An exploratory study of
interprofessional teams in
Primary Care Networks in Alberta

Final Report
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Executive summary

In the early 2000s, primary health care reform in Alberta focused on the development of physician-led Primary Care Networks (PCNs) that emphasize interdisciplinary service provision. While much is known about interprofessional (IP) teams within various contexts, little is known about the composition and functioning of IP teams within PCNs.

The objectives of the study were as follows:

- To better understand the structure and functioning of interprofessional teams in select PCNs in Alberta;
- To use evidence from the research to inform the effective and efficient use of interprofessional teams in primary care in Alberta.

Seven PCNs were recruited from across Alberta representing different patient populations and geographic locations (urban, northern remote and rural). We conducted in person focus group interviews with two teams from each PCN and individual interviews with PCN leadership, management, physicians and patients during the summer and fall of 2012. Each team was asked to describe team composition and roles and how they work together to provide patient care. They were also asked about challenges they face with providing team-based care along with the factors that helped them to effectively function as a team. PCN managers, leaders and physicians were interviewed to understand team development within their PCN. Patients who received care in the participating PCNs were interviewed about their experiences with the IP teams. We used an ecological framework to organize the emerging issues into external, organizational, team and individual factors impacting IP teams.

• **External factors:** Physician compensation models and PCN sustainability arose as key issues for the participants. The connections between external policies (e.g., from Alberta Health) and team development and functioning were seldom discussed by the PCN participants.

• **Organizational factors:** While there were some unique issues faced by PCNs in different geographic areas, there were fewer differences than commonalities such as challenges with workforce turnover and availability.

Workplace culture was one factor influencing IP teams. Participants were generally positive about workplace culture and considered it important to have clear organizational and governance leadership that fosters a culture of respect and collaboration.
Lack of physical space and IT infrastructure were commonly noted challenges. It was deemed essential to have a physical and IT infrastructure that enables patient education and care as well as team communication and relationship building. Participants recommend that adequate space to accommodate all providers be available and that co-locating teams be considered to facilitate team development. It was suggested that having an interdisciplinary management team would facilitate development and implementation of solutions that work for all providers.

Determining appropriate staff mix on the teams was described as an evolving process for most PCNs, but typically guided by population needs.

Employment models were reported to be both a facilitator and challenge to IP team functioning and it was recommended that an equitable compensation package be adopted to equalize salary and benefits between PCN and AHS employees on IP teams.

Progress continues towards greater integration with services provided by the PCNs, community and AHS; however, this is variable across the PCNs. Exploration of strategies being used by IP teams to achieve integration and their effectiveness is recommended.

- **Team and individual factors:** Important factors emerged at the team level. Within many PCNs, leadership was perceived as hierarchical with physicians in leadership roles and final decision-making authority. Other participants viewed leadership within teams as shared, with decisions for patient care being made by team member consensus. The roles and responsibilities of IP team members were well understood by most participants; however, participants had mixed responses about role overlap between IP team members, noting benefits as well as challenges.

Opportunities and structures for communications and team interaction were considered by the participants as critical for team development and functioning. It was recommended to encourage open, transparent communication among PCN staff, physicians, and PCN partners and to engage staff in activities (e.g., meetings for staff to address concerns) that facilitate trust, respect, and rapport necessary for good team functioning.

IP team members in the PCNs were hired for both their clinical skill sets and for individual attributes that promote good team functioning. These attributes include flexibility, independence, confidence in one’s scope of practice, team skills, the capacity to embrace change, open-mindedness, innovation, conflict resolution skills, openness to feedback, and communication skills.
- **Patients:** The IP team model was considered the foundation for patient-centred care. This was described as holding patient and their families responsible for being members of the team by actively participating in the development of their goals and care plans committing to those goals, and doing the work to achieve them. Patients considered the team-based approach to be an improvement over other primary care provision models because their team had a range of knowledge and expertise, and providers were quickly and easily accessible.

In summary, our research revealed that there is considerable diversity in IP teams in Alberta’s PCNs. Teams vary according to configuration, co-location, skill mix, and geography. Despite this diversity, there are many similarities in the challenges PCNs face when implementing teams. Challenges emerged from external factors (such as funding models), organizational factors (such as organizational culture and leadership, physical space and IT infrastructure), from constraints at the team level (e.g., role overlap and accountability issues, team communication) and the personal characteristics of individual team members. There was recognition that working in IP teams takes time, resources, and education. In the end, effective team development requires action at various levels and by different stakeholders. For instance, PCN management and leadership may take note of the value placed in a supportive organizational culture and discussions about infrastructure supports may need to include the provincial government.
1. Primary health care and PCNs

In the early 2000s primary health care reform in Alberta focused on the development of physician-led Primary Care Networks (PCNs) that emphasize interprofessional (IP) service provision (Drew et al 2010). The 2003 Trilateral Agreement\(^1\) between Alberta Health, the Alberta Medical Association, and Alberta Health Services (AHS) led to the establishment of the Primary Care Initiative, which facilitated the development of PCNs. The objectives of PCNs (Primary Care Initiative 2008) are to:

- 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 care 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.

As of 2012, there were 40 PCNs operating in Alberta with over 2600 family physicians involved (Auditor General of Alberta 2012). Each PCN is unique with regards to size, primary health care service delivery and focus. Some PCNs are comprised of fewer than five physicians and some have over 200 physicians. Some PCNs are configured as single clinics with the co-location of physicians, while in others services are delivered in physician clinics across a geographic catchment area (Scott and Lagendyk 2012). They have flexibility in matching service provision with local population needs (Scott and Lagendyk 2012). An IP team-based approach within the PCNs is aimed at improving the delivery of primary health care, to increase access to and utilization of appropriate team members working to their full scope of practice, to fill in gaps for chronic disease management, and to improve access, the continuity of care and service integration within primary care.

