- Changes in the university system
  - fundamental changes to ethics review processes which influenced ethics research in the health system
  - changes in funding for university based faculty which had a direct impact on CoMPaIR team members

The impact of some of these changes will be highlighted and their impact on the PCNs will be described in detail in the Methods sections and Case Reports. The impact on the co-investigator team, project timelines and research approach will be briefly outlined here.

Since the beginning of this project in 2007, every research team member has experienced a fundamental change in their work or life circumstances (e.g., change or loss of job, a major life event, a move out of province or out of country). In 2007-2008, attempts were made to hold whole team meetings with different options for participation offered. An alternative strategy for communication included sending all team members program updates (Appendix C) with requests for input in each of these. Additionally, updates were posted to the CoMPaIR website (www.compaircanada.ca). Despite these efforts, we acknowledge our lack of success in effectively engaging team members on an ongoing basis in a long-term project such as this. Based on this experience, recommendations for team recruitment and engagement in long-term projects are included in the discussion section.

The research approach

The **objectives** for this program of research included: documenting a range of primary health care models that exist across the country (Appendix D: Echo 2); identifying common characteristics that cut across these models; developing an understanding of the interaction between contextual influences and the development and implementation of models; documenting a range of inter-professional relationship structures across different models; developing an overarching framework for model development adaptable for different contexts; and, describing the application of a participatory, deliberative process for combining different sources of evidence to guide health systems decision-making.

Development of the primary research questions was driven by practice-based questions that the decision-makers and clinician team members brought to the table. The two overarching research questions for the program of research were:

1. ***How do contextual influences interact with models of PHC reform to produce varying outcomes?; and,***
2. ***How does a deliberative process facilitate or impede the use of different sources of evidence for decisions regarding PHC services reform?***

Subquestions included:

a. What are the contextual influences (e.g., policy – strategic directions, organizational structures; economic – availability of resources) on development and implementation of the PHC models in different contexts (e.g., urban vs. rural, different provinces &/or territories)?

b. What are the defining characteristics of each model (e.g., governance mechanisms, stated objectives, funding mechanisms, public participation, inter-professional relationships)?

c. What are the resources that support or constrain the development and implementation of each model? Resources include instrumental (e.g., meeting places, practice sites, communication technology, financial support), personal (e.g., motivation, skills, values), and *relational*** (e.g. social networks, knowledge brokers) resources?

d. How are relationships among professionals structured in different models and how are these affected by other contextual factors?

e. What outcomes are relevant in different contexts (i.e., what outcomes were chosen and why)?

f. What influences the achievement of outcomes in different contexts (e.g., contextual factors, different types of resources)?

While we have identified and described a range of contextual influences and their interactions with models of PHC, a particular analytic focus of this study was on relational resources; how context and this particular component of PHC models (i.e., inter-professional relationships) interact to generate varying outcomes. This is key, given that a defining characteristic of many PHC models is the (re)configuration of interprofessional relationships (San Martin-Rodriguez, Beaulieu, D'Amour, Ferrada-Videla, 2005; Davidson, MacIntosh, McCormack, Morrison, 2002; Pineault, Tousignant, Roberge, Lamarch, Reinharz, Larouche, Beaulne, Lesage, 2005; Deber, Baumann, 2005; Lewis, 2004; AH&W, AMA &ARHA, 2005)

METHODS

Design

The program was designed in three overlapping phases to develop understanding of the interaction between context and models of PHC at regional, provincial and national levels (Appendix E). We used a comparative case study method, with each PCN considered one case41,45. Combined methods comparative case study design is particularly appropriate for this type of study. Gaining in-depth understanding of contextual influences requires the use of multiple sources of data, as well as multiple data collection and analysis strategies (Agar, 1996; Carspecken, 1996; Lofland & Lofland, 1995; Maxwell, 1996; Merriam, 1998).

Critical analysis that combines different sources of data was used not only to document characteristics of context but also to answer questions about why structures and processes are the way they are and what worked and did not work within a given context (Agar, 1996; Carspecken, 1996).

The initial phase of the program was to be conducted within one health region in Alberta, capturing differences in PHC development within urban contexts and between urban and rural settings. This Phase was set in Alberta for reasons of feasibility and is designed to pilot test data collection and analysis strategies. During Phase I data collection (Spring 2008), the health system within Alberta was fundamentally re-organized from 9 health regions to a single, provincial health services organization. The changes associated with this restructuring had wide-ranging implications for the CoMPaIR team members as well as for the design of the study. It was intended that Phase 2, which would involve Primary Care Networks from other health regions (i.e., provincial representation) would commence in 2008-9. Given the systems changes described above, it was not possible engage with additional PCNs for study participation until there was more stability in the provincial landscape. As a result, activities commenced for the national (and international level) work (i.e., Phase 3) prior to the initiation of Phase 2. Methods developed and piloted in Phase 1 were applied to the development of case descriptions in Phases 2 & 3.

We worked with the PCN stakeholders on questions of interest and value to their PCN, using methods that provided sufficient data to address their interest and allowed our CoMPaIR research team to answer our research questions. This research process contributed to our research question about **deliberative process**, and our **process objectives** of building research capacity in the participants, by increasing their engagement with the research. When engaging with PCN stakeholders in a new (to CoMPaIR) PCN, we discussed examples of earlier research projects completed within CoMPaIR. For example, in Phase 1 we worked within one PCN to develop a narrative approach to form a community-based team that addressed local Chronic Disease Management (CDM) needs. We used this project as an example when engaging with a Phase 2 PCN that wished to explore difficulties in their current approach to CDM. With this PCN we further developed the narrative model to improve interprofessional practice in their CDM team. Our model development process included observation of team meetings and interviews – which allowed us to collect data to answer the CoMPaIR research questions. In turn, ongoing testing and evaluation of this innovative model is currently transitioning to the department of Knowledge Management within AHS, and will be shared with other PHC stakeholders in AHS and beyond to inform knowledge and future research – addressing our **process objective** of informing PHC policy and decision-making.

Sampling strategies

In our analysis we describe the PHC model used in each case, the context within which it is situated, the factors that influenced the development of the model, the structure of professional relationships, and the outcomes that are relevant to the model. Sampling strategies reflected the descriptive purpose of the study. *Different strategies were used to select the **cases** (at regional, provincial and national levels), as well as to select **individual informants** for interviews, survey respondents, **observation** times and settings, and **documents** to review.*

Case selection

Some members of the research team were also stakeholders within the PCI and PCNs and provided entrée into the PCN setting. members and were involved in national PHC decision-making bodies. During Phase 1, team members and collaborators initially continued to develop relationships with decision-makers in other regional jurisdictions in Alberta and other national contexts in order to identify PHC reform initiatives that would be interested in participating in Phases 2 & 3.

In Alberta, discussion and decisions to engage in the research were held with the Executive Director of the PCN, and with other key stakeholders they identified (e.g., medical director, local primary care decision makers). Methods of working within each PCN varied by PCN, and built on our early research. Throughout the program of research our methods included: interviews (individual and group), network surveys, narrative research, document review; and, observation. While some areas of interest were studied in only one PCN (e.g., social work, facilitator role, nurse practitioner role), other program areas were studied across multiple PCNs (e.g., CDM, low risk maternity).

Phase 1 – Prior to commencement of the CoMPaIR program, members of the research team worked with decision-makers and physician leads in the Calgary Health Region to identify PCNs that are at a stage of readiness to participate in such a project (i.e., research champions within each PCN, desire to learn from development of their PCN, willingness to share lessons with other jurisdictions, willingness to actively participate). Cases described as being at a stage of readiness were further selected for inclusion based on maximum variation sampling to ensure a range of contextual influences and PHC models. One urban (South Calgary) case, one rural (Calgary Rural) case, and one that has a combine rural-urban focus (Calgary Foothills) have a keen interest in the research and have agreed to participate.

Phase 2 – Similar selection methods were used to identify two additional cases within the province of Alberta in order to develop insight into a range of PHC models. Cases that were included demonstrated a level readiness and principles of maximum variation sampling based on our knowledge of PCN model characteristics. That is, both of these cases included a different governance model than those included in Phase 1, one PCN has a combined rural and urban focus and the other is in a rural context.

Phase 3 – It was proposed that one case would be selected from each of Nunavut, Quebec, Ontario & Nova Scotia. It was not possible to conduct the in-depth, participatory research that we proposed in each of these contexts. For example, while we worked with one of the co-Investigators to develop a proposal for research in Nova Scotia but this was not successful. We have collaborated with colleagues who are studying PHC reform in Quebec and Ontario. As anticipated in our original proposal, data included in this report from these provinces is based on secondary analysis of reports from their research rather than from conducting primary case study research in these jurisdictions. Our contacts within Nunavut changed over the period of the research program and we were not able to move forward work in that Territory in a way that was in keeping with the community engagement process required both from the Territorial research criteria and the participatory approach that we adhered to within CoMPaIR.

Data collection methods

Key informant selection

Within each case, purposive sampling strategies were used to identify informants for initial semi-structured interviews in each case.[46] Key informants were people who were actively involved with the development and implementation of each PHC model. These interviews were conducted to develop a level of contextual understanding (e.g., answers to such questions as "What has happened to date?" and "Who have the key players been?") required to undertake the subsequent components of each case study. Snowball sampling strategies were used to identify further informants for each case (Crabtree & Miller, 1992).

Table 3: Interviewees by Year Recruited and Sex

Year	Female Interviewees	Male Interviewees	Total Interviewees	Cumulative total
2007	13	9	22	22
2008	5	3	8	30
2009	9	5	14	44
2010	0	0	0	44
2011	13	2	15	59
Total	**40**	**19**	**59**	

Within the PCNs, a wide variety of professions and roles were represented within and across PCNs. One interviewee could be represented in multiple categories (e.g., a program manager may also be a nurse). Note: numbers of interviewees by PCN or within roles and professions are not presented in order to maintain the confidentiality of participants. Professions and roles among CoMPaIR interviewees include: PCN leadership (i.e., executive director, medical director, PCN board member, program lead (physician or other profession)); PCN support staff (e.g., business manager, finance manager, IT support, administrative support), PCN physicians, PCN program staff (e.g., nurse, nurse practitioner, referral nurse, dietician, pharmacist, respiratory therapist, behavioural health consultant, social worker, diabetes educator, quality improvement facilitator, quality analyst); and, health regional staff (e.g., PCN liaison, regional laboratory manager). Of the 59 interviewees, four interviewees were interviewed for their knowledge and experience with PCNs from a provincial or regional perspective (i.e., they were not associated with only a particular PCN).

Observation sites and times and document selection

In addition to interview data, notes from 25 sessions of observation data are included in the analysis.

Sites that were relevant to the activities of the PHC initiative and key documents that described or influenced the PHC initiatives were identified through key informant interviews.

Network survey respondent selection

The network survey component of the study was to provide a snapshot of the structure of relationships among professionals in each case (Scott, 2004; Wellman & Berkowitz, 2003). Network surveys were conducted in the PCNs within Phase 1; however, we found meaningful analysis and application of the results of this method within CoMPaIR were limited. The number of potential actors within the networks, and the context surrounding them, were changing so rapidly that attempts to capture a "whole network" (i.e., a complete roster of actors) at any given time were virtually impossible and of limited value. The dynamic nature of the networks was such that the map would be outdated before

we had a chance to create it. Furthermore, even if a semi-complete roster had been constructed, sending a network survey to document a "whole network" required resources beyond the scope of this program. For PCN 3 we attempted a network approach in a more limited context, surveying the social workers employed by the PCN (Appendix D: Echo 3). Even then we found the number of responses were overwhelming, limiting the interpretation and the value of this approach. Moreover, we met with apprehension and confusion on the part of PCN members when they were asked about who they were connecting with to do their jobs – (i.e., 'why are you asking? What are you going to do with this information?'). This was counter-productive to our aim of engaging PCN stakeholders within the research. We did not attempt a network approach in Phase 2. Dissemination about the methodological issues we encountered in this application of network theory is planned.

The lessons learned from this process provided valuable insight into the difficulties related to implementation of this method in a changing context. Specific examples of its application are discussed in the Case Reports. Further details related to methodological issues will be summarized in the Discussion.

Data collection & analysis

Data collection strategies included key informant interviews, observation (i.e., in settings and at times relevant to each case), document review (e.g., policy documents, meeting minutes) and survey methods (i.e., network survey).

Case analysis was conducted in iterative phases with data from the cases contributing to cross case comparisons on an ongoing basis throughout the phases . Data from each of the cases were analyzed as data were collected with informal updates provided to PCN stakeholders. These data were also used to develop detailed individual case descriptions. Qualitative data was analyzed using template analysis strategies (Crabtree & Miller, 1992) NUD*IST software (QSR, 2006) was used in the analysis. Network survey data was analyzed using network analysis methods and UCINETsoftware (Borgatti, Everett & Freeman, 2002) to provide basic descriptive data about the structure of relationships that exist in the cases.

