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## Models of maternity care in rural environments: Barriers and attributes of interprofessional collaboration with midwives

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## ABSTRACT

*Objectives:* interprofessional primary maternity care has emerged as one potential solution to the current health human resource shortage in many developed nations. This study explores the barriers to and facilitators of interprofessional models of maternity care between physicians, nurses, and midwives in rural British Columbia, Canada, and the changes that need to occur to facilitate such models.

*Design:* a qualitative, exploratory framework guided data collection and analysis.

*Setting:* four rural communities in British Columbia, Canada. Two rural communities had highly functional and collaborative interprofessional relationships between midwives and physicians, and two communities lacked interprofessional activities.

*Participants:* 55 participants were interviewed and 18 focus groups were conducted with midwives, physicians, labour and delivery nurses, public health nurses, community-based providers, birthing women, administrators, and decision makers.

*Findings:* in models of interprofessional collaboration, primary maternity care providers – physicians, midwives, nurses – work together to meet the needs of birthing women in their community. There are significant barriers to such collaboration given the disciplinary differences between care provider groups including skill sets, professional orientation, and funding models. Data analysis confirmed that interprofessional tensions are exacerbated in geographically isolated rural communities, due to the stress of practicing maternity care in a fee-for-service model with limited health resources and a small patient caseload. The participants we spoke with identified specific barriers to interprofessional collaboration, including physician and nurses' negative perceptions of midwifery and homebirth, inequities in payment between physicians and midwives, differences in scopes of practice, confusion about roles and responsibilities, and a lack of formal structures for supporting shared care practice. Participants expressed that successful interprofessional collaboration hinged on strong, mutually respectful relationships between the care providers and a clear understanding of team members' roles and responsibilities.

*Conclusions and implications for practice:* interpersonal conflicts between primary maternity care providers in rural communities were underpinned by macro-level, systemic barriers to interprofessional practice. Financial, legal, and regulatory barriers to interprofessional collaboration must be resolved if there is to be increased collaboration between rural midwives and physicians. Key recommendations include policy changes to resolve differences in scope of practice and inequitable funding between rural midwives and physicians.

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### Introduction

Throughout the last century, the primary maternity care needs of women in Canada have been met by family physicians and specialists (Blais et al., 1999; Collin et al., 2000) with support from

nurses (MacKinnon et al., 2005; Medves and Davies, 2005). In recent years, an increasing proportion of parturient women have sought care from midwives, who are regulated and publicly funded in all but two provinces and one territory, Newfoundland, Prince Edward Island, and Yukon Territory (Canadian Association of Midwives, 2011). In parts of rural Canada the local care of parturient women is undertaken almost exclusively by family physicians with the support of specialists in referral communities (Iglesias and Hutten-Czapski, 1999; Kornelsen and Grzybowski, 2010). However, we are experiencing a health human resource

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crisis in rural – and urban – maternity care due to a confluence of challenges including shortages in obstetrically trained nurses and the growing attrition of family physicians from rural practice.

Interprofessional primary maternity care – where providers work together to meet the needs of birthing women – has emerged as one potential solution to this situation. However, there are significant barriers to such collaboration given the disciplinary differences between the groups such as scope of practice, professional orientation, and funding models. In geographically isolated rural communities, challenges are exacerbated by the unique context of small birthing populations and limited hospital resources. This has been demonstrated in rural British Columbia where low volume and professional isolation have contributed to the limited integration of midwives into rural practice (Centre for Rural Health Research, 2008a, 2008b, 2011). While interprofessional maternity care models are beginning to emerge in urban environments, barriers specific to rural communities exist but are not well understood within the context of policy and planning. In order for policy makers and planners to promote and support sustainable models of team-based rural maternity care, evidence on the attributes of interprofessional collaboration in a rural context is necessary.

This study explores the barriers to and facilitators of interprofessional models of maternity care between physicians, nurses, and midwives in rural British Columbia, Canada, and the changes that need to occur to facilitate such models. Findings are discussed within the context of ongoing legislative and regulatory, legal and financial, and professional (ideological) barriers to interprofessional care.