1.1. Project description and methodology

Effective IP teams are expected to increase the focus of PCNs toward enhanced prevention and health promotion, and improved population health, which are key to

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\(^1\) The Trilateral Agreement expired on March 31, 2011 giving Alberta Health sole authority for all financial matters related to the PCNs with the AMA and AHS represented on an interim advisory committee (Auditor General of Alberta 2012).
the sustainability of the health care system. There is evidence that IP teams in PCNs increase access to primary care services by providing the right service, for the right patient, by the right provider, and improve patient, provider and system outcomes (Government of Alberta 2010). At the same time, little is known about the composition and functioning of IP teams within PCNs including what works well, what does not, and the improvements needed for effective IP team functioning in PCNs.

1.2. Project goals and research questions

This research study explores some critical questions to gain a better understanding of the structure and functioning of IP teams in select PCNs in Alberta, and to use the research evidence to inform the effective and efficient use of IP teams in primary care in Alberta.

The following overall research question and supporting questions guided the study.

**What factors influence the structure and functioning of IP teams in PCNs?**

1. What are the roles and responsibilities of members within the IP team?
2. How are decisions made about the staff mix of an IP team (e.g., membership of the team, definition of “ideal” staff mix, factors that influence staff mix decisions)?
3. How well is the IP team integrated within the larger health care system, if appropriate?
4. What does leadership of the IP team look like? What factors influence this?
5. How do governance structures, management structures, employment models, and compensation models influence IP team composition and functioning?
6. How does workplace culture impact IP team practice?
7. How do the policies and practices of stakeholders (e.g., PCNs, Primary Care Initiative, Alberta Health, AHS) influence IP team composition and practice?
8. How does infrastructure (e.g., space, information systems, electronic health records, funding) impact IP team practice?
9. What are the unique issues faced by PCNs in different geographic areas and stages of development when implementing IP team practice?
10. How is the patient part of the IP team?

1.3. Methodology

An exploratory qualitative approach was used to capture data for this research study. The data is described in a narrative to better convey the complexities of IP teams. Interviews were conducted with staff, physicians, managers, and patients to
understand the factors that influence the structure and functioning of IP teams in PCNs. See Appendix A for the interview questions. The business plans of the participating PCNs were reviewed to provide more information. An advisory committee, mandated to oversee the study, was comprised of representatives from participating PCNs, educational institutions, the Primary Care Initiative, AHS Primary Care and Alberta Health.

**PCN and participant recruitment**

PCN recruitment was facilitated through representatives from AHS who identified and contacted PCN administration with information about the study and requesting they contact the project lead if interested. Seven PCNs representing rural regions, the north, inner city populations, and urban populations replied with an interest in being included in the research. A teleconference meeting with each PCN contact provided an opportunity to clarify the project, their responsibilities (e.g., participant recruitment), and what they could expect from the researchers including a case study about their PCN.

Contacts at the participating PCNs were responsible for interviewee and team recruitment and the research team provided them with information to assist with recruitment. Two teams were identified by each of the PCNs. Due to the explorative nature of the research, the teams themselves were self-selected by the PCNs to identify differences in configuration and function.

**Participant interviews**

The research team conducted both face-to-face and phone semi-structured interviews. In person, group interviews were conducted with the two identified teams in each PCN. Individual interviews with managers, other providers, physicians and patients were conducted by phone and in person.

Each participant signed a consent form. Demographic information was also gathered. Interviews were audio recorded. Prior to the interview, participants were provided with a brief overview of the research and given the opportunity to ask questions. Participants were advised that the interview could be discontinued at any time and that the recording could be stopped at their discretion.

**Analysis**

An iterative process was used to collect and analyze the data. Interviews were transcribed and preliminary analysis was conducted to identify themes. A series of coding iterations were used to refine the themes and ensure consistent data coding. NVivo™ (v10) qualitative data analysis software was used to facilitate thematic analysis of the data. A case study for each PCN was written by one of the researchers. A second researcher validated the case study against the interview
transcriptions. Each case study was then sent to the corresponding PCN for their validation and changes were made to the case study as appropriate.

One researcher thematically analyzed and reported the patient data and a second researcher validated it. The results were not included in the PCN case studies and are reported only in aggregate form in this report.

**Ethics**

Ethics approval was obtained from the Conjoint Health Research Ethics Board (University of Calgary).

1.4. Deliverables

The advisory committee and extended research team provided support with the development of an integrated and end-of-grant knowledge translation plan. The plan includes conference presentations, report distribution, presentations to key primary care stakeholders, and published papers.

This aggregate data report and the individualized PCN case studies fulfill the report deliverables.

2. Results

2.1. Description of PCNs and IP teams

Seven PCNs from across the province participated in the study. Table 1 outlines key characteristics of these PCNs.

<table>
<thead>
<tr>
<th>PCN</th>
<th>Year started</th>
<th>Location</th>
<th>Number of patients attributed to PCN</th>
<th>Number of physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2007</td>
<td>Northern remote</td>
<td>18,741</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>2009</td>
<td>Rural</td>
<td>25,815</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>2005</td>
<td>Rural and urban</td>
<td>171,400</td>
<td>120</td>
</tr>
<tr>
<td>4</td>
<td>2007</td>
<td>Urban</td>
<td>153,569</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>2008</td>
<td>Urban</td>
<td>154,942</td>
<td>121</td>
</tr>
<tr>
<td>6</td>
<td>2007</td>
<td>Urban</td>
<td>72,000</td>
<td>53</td>
</tr>
<tr>
<td>7</td>
<td>2006</td>
<td>Urban</td>
<td>110,979</td>
<td>78</td>
</tr>
</tbody>
</table>

While 14 teams were interviewed through focus groups, there were three others that were identified and discussed during group and individual interviews. As it was our goal to explore team development and function, these teams were included in the analysis. Eleven of these 17 teams were composed of providers from multiple professions and six teams were composed of providers from only one profession (e.g., nursing). The objectives of these teams were to address patient needs such as lifestyle changes in exercise and nutrition, weight management, chronic disease
management, maternity care, and mental health. The size of the teams ranged from four to 11 members.