Comparative analysis was conducted as cases were added to the study and finally when all cases were complete (Yin, 1994). Finalized individual case descriptions and the initial cross-case comparison will be shared with participants from the relevant cases (i.e., Case 1 data shared with Case 1 participants, etc.) in July-September 2011. Further comparative analysis was conducted across phases in order to develop summary information regarding PHC models. This information will be shared with participants from all phases of the study in the remaining period of the program of research (ending December 2011) and beyond.

OVERVIEW OF RESULTS

The results of our work are presented as follows:

- Overview of the PHC context in Alberta
- Case study reports (n=5)
- Cross-case comparison

Within each case we present a short summary of the main areas of interest in the CoMPaIR program of research: Context, Models and Interprofessional Relationships. PCNs are complex, dynamic organizations. Within them there are a number of different professionals who may play different roles to address multiple initiatives. PCNs are far more complex than is possible to comprehensively represent within one report. Thus, for this report we highlight PCN program or interest areas within a given PCN as samples of the kinds of work we learned about in our data collection. The results of the CoMPaIR program will continue to be presented and disseminated in the months to come (Appendix F: CoMPaIR connections).

Although the case study reports are sectioned into areas of relevance to our research questions (context, models, interprofessional relationships) there is natural overlap and interrelatedness between the areas. That is, the sections are not mutually exclusive, but are separated for ease of reporting and reading.

A note about quotes: Direct quotes from interviewees are set apart from the body of the text, indicated by italics. To increase confidentiality no identifiers or descriptors of the interviewee are provided with the quote. When a quote is presented within a PCN case report, the excerpt was extracted from an interview with a participant who was knowledgeable about that PCN either as an employee or physician member of the PCN, or as a stakeholder closely associated with that PCN (e.g., regional health board representative).

Case 1: Primary Care Network 1 (PCN1)

Geographic Area, Legal Model, Date formed	Approx # Physicians, Patients Enrolled, Current	Data collection in CoMPaIR	Program areas studied with CoMPaIR	**Interprofessional Relationships** highlighted from this PCN
Urban & Rural Legal model #2 2006	~ 300 physicians ~ 313, 000 patients	2007-2009	Hospitalist Program Low Risk Maternity After hours Clinic Chronic Disease Management	Examples from the Chronic Disease Management program

Context

This large primarily urban PCN was developed collaboratively with a few key leading physicians and groups of family physicians providing input into the original business plan. Early interviews with this PCN describe resource challenges that both impeded and drove the development of the PCN. In 2007 the Alberta economy was booming, and although the PCN had funding, lack of other **resources** became a limiting factor. For instance, development of new programs was limited by lack of availability of space or location. Finding space to lease at a reasonable cost was difficult to impossible, and exacerbated by the tenure of most lease agreements that usually exceeded the relatively short term funding allotted to PCNs at the time (3 years). Ironically, lack of availability or exorbitant increases in space leasing costs sometimes drew physicians into the PCN. For instance, two family physician clinics with a special interest in provision of low risk maternity care that previously been uninterested in working with each other or the PCN, but joined the PCN in order to maximize resources and find a common location in which to operate when space became an issue for each clinic. Through the PCN's resources (e.g., office support to find a location, staff that acted as liaisons, complementary PCN programs that shared the costs of office space) the clinics worked together to relocate and co-locate. Other examples of the resource challenges included staffing the PCN. In the boom, other sectors offered superior opportunities to potential PCN staff such as administrative assistants, and a tension existed around PCNs hiring qualified health professional staff away from their partners (i.e., the health region or physicians' offices).

An important component of this PCN's development was the role of the **health region liaison**. This health region role was designed to help bridge the organizational structures of the health region and the PCN. The liaison worked closely with the PCN in the development of PCN programs and to facilitate access to resources available through the health region.

"[Name of liaison] is our representative, our direct contact with the Region, and has been very good at not only maintaining the liaison but working with the PCN to develop programs to the PCN's satisfaction, then going back through the bureaucracy and working out the mechanics of how that should be done within the Region. So [liaison] has been very positive, and he's probably you know one of the main cogs."

In this PCN, some of the physicians in a geographically close **rural** community joined the urban physicians. As the PCN initiated and developed programs in close alignment with the health region, the inclusion of this rural community increased the complexity of these processes. The health region had separate portfolios for urban and rural programming. Thus, PCN program development often needed to work with representatives from both portfolios.

Models

Key stakeholders within this PCN spearheaded what is now known as PCN Legal Model #2, (Appendix A). In this **governance** structure representatives of the PCN physician corporation and health region work in close concert to govern PCN operations. This structure required knowledge and skill sets that were sometimes lacking among the Board members (Appendix D: Echo 1). Although it presented challenges, processes required to enact Model#2 were viewed as beneficial to developing strong relationships between the PCN and the health region, and provided new ways of engaging with primary care physicians.

"I think the other bonus was the fact that the Region was going to be an equal part in it, with the physician group, in developing these concepts. And certainly in retrospect, then in going forward, it's been a major accomplishment of the Primary Care Network, at least for [PCN 1]. I mean you're having senior administrative people sitting at the table and talking to the physicians, with an equal level of respect and decision-making. You know that was unheard of historically….It was a top down rather than, 'well let's meet on a level plane."

Model #2 has now been adopted by most of the subsequently developed PCNs in this health region; and, a PCN in a different health region is considering moving from Model #1 to an adapted version of Model #2 (see PCN 5).

Another key component of the early business model in this PCN was the **medical director** position that was split between two key physicians, one practising in the urban area, one in rural. These physician leaders had been involved in the PCN planning process and provided continuity with other physicians who had participated in planning groups, whom they subsequently engaged as physician leads for developing PCN program areas. Not all PCNs in this study enjoyed the same level of engagement (see PCN 2).

"We were very easy. What was interesting for me was that, that we were able to identify doctors in particular areas that were the logical choices [as physician leads]….So that was useful because having your physician leads in place, you were able to bring them into the discussion, start them in the planning process and do all of that… But I think a lot of that reflected the fact that [the PCN] had a very strong leadership above that from you know [physician instrumental in planning] and [Medical Director 1] who had been involved in the planning process in, in a very heavy way and [Medical Director 2] is the other Medical Director. And so you know we had a very good core group that was sort of dedicated to the executing [of PCN operations]."

PCN program areas discussed within CoMPaIR

Each of the program areas developed within the PCN had a physician program Lead and a non-physician lead. During the PCN's first year of operation some programs developed more quickly than others, influenced by factors such as stage of development of the program model, and availability of appropriate space and staff. **Physician champions** keen on developing health care solutions in various areas often drove the development of these programs early in the history of the PCN.

"When [Medical Director 1] was explaining the different portfolios, and you know, my interest from a CME [Continuing Medical Education] perspective and an academic perspective…when that portfolio became available and knowing that there was going to be a great opportunity for innovation, thinking outside the box, collaboration, I sort of volunteered myself [to lead a program]."

Programs studied within CoMPaIR include:

After hours clinic: This PCN worked with Health Link (provincial call-in medical triage line) to provide an after-hours service and clinic for patients of PCN physicians. Through Health Link, patients of PCN physicians are given an appointment time at the after-hours clinic. Patients are referred to the clinic in multiple ways: answering service for physicians' after hours calls directing patients to Health Link; patients calling Health Link directly; PCN physicians' offices requesting an urgent patient appointment that could not be scheduled during office hours. PCN physicians sign up for shifts to staff the clinic and are compensated accordingly by the PCN. Clinic staff and space are provided by the PCN. The clinic is co-located with the low risk maternity clinic, with complementary hours for each.

Low risk maternity: The PCN worked with two primary care physician offices specializing in low risk maternity care to relocate and co-locate a low risk maternity clinic. Patients are referred by their primary care physician or through self-referral, and can be followed by the clinic for all or part of their pregnancy and delivery.

Hospital Care program: In this program PCN nursing staff work in hospital with PCN physicians, their patients and families to improve coordination of patient care and physician access to patients in hospital, and discharge planning. PCN physicians who have an interest in hospitalist work staff this program.

Chronic Disease Management: This PCN program is run through a clinic that matches "unattached" patients (i.e., patients without a family physician) with chronic disease to a physician and other health care providers (e.g., diabetes educator, dietician, respiratory therapist) as appropriate to manage their chronic disease. All of the professionals work from one clinic site. A PCN physician works with the clinic while building up a patient roster as the patient is usually "attached" to the PCN physician as a family physician when the patient is discharged from the program.

Evaluation of the programs in the PCN was planned through a regional team with joint funding contributed by multiple PCNs in the health region. An evaluation framework was created by a working group for the Primary Care Initiative. In early development, key stakeholders in the PCN found the application of the provincial framework lacked consistency across PCNs.

"But there's no consistency between the actual 'what did you do at the end of the day?' Like if nobody picks the same evaluation questions (laughing), it could get a bit hard. Within this province, there should be a little bit of consistency. Because there are some mandated evaluation outcomes..."

Interprofessional Relationships

Early in the development of this PCN interprofessional relationships were welcomed in theory, but just getting started in practice. For example, in the planning stages of the Chronic Disease Management (CDM) clinic, the plan was to create a model of care where a team of professionals would work with the patient to help them learn to manage their disease.

"What it is and I think that this is exciting because it's a capacity building. The vision is that unattached patients with chronic diseases will come into the clinic. They'll be provided care by a multi-disciplinary team… [S]o it does two things. It introduces, it provides good care to patients with chronic disease management, teaches them about self-management in a multi-disciplinary setting, and then it attaches them [to a family physician] on the way out. So I think this clinic has great potential and I don't think there's a model for it anywhere. So we're really excited about the direction and looking at the outcomes of that."

Later in the development of this PCN we returned to do in depth interviews with members of this interprofessional team. Members of the team were enthusiastic about the model of care that had transpired. They discussed the benefits of **co-location** with the other professionals (e.g., face -to-face and informal communication with other professionals i.e. "the hallways consult", efficient referrals, building trusting relationships, improved knowledge of others' scope of practice, improved continuity and comprehensiveness of patient care). Challenges were mentioned, but few (e.g., learning how to balance case load and case management among professionals, some underutilization of team members). In general, interviewees perceived a shift from the physician-directed biomedical model of care to more supportive, wholistic team-based care that encouraged patient self-management.

"I think it's partly the personality of everyone on the team. We are a team and we get along really well and we're all really open and willing to share our knowledge and give people the freedom to be part [of] a lot of situations. …[My profession] wouldn't be able to necessarily come up to a physician and say 'I really think this person should be tested for celiac' for example. The physician might 'oh pshh, no' but here it's like 'you know what, if that's what you think, let's do it'. It's just a really respectful, safe environment to go and ask questions and share and I think that just benefits the patient because they're getting really well rounded team approach because we're communicating about a patient every day. … I think part of it too is the personality, like I want people to know as much about [my practice] as much about how it affects the different chronic diseases as possible because obviously that's going to affect their practice and vice versa so I think it's just wanting people to understand where you're coming from. We're all a bunch of keeners. (Chuckle)"

Case 2: Primary Care Network 2 (PCN2)

Geographic Area, Legal Model, Date formed	Approx # Physicians, Patients Enrolled, Current	Data collection in CoMPaIR	Program areas studied with CoMPaIR	**Interprofessional Relationships** highlighted from this PCN
Urban Legal model #2 2006	~ 120 physicians ~ 115, 000 patients	2007-2009	Low risk maternity Behavioural health consultants After hours Office supports	Examples from physician office support and low risk maternity

Context

This PCN grew out of a physician association that had formed prior to the initiation of PCNs to collectively work with the health region to provide innovations in primary care. These physicians were located in a rapidly expanding area of the city with a high population of young professional families that were underserved in number of family physicians and acute care facilities. Many of the original physicians signing on to this PCN were part of the previous physician association; thus, they came into the PCN with a **history** of relationship with the region. Interviewees described a general **lack of trust** among the PCN physicians that may have encouraged the physicians to band together in the PCN.

"The relationship with the Region has changed considerably, at least in our PCN. I don't know if it's the same in all other PCNs. When we started out the only reason I ran for this new thing [the PCN] is because I thought all the Regions are going to do something. I want to see how it's going to affect my practice you know and nobody trusted. Everyone thought that something terrible was going to be done and that's probably why they got all the doctors there at the time and now, we, I mean given time, we came to realize that the Region is actually trying to help us, and that's a very good feeling too."

This PCN was one of the first to propose Legal Model #2, which was reported as an administrative stumbling block with the Primary Care Initiative office that delayed the "go live" date for the PCN. Ironically this block provided the impetus for the Region and the PCN physicians to work together, improving the relationship. In addition, representatives from the Region who portrayed openness and understanding of the primary care physicians' needs were named as instrumental in building the trust that moved the PCN forward.