In comparison to other developed countries, midwifery in Canada plays a relatively small role in the provision of maternity care. There are 846 registered practicing midwives in Canada, of which 157 practice in British Columbia, the western-most province (Canadian Association of Midwives, 2011). Currently, BC Midwives provide care for approximately 10 per cent of the 43,000 annual deliveries and have been publicly funded and regulated since 1998. Similar to models in the Netherlands, New Zealand, and United Kingdom, Canadian midwives are autonomous, community-based care providers and work in solo or small group practice. In rural British Columbia, the consumer demand for midwives has increased steadily since provincial regulation, particularly in rural and remote communities where the midwifery model is well suited to meet the needs of socio-economically vulnerable women, including First Nations women.

In recent years, efforts toward increasing the sustainability of maternity care in Canada have included the exploration of interprofessional models of care. At a national level, this has been led primarily through the Multidisciplinary Collaborative Primary Maternity Care Project (MCP<sup>2</sup>), a Health Canada funded, joint initiative of all key Canadian maternity care provider organizations, designed to facilitate collaborative primary maternity care strategies as a means of increasing the availability and quality of maternity services for all Canadian women (MCP<sup>2</sup>, 2006). Directly building on the recommendations of MCP<sup>2</sup>, the Society of Obstetricians and Gynecologists of Canada (SOGC) published a National Birthing Initiative (NBI) in 2008, highlighting the importance of addressing key barriers to interprofessional collaboration (Society of Obstetricians and Gynaecologists of Canada, 2008). In addition to interpersonal challenges, the NBI recognized the barriers posed by the health-care system, such as different professions' scope of practice and the lack of financial models to support interprofessional collaboration. At a provincial level, the push towards interprofessional models of maternity care is reflected in initiatives such as the Ontario 'Babies Can't Wait' project (Kasperski et al., 2006) and the Aboriginal birthing programme in Nunavik, Quebec (Van Wagner et al., 2007). In British Columbia, the

'Maternity Care Enhancement Project' recommended the promotion and support of women-centred, collaborative, team-based models of maternity care as a solution to the province's physician resource crisis (Maternity Care Enhancement Project, 2004). Despite this the rhetoric supporting interprofessional collaboration for maternity care, collaboration with midwives in Canada has been slow and fraught with challenges (Kornelsen, 2009). In the context of rural British Columbia, systemic barriers to interprofessional collaboration have included historical resistance to homebirth on the part of the College of Physicians and Surgeons of BC which has hindered the uptake of collaborative relationships.<sup>1</sup> Critics have argued persuasively for and against interprofessional collaboration in Canadian rural maternity care, with proponents pointing to the benefits to physicians of integrating more care providers into a rural community's on-call schedule (Rogers, 2003) and opponents arguing that midwifery practice is unsustainable in low-volume environments (Hutten-Czapski, 2003).

To date, there have been studies examining the qualities of interprofessional collaboration between midwives and nurses (Kornelsen et al., 2003; Kennedy and Lyndon, 2008; Bell, 2010) and the attitudes and beliefs of professional leaders (Peterson et al., 2007). Findings from the latter study indicated that representatives from the national maternity professional associations anticipated that collaborative maternity care could help mitigate work/life challenges that were contributing to the current health human resource crisis in maternity care. Others predicted benefits of collaborative care included improved access to care, choice of care provider, and appropriateness of care provider for birthing women. However, the participants also expressed concerns about how interprofessional models of maternity care could be implemented given current incompatible fee structures between the professions, issues with team insurance coverage, and interdisciplinary rivalry.

Drawing from the definition of multidisciplinary care found in MCP<sup>2</sup>, we interpret *interprofessional collaboration* to mean collaboration between maternity care providers built on mutual respect, trust, and flexible competency-based definitions of care provider roles and responsibilities (MCP<sup>2</sup>, 2006). Further, in successful interprofessional collaboration, care providers' skills sets and scopes of practice were recognized as complementary and differences in roles were respected.