Of the 17 teams, nine were centralized, five were decentralized and three were hybrid. According to the respondents, a centralized team is comprised of team members who are co-located in PCN offices apart from physician clinics. Decentralized teams, often comprised of nurses, work in physician clinics. A hybrid team was identified as one in which team members work out of both the centralized PCN office and out of physician clinics. Team members may be co-located within a PCN office but travel to the physician clinics.

One hundred and eighteen staff, managers, and physicians were interviewed. Of those who provided demographic information, the majority were employed full-time (n=69), 21 were employed part-time, and one was casually employed. Forty-three participants were employed by the PCN, fourteen were employed by AHS, and three were employed by both. Most participants (n = 67) had been practicing in a PCN for more than one year and twenty had been practicing for a year or less. Patients (n=11) from six PCNs were interviewed. Table 2 lists the types and numbers of participants.

Table 2: Participants

<table>
<thead>
<tr>
<th>Participant type</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietitian</td>
<td>12</td>
</tr>
<tr>
<td>Exercise specialist/Active living consultant/kinesiologist</td>
<td>5</td>
</tr>
<tr>
<td>Registered nurse, Licensed practical nurse</td>
<td>24</td>
</tr>
<tr>
<td>Manager or leader</td>
<td>22</td>
</tr>
<tr>
<td>Mental health clinician</td>
<td>8</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>7</td>
</tr>
<tr>
<td>Physician</td>
<td>12</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>3</td>
</tr>
<tr>
<td>Resource navigator/facilitator/coordinator</td>
<td>7</td>
</tr>
<tr>
<td>Social worker</td>
<td>4</td>
</tr>
<tr>
<td>Office assistant</td>
<td>4</td>
</tr>
<tr>
<td>Other, non-clinical</td>
<td>3</td>
</tr>
<tr>
<td>Other, clinical</td>
<td>5</td>
</tr>
<tr>
<td>Not specified, PCN staff or provider</td>
<td>2</td>
</tr>
<tr>
<td>Patient</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>129</strong></td>
</tr>
</tbody>
</table>

2.2. Socio-ecological framework

We modified the socio-ecological framework by Mulvale and Bourgeault (2012) to organize the themes from interviews with PCN team members, physicians and managers on the composition and functioning of IP teams. Factors within the
framework include external factors, organizational factors, team factors and individual factors. Recommendations from participants are presented at the end of the results to highlight possible areas of action.

**Figure 1: Framework for research and action on factors influencing the structure and function of IP teams in primary care**

Source: modified from Mulvale and Bourgeault (2012)

### 2.3. External factors

When querying participants about the impact of external policies and structures on team composition and functioning, few were raised as specifically impacting IP teams. The common external factors reported as affecting team composition and function include sustainable funding for PCNs by the provincial health ministry and physician remuneration models. Workforce issues (e.g., turnover rates) were raised as having an impact on team development and formation but to a lesser extent.

**PCN funding**

Several participants raised concerns about the sustainability of funding for PCNs and how it affects IP teams. The lack of certainty contributed to low PCN staff member morale and anxiety for the team. It also challenged PCNs when trying to hire additional staff (e.g., psychologists) if funding resources were not available, which may affect IP team composition. Limitations on PCN funding also challenged PCNs when extending their programs. The funding formula was problematic for some PCNs, particularly northern remote and rural, because they serve communities and patients from outside their catchment area. These patients, who are not part of the PCNs’ patient panels, are not reflected in the funding or resource allocation.
allocation even though they may increase the workload for team members and affect team functioning. Some participants noted that having PCN funding for team members allowed physician clinics to hire additional team members, most notably nurses or medical office assistants.

**Physician remuneration**

A common issue raised by the participants was the impact of physician compensation models on team development and functioning. While viewed as non-problematic for some participants, several argued that the fee-for-service payment model was counterproductive to team-based care. Although the patient appointment may be with the PCN nurses, the physician is still required to see the patient to bill for the visit. In this respect, physicians in the fee-for-service model are not compensated for a visit if they do not see the “whites of the patients’ eyes.”

Some participants went further by suggesting that a different payment model for physicians is preferred to allow physicians to be more proactive in patient care. Alternative relationship plans and capitation models were noted by participants as a step forward for IP team development since it allows physicians to manage patient care and make referrals to other team members without having face-to-face contact with the patient.

Other responses focused on the need to adopt financial mechanisms to facilitate physician engagement with teams. When physicians are not compensated for their work with team-based programs, it creates an economic disincentive for their involvement with PCN teams.

**Workforce issues**

Workforce issues were raised by several PCNs. It was noted that the instability of team members and high turnover rates contributes to backlogs in the team-based services.

**2.4. Organizational factors**

Organizational factors that impact IP teams in the PCNs include organizational leadership and workplace culture, physical infrastructure, IT infrastructure, organizational supports, governance, organizational policies, integration with other organizations, and the employment models.

**Organizational leadership and workplace culture**

Having good organizational leadership is an important factor in supporting IP team functioning within the PCNs. PCN leadership and management were reported by many participants as modelling a culture of respect and collaboration. They were accessible and considered staff concerns when developing policies. Leaders
facilitated communication, education, working to scope, ensuring the correct staff mix, and appropriate patient services. Strategies taken by leadership to support team functioning include team building activities, surveying staff, and encouraging staff to take leadership roles.