Like other Alberta locations, finding adequate space in which to operate was challenging, as was finding staff. As early programs were often part time, sharing staff with the health region was sometimes a solution, if suitable arrangements with the health region, unions, and PCN could be agreed upon.

Models

As in other **Model #2** PCNs, the physicians formed a separate not-for-profit corporation, three of whom sat upon the governing PCN Board. Like PCN 1, this PCN split the **medical director** position between two physician leaders who had been instrumental in planning and continued to provide guidance on program direction within the PCN. The dual perspective was valued as an asset within the PCN.

Although some described good relationships among the PCN physicians and improved relationships with the health region at the PCN level, a lingering sense of mistrust about the health region among the physicians was perceived as a barrier to physicians taking a lead to develop programs within the PCN.

"There seems to be a lot of wariness amongst the physicians when it comes to dealing with the Region, and more so than the other networks. So the other networks have been up and running and started their programs, they almost seemed to have actually gone ahead of the [PCN] even though [this PCN] actually went live long before they did. It's been a great struggle trying to get physician participation in the network. They've signed up but I think this is general distrust of stuff to do with the Region. Like anything that looks like, even programs that have, that are strictly designed and run by the network, the physicians are still wary of it 'cause they still feel as if the Region is there…, they still feel the Region's sort of hand on it and they tend to be very negative and again I think they're a little gun shy because of what happened with [previous physician association]. They don't trust the Region very well."

PCN program areas discussed within CoMPaIR

Early program areas that developed well in the initial days of this PCN had a strong physician champion and/or met strong physician or patient needs. For example, this PCN's patient population had a high percentage of relatively young professional families who were unattached to a family doctor or had a family doctor that did not provide prenatal care. There was a strong physician champion keen to improve maternity care, and the low risk maternity clinic was one of the first programs developed in this PCN. It was, and is, highly successful, and expanded rapidly (see below). Another early success was the PCN's office supports program which helped physicians with anything from negotiating escalating lease costs to implementation of information technology (IT).

After hours – physician on call program: After hours, if this PCN's physicians patients called Health Link and required physician consult, the on call physician would be contacted to call the patient. Unattached patients who lived in the PCN's geographic area and required physician care would be given a "next day appointment" at a PCN physician's office, and followed until the care concern was resolved. PCN physicians shared on-call duties through the PCN; "next day appointment" time slots were also paid through the PCN.

Low risk maternity clinic – Expectant women who lived within the PCN geographic area and had no family doctor or had a family doctor that did not provide prenatal care attend the clinic for pre and post natal care and delivery. This program had a strong physician champion and grew rapidly, requiring it to move locations. PCN physicians with an interest in maternity care, nurses and other health care providers staff the clinic. A breast feeding clinic has now been added to this PCN, but is in a different location than the low risk maternity clinic.

Behavioural consultants – Behavioural health consultants of various professions (psychology, social work) worked in physicians offices (usually set days per week each week) to provide counselling and support for mental health issues or behavioural health changes (e.g., smoking cessation or weight loss).

Office Supports – The PCN provided support through a business development manager who provided business advice to physicians; and, for instance, helped negotiate leasing costs. This PCN also provided extensive IT support to help physicians' offices become electronic in their business operations and electronic medical records.

Evaluation of the programs in the PCN was planned through a regional team with joint funding contributed by multiple PCNs in the health region. A common perspective on evaluation in the early days of the PCNs was that people within PCNs were preoccupied with planning and initiating programs and placed limited emphases of evaluation as an aspect of program development (e.g., process evaluation).

"So that evaluation process has just started to be more formalized because it's hard to evaluate things before you've got programs, right? To be honest, I don't think we did a very good job of that in the beginning. No one ever thought about how things should be evaluated before (chuckle). They just wanted the programs and 'let's make it happen' because 'let's show that we're doing something with our money' and 'physicians want to get going' and it was a bit of that push. I think the more people that have been involved with the primary care network, and as you get staff in different perspectives, the realization is we need evaluation to do part of the planning process – instead of the after process. So that is changing in how we're planning programs. Initially programs were just happening and no one was thinking about evaluation."

Interprofessional Relationships

Early in this PCN interprofessional relationships discussed by the interviewees were centred on PCN sponsored interprofessional staff that were being introduced into the **physicians' clinics** settings. For instance, interviewees described the roles of PCN office support staff (e.g., business development manager, IT support staff) that supported physicians in their clinics' business processes. Interviewees also described clinical professional support introduced by the PCN (e.g., behavioural consultant, nursing).

"If it was not for the PCN, we would have had to close our doors. [For example...] we have [our business manager] in our PCN who has been negotiating [lease costs] so we got her in to negotiate. And she got this lowered to a 30 percent increase [from 100%] which was a big saving for us. And you know we don't have the time meant to go out to the landlord... You'd much rather sit here and see patients... I mean you hear about offices closing all the time... It has changed our practice, to be part of a multi-disciplinary team now, right? We've been able to get some nurses. We've hired another one today. So now we've got two nurses and we've got three nursing students… They all work with the Region, because they want to have their benefits – and then they work part time over here – which is fine. And then we've got the psychologist and this is the Behaviour Health Consultant, so we have her. And these are new ways of practicing. We're changing our behaviour and sending patients to her.... And we look forward to having a [chronic disease] management clinic and get all the diabetes and hypertension and things managed."

In the low risk maternity clinic PCN physicians worked closely with the nursing staff to provide maternity care, in what seems to be a relatively traditional model of care i.e., patients meet with the nurse and physician in the clinic and are **referred elsewhere** to meet with other professions as required (e.g., obstetrician, social worker, dietician, lactation consultant).

The need to develop trust with the physicians as an initial step to PCN development is noted in earlier discussion of this PCN. This interviewee describes the effect the PCN has had on building **trusting relationships** that foster a team approach to care.

"I believe it's the physicians trusting the outsiders or bodies that will come in and promote ideas. The Health Authority, the province, type of thing… I see the PCN as the glue, the conduit. That's how I see us now. Yeah, we're integrators… Between the province, the other allied professionals and stuff, because again you reference the multi-disciplinary teams. Sure, but as a PCN we're learning more about everybody's discipline and why do we make that work as a team right? Sure, a lot of people have talked about inter-disciplinary team but I'd be interested to know how successful or how unsuccessful [multi-disciplinary teams have] been in the last five years, three years… I see the role of the PCN to be the conduit, the glue, the facilitators, the coordinators, the – we're not the solutions expert – but we can put things together now based on what we know."

Case 3: Primary Care Network 3 (PCN3)

Geographic Area, Legal Model, Date formed	Approx # Physicians, Patients Enrolled, Current	Data collection in CoMPaIR	Program areas studied with CoMPaIR	**Interprofessional Relationships** discussed with this PCN
Rural Legal model #2 2006	~ 115 physicians ~ 101, 000 patients	2007-2009	Social Work Chronic Disease Management Pharmacist Seniors' Health Team	Examples from the introduction of the Pharmacist and Social Work roles.

Context

This rural PCN is composed of a series of **community-based primary care teams** that surround a large urban centre. Health care in this geographic area had been affected historically by provincial changes in the health care system. Most of the communities were in a rural regional health authority that was subsumed into a large mostly urban health region when the Alberta health system evolved 17 health authorities to 9 health regions in 2003. There was a general feeling among physicians and other health care providers that health region policies, programs and urban-based staff demonstrated a lack of understanding of the rural context, and that a disparity in access to health resources for health care providers and patients existed between urban and rural settings within the region. Although physicians respected their local health region representative – the health region as a whole was mistrusted. This affected PCN development.

"These people [PCN physicians and health professionals] have been saying we were [previous health region] before and the [new health region] took over but you know we never really had a chance just to do things on our own as a community with the local doc and the local health region. The docs mistrusted the Health Region like you wouldn't believe when I started and some … they're still back you know like those Japanese that are still, they're still fighting (laughter) all those years after the war was over. (Laughter) [We say…] 'Oh no, it's not like that. There's PCNs that are saying we really support, everybody just wants to help the family docs and provide support and nurses with them…'cause we know we have to improve primary care'. But there are still some times you hear things at meetings that I might have heard at our meetings three or four years ago that was they wouldn't trust the Region. So there was this kind of sense that, 'I like the Region if the Region is my local manager' 'cause all the docs really like their local managers and they know how hard they work, and with the Home Care, and all these things. But this nebulous thing called "the Region" this is the black box in [city office] or whatever was kind of perceived as the enemy."

As the communities are geographically disbursed, the PCN teams operate **relatively independently** of one another. Opportunities for PCN professionals in similar roles across local primary care teams to meet were challenging; and thus, limited. Community health needs varied greatly. For instance, some communities bordered on, and served patients, from ethnic communities (e.g., First Nations reserves, Hutterite colonies) with **diverse health needs**. One issue faced by multiple communities was increased pressure on local healthcare resources as the economic boom resulted in increasing population growth in the communities closest to the city. For example, there was an increase in high-density seniors' retirement residences – the residents of which were perceived as a future health care demand that was not being anticipated by the health region. Finding qualified health care staff in the more distant communities was a continual challenge for the PCN and the health region.

Models

This PCN operates under **Legal Model #2** with local community-based primary care teams for program planning and decision-making. The not-for-profit physician corporation includes physicians from all of the community-based teams. Three physicians head this corporation and sit on the governing PCN board (Table 2 and Appendix A). Each local team is co-lead by a primary care physician and a health region lead, and has representatives from local programs and areas of interest. Unlike all other PCNs in this study, this PCN has **no stand-alone PCN office**. The executive and **medical directors** work from home-based offices and hold regular meetings that include the minimal PCN administrative staff (who also tend to work from home-based offices). The medical and executive directors regularly attend each local primary care team meeting, with PCN administrative staff attending as required. In this way the directors provide and exchange information among local primary care teams. Funding flows through the PCN to the local primary care teams, in part, through a project charter process. For example, if the local primary care team requests funding for a smoking cessation program they complete a project charter that demonstrates need, alignment with the PCN strategies, performance support, and so on. This model provides strong local decision-making, control and allocation of PCN funding to locally relevant and prioritized health needs.

[Decisions are passed] "…down to all the people at the front line right. The local physician or community lead from the Health Region, those two get to put together the team and, 'here's $800,000.00 a year for three years. What are you going to do to (chuckle) improve the health of your community in these service responsibilities and along these strategic directions?' So it's all pretty clear for them [through the program charter] but nobody's ever said, 'here's $800,000.00 and spend it you know within a context'…. That system you know kind of led to spending a little money…but spending it more locally. That's the rule of context thing, that there's different issues in [Community 1] than there are in [Community 2] and [Community 3]."

PCN program areas discussed within CoMPaIR

This PCN's funding has included programs that address the social determinants of health (e.g., school breakfast programs, fitness facility time for obese patients in a PCN weight loss program). Local decision-making and control are perceived to increase engagement with physicians and other health professionals in the PCN.

Evaluation of the programs in the PCN was planned through a regional team with joint funding contributed by multiple PCNs in the health region. As the local teams each focussed on different areas this increased the complexity of evaluation in this PCN.

Social work – One of the first professions hired within each of the local teams was social work. The role of the social worker varied with the team and location of the social worker's office. In general, the social workers provide a whole person approach to care that includes the social determinants of health, and actively facilitates interprofessional practice. A better understanding of the social worker's roles within the PCN is portrayed in Echo 3 (Appendix D).

Chronic Disease Management – One of the local primary care teams hired a CDM nurse who was interested in better coordination of diabetes care within the community. This CDM nurse worked with CoMPaIR to develop an interprofessional community-based team approach to provision of diabetes care.(Table 7).

Seniors' Health Team – In this clinic in one PCN community, multiple professions (includes nursing, occupational therapy, social work and pharmacy) work in close concert with family physicians interested in gerontology to provide care for senior patients with complex health care needs. The narrative approach piloted in the CDM team above was discussed at local primary care team meetings in other communities within the PCN. We were then invited to aid this team in better coordination of their specialized seniors' health clinic.

Pharmacy – In this PCN, another profession that was introduced into some physicians' offices and other health care settings (e.g., long term care, seniors' health clinic) was a pharmacist. The PCN hired a PCN pharmacist to coordinate this work, and some teams hired local pharmacists. The pharmacists worked in a variety of ways (e.g., in chronic disease management teams, doing chart and medication reviews with complex patients in physicians' offices and in long term care settings).

Interprofessional Relationships

In this PCN interviewees discussed interprofessional relationships in terms of the **challenges** PCN physicians faced in learning to work with new professions. Many primary care physicians were **not trained to work in a team**, and had neither work flow processes nor space to add additional team members into their offices. One interprofessional role discussed in more than one local primary care team was the introduction of a pharmacist to the team.