## Methods

A qualitative, exploratory framework guided the data collection and analysis, an approach used when there is an overall lack of developed knowledge about an issue or problem (Strauss and Corbin, 1998). We used extreme case sampling to select research communities using the following sample criteria: (1) communities that currently provide maternity care services or have the potential to offer such services; and (2) communities with the presence of primary care providers (general practitioners, midwives, general practitioners with enhanced skills ['GP Surgeons'], obstetricians) or reasonable access to such providers. Communities were chosen to provide variation in geography, highest level of care, and community demographics. The extreme case sample identified a total of four communities: two rural

<sup>1</sup> Prior to 2009, the policies of the College of Physicians and Surgeons of BC (CPSBC) did not support physician attendance at planned home births. Since data collection for this study, the CPSBC has altered its policy on home birth, stating its support for women's right to consider a home birth and physicians' right to attend planned home deliveries (College of Physicians and Surgeons of British Columbia, 2009).

communities with highly functional and collaborative interprofessional relationships and two communities lacking interprofessional activities. Interviews were sought and conducted with all primary care providers, labour and delivery nurses, public health nurses, and doulas (see Table 1). In the two communities without interprofessional activities, there were no registered midwives to interview. We therefore augmented our sample with birthing women and explored their perspectives through interviews and focus groups. Administrators and health authority decision makers were also interviewed for their perspectives on the legislative and regulatory barriers to interprofessional collaboration. The lead researcher (JK) facilitated recruitment through her established programme of research and relationships with the research communities. Potential participants were contacted by mail to solicit participation. Chain-referral sampling (the 'snowball' technique), where existing participants identified and referred us to other potential interviewees, was used to identify further participants within the communities.

### Data collection

Ethical approval was sought and received from the Behavioural Research Ethics Board of the University of British Columbia and from the regional Health Authorities governing the hospitals in the four communities. Participation involved one in-depth interview or participation in one focus group, plus the optional review of the findings to assess their accuracy, relevance, and comprehensiveness. Informed consent was secured at the outset of interviews and focus groups. Interview guides were created for each participant group (care providers, administrators, birthing women) and were developed based on a review of the literature on interprofessional collaboration in rural environments, informed by the authors' previous qualitative research on (1) rural maternity care and (2) the integration of midwifery in British Columbia (Kornelsen et al., 2003; Kornelsen and Grzybowski, 2005; Grzybowski et al., 2007). Open-ended, probing questions were used to elicit narratives of participants' experiences of interprofessional work, benefits to such an approach, and profession-specific deterrents and challenges. Questions for care providers and administrators included: *How long have you provided maternity services in the community? What is your experience of working with midwives? How does/would interprofessional collaboration work in your community? What are the (regulatory, financial, ideological, legal) challenges of interprofessional collaboration in your community? What resources/activities would you need in order for interprofessional collaboration to work in your*

*community?* Birthing women were asked of their experience with midwives and their beliefs and assumptions about interprofessional collaboration. Questions were refined during early data collection in response to emerging themes. Interviews and focus groups lasted 60–90 mins on average and were held at the local hospital, health centre, or location of the participants' choice. All interviews were audiotaped with participants' informed consent and transcribed. Interviews were conducted in each community until data saturation was achieved (no new themes emerged from the data).

### Data analysis

Each audiotape was transcribed for analysis. Open coding methodology informed the four stages of our analysis: (1) immersion in the transcripts; (2) the development of thematic codes; (3) coding the transcripts; and (4) re-integrating the codes into an explanatory narrative (Strauss and Corbin, 1998). The lead investigator and research co-ordinator read and coded each transcript separately, creating two lists of derived thematic codes (codebooks). When comparing the codebooks, we found a high degree of congruency between the two lists. Some modifications were made to the combined codebook to increase semantic congruency. A research assistant then entered all coded sections of the transcripts into a qualitative management programme (NVivo, QSR International) to aid in organizing, storing, and linking the coded data. Coded reports were then printed and used in writing the narrative data analysis.