Participants from several PCNs specifically stated that their workplace culture is supportive of IP teams. Workplace culture was commonly described as supporting continuous quality improvement, encouragement and trust.

**Physical infrastructure**

A lack of physical space, including clinical space, classrooms, and office space was identified as a barrier for team functioning by participants in most of the PCNs. Most of the respondents noted their spaces did not support IP teams because it negatively impacted their opportunities to build relationships, collaborate with colleagues and access the expertise of other team members.

The most salient aspect of physical infrastructure was whether the IP team was centralized (where team members all work together in locations away from physician clinics, often in a PCN clinic) or decentralized (where team members work in physician clinics). Team centralization, or the co-location of team members in a PCN office, facilitates collaboration, communication, relationship building and, in some instances, is more economical. Being co-located lessens a siloed approach to care because the team can work together more easily and have informal hallway conversations. This collaboration broadens providers’ knowledge because they have more opportunities to learn from each other. Centralization also gives providers opportunities to learn about the roles and scopes of practice of their colleagues, and facilitates case management and patient referral within or between teams. It allows small physician clinics access to IP teams when it is not economically feasible to have team members onsite. The disadvantage of centralized teams is the lack of day-to-day and easy interactions with physicians who are considered by several participants to be the most important member of the IP team.

Decentralization was preferable for some participants because it allowed relationships and trust to build between physicians and team members, and it allowed patients to receive services at a location familiar to them. However, some team members reported finding time to communicate with physicians a challenge because physicians are busy or there is a lack of space to hold discussions about patients.

**IT infrastructure**

Issues around IT infrastructure focused on the accessibility and use of electronic medical records (EMRs). EMRs facilitate team functioning by making patient
information accessible to all providers and supporting shared decision-making and problem solving. EMRs are used to document and share patient information including medication updates, assessments and diagnostics, and treatment plans. There is some variance in the interoperability of these EMRs. In some PCNs, the EMR is specific to physician offices and/or to the PCN staff so there is no common EMR for PCN staff and its physicians. The lack of a common EMR throughout the PCN resulted in challenges in communication among sites which instead relied on fax, phone or email. Poor internet connections make using the EMR slow in some small communities.

**Organizational supports**

Supports by the PCN were generally thought to contribute to effective team functioning. Education opportunities were noted as facilitating team functioning by building trust and giving staff a sense of belonging. These included new staff orientations, learning components in staff meetings, job shadowing, team building exercises, discipline-specific meetings, and joint learning with physicians and other providers. Some team members noted that the Access Improvement Measures program assists with business practices and processes to improve efficiency, clarifies the best provider for each patient, balances workloads, and standardizes care. The team also makes changes to the way care is provided based on needs assessments and by examining data collected by the PCN. Finally, PCN newsletters were raised as a good format for sharing knowledge, best practice information, and team building material among staff, physicians and patients.

**Governance**

Participants were mixed on the role of governance on IP team composition and functioning. According to some participants, their governance board is comprised mainly of physicians with other participants reporting AHS representation on their boards. They provide an overarching strategic direction for PCN programs and teams, guide program development based on population needs, encourage a culture of innovation, encourage staff input and facilitate community partnerships. The board may determine what types of providers are hired either directly or by their development of PCN policies (e.g., provider funding). However, some participants noted a lack of direct communication with the physician-led board and this challenged the IP team’s understanding of their role in service delivery.

**Organizational policies**

Few participants discussed organizational policies. Participants discussed hiring policies which focused on attracting providers who would work well on an IP team.
Integration with other organizations
There is reportedly a good deal of integration between PCNs and other organizations including AHS and community organizations. Several participants noted that they work to improve their understanding of what programs are available from AHS and in the community, how they interface with PCN services, and how the PCN team members access these services for patients.

Participants discussed several strategies to share information with other organizations including a centralized referral process, regular meetings amongst key stakeholders, discipline-specific meetings, mutual learning opportunities and patient education sessions.

Employment model
The employment model sometimes affected IP team functioning and the recruitment and retention of staff. The typical IP team is comprised of non-unionized providers; however, there are several instances where unionized AHS employees are considered part of the team. There were reports by the participants that this scenario could result in pay inequity and an attitude of “us and them” which affected team cohesion. One strategy to address this was the adoption of a compensation package to equalize PCN non-union staff salaries and benefits with AHS union staff.

Several IP teams are comprised of contracted providers who work part-time, or may work in more than one clinic and with different teams. There were mixed perceptions about having contracted members on the teams. Contracting staff allowed flexibility with filling staffing gaps and allowed for a more diverse group of providers (e.g., specialized language skills). However, it created challenges related to team collaboration since these team members had limited availability to consult with other team members and physicians. Workload was also noted as a barrier to team functioning. Increased workloads reportedly reduce opportunities for communication and collaboration amongst team members.

2.5. Team factors
Team factors that were determined to impact IP teams in PCNs include team leadership and accountability, communication and team interaction, provider roles and staff mix, patient- and family-centre care, and interactions among PCN teams.

Team leadership and accountability
Team leadership and accountability were discussed within the context of physicians as the team leader, shared leadership within IP teams, team accountability and provider accountability.
Within many PCNs, leadership was perceived as hierarchical with physicians in leadership roles in the teams within the clinics. Many participants across PCNs viewed the physician as having final decision-making authority within the teams and to be ultimately accountable for the patient. However, there was a sense by some participants that, as physicians become more familiar and comfortable with the skills and scopes of IP team members, leadership becomes more shared.

Other participants perceived leadership and accountability within teams as shared, with the majority of decisions for patient care being made by team member consensus. In some teams, IP team members take on leadership roles based on their interests and skills. In some cases, leadership rotated among staff members.