"They're [primary care physicians] like the figure skater right. Then all of a sudden they're out on the ice with other players and they're supposed to play a team sport. It's, I don't know, 'the light was on me, you know like everything else was dark.' Yeah, so you throw the pharmacists and the chronic disease nurse in. They're [physicians] just, 'what are these people doing here?' You know this is my …and it's not necessarily that docs are bad, but just our understanding of their contextual understanding of them and their role, and others, and how…so what we do is I fire them [physicians] literature."

Even if the physicians had "literature" (see quote above), the roles the pharmacist could offer to the practice were unfamiliar, and professional **practice boundaries** and patient confidentiality were guarded by some physicians. The following quote demonstrates the process a pharmacist used to introduce the services that the pharmacist could provide to the PCN physicians in one primary care team.

Participant: "When I was hired on as the pharmacist we had a lunch meeting with them, in which I sat down with as many physicians as were available from that clinic so we made it a lunch and learn… And in that context I introduced myself and introduced what I had to offer. So I basically had a job description that I was given, so within that I told them what kind of patients I would be interested in participating in- which would be the patients with several disease states or several chronic diseases; those on eight or more medications, for instance. I would be of assistance with medication related questions that they had, not necessarily for specific patients, but just in general. That we could be of benefit with their senior patients, with drug interaction reporting, with medication reconciliation for their patients that are making the transition from hospital back into their offices."

Interviewer: "And how was it received?"

Participant: (Chuckle) With guarded enthusiasm. It was more guarded, guarded enthusiasm in terms of, 'okay well I don't know which patients to give you', that type of thing. There were a few physicians who kind of outright, 'then there's confidentiality issues around this. Is this going to be confidential?' We [said] 'yes of course, it has to be.' And so we explained that yes, confidentiality would be maintained (chuckle) being healthcare professionals and all. I was laughing at the idea that you might not have thought of that ... so there were those questions. I had at least one physician that was outwardly resistant and had really no interest in partaking and still really doesn't in the big picture."

In contrast, in another community setting within this PCN the pharmacist worked closely with the staff in a long term care facility to review residents' medications, and make recommendations, especially for complex patients. This **regular interaction of the pharmacist and staff became so highly valued** that it had become a work event with social pleasantries where they brought and shared baking and coffee. Put another way: the interprofessional relationships in this team were working so well that the day the pharmacist was working at the facility was known as "blueberry muffin day".

Another area of interest we explored in depth with this PCN was the role of social workers within their primary care teams. Although social workers were one of the first positions hired within each of the teams, the PCN was interested in helping other professions in the PCN better describe and understand the value the social workers brought to their team. The results of this work are portrayed in Appendix D: Echo 3. An interesting outcome of this work was the realization that the **location** of the social worker's office **highly influenced the work of the social worker**, through the interprofessional relationships developed. For instance, social workers whose offices were in the long term care centre or beside the continuing care offices in the hospital formed relationships with the staff in those areas, and those areas then comprised a large portion of the social workers' role. In follow up to the CoMPaIR work in this PCN, a social worker contacted us as she designed the model of social work care for a newly developing PCN. With multiple options available, she was deliberately matching the location of the social workers' offices to be strategically located where the social workers could form relationships that were mostly likely to address the PCN's needs.

Case 4: Primary Care Network (PCN4)

Geographic Area, Legal Model, Date formed	Approx # Physicians, Patients Enrolled, Current	Data collection in CoMPaIR	Program areas studied with CoMPaIR	**Interprofessional Relationships** discussed with this PCN
Rural Legal model #1 2006	~ 15 physicians ~ 14, 000 patients	2010-2011	Chronic Disease Management Nurse Practitioner Referral nurse or "nurse navigator"	Examples from the Nurse Navigator role and Chronic Disease Management program

Context

This **small rural** PCN is located 2 – 3 hours from urban centres, and in close proximity to several First Nations reserves. The PCN physicians are **co-located** within one clinic and serve a number of communities that surround the town. They also practice within the local hospital and long term care centre; thus, local patient care needs across the continuum of care are evident to the physicians and can be directly impacted through services provided within the PCN.

"Probably within, I'd say, the first couple of years, we could feel the impact [of the PCN] over there [at the hospital] just in regards to INRs [International Normalized Ratio]. ... They couldn't get their appointments, Emerg really wasn't appropriate and PCN was an option so it was really nice. Lots of great feedback about having the Nurse Practitioner on board because it was nice to have another female because she was kind of on board before we had our second [female physician] I think."

Many PCN patients work within the oil and gas, lumber and agriculture sector. Residents of the neighbouring First Nations communities are also served. Distance from speciality care and services also impact primary care, increasing the complexity of the referral process and speciality care for patients and health care providers.

Models

This PCN operates using **Legal Model #1**. All of the physicians within the clinic are members of the not-for-profit physician corporation and the PCN. Originally all physicians within the corporation made decisions jointly, but this process was found to be cumbersome, slowing PCN development. The model evolved and now PCN operational decisions are made by three physician officers (Secretary, Treasurer, Physician Lead). Officers serve on the Board a total of 3 years, rotating annually as follows: entry as Secretary (Year 1); Treasurer (Year 2); Physician Lead (Year 3), then off the Board. There is **no separately paid Medical Director** position, although the Physician Corporation Lead may sometimes act in this role (check notes). PCN decisions that affect or are affected by regional operations are discussed through the Joint Venture Committee (on which regional representatives sit) (Table 2 and Appendix A). Similarly, the business plan has evolved over time. The original business plan was developed by physicians with regional partners. Physicians identified gaps in local care and physician needs (administrative support, work stress reduction) that would be addressed through the PCN. After the 2006 "go live" date the plan was revised through consultation with Working Groups that included physicians, PCN staff, regional and community representatives. The original business plan included 10 priority initiatives which have since been revised and combined to 5 priority initiatives aligned with the PCN provincial strategies. The physicians and PCN office are co-located, on separate floors of the same building.

PCN program areas discussed within CoMPaIR

Generally **physicians** see patients in their offices, and **refer patients to PCN services.** Some PCN programs accept self-referral and some PCN programs are held in community locations (e.g., local school, on reserve). This small PCN has only recently gained access to an **evaluation coordinator** to further evaluation of PCN activities.

- Referral nurse or "nurse navigator": This PCN employs a nurse to help patients requiring specialist referral or tests. PCN physicians refer the patients to the nurse navigator who then liaises between the PCN physicians and patients and the multiple speciality clinics across the province. This process is increasingly complex, as the geographic location of this PCN is relatively central between Calgary and Edmonton (the site of most specialists within the province) and the referral may depend on physician, specialist, and patient preference. In addition, although the formation of Alberta Health Services promises improved care pathways, throughout the province referral processes, lab requisition and reporting systems, and other supports such as information technology systems and administrative staff to respond to calls, lack consistency.
- Chronic disease management: One of the original areas of interest within this PCN was chronic disease management. With strong physician leadership, this program was one of the first to be initiated within the PCN, and now sees hundreds of patients annually. It includes a regular on-reserve service where a PCN team (physician, nurse, pharmacist) sees CDM patients on the reserves, in the native health centres. This team has worked with CoMPaIR to adapt the narrative approach used in PCN 3 to create a new model of care to better manage the burgeoning number of CDM patients. This work will transition into Knowledge Management, AHS.
- Pharmacist: For some time the PCN did employ a pharmacist on staff to work in various PCN programs. Currently, community pharmacists are employed on a part time basis to meet needs for medication management within the PCN program (e.g., on reserve CDM visits).
- Nurse Practitioner: This PCN employs a nurse practitioner whose practice has evolved over time within the PCN. A large portion of her practice includes "well woman" visits (i.e., regular annual physicals for adult women) and sexual health. She sees patients within the PCN office, and provides "on reserve" clinics for the same services. The PCN also experimented with teen sexual health clinics in the school setting.
- Midwifery: Through a unique arrangement between the PCN, First Nations and Inuit Health Branch, and Alberta Health and Wellness this PCN provides prenatal and obstetrical care through midwives and PCN physicians. A large portion of the clients served include First Nations women on reserve, and is reported to have substantially increased the numbers of native women accessing pre and post natal care.

Interprofessional Relationships

One program of interest in this PCN is the nurse referral service, more commonly known as the nurse navigator. This position requires **strong interprofessional relationships** with PCN physicians and staff as all referrals for patients that require speciality care are funnelled through this nurse. In addition, the nurse navigator builds and capitalizes on relationships outside of the PCN environment in order to most efficiently help patients "navigate" their care pathway through the wide array of AHS systems that are not yet streamlined or centralized. For example, knowing the staff on a first name basis within a referral office for a speciality clinic like cardiac care allows this nurse to most efficiently follow up on patient tests, referral documents, appointment setting, and so on. Working closely with PCN physicians, this nurse keeps the physicians "in the loop" of communication around the progress of the patient through the speciality service.

In this **PCN physician leads** head the chronic disease management program, and have **worked closely with staff** from the beginning to develop algorithms for patient care. This model has changed the way some physicians work with other professions, but was more often described as having changed the ways non-physician staff work with each other to provide a team approach to CDM care.

"I think it works... well because we do have the mental health liaison. We have the anti-coagulation. We generally have the blood pressure. We have the diabetic aspect and everybody sort of does a little bit of everybody's job. They all have knowledge in each other's [disciplines] and they tend to share patients back and forth so instead of just attacking diabetics and the diabetes diagnosis, they go after the cause or the reasons or the more social aspects first before trying to treat the disease. That's one of the things that I noticed coming here was that I was surprised at how instead of having such a straightforward rigid approach to 'you're now a diabetic, you must do this', it's a very grey area so just because you're diabetic doesn't mean you have to only see this person. They share their patients to make sure the patient is getting the best care and being able to deal with their diagnosis as best they can."

Not all of the PCN physicians have changed the way they manage CDM patients. In the current model of CDM care, this was viewed by some staff as confusing.

"We don't have buy in from all the docs so if we get [a patient] from one physician who wants us to follow them all the way through, great, but then we have one physician who doesn't and they just want us to do a certain portion of the algorithm and it's really confusing ... we end up having to task back to the doc… and I know that the intention was, at the meeting that they had in May, it was going to be an all or nothing thing. Either everybody bought into it or we disband and call her quits because when you've got fifteen physicians (chuckle) and you've got eight that want it one way and seven (chuckle) who want it another, it creates absolute chaos down here."

PCN staff described a number of factors that influenced the development of better interprofessional relationships within the CDM team. The ability to **spend time together working** in and travelling to and from the First Nations reserve clinics strengthened the relationships between nurses, physicians, and pharmacists, as did the opportunity to have input into the program decision-making.

"I think that we're [staff] definitely more involved in some of the decisions, especially through the meeting tonight and we'll be more involved whereas before it was a board of physicians that sat together. Now they're involving us in the decision making so I think that that makes it better."

The CDM program is an area of CoMPaIR work that is transitioning into the Knowledge Management Department of Alberta Health Services. As this team transitions to a co-designed (PCN CDM team with CoMPaIR team) model of care, the transition in interprofessional relationships will be evaluated as an outcome of interest.

Case 5: Primary Care Network 5 (PCN5)

Geographic Area, Legal Model, Date formed	Approx # Physicians, Patients Enrolled, Current	Data collection in CoMPaIR	Program areas studied with CoMPaIR	**Interprofessional Relationships** discussed with this PCN
Urban, rural Legal model #1 2005	~ 100 physicians ~ 122, 000 patients	2010-2011	Facilitator role Clinical care coordinator role Office supports	Examples from office supports and facilitator role

Context

This PCN has both **urban and rural** components in a widely dispersed geographic area that covers what was the entire former health region. One of the first PCNs to be created in the province, it was heavily influenced by a **physician champion** interested in quality improvement within the primary care setting. In addition, some of the clinics within this PCN had already begun innovations in their practice (e.g., working with multiple health professions in their primary care teams). Similar to other PCNs within this study, interviewees spoke of the need to build trust with the physicians in order to engage them within the PCN.

"In the beginning I think it was a matter of you know let's, let's just try and get this baby out of the birth canal and you know (chuckle) and that was a monumental feat given the trilateral nature of it and so forth. Monumental and there had to be you know a way to have it seem attractive to get people to sign on and, and to get it off the ground, um, so maybe that inspires rules that you know are a little bit more lax in, in the beginning and also a lack of clarity. I mean it's a brand new initiative and you don't always have all your ducks in a row and then it's hard for the people who come in a little bit later and they want to start you know having, setting the bar on certain matters in a different place and, ah, it puts you in a difficult spot. "

Unlike other PCNs in this study, the health region that existed at the time of PCN initiation entered into only one PCN joint venture agreement. All primary care physician clinics within this health region that wanted to be included within a PCN signed on to the one PCN.