Team accountability was discussed as holding members accountable to their team by providing guidance and support, relying on each other to document care, communicating about patients, and balancing workload. Team accountability was thought to improve with better understanding of each team member’s role and responsibility for the patient. When more than one IP team member provides care to the patient, strategies such as case management are employed to coordinate patient care. At the individual level, accountability was often described as upholding one’s professional standards. Many participants felt a sense of responsibility for their part in patient care.

*Communication and team interaction*

Communication and team interaction were important factors in team functioning and for sharing patient information. Formal communication included EMRs, paper charts, faxes, team meetings, weekly reports and online discussion boards. Informal communication occurred in hallway discussions, emails or phone calls. Participants acknowledged that communication could be challenging, particularly with physicians or providers who were not co-located with other team members. However, they recognized the importance of efficient communication and continued to refine their communication methods.

Participants considered team interaction to be good, and tension or conflicts were dealt with immediately. Focusing on patients’ needs helped the resolution process, particularly if the tension was a result of role overlap.

Several IP teams use regular team meetings (either clinical staff, or both clinical and non-clinical staff) to network, discuss a variety of processes (e.g., protocols, documentation, new referrals, staff changes) and resolve issues. Team building events and social gatherings were also identified as ways to foster team unity.
For some participants, team interaction was challenging because providers who worked in different physician offices were isolated from their same discipline colleagues.

**Provider roles and staff mix**

Participants had mixed responses about roles and responsibilities, particularly about role overlap and clarity. Participants working in centralized teams discussed the benefit of role overlap. They noted that working together helped providers gain a better understanding of the roles and responsibilities of their colleagues, expand their own knowledge, enable multiple providers to fill the same role, and allow for better sick time coverage. In a number of PCNs, however, role overlap and lack of role clarity sometimes caused tension and uncertainty resulting in inappropriate referrals. In the clinics, role overlap between physicians, nurses and other clinic staff was described as sometimes challenging but at times beneficial for patients.

When asked about working to scope of practice, a number of participants stressed that they were working to scope appropriate for the primary care setting. However, participants in several decentralized teams noted that the ability of nurses in clinics to work to scope was often dependent on physicians with some being supportive of maximizing nurses’ roles and others more hesitant.

Some participants commented that physicians’ comfort level with delegating responsibility to team members seemed to vary. It was believed that, in some instances, physician’s reluctance was due to lack of knowledge of the team’s skills. Building relationships through lunch-and-learn sessions and networking meetings was thought to increase physicians’ trust in team-based care, their referrals to team members, and the likelihood of physicians being involved on the IP team.

Determining appropriate staff mix on the teams is an evolving process for most PCNs. There are a number of strategies used to determine which provider types will best meet patient populations’ needs. These include considering the types and numbers of physician referrals to the PCN, and the composition of physicians’ patient panels (e.g., number of diabetic or hypertensive patients).

**Patient- and family-centred care**

A number of participants considered the IP team model to be at the foundation of providing patient-centred care. Patient centredness was viewed in part by the participants as holding patient and their families responsible for being active members of the team by monitoring their condition and communicating their goals for their care plan. In general, IP teams are viewed by the participants as having a role in supporting patients by considering all the factors important to their
wellbeing (e.g., housing), empowering patients, and providing patients with tools to make sustainable lifestyle changes.

Participants reported that patients are able to easily and quickly access the knowledge and expertise of all the health care providers on the team. In addition, efforts are continuously made to improve patient access (e.g., triaging, evening classes, extended clinic hours, telephone visits, group visits).

Participants described taking a proactive approach to care by contacting patients when they are due for screening tests and follow-up appointments. Patient- and family-centred care may hinge on ethnic, religious or cultural factors that might affect a patient’s ability to participate as a team member. Several PCNs have developed strategies such as having team members with appropriate language skills and cultural competence.

**Interactions among PCN teams**

Several PCNs reported that the centralized and decentralized teams, including the physicians, interact with each other to some degree to provide care. This interaction is facilitated in a number of ways such as referrals or cross promotion of services (e.g., nurse refers complex patient to the chronic disease management team). Some participants reported challenges interacting with other teams and cited workload and scheduling as factors that hindered good interaction.

**2.6. Individual factors**

Staff in the PCNs are hired for both their clinical skill sets and for individual attributes that promote good team functioning. These attributes include flexibility, independence, confidence in one’s scope of practice, team skills, the capacity to embrace change, open-mindedness, innovation, conflict resolution skills, openness to feedback, and communication skills.

**2.7. Participants’ recommendations**

Participants had a number of recommendations on how to implement IP teams, which are categorized as organization-, team- and individual-level recommendations. While external issues emerged during discussions, there were no recommendations given by the participants specific to external resource, policy or workforce needs.

**Organization-level recommendations**

- Engage all stakeholders (e.g., physicians) during PCN development to identify gaps in services and assist with program creation and direction. Realize it will take time to truly understand the patient populations’ needs. Define the services as best as possible before hiring staff and developing teams.
• Measure program outcomes to understand which programs are most effective for patients and providers. Allow teams to identify areas of concern to improve team-based care.

• Allow for co-location, when appropriate, as it was viewed as important and necessary for team functioning. Adequate space to accommodate all providers is needed.

• Develop procedures during IP team formation to ensure consistent application of best practices and policies.

• Foster a culture of respect, continuous learning and striving for improvement. Recognize that mistakes are necessary for learning to occur in an organization. Acknowledge the good work done by staff by communicating success stories not only within the PCN but also to the wider community.

• Share learnings and experiences among PCNs.

• Tailor programs to the community and the populations’ needs.

• Create an interdisciplinary management team so that decisions will be more likely to work for providers across professions.