Models

This PCN follows **Legal Model #1**; however, unlike other PCNs in this study, each of the 20+ physician clinics formed **separate not-for-profit physician corporations** for their clinic, each of which entered into the joint venture agreement with the health region, **under the umbrella of one PCN**. A PCN leadership committee composed of physicians and regional representatives governed the PCN. Originally, funding for PCN activities flowed through the health region to each of the not-for-profit corporations with separate financial reporting systems for each. Current leadership within the PCN has pushed strongly for an evolution of this complex and unwieldy original business model to Legal Model #2, with some adaptation. That is, the PCN physicians will join together to form one not-for-profit corporation that will partner with (now) Alberta Health Services in the joint venture agreement, governed by a PCN Board with equal representation from the PCN and AHS. However, representatives of each clinic will sit on an Advisory Committee that will provide input to decision-making by the PCN Board.

"And there will be some differences from the pure model two. We're going to have an advisory committee that will be above the PCN corp. that will still have a lead physician from each clinic sitting on that advisory committee and then four reps from Alberta Health Services and the intention is that that will be really, for all intents and purposes, the decision making body but then legally we will have a Board of Directors around PCN corp., probably three on the AHS side, three on the physician side, and they'll be the officers that will actually officially execute business but the intention is that they won't execute anything that wasn't supported by the advisory group… So we will have that six person entity, that Board of Directors around PCN corp. that will be responsible for the typical Board decisions but they will not make decisions that are not congruent with the will of the advisory committee because these physicians are so used to having that prominent role in the, the governance of the PCN. And so then the advisory committee is going to have really the 23 people on it [plus] the AHS side."

Similar to PCN 3, individual clinics within the PCN were often **geographically dispersed**. In this PCN the focus is on locally relevant health care improvement initiatives. This PCN does not have a Medical Director role, but is planning to initiate and implement this role to promote knowledge exchange and champion innovation at the clinic level. Decisions about funding at the clinic level followed an **80-20 rule** where 80% of the funding was allocated to multi-disciplinary value added teams. Interviewees commonly credit this guideline as the underlying foundation for the increase in interprofessional practice within the clinics. Provincial funding for wait times management allowed the PCN to work with the region on improving wait times within specific areas within the health region. This PCN had a **strong focus on evaluation** through **quality improvement** measures from its inception.

"I think that evaluation should be one of those things where it's well resourced and there's a provincially coordinated approach to it to make sure that we're getting the kind of information that we need to inform good decisions going forward and be able to defend continued investment in this area."

"I also think that the central office, not to toot our own horn or anything (chuckle) but to have the team that we have here working so closely with the clinics, I think that has very much changed the way that we have evolved compared to other networks as well as the evaluation team… you can't really improve on things unless you measure it in the first place and know where you're starting from."

PCN program areas discussed within CoMPaIR

This PCN works closely with individual clinics, and has less focus on PCN-wide programs. Recently there is some interest in having clinics interested in similar initiatives (e.g., weight loss management) meet with each other to share information about what has or has not worked well in initiating these programs within clinics. PCN roles discussed included:

- Improvement Facilitators: A physician champion initiating the PCN had been exposed to quality improvement in health care through the Institute for Healthcare Improvement and was instrumental in bringing the "collaborative" approach into the PCN. Facilitators are matched with PCN clinics that are interested in making local clinic improvements in areas such as team function, communication, process improvements (e.g., reduced wait times, increased access to care) and screening rates. As the readiness of the clinics and context varies clinic to clinic, so does the facilitator role. Facilitators work from the PCN office, but do go onsite with their clinics regularly – to help plan, initiate and implement quality improvements. They also meet with each other informally to exchange information about their work.
- System improvement facilitation support: With provincial funding for wait times management, the **PCN was able to support additional facilitators who worked within the health region to improve wait times** (e.g., hospital flow initiatives). When the funding ceased, the PCN could no longer support these facilitators.

- Clinic care coordinators: These PCN-funded nursing staff are placed within the physician clinics as their regular place of work and are viewed by some as "the voice" of the PCN within the clinic. Their role includes supporting the clinic physicians and staff to implement the improvement measurements being conducted with the PCN. The CCCs meet regularly (approximately monthly) at the PCN office to exchange information among the CCCs. They work closely with the Improvement Facilitators assigned to the clinic in which they work.

Interprofessional Relationships

Similar to PCN 3, this PCN focuses **less on PCN-wide initiatives, and more on improvement initiatives within clinics**. Thus, discussion of interprofessional relationships centres largely around the roles of the PCN staff with the physician and staff within clinics. An interesting artefact of the 20+ not-for-profit physician corporations that signed on as partners within this joint venture agreement is the complexity of the financing of the business model. As PCN leadership moves the PCN forward to change this model, the ability of the **PCN business support staff to develop trusting relationships** with each of the clinics was named as a key factor in allowing this change to proceed. Developing trusting relationships included multiple visits from the PCN business support staff out to the clinic offices spread throughout this region, including rural sites, in addition to attending the PCN meetings that brought the physicians into the PCN offices.

"Because you know for them [primary care physicians] they're not very trusting. They've, they've had issues in past working with (sigh) different portions I think in the health care and you know different individuals, different departments. They're somewhat guarded. You know they have a business that they're running."

Interviewees described how **building trust** with the physicians was needed to proceed with a given improvement initiative.

Interviewer: (What) key factors… affected the development of the PCN along the way?

Participant: I think it was the physician buy in and that they had a trust. I think that was the main thing, especially for the evaluation, that they were willing to be judged... we always say we do evaluation without judgment but anytime you have an number right, there's a judgment, but you know they really, really bought into this.

In helping physicians and staff improve clinic processes, the **PCN staff demonstrated added value** by achieving better physician performance on the measured indicators, and improved patient outcomes in terms of access, wait times and other indicators. This contributed to the "buy-in" of physicians working with PCN staff.

First interviewee: Just the idea that we're coming in as, quote 'the analyst'. Okay now you're going to be looking at patient records and all the docs are great with it. And we're going to be looking at your numbers and we're going to be telling you how you're doing and it was like wow, that was very surprising to see so many docs [agree to it]. And yes there are some docs who are kind of sensitive about their numbers and things like that in terms of how they're performing in terms of screening but for the most part it's like a buy in across the board. And that was, it was very surprising just 'cause you know you wouldn't normally expect that level of integration across this many different clinics across the region…They're competing with their colleagues and it's a healthy competition. You know within the clinics and between clinics you see it. The bigger clinics they want to best the other one you know, it's 'how are my numbers?' and they can't wait to get it. So that's really interesting, like positive reinforcement.

Second interviewee: "And it is really 'cause there were some that were lowest or second lowest and they were quite shocked to see that. And I remember one physician saying to me, 'cause he was the lowest for breast cancer screening and he was like, 'never again'. And he increased his numbers from 16 percent to over 90 percent the next year. He was like, 'I had no idea it was this bad and never again'. Never again is he going to be at the bottom. 'Cause he was, 'you know I'm not doing the best service for my patients and I didn't realize it.'"

The interviewees also described how the PCN facilitated the development of interprofessional relationships and team work within the clinics, and link it to **improved patient care**.

"I think the reality is that these health professionals within these clinics simply were not there before primary care networks. I mean some of the bigger clinics obviously did have some RNs but to be able to have that multidisciplinary team within a clinic, I would say the vast majority of our clinics had no health professionals in them before this… I think it's really created a different visit for the patient. Where a doctor doesn't have time to sit and educate somebody on diabetes or weight loss, now there is that health professional to be able to do that with that patient."

CROSS CASE COMPARISON & COMPARATIVE ANALYSIS

The table summarizes the elements recorded for each of the PCNs presented in the case reports.

Table 4: Cross Case Comparison

Element	PCN1	PCN2	PCN3	PCN4	PCN5
Geographic Area	Urban & Rural	Urban	Rural	Rural	Urban & Rural
Legal Model	Legal model 2	Legal Model 2	Legal Model 2	Legal Model 1	Legal Model 1
Date formed	2006	2006	2006	2006	2005
Current # Physicians (approx)	~ 300 physicians	~ 120 physicians	~ 115 physicians	~ 15 physicians	~100 physicians
Current Patients Enrolled (approx)	~ 313, 000 patients	~ 115, 000 patients	~101, 000 Patients	~ 14, 000 patients	~122, 000 patients
Data collection in CoMPaIR	2007-2009	2007-2008	2007-2009	2010-2011	2010-2011
Program areas studied with CoMPaIR	Hospitalist Program Low Risk Maternity After hours Clinic Chronic Disease Management	L ow risk maternity Behavioural health consultants After hours Office supports	Social Work Chronic Disease Management Pharmacist Seniors' Health Team	Chronic Disease Management Nurse Practitioner Referral nurse or "nurse navigator"	Facilitator role Clinical care coordinator role Office supports
Interprofessional Relationships highlighted from this PCN	Examples from the Chronic Disease Management program	Examples from physician office support and low risk maternity	Examples from the introduction of the Pharmacist and Social Work roles.	Examples from the Nurse Navigator role and Chronic Disease Management program	Examples from office supports and facilitator role

The summary below contrasts and compares factors of interest that arose within and across PCNs. As in the previous section, the categories are not mutually exclusive, but are separated for ease of discussion.

Context

Within the contexts described across PCNs some commonalities emerge.

- Differences in geographic locations of the PCNs often created different health needs and local PCN priorities because of population demographics (e.g., rapidly expanding urban communities underserved by primary care physicians, neighbouring communities such First Nations reserves, or distance from speciality care in rural PCNs). Rural areas reported more difficulty in recruiting and retaining staff and in providing opportunities for PCN staff in different community locations to meet to share PCN learning. and experiences. Participants also reported increased complexity dealing with urban health regions from rural areas. .

- Although described more prominently in some contexts than others, participants described a general sense of distrust of "the health region" among physicians. Many physicians who had a history of previous relationships with "the system" or "the region" were described as reluctant to engage in the PCN, as the health region was a partner in the joint venture agreement. This mistrust was sometimes attributed to a history provincial change (e.g., realigning the health authorities into health regions in PCN 3) which increased complexity in attaining support by the region for physicians and patients, or to decreased local control when the region "took over" an initiative (e.g., PCN 2).
- Alberta's economic boom affected the resources available to the PCNs when they were forming. Although funding was available, other resources such as office space and staff were in short supply. The PCNs were often competing with industry and their PCN partners (health regions, physicians' offices) for these resources. Ironically, resource shortages sometimes encouraged physicians to join the PCN to take advantage of the office supports offered to PCN physicians.

Models

- Three of the PCNs were created using Legal Model #2, distinguished by the joint PCN corporation governed by a board consisting of PCN physician corporation representatives and health region representatives. Board representatives sometimes lacked the knowledge and skills required to effectively govern on these boards. One of the PCNs was in the process of changing from Legal Model #1 to #2, to increase efficiency of its current operational structure.
- Three of the PCNs had a Medical Director position, and one of the other PCNs is planning to recruit one. Medical directors were highly influential with PCN physicians, and where physician champions or leadership existed, physician leads for programs within PCNs were recruited relatively easily. Programs with strong physician leads seemed to develop better than programs where strong physician leadership was lacking.
- Programs that met strong physician needs also seemed to develop well. For instance, office supports programs that helped physicians with escalating leasing costs, or implementing electronic medical records or IT infrastructure supports were well-received by physicians. Similarly programs that met local health priorities (e.g., low risk maternity care, chronic disease management) were well-subscribed.
- When teams within the PCN were geographically dispersed (e.g., PCN 3) or PCN initiatives were clinic based (e.g., PCN 5) fewer programs that applied across the PCN were developed. Instead, projects or initiatives tended to be created for the local (geographic) area or clinic. In PCN 3 knowledge about innovative projects or programs tended to be deliberately exchanged through the medical and executive directors' attendance at all local team meetings. In PCN 5 spread seemed more limited to exchange of information through individuals such as the physician representatives at Board meetings, or clinical care coordinators or improvement facilitators exchanging information.
- Evaluation varied widely across all PCNs, and is discussed more in the Discussion.

Interprofessional Relationships

- In all PCNs, interprofessional relationships seemed to be facilitated by co-location but co-location in and of itself was not sufficient to foster good interprofessional working relationships. One PCN's budget guidelines encouraged the hiring of new professionals into clinic settings (the 80-20 rule in PCN 5), and this was perceived as foundational to building the interprofessional team approach.
- Challenges of bringing new professionals into physicians' work environments included lack of training and work processes that were based on working individually not in teams, space, lack of understanding of the scope of practice of other professions, and skill sets of individuals.
- Challenges were successfully overcome when trusting relationships were built between individuals, and sometimes facilitated when professionals came to know one another through increased social interaction(e.g., blueberry muffins in PCN 3, drives to the reserve in PCN 4, the hallway consults in PCN 1).
- Trusting interprofessional relationships between non-clinical PCN staff (e.g., business analyst, IT support, finance manager) were also important to allowing behavioural change with the PCNs. These professionals helped physicians in areas where they may have been especially lacking support, and were often viewed as having made life easier for the physicians by reducing lease costs, helping with IT implementation, and so on.
- Strong interprofessional relationships were required to allow quality improvement initiatives and other practice changes (e.g., team based approach to CDM) to proceed within the physicians' offices.

In addition to the case data, data from the following additional sources contributed to the comparative analysis. Sources included:

- The final report for a study conducted by Drs. Grant Russell, Robert Geneau, and Barbara Farrell. This ethnographic study entitled **Behind the Closed Door: Using Ethnography to Understand Family Health Teams (FHT) Phase II** was completed in Ontario between April 2008 and June 2009. Drs. Cathie Scott and Ben Crabtree were invited to participate in this study as methodological consultants and, as such, had direct insight into the results of this work. The objective of this study was to illustrate how the transition into a FHT influences organizational routines, particularly those relating to the care of persons living with chronic disease. *The summary of these results emphasizes the existence of variability across Family Health Teams (FHTs); variability in implementation of chronic disease management, interprofessional roles, innovation and outcomes. Innovation was dependent upon factors such as leadership, communication and managing expectations.* (Russell, Geneau & Farrell, 2009)
- Data syntheses prepared for a Primary Healthcare Synthesis Forum held in Montreal November 3, 2010. The summaries were prepared by Drs. Fred Burge, Jeannie Haggerty, Bill Hogg, Alan Katz, and Sabrina Wong. The summaries describe reforms underway in British Columbia, Manitoba, Ontario, Quebec, and Nova Scotia with strategic dimensions that correspond to the conceptual framework used within CoMPaIR. *Results of this work indicate that primary care organizational models and innovation programs vary based on the following strategic dimensions: Structure – governance, administration, physician's remuneration, patient's enrolment; Resources – multidisciplinary teams, information technologies; Access – Extended hours, Walk-in; Services – Chronic disease management, prevention, coordination, continuity; and, Vision – responsibility; Context of change; and, Local Health Authorities.* (Burge, Haggerty, Hogg, Katz, & Wong, 2010)

- Initial analysis of data generated from CIHR Catalyst grant design to synthesize results of primary healthcare research completed in different contexts (i.e., Quebec, Ontario, Alberta, the United States and Australia). Dr. Scott is a co-Investigator on this project entitled **Shifting Ground, Common Ground> Understanding the evolving Primary Care Practice**. Other co-investigators include: Drs. Jane Gunn, Mark Harris, Grant Russell, Bill Hogg, Robert Geneau, Simone Dahrouge, Jean-Frederic Levesque, Ben Crabtree, and Will Miller. The syntheses from this work will presented at upcoming two conferences in Alberta in the Fall of 2011 (i.e., Accelerating Primary Care & NAPCRG). *Preliminary findings illustrate the similarities across studies (i.e., variability related to models; the negative influence of physician hierarchy; the focus on volume versus value had a negative impact on teamwork; the importance of facilitation for change processes; regular communication and group reflection had a positive impact, the importance of clinical and administrative leadership; the value of creating space (both physical and perceived) to work collaboratively; IT systems tend not to be facilitators; to the degree that fee-for-service is diminished, team development improves)*. (Sorrento Primary Care Research Group, 2011)

DISCUSSION

The results of this program of research clearly illustrate that context matters in the development of primary healthcare models. There is no one way to develop a primary healthcare model that will meet the needs of patients and providers across all contexts – this reflects the complex nature of primary healthcare (Appendix D: Echo 4). There are, however, commonalities across contexts that warrant further consideration; essential elements for consideration that appear consistently across cases within this study (Appendix G and cross case comparison above) as well as across studies reviewed in the comparative analysis. These are, not surprisingly given the breadth of their work, resonant with the findings of the Sorrento Primary Healthcare Research Group and include:

- Governance – the governance model selected is determined by leadership within the primary care context and determines the relationships that develop, the staffing models chosen, and the programs that are emphasized. In the changing policy context within Alberta, the influence of policy uncertainty had a negative impact on engagement of physicians within PCNs. Even minor changes in policy statements (e.g., changes in the wording of the five core PCI objectives (Table 5), had the potential to shift the direction of programs and initiatives (e.g., removing the word multidisciplinary team from the fifth objective created the opportunity to more narrow implementation of programs – teams could be interpreted to be teams of physicians). Major differences in governance models that are described in the data determine where the funding flows, and "who" hires the employees
- Leaders – the importance of administrative and clinical leaders cannot be over emphasized. Leaders create the environments within which people can work toward common goals, advance creative solutions to long-standing practice issues and work through differences. Strong leaders can both facilitate relationships and mobilize the resources required to effectively implement programs.
- Connections and relationships – relationship development and maintenance requires ongoing support and facilitation. There is a common assumption that co-location will overcome relational woes; however, co-location itself is insufficient to ensure effective interprofessional working relations. In addition, the CoMPaIR data and data from Ontario study of FHTs illustrate the importance of open, transparent relationships between policy bodies (i.e., government, health regions) and those who are implementing service change and providing service. Effective communication strategies, whether face-to-face or virtual, are essential if trust, respect and common understanding are to be achieved. Without these, no amount of resourcing will be sufficient to achieve desired outcomes.

"There's certainly a lot of trust now although some physicians may argue. That's just my opinion, I personally believe there's a lot of trust now… between the physician community with the collegial trust and there's the regional trust and the provincial trust, 'cause there's always those layers right? Well, and we haven't even touched federal right (laughter) or national but seriously, there was a period there where there was a mistrust. I don't know the magnitude of the mistrust but I heard it, I saw it, I felt it, the mistrust between the physicians and the health authority. But I don't believe that's so much the case anymore because a lot of things occurred already as far as relationship building and communications so, I believe that people are doing the right thing now. Everybody, both sides, whichever sides those are, and an awareness is key and there's certainly a lot of that now. [Awareness of] what's going on, what's on people's minds, their ideas, what's not working … Primary care physicians are not that quiet anymore. It's good though. It's good. [So before] there wasn't much talking around. I mean not so much not-talking but I think it was a combination of maybe not addressing the issues right away and at the same time, the right people are not listening."

Communication – Over the evolution of the PCNs in Alberta, people working within PCNs consistently mentioned their desire for more opportunities to share what they were learning across the province to inform the development of their models. Communication within and across PCNs and with other organizations, greatly influenced implementation of programs.

Table 5: Five core Primary Care Initiative Objectives for PCNs

#	2006	2011
1	◥ To increase access to primary care	◥ Increase the number of Albertans with access to primary care services
2	◥ To provide 24/7 access to appropriate health care services	◥ Manage access to appropriate round-the-clock primary care services
3	◥ To increase emphasis on health promotion, disease and injury prevention, care of medially complex patients, and patients with chronic disease	◥ Increase the emphasis on: ◥ Health promotion ◥ Disease and injury prevention ◥ Care of patients with medically complex problems ◥ Care of patients with chronic diseases
4	◥ To improve coordination and integration with other health care services, including secondary, teriary and long-term care	◥ Improve coordination of primary health services with other health care services including hospitals, long-term care and specialty care services
5	◥ To facilitate optimum use of multidisciplinary teams	◥ Foster a team approach to providing primary health care (PCI website, June 25, 2011).

- Outcomes – PHC initiatives across Canada are just beginning to measure outcomes using indicators developed from the Canadian Institute for Health Information (CIHI) Primary Health Care Development Indicator Project. In Alberta, each PCN identified priority service areas and relevant outcomes. Primary Care Networks are responsible for collecting their own outcome data and are at varying stages of readiness to do this. As anticipated, that variation in outcome measurement extends to PHC models across the country. Based on feedback from the decision-makers on our team, we were advised against attempting to measure outcomes within this study. We were advised that it would provide a valuable foundation for future PHC outcomes studies if we identified which CIHI indicators are being used, in which contexts, and why. We will not directly measure outcomes but, where possible, we describe outcome data that has already been collected by the PHC initiatives participating in the program of research.
- Future research – combined methods approaches demonstrate great value in highlighting not only what is working and what is not, but why things are the way they are. In the absence of cross-cutting or standardized outcome measures, innovative methods for understanding complex interventions will need to continue to evolve. Having interprofessional research teams is strongly promoted both to address the research/practice divide and to ensure appropriate expertise to examine complex issues, these considerations must be balanced with feasibility and practicality. In hindsight, the size of the CoMPaIR team was unmanageable. Asmaller team with the addition of relevant members for specific projects would have helped to improve team interactions. The difficulties in sustaining the team were also associated with the many contextual changes for team members over the period of the grant – all have experienced job changes.

As a result of the deliberative, participatory approach taken within the CoMPaIR program, the connections made through this research have and will continue to influence changes within the practice environment for some time to come. Over the next six months, CoMPaIR team members will continue to work within Alberta and with national and international colleagues to advance primary healthcare research and practice.

SUMMARY OF RESEARCH ACTIVITIES

2a. Knowledge Transfer, Exchange (KT & E), and Implementation

In line with our deliberative approach we have from the beginning engaged other researchers, healthcare professionals, and decision-makers in our research and have shared our process and results with a broad audience. Some of the highlights associated with our approach are summarized below.

Strong connections have been established with decision-makers throughout Alberta and other parts of Canada. We have engaged with Primary Care Networks (PCN) and Primary Care Administrators with Alberta Health Services. For example, we have been asked to participate in the Knowledge Generation Management Advisory committee (KGMAC) Applied Research and Evaluation Priorities Working Group. This group will be examining research priorities for AHS in primary care and chronic disease management, aligning research with evaluation and strategic directions. Some of the professionals with whom we have worked closely and built relationships include physicians, nurses, allied health professionals, managers in primary healthcare, as well as university-based researchers. We have also established connections with:

- representatives of the Alberta Primary Care Initiative Committee (PCIC);
- representatives of the Alberta Interdisciplinary Primary Healthcare Network (ABIN);
- other primary healthcare research teams based at campuses across Alberta and in other provinces. For example:
  - Dr. Ben Crabtree (New Jersey) has provided methodological advice related to CoMPaIR;
  - Dr. Scott worked collaboratively with Dr. Grant Russell and Dr. William Hogg on their ethnographic study of Family Health Teams (FHT) in Ontario;
  - Dr. Scott and Dr. Ben Crabtree were invited to participate as methodologic advisors on the above-mentioned FHT project;
  - Dr. Scott, Dr. Russell and Dr. Hogg (along with others) were successful in obtaining a CIHR Catalyst Grant to compare PHC models across different provincial and national contexts (i.e., co-investigators from Australia, the US, and Canada (Ontario, Quebec & Alberta);
- primary healthcare researchers from international jurisdictions (i.e., Australian researchers Lucio Naccarella and Julie MacDonald; Dr. William Hogg from Ontario).

- Our action research approach has stimulated discussion related to the role of researchers in practice settings. These discussions will continue with system-based team members to identify lessons learned from our experience for inclusion in upcoming writing products.
- One PCN requested support in analyzing results from their planning retreat. Working with the PCN on this analysis established a level of trust with them and engaged them further in the research process, which resulted in two further projects within the PCN: studying interprofessional team development within a Chronic Disease Management (CDM) team and the exploration of the value of social work positions within the context of primary care. CoMPaIR's ongoing collaboration with Dr. J. Parboosingh and another PCN to develop an Innovative Practice Improvement (IPI) model has grown from the CDM work, and will continue beyond the CoMPaIR program of research.
- CoMPaIR was featured as an example of an innovative approach to bridging research-practice boundaries in a keynote address at the 2009 Accelerating Primary Care Conference in Edmonton, AB. As part of this address, CoMPaIR's research process and preliminary results from Phase 1 were presented.