*Team-level recommendations*

• Recognize that PCN needs may change as the PCN matures and patient needs are better defined (e.g., types of disciplines required).

• Support staff efforts to collaborate with each other and with PCN partners. Do not confine the definition of team to one group of providers. Seek out the services of other teams both internal and external to the PCN.

• Promote physician buy-in and support by compensating physicians for time in meetings, and providing education and shadowing days where physicians (and other IP team members) observe IP teams in action.

• Encourage open, transparent communication among PCN staff, physicians, and PCN partners. Engage in activities (e.g., meetings for staff to address concerns) that facilitate the trust, respect, and rapport necessary for good team functioning.

• Ensure that Albertans, including health practitioners, know about IP teams in PCNs, how to access them, and the benefits of receiving care from them.

• Recognize that as the PCN grows from a single unified team to several smaller sub-groups, maintaining team cohesion is challenging and strategies must be developed to preserve good team functioning. Start with smaller teams and expand to larger teams as the PCN evolves.
• Support clinical and non-clinical staff by orienting new staff and providing ongoing education to facilitate collaborative IP practice.

*Individual-level recommendations*

• Recognize that working in IP teams takes time, resources, and education. Hire flexible, experienced providers who are a good fit for primary team-based care.

### 2.8. Patient voices

Eleven patients (six women, five men) were interviewed about their experiences receiving care from IP teams in PCNs. Overall, the patients interviewed were very pleased with the care they received from the IP teams in their PCNs and interactions with team members were satisfactory. While some patients were ambivalent or stated they had not been with the team long enough to judge, most of the patients considered themselves to be part of the team. This meant they were responsible for their health by being a partner in their care, collaborating with the team in the development of their goals and care plans, committing to those goals, and doing the work to achieve them. The team members were considered very knowledgeable and able to provide a range of information and advice. Patients reported being able to communicate with any team member involved in their care. Patients perceived communication among team members as good. They described communication as occurring in a number of ways depending on the PCN, patient needs, or services being accessed.

While some patients did not perceive a difference between the care received from the IP team and care that was not team-based, the majority of patients considered team-based care to be an improvement with better access to, or coordination of, care and services. Most patients dealt with one team member who then communicated with the remainder of the team on behalf of the patient. In some cases, patients had support navigating the health care system or had improved access because team members were able to accommodate them in a timely fashion.

Care by the team was thought to reduce emergency or acute care visits as team members assisted patients with medication reconciliation and managing chronic conditions. Also, team members were able to spend more time with patients to answer questions about health concerns than were physicians.

Patient suggestions for improvement focussed on improving care in their community and communicating the advantages of IP team-based care to the public.

### 3. Discussion

Primary Care Networks are a primary health care service delivery model introduced in the early 2000s to increase Albertans’ access to primary care services, promote
health and prevent disease and injury, increase coordination of health services across the continuum of care, and foster a team approach to patient care. The purpose of this project was to gain a better understanding of the structure and functioning of IP teams in select PCNs, and to use the research evidence to inform the effective and efficient use of IP teams in primary care.

Understanding IP teams in PCNs is highly complex and determining the ideal skill mix for each team, which is an evolving process, is linked with the specific needs and contexts of the local population. Some teams may be comprised of one provider group such as nurses, while others are comprised of different types of health care providers whose roles overlap for chronic disease management, prevention and education. Administrative staff were sometimes considered vital team members; family physicians were described as active and central team members on several but not all teams. Some participants included AHS providers working on contract as part of their team. Teams differed with respect to location; while some teams are co-located within PCN offices, others are decentralized within physician clinics.

The PCNs included in this study spanned across Alberta and had unique challenges. Challenges for inner city PCNs related to ensuring a team-based service delivery model that addresses the needs of lower socioeconomic populations. Northern remote and rural PCNs were especially challenged by workforce turnover and availability, though some urban PCNs also identified these as a challenge. Even with this diversity, there were more commonalities than differences in the challenges and facilitators experienced by PCNs when developing and sustaining effective IP teams.

**External factors**

The model developed by Mulvale and Bourgeault (2012) conceptually illustrates that IP teams are impacted by a complex and diverse set of factors, and our findings reflected this. While our study participants were queried about the impact of external policies and structures on IP teams, for the most part the discussions centred on the sustainability of funding for PCNs, physician remuneration and workforce issues. For instance, when queried about physician remuneration, several participants discussed how models such as fee-for-service compensation created challenges for fully integrating physicians on the team. Other external policies (e.g., from the Primary Care Initiative, Alberta Health Services or Alberta Health) were not specifically discussed. Participants were not prompted, nor did they volunteer comments, about the impact of professional regulations and legislation on IP team function which has been raised by other studies (Mable and Marriott 2012; Watson and Wong 2005). This may be an avenue for further investigation.
Organizational factors

Several organizational factors were discussed by the participants. Infrastructure, organizational leadership, governance, and methods of informal and formal communications and relationship building were reported to be facilitators for IP teams. One unique variable mentioned in the interviews is the importance of co-location, with discussions centering on the benefits and challenges of having team members located in one office versus their distribution among physician clinics. For some participants, being centralized in one office facilitates relationship building, the sharing of patient information, referrals to other team members, and enhanced opportunities to learn about the role of other providers on the team and their contribution to patients’ care plans. The disadvantages for centralized teams are that they are physically apart from family physicians. Decentralized teams have a closer proximity to family physicians, though it is unclear if having team members in the physician offices necessarily enhances relationship building and communications between physicians and other members of the team. There are some options being explored by the PCNs to reconcile these issues, for instance increasing and streamlining methods of communication and referrals. According to the participants, this can entail the development of an integrated EMR system between and across clinics and PCN offices that allows team members to communicate about treatment plans. The effectiveness of EMRs and the resources needed to implement them were not fully discussed.