- We were invited by QSR International to collaborate with them to develop a feature case study based on CoMPaIR: Alberta Health Care Reform: Using NVivo 8 to deliver results, today and tomorrow (http://www.qsrinternational.com/solutions_case-studies_detail.aspx?view=159).
- In November 2008 we held a Primary Healthcare Forum and Whole Team Meeting in Calgary, AB to bring together people involved with CoMPaIR (as team members or research participants) and people involved in primary care planning, provision, research and evaluation (see Section 2b for more details about this 2-day event).
- Team member engagement: As stability within AHS has permitted renewed action with CoMPaIR, a number of strategies for team member engagement are planned:
  - Whole team teleconference, early autumn 2011.
  - One-on-one or small group meetings to discuss CoMPaIR findings of interest to the team members. In these sessions we will continue to develop written products (e.g., Echo, manuscripts for publication, briefing notes, etc) and presentations for dissemination. Topics that continue to be of interest for development with specific team members as leads include: Leadership; Innovative ways to integrate primary care services into regional-based health services; Social Capital; Interprofessional team development; PC Outcomes; PHC policy; and, Embedded research processes.
- Three papers are currently in preparation with team members (one reports on the PHC models within the PCNs, the other discusses evaluation, and a third is entitled, "Knowledge translation: what can partnership research teams offer?").
- Four Echos have been produced. These are 2-page information sheets on topics derived from the data or of interest to the PCNs, and circulated to a wide group of stakeholders including research participants. The most recent Echo (Appendix D: Echo 4) is to be distributed in early July with news of final report submission. More Echos are planned as part of our 2011 dissemination activities.
- We have initiated discussion and engagement with relevant stakeholders (e.g., AHS primary care staff, PCN directors and staff) to plan a CoMPaIR wrap-up forum for autumn 2011, to share knowledge and insights gained through the CoMPaIR program of research, in conjunction with other primary care events planned within AHS. We have received enthusiastic response from the stakeholders to the idea of showcasing and sharing local knowledge.
- The innovative narrative approach to development of interprofessional practice piloted in Phase 1 and being extended in Phase 2 will become a transferable model to include in the Knowledge Management department's toolkit of methods and processes for working with healthcare professionals to help them make better use of evidence in practice.
- Dr. Scott was asked to do an oral presentation regarding primary healthcare in Alberta, in Berlin, Germany in February 2010.
- Dr. Scott actively engaged in several activities that facilitate exchange of lessons learned across contexts. For example she:
  - was actively involved in the planning committee for the Picking up the Pace (PuP) conference in 2010;
  - is currently exploring the opportunity to extend the PuP approach in Alberta to profile such "innovations in primary healthcare" on an ongoing basis through the Knowledge Management department;
  - attended an Ottawa workshop about the use of narrative for dissemination of evidence-based messages;

- has worked with the CIHR catalyst grant team attending three meetings focused on synthesizing lessons learned from CoMPaIR with those learned from other international contexts (Lambertville, NJ, Seattle, WA, Melbourne, Australia).

- Dr. Scott is currently participating in the CIHI Survey Working group on the Pan-Canadian PHC Indicator Update project.

Research Activities

Primary Healthcare Forum and Whole Team Meeting – November 6th – 8th, 2008

In November 2008 we held a two-day event geared at bringing together various stakeholders, decision-makers, and researchers and providing an opportunity for deliberation regarding the use of evidence emerging from Phase 1. About 30 people attended the first day (the Primary Healthcare Forum), the majority of whom were people who had been involved in the initial phase of CoMPaIR data collection, while others were people from across the province who have been involved in primary care planning, provision, research and evaluation. The intent of the day was to provide an overview of primary healthcare policy, practice and research and to provide a forum where people could discuss the following questions: "what is working well?", "what should we do next?", and "what we shouldn't do based on what we have learned so far?" We used a World Café format to facilitate dialogue on these key questions. Keynote speakers included Grant Russell (CoMPaIR team member – Ottawa), Marion Relf (AHS – Edmonton), Trish Reay (School of Management, University of Alberta), Cathie Scott (CoMPaIR research team lead), and PCN Executive Directors Larry McLennan and Joe McGillivray. Ben Crabtree (New Jersey), Charmaine McPherson (Nova Scotia), and Judy Chisholm (Nova Scotia) joined us by phone for part of the day.

On Day 2 we held a CoMPaIR Whole Team Meeting to discuss the results of the Forum and next steps for CoMPaIR. Ben Crabtree provided a presentation (via teleconferencing) related to interdisciplinary research team development. Summary documents of major data themes from Phase 1 were prepared and distributed to all participants, and are now posted on our website (www.compaircanada.ca).

The following tables provide a summary of CoMPaIR's activities as a research team, including team meetings, communications to the CoMPaIR team and research stakeholders, conferences attended, and presentations made (Table 6).

Table 6: Communication

Date	Location	Type of Communication
2007		
01-Mar	Southport & teleconference	Whole Team Meeting #1
16-May	Southport & teleconference	Whole Team Meeting #2
27-Jul	Rockyview & teleconference	Whole Team Meeting #3
13-Feb		Program Update: Year 1, Issue 1
18-May		Program Update: Year 1, Issue 2
25-Sep		Echo (Phase 1, Issue 1): What is policy?
2008		
28-Feb		Echo (Phase 1, Issue 2): Primary Healthcare Models
6-Nov – 7-Nov	Greenwood Inn, Calgary, AB	Primary Healthcare Forum and Whole Team Meeting #4
2009		
02-Feb		Echo (Phase 1, Issue 3): CRPCN Social Workers
2011		
30-May		Echo (Phase 1, Issue 4): Complexity in Primary Health Care

Table 7: Dissemination

Date of presentation/ publication	Venue	Location	Title	Author(s)…"on behalf of the CoMPaIR team"	Type of Presentation
2006					
17-Sep – 19-Sep	Canadian Association for Health Services and Policy Research	Vancouver, BC	Strengthening Primary Care Services	CM Scott	Invited Panel Presentation
2007					
20-Jun	Undergraduate Student Research Program Presentation	University of Calgary	CoMPaIR – Research in Progress	CM Scott, S Dobrowolski	Oral Presentation
21-Sep – 24-Sep	Advances in Qualitative Methods Conference	Banff, AB	Putting Research to Work: A Participatory Deliberative Approach to Primary Healthcare Research	CM Scott, C Paskall, L Lagendyk, S Dobrowolski, G MacKean	Poster
21-Sep – 24-Sep	Advances in Qualitative Methods Conference	Banff, AB	Avoiding bottlenecks on the information superhighway: Handling qualitative data in a multi-site study (CoMPaIR)	L Lagendyk & CM Scott	Oral Presentation
21-Sep – 24-Sep	Advances in Qualitative Methods Conference	Banff, AB	A Network Approach for Mapping Interprofessional Relationships within Primary Care Networks (PCNs)	CM Scott, S Dobrowolski, L Lagendyk, C Paskall	Poster
21-Sep – 24-Sep	Advances in Qualitative Methods Conference	Banff, AB	Elephants at the Bazaar: Following Yourself through Foreign Spaces	S. Kadyschuk	Oral Presentation
28-Sep	Undergraduate Student Research Program Presentation	University of Calgary	A Network Approach for Mapping Interprofessional Relationships within Primary Care Networks (PCNs)	CM Scott, S Dobrowolski, L Lagendyk, C Paskall	Poster
01-Oct – 03-Oct	Research Transfer Network of Alberta Conference	Edmonton, AB	Generating evidence collaboratively to influence policy and practice decisions in 'real time' – the example from the CoMPaIR Program	CM Scott, L Lagendyk, G MacKean, A Casebeer	Poster
13-Dec – 14-Dec	Retreat FHTs project "Behind the Closed Door"	Ottawa, ON	CoMPaIR – Research in Progress	CM Scott	Oral Presentation
19-Dec	Primary Care Advisory Committee, Calgary Health Region	Calgary, AB	CoMPaIR	CM Scott	Oral Presentation

Date of presentation/ publication	Venue	Location	Title	Author(s)..."on behalf of the CoMPaIR team"	Type of Presentation
2008					
25-Jan	Family Medicine Symposium	UCMC	CoMPaIR: Context and Models in Primary Healthcare and their Impact on Interprofessional Relationships	Cathie Scott	Oral Presentation
12-Feb – 14-Feb	Accelerating Primary Care Conference 2008	Edmonton, AB	A Network Approach to Optimizing Interprofessional Interprofessional Teams in Primary Care Networks (PCNs)	Cathie Scott, Laura Lagendyk, Shauna Kadyschuk	Poster
22-Mar	Workforce Re-Design Group	Calgary, AB	The contribution of observation data to an innovative mixed methods primary healthcare study	Carol Cullingham	Oral Presentation
May 2008	Calgary Rural Primary Care Network	Claresholm, Vulcan, High River, Okotoks, Strathmore, Canmore	New Frontiers of Collaborative Practice: Report on the Calgary Rural Business Planning Retreat	Cathie Scott, Laura Lagendyk, Lindsay Friesen & Carol Cullingham	Written Report (for CRPCN's information only – not for circulation)
12-Jun	Computer-Aided Qualitative Research	Amsterdam, Netherlands	Using Combined Methods (Qualitative & Quantitative) in Primary Healthcare Research	CM Scott & L Lagendyk	Oral Presentation
19-Sep	Undergraduate Student Research Program Symposium	Calgary, AB	The Contribution of Interview Data to an Innovative Mixed Methods Primary Healthcare Study	Lindsay Friesen, Cathie Scott, Laura Lagendyk, & Carol Cullingham	Poster
November 2008	Primary Healthcare Forum and Whole Team Meeting	Calgary, AB	Overview	Cathie Scott & Laura Lagendyk	Data Summary
November 2008	Primary Healthcare Forum and Whole Team Meeting	Calgary, AB	Communication	Cathie Scott & Laura Lagendyk	Data Summary
November 2008	Primary Healthcare Forum and Whole Team Meeting	Calgary, AB	Evaluation & Outcomes	Cathie Scott & Laura Lagendyk	Data Summary
November 2008	Primary Healthcare Forum and Whole Team Meeting	Calgary, AB	Interprofessional Relationships	Cathie Scott & Laura Lagendyk	Data Summary
November 2008	Primary Healthcare Forum and Whole Team Meeting	Calgary, AB	Leading & Leadership	Cathie Scott & Laura Lagendyk	Data Summary

Date of presentation/ publication	Venue	Location	Title	Author(s)..."on behalf of the CoMPaIR team"	Type of Presentation
2009					
10-Feb	Accelerating Primary Care Conference 2009	Edmonton, AB	The Role of the Social Worker in Primary Care	Cathie Scott, Laura Lagendyk, Shauna Kadyschuk	Poster
Spring 2009	Presentation of Results of Social Work Project to CRPCN local team meetings	Claresholm, Vulcan, High River, Okotoks, Strathmore, Canmore, Chestermere	Presentation of Results of Social Work Project to CRPCN local team meetings	Scott, Lagendyk, Cullingham, Friesen	Echo & Oral
10-Apr	KTA Diabetes – Narrative Session, Initial Meeting	Strathmore, AB	Workshop using narrative approach to identify common diabetic care needs in the community, and shared potential solutions.	Parboosingh, Scott, Lagendyk & Dr. S. Ross	
	Workshop				
06-Nov	Canadian Association for Health Services and Policy Research (CAHSPR)	Calgary, AB	Knowledge exchange for systems change: a deliberative process in action	Scott, Lagendyk, Hofmeyer & McPherson	Poster/Oral Presentation
2010					
Jan 2010	QSR International Website, Case Study Reports	Australia	Alberta Health Care Reform: Using NVivo 8 to deliver results, today and tomorrow (http://www.qsrinternational.com/solutions_case-studies_detail.aspx?view=159)	QSR	Case Study
Mar 2010	Faculty of Social Work 3rd Annual Research Symposium	Calgary, AB	Understanding the Needs of Social Workers in a Primary Care Network	Ramdath, Welsh, Lagendyk, Scott	Poster
May 2010	Narrative Matters 2010 – Exploring the Narrative Landscape: Issues, Investigations, and Interventions	Fredericton, NB	A pilot project using narrative to identify community care gaps for Diabetic patients	Lee, Scott, Lagendyk, Parboosingh	Oral Presentation (Appendix H)

Date of presentation/ publication	Venue	Location	Title	Author(s)…"on behalf of the CoMPaIR team"	Type of Presentation
2011					
	Abstract accepted for Accelerating Primary Care conference, October 2011	Edmonton, AB	The complexity of changing practice in primary care – here's the story	Lagendyk, Parboosingh, Carruthers, Scott	Oral or Poster
	Abstract accepted for Accelerating Primary Care conference, October 2011	Edmonton, AB	The Relationship Between Social Network Characteristics and First Time Mothers' Maternal Experiences	Cullingham	Poster
	Abstract accepted for Accelerating Primary Care conference, October 2011	Edmonton, AB	Preconference workshop – Primary Care Teams – What Works and What Doesn't: Perspectives from three countries	Russell, Hogg, Crabtree, Levesque & Scott on behalf of Sorrento Primary Healthcare Research Group	Workshop
	NAPCRG	Banff, AB	Primary Care teams – what works and what doesn't: perspectives from three countries	on behalf of Sorrento Primary Healthcare Research Group	Workshop (papers also accepted)

Table 8: Capacity, Linkage & Exchange

Date of meeting/ presentation	Venue	Location	Purpose	Participants
2007				
23-Jul – 24-Jul	Networks Leadership Symposium	Banff, AB	Networking, Student Capacity Development	Symposium participants were international experts on networks; from our team, Cathie Scott, Laura Lagendyk, Shauna Kadyschuk, Carol Paskall, Sarah Dobrowolski
24-Oct	Primary Care Initiative Provincial Forum	Calgary, AB	Presentation of CoMPaIR	Allison McKinnon
27-Oct	Face to face	Calgary, AB	Potential international collaboration	Meeting with Lucio Naccarella, Cathie Scott & Laura Lagendyk
30-Oct	Face to face	Calgary, AB	Potential international collaboration	Meeting with Julie MacDonald, Cathie Scott, Laura Lagendyk, Allison McKinnon, Gail MacKean, Ann Casebeer
2008				
27-Feb	Teleconference – Calgary-Ottawa	Hosted by us	Networking, potential sharing of research resources and results	Cathie Scott, Laura Lagendyk, Lynn Casimiro, Anne Brasset-Latulippe, Bernard (Delta Media)
02-May	Health Research Methods	Calgary, AB	Networking, Student Capacity Development	Carol Cullingham and Lindsay Friesen
Oct 2008	7th International Conference on Urban Health: Knowledge Integration – Successful Interventions in Urban Health	Vancouver, BC	Student Capacity Development	Carol Cullingham
Fall 2008	CoMPaIR/ University of Calgary	Post Doctoral Fellow	$50 000	Charmaine McPherson
6-Nov – 7-Nov	Primary Healthcare Forum and Whole Team Meeting Team Development-Crabtree	Greenwood Inn, Calgary, AB	Networking, Knowledge Transfer, Team Development	CoMPaIR Team Members present at WTM

Date of meeting/ presentation	Venue	Location	Purpose	Participants
2009				
12-Jan – 14-Jan	Network Leadership Summit	Banff, AB	Networking, Student Capacity Development	Charmaine McPherson, Carol Cullingham & Lindsay Friesen
12-Feb – 14-Feb	Accelerating Primary Care Conference 2009	Edmonton, AB	Networking, Sharing of research results, Student Capacity Development	Cathie Scott, Laura Lagendyk, Shauna Kadyschuk
	Ben Crabtree Meetings	teleconference		
	Anne Hoffmeyer Meetings	teleconference		
Winter 2009	CoMPaIR/ University of Calgary	Post Doctoral Student		Charmaine McPherson
July 2009	Behind the Closed Door			
2010				
Feb 2010	Mental health Services in Germany at the edge of a new financing and funding system: Interests – Opportunities – Threats – Experiences – Perspectives	Berlin, Germany	Dr. Scott spoke on the topic of KM, systems change – including focus on primary health reform in Alberta	Dr. Cathie Scott
May 2010	Using narratives for dissemination of evidence-based messages	Ottawa, Ontario	Share experiences of narrative based approach used within one PCN working with us in CoMPaIR	Dr. Cathie Scott
Nov 2010	North American Primary Care Research Group 38th NAPCRG Annual Meeting	Seattle, Washington	Attended pre-conference workshop. Entitled "Mixed Methods Research: Introduction, Research Questions, Study Design and Implementation Planning" and attended conference.	Greg Yelland
Nov 2010	Picking up the Pace: How to Accelerate Change in Primary Healthcare	Montreal, Quebec	Committee member, coordinated submissions from Western Canada, facilitated and chaired a session, attended policy forum	Dr. Cathie Scott
Various	CIHR Catalyst Grant: Shifting ground, common ground: understanding the evolving primary care practice)	Lambertville, NJ; Seattle, WA; Melbourne, Australia	Co-investigator meetings	Dr. Cathie Scott

Capacity Development

We have been very successful in engaging students and research assistants in various roles throughout the CoMPaIR program of research. Table 9 summarizes this aspect of our program.

In keeping with the ethos of CoMPaIR's deliberative approach to research, capacity development has extended beyond the CoMPaIR team to members of the PCN with whom we have engaged:

- In 2010 through CoMPaIR we were able to link PCN staff to the AHS Knowledge Management (KM) department to enhance their ability to share knowledge and make better use of evidence in practice. For example a Phase 2 PCN nurse navigator was able to generate and share her practice knowledge at an AHS Knowledge Forum about health care access and wait times that was sponsored by KM.
- Several members of a PCN with whom we are working in Phase 2 are attending a KM-supported series of sessions over six months to learn an integrated approach to program planning and evaluation.

Table 9: Capacity Development

Name	Discipline/Degree	Time Frame/Funding Source	Roles/Training Opportunities	Currently...
Shauna Kadyschuk	Sociology/BA; Sociology/ MA (candidate)	◥ CoMPaIR Studentship,	◥ Research assistant ◥ Social network analysis ◥ Oral & poster presentations ◥ Interviewing ◥ Project management ◥ Report writing	
Sarah Dobrowolski	Chemistry/BSc	◥ Undergraduate Student Research Program (USRP), Summer 2007	◥ Social network literature search ◥ Social network analysis ◥ Oral & poster presentations ◥ Report writing	Attending Dalhousie Medical School
Carol Cullingham (Paskall)	Chemistry/BSc; Engineering/BSc; Sociology/BA; Sociology/MA (candidate)	◥ CoMPaIR Studentship Sept. 2010 – ongoing; ◥ Maternity Leave, July 2009 – June 2010; ◥ CoMPaIR Studentship Sept. 2008 – April 2009; ◥ CoMPaIR support for attendance at 7th International Conference on Urban Health: Knowledge Integration – Successful Interventions in Urban Health (Vancouver), Oct. 2008 ◥ USRP Fall/Winter 2007-2008; ◥ USRP Travel Grant 2007-2008; ◥ Centre for Advancement of Health Summer Studentship 2007	◥ Research assistant ◥ Skill development with social network research approach ◥ PHC models literature search ◥ PHC report writing ◥ Development of briefing notes ◥ Oral & poster presentations ◥ Observational data collection ◥ MA student co-supervised by Dr. Scott	Conducting MA research with Phase 1 PCN
Denise Ferris	Health Sciences/ BHealthSciences (Student)	◥ Undergraduate Student Placement, Jan. 2008 – Aug. 2008	◥ Student project – literature search on dissemination strategies ◥ Website design ◥ Report writing	

Name	Discipline/Degree	Time Frame/Funding Source	Roles/Training Opportunities	Currently...
Lindsay Friesen	Biology/BSc; Psychology/BSc	◥ Graduate School Applications, 2009-2010 ◥ Research Assistant, Sept. 2008 – April 2009 ◥ Summer Studentship, 2008	◥ Graduate School application development ◥ Research assistant ◥ Interviewing ◥ Data analysis ◥ Report writing ◥ Oral & poster presentations ◥ Development of briefing notes ◥ Literature searching	Enrolled in the MA program in Clinical Psychology, University of Regina
Charmaine McPherson	Nursing/PhD	◥ CoMPaIR/University of Calgary postdoctoral fellowship, Sept. 2008 – Aug. 2010	◥ CADRE postdoctoral fellowship with CoMPaIR ◥ WHO Visiting Nurse Scholar Program ◥ Acted as Dr. Scott's delegate to the Canadian Working Group on Primary Healthcare Improvement (Dec. 2009) ◥ Lead role in development of proposal for Phase 3 project (Nova Scotia)	Has completed her postdoctoral fellowship and continues to actively work in the field of primary healthcare at the national and international levels.
Greg Yelland	Sociology/MA; Sociology/ PhD (student)	◥ CoMPaIR Studentship, July 2011 – Dec. 2011; March 2009 – April 2011; July 2009 – June 2010; ◥ CoMPaIR support for NAPCRG conference attendance, Nov. 2010	◥ PCN stakeholders as research participants ◥ Research literature on complexity and PHC ◥ Background policy development ◥ Development of materials for research dissemination ◥ Dissertation literature review material used to produce a CoMPaIR Echo about complexity and PHC ◥ MDSC 755.45 course participanta ◥ PhD student Co-supervised by Dr. Scott	Conducting PhD research about complexity in the context of primary healthcare with PCN stakeholders as research participants.

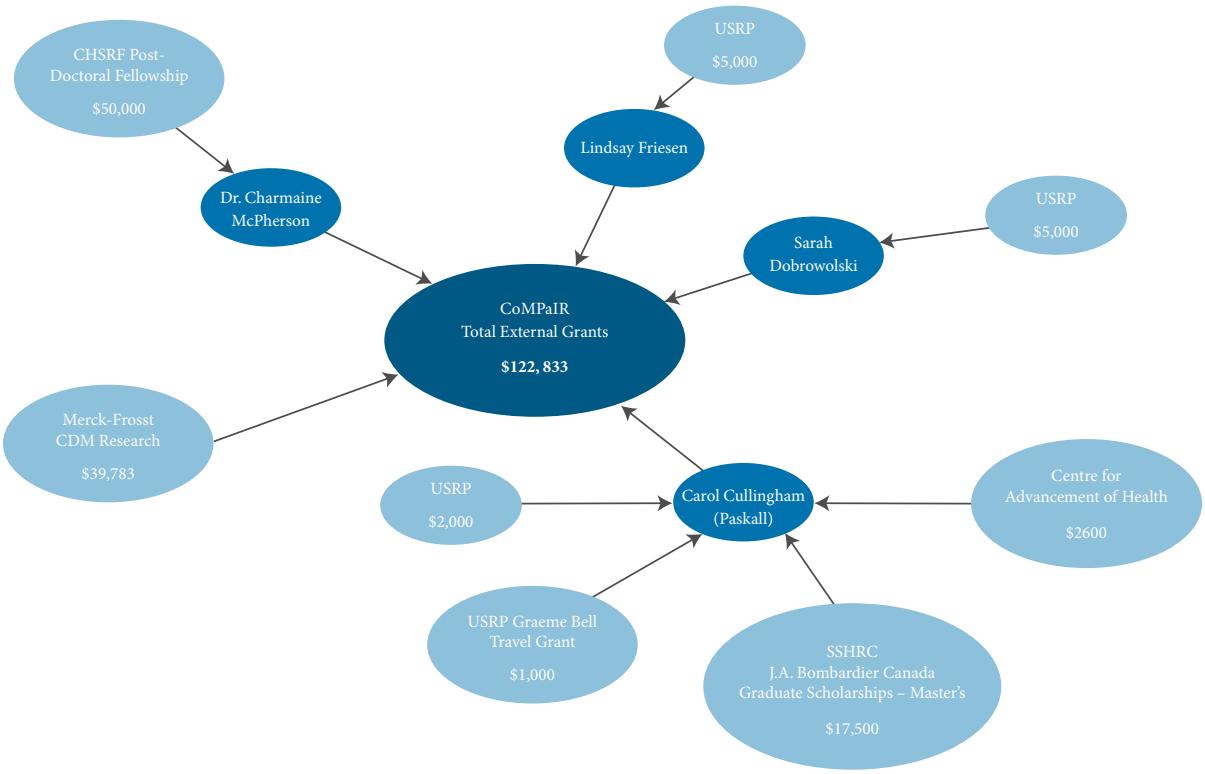
Name	Discipline/Degree	Time Frame/Funding Source	Roles/Training Opportunities	Currently...
Kimberley Freed	Psychology/BSc (student)	◥ Research Assistant, Sept. 2008 – Jan. 2009	◥ Report writing	
Karina Ramadth	MSW	◥ Practicum Student January – May 2010	◥ Interviewing ◥ Data analysis ◥ Report writing ◥ Development of briefing notes ◥ Literature searching ◥ Oral & poster presentations	
	Anthropology/MA	◥ Research Assistant, April 2008 – June 2009 Jan. 2011 – ongoing	◥ Interviewing ◥ Data analysis & synthesis	
Laura Lagendyk	BSc, BSW, Community Health/MSc	◥ Program Coordinator, Jan. 2007 – ongoing	◥ Poster presentation ◥ Qualitative data analysis training ◥ Certification as QSR trainer	

a. Drs. Cathie Scott and Anne Hofmeyer co-facilitated a graduate level directed studies course through the University of Calgary (Knowledge Linkage & Exchange in Healthcare – MDSC 755.45; Winter 2009).

External Funding

CoMPaIR team members have acquired substantial external funding for work directly and indirectly related to the CoMPaIR program of research. This is summarized in Figure 1.

Figure 1: CoMPaIR External Funding



2e. CoMPaIR Connections

The many sub-projects and approaches comprising CoMPaIR have engaged a variety of stakeholders, have been connected to each other in many ways (e.g., by common stakeholders, common methods, etc.), and have become launching pads for projects and relationships that extend beyond CoMPaIR's scope and lifetime. The relationships among the elements comprising CoMPaIR, and the generative effects of our program of research – the "ripples" generated by CoMPaIR – are shown in Appendix F.

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