Related to this issue is the impact of infrastructure and space allocation on IP teams. Regardless of the location of the teams, concerns were raised that the infrastructure does not effectively support IP teams. Several participants stated that the space in some clinics is not designed to enhance communications between the team members and that space in PCN offices is at capacity for seeing patients. Given this, we recommend a more focused exploration of the physical and IT infrastructure needs and space allocation strategies that facilitate relationship development and streamline communications. Other critical issues that facilitate team development and functioning include strong organizational leadership and governance and a culture that supports innovation, quality improvement, and encourages provider contributions to service design and team development. These factors were generally viewed as positive by the participants with the organizational culture being described as supportive and PCN leadership as being accessible, team-oriented and solution-oriented. In most cases, informal communication, education, and working to scope were encouraged and conflicts were rarely reported as issues. Some PCNs provide opportunities for providers to learn together which promoted increased understanding of each other’s scopes, roles and responsibilities. We would therefore suggest that there is a strong sense of organizational support and team-oriented
culture being expressed in the participating PCNs. This finding, however, may not necessarily be generalizable since the PCNs self-selected to participate in this study.

Employment models were reported to be both a facilitator and challenge to IP team functioning. Pay and benefit differences between non-unionized PCN paid staff and unionized staff employed through and paid by AHS was sometimes a barrier to team cohesion. However, those differences can be mitigated by the adoption of a compensation package that would equalize those inequities.

The participants expressed progress towards greater integration with community organizations and the services provided by AHS. Mechanisms and strategies are being established for referrals and communications with community groups and services (e.g., sexual assault centres, mental health services) and AHS services. However, service integration is highly variable across the PCNs. We therefore recommend further exploration of not only the strategies being employed by IP teams in the PCNs for service integration but also the effectiveness of those strategies.

**Team and individual factors**

The roles and responsibilities of IP team members were well understood by most participants; however, there were reports of role overlap. Role overlap was reported as being beneficial because it enabled multiple providers to fill the same role, which facilitated good patient care. Lack of role clarity, however, sometimes resulted in tension. Tension or conflicts resulting from role overlap were resolved by open discussion and focusing on patients’ needs.

Team leadership was discussed within the context of physicians as leaders and shared leadership. A number of participants considered the physician the team leader and having final responsibility for the patient. Other participants, however, viewed team leadership as shared, with decisions regarding patient care being made by consensus.

Action is being taken across the PCNs to implement structures and processes for enhancing team communication and relationship building. Team meetings are common and increase provider’s opportunities to learn from other providers and communicate with providers and organizations outside the PCN. Successful teams tend to have individuals who demonstrate innovation, flexibility and are open minded, which is also reported in other findings (Delva et al 2008; Grumbach and Bodenheimer 2004). What does emerge from the interviews is that physician involvement within IP teams varies considerably within and across the PCNs. Identifying key mechanisms and processes for facilitating physician support and integration is a recommendation for further action.
Patients

On the whole, patients reported that team-based care was an improvement over other care provision models in primary care. Both providers and patients consider patients to be critical team members who share the responsibility and accountability for their health and care plan. This means patients take greater responsibility for their health by collaborating with the team in the development of their goals, committing, and working to achieve them. There was a general consensus among the patients that the services provided by IP teams and their availability reduce their likelihood of visits to acute care.

4. Conclusion

While there are differences in team configuration, location, relationships and team membership, in general, steps are being taken by Alberta’s PCNs to implement effective IP teams. There was a sense that the development of effective IP teams is an evolving process that incorporates constant and reflexive learning, self examination and evaluation. There is therefore no “right” way to implement effective teams in primary care. What the participants note is that there are several factors that facilitate this evolution including finding and supporting the right people, having clarity in goals and leadership, and flexibility to meet population needs. One participant stated, “I’ve sometimes likened it to a roadmap, we kind of know where we want to go but we don’t actually have the signs to take us there. We’re creating them as we go.”

While we are able to report the factors that worked well or could be improved to facilitate good team functioning in PCNs, there are a number of limitations in our research. We did not examine quantitative indicators to fully understand the effectiveness of IP teams (e.g., number of patients seen by IP team members, patient outcomes, measures of team effectiveness) because collection and analysis of that data was not within the scope of this study. This is an important component for understanding IP teams in primary care and we suggest this should be the focus of future research. Also, this study lacks randomization of both the PCNs that participated and the people who were interviewed. PCNs self-selected for participation and given the variance among PCNs within the province, findings cannot be generalized to other PCNs. Participants, including the patients, were recruited by PCN management and therefore may not represent the perspectives of all IP team members.
References


Mable A, Marriott J. 2012. *Canadian primary healthcare policy: The evolving status of reform*. Ottawa: Canadian Health Services Research Foundation

Mulvale G, Bourgeault I. 2012. *How social, political and economic factors shape formation and integration of interprofessional primary healthcare teams: A case study of family health teams in Ontario*. Presentation at the Accelerating Primary Care Conference, Banff AB.


Appendix A: Interview questions

**Staff (individual and group interviews)**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Probes</th>
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<tbody>
<tr>
<td>1. What is your role in this practice/clinic?</td>
<td>Profession, duties</td>
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<tr>
<td>2. Tell me about your IP team. (The team you most closely identify with)</td>
<td>Focus of team&lt;br&gt;Team composition (across continuum of care)&lt;br&gt;Roles (Is there clarity? Is there overlap?)&lt;br&gt;Members practicing to full extent of education, knowledge, skills?&lt;br&gt;Integration of team with other organizations (e.g., AHS)&lt;br&gt;What is the role of physicians on your team?</td>
</tr>
<tr>
<td>3. How does your team involve patients and families in their care?</td>
<td>What does patient-centred care look like?&lt;br&gt;How do your teams engage patients?&lt;br&gt;How does the team approach impact patient care?</td>
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<td>4. How does leadership work in your team?</td>
<td>What is the leadership model? (e.g., collaborative leadership, shared leadership, hierarchical)</td>
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<td>5. How is accountability shared by the team members?</td>
<td></td>
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<td>6. How do professionals on your team communicate with each other?</td>
<td>Formal or informal communication processes&lt;br&gt;Dealing with conflict</td>
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<tr>
<td>7. How well does the team function? What makes it function well? What are the barriers to effective functioning?</td>
<td>Facilitators and barriers:&lt;br&gt;Culture&lt;br&gt;Management structure at clinical level or overall&lt;br&gt;Leadership&lt;br&gt;PCN policies&lt;br&gt;Education in IP teamwork&lt;br&gt;Infrastructure (e.g., space, EHRs)&lt;br&gt;Supports from various stakeholders (e.g., PCNs, PCI, AHS)&lt;br&gt;Governance structures&lt;br&gt;Employment models (e.g., part-time and contracted providers, possible job insecurity)&lt;br&gt;Physician compensation – fee for service or some form of ARP</td>
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<tr>
<td>8. What are the unique issues for the interprofessional teams in this PCN?</td>
<td>Size, location (e.g., remote), accessibility&lt;br&gt;Inability to hire staff and/or accessibility/availability of other providers&lt;br&gt;Experience of management, physicians, staff&lt;br&gt;Length of time PCN has been functioning&lt;br&gt;Turnover&lt;br&gt;Patient complexity&lt;br&gt;Technology to support virtual team care</td>
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</table>
Physicians, Managers (individual interviews)  
These questions will depend on the level of manager or executive.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Probes</th>
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<tbody>
<tr>
<td>1. What is your role in the PCN?</td>
<td>Number of teams</td>
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<tr>
<td></td>
<td>Focus and composition of teams (across continuum of care)</td>
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<td></td>
<td>Team members and roles</td>
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<td></td>
<td>Roles (Is there clarity? Is there overlap?)</td>
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<tr>
<td></td>
<td>Members practicing to full extent of education, knowledge, skills?</td>
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<tr>
<td></td>
<td>Integration of teams with other organizations (e.g., AHS)</td>
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<td></td>
<td>What is the role of physicians on the teams?</td>
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<tr>
<td>2. Tell me about the IP team(s) in this PCN.</td>
<td>Number of teams</td>
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<tr>
<td></td>
<td>Focus and composition of teams (across continuum of care)</td>
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<td></td>
<td>Team members and roles</td>
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<td></td>
<td>Roles (Is there clarity? Is there overlap?)</td>
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<td></td>
<td>Members practicing to full extent of education, knowledge, skills?</td>
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<td></td>
<td>Integration of teams with other organizations (e.g., AHS)</td>
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<tr>
<td></td>
<td>What is the role of physicians on the teams?</td>
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<tr>
<td>3. How do the team(s) involve patients and families in their care?</td>
<td>What does patient-centred care look like? How do your teams engage patients?</td>
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<td></td>
<td>How is a team approach different than other models of care?</td>
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<td></td>
<td>(this could include the traditional models of care based on a siloed approach)</td>
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<td></td>
<td>What does a team approach bring to patient care? Or how does the team approach impact patient care?</td>
</tr>
<tr>
<td>4. How does leadership work in the teams?</td>
<td>What is the leadership model? (e.g., collaborative leadership, shared leadership, hierarchical)</td>
</tr>
<tr>
<td>5. How is accountability shared by the team members?</td>
<td>Governance model: JVA 1 or 2</td>
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<td></td>
<td>Management structure at clinical level or overall</td>
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<td></td>
<td>Physician compensation – fee for service or some form of ARP</td>
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<tr>
<td>6. How do the PCN structures affect formation and functioning of IP team(s)?</td>
<td>Criteria for establishing required staff mix</td>
</tr>
<tr>
<td>7. How does the PCN define “ideal” staff mix?</td>
<td>Culture</td>
</tr>
<tr>
<td></td>
<td>Governance, management structures, employment models</td>
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<tr>
<td></td>
<td>Leadership</td>
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<td></td>
<td>PCN policies, other policies (e.g., AHS, PCI)</td>
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<td></td>
<td>Infrastructure (e.g., space, EHRs)</td>
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<td></td>
<td>Supports from various stakeholders (e.g., PCN, PCI, AHS)</td>
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<tr>
<td>8. How well do the team(s) function?</td>
<td>Size, location (e.g., remote), accessibility</td>
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<td></td>
<td>Inability to hire staff and/or accessibility/availability of other providers</td>
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<td></td>
<td>Experience of management, physicians, staff</td>
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<td></td>
<td>Length of time PCN has been functioning</td>
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<td>Turnover</td>
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<td>Patient complexity</td>
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### Patients

<table>
<thead>
<tr>
<th>Questions</th>
<th>Probes</th>
</tr>
</thead>
</table>
| 1. Are you a member of your health care team? Can you tell me about your experiences as a patient in the clinic/Dr. office as a member of your health care team? | - Interactions with providers  
- Input into health goals  
- Clarity of plan of care  
- Communication with team members  
- How well the team members work with each other and communicate with each other about your care  
- What is your role on the team? |
| 2. Have you noticed differences between the team care you receive here and care you received previously (or at other places)? | - What differences (if any) are apparent between IP team care and other types of care? |
| 3. What would make the care provided better for you?                      | - Other types of professions  
- Communication between team members  
- Communication to providers outside of the organization  
- A different role in decision-making, planning care |