### Findings

In total, 55 participants were interviewed and 18 focus groups were conducted in four rural BC communities (see Table 1). Each of the four communities studied exemplified a different model of interprofessional collaboration, ranging from independent, parallel community-based practice between midwives and physicians to integrated care involving a shared on-call schedule and patient caseload. Two communities were in the process of integrating their first local midwifery practices (Communities A and C) while two had had local midwifery care since prior to the regulation of the profession in British Columbia in 1998 (Communities B and D). Community D had an innovative mixed model of *shared care*, in addition to the long-established community midwifery practice, in which physicians and a midwife shared a patient caseload, on-call responsibilities, and clinic duties. Also, each study community had

**Table 1**

Interviews and focus groups conducted in the study communities.

Community	Midwives		Physicians <sup>(3)</sup>		Labour and delivery nurses		Public health nurses		Birthing women		Community-based providers <sup>(4)</sup>		Administrators		Decision makers <sup>(5)</sup>		Total
	(I)	(FG)	(I)	(FG)	(I)	(FG)	(I)	(FG)	(I)	(FG)	(I)	(FG)	(I)	(FG)	(I)	(FG)	
A <sup>(1)</sup>		1	10		2	2		2	2	2	2	1	2		5		31
B <sup>(2)</sup>		1	4			1							1				7
C <sup>(1)</sup>	1		9		4	1	1	3		1	1	1			1		24
D <sup>(2)</sup>	4		4			1		1					1				11
<b>Total</b>	<b>7</b>		<b>27</b>		<b>11</b>		<b>7</b>		<b>5</b>		<b>5</b>		<b>5</b>		<b>6</b>		<b>73</b>

(I): Interviews.

(FG): Focus groups.

Note:

(1) No local midwifery care. The community was in the process of integrating midwives.

(2) Local midwifery care since prior to regulation of the profession in 1998.

(3) Physicians included family practice maternity care providers, GP surgeons, and specialists.

(4) Community-based providers included paramedics, lactation consultants, prenatal educators, and doulas.

(5) Decision makers included regional health authority officials and representatives from care provider professional colleges.

a different level of surgical service. Primary care providers received surgical back-up from GP Surgeons in Communities C and D, while this back up was provided in Communities A and B from a 'mixed model' of GP Surgeons and obstetricians.

Several themes emerged from the analysis that spoke to the range of challenges to interprofessional models of maternity care in rural communities. Each participant group identified different barriers to interprofessional collaboration. These barriers were underscored by the participants' shared recognition of some broad challenges to sustainable rural maternity care, including low volume of deliveries in rural communities and care provider stress and subsequent attrition from practice due to intense workloads. Additionally, participants identified what they perceived to be the qualities that characterize successful examples of interprofessional collaboration. Each barrier and attribute is discussed below.

#### *Low volume of deliveries*

The four communities studied had low volumes of annual deliveries with numbers ranging from approximately 100 births in the smallest community to 360 births in the largest. This reality led many to predict that the introduction of midwives to their community would impact the sustainability of existing primary maternity care providers. Perceived threats included the potential for midwives to draw women away from the family physicians' client base leading to a smaller obstetrical caseload for physicians, diminished financial incentives to practice GP maternity care, and diminished professional satisfaction. Some posited that, without maternity care in their scope of practice, family physicians would leave the community altogether, creating a crisis in local general practice services. As one participant stated:

The status of family physicians in this province is so precarious and they are looking for any reason to give up obstetrics. So it may be that putting a midwife in the community means 40 or 50 of the deliveries are gone, so a family physician might say, 'Geez, here is someone with specialist skills in obstetrics so I don't need to do this anymore,' and they would go work in the emergency department. Or just leave. (Participant A8, line 214)

#### *Care provider stress and attrition*

All study communities had experienced challenges with workplace stress and attrition of primary maternity care providers. While these communities had a relatively low volume of deliveries, each provider was responsible for a significant amount of obstetrical on-call work. Many of the physicians interviewed spoke of 'burning out' due to the stress and lack of on-call funding for small call groups (e.g. two physicians sharing a pager).

We [physicians] were both burning out basically ... So without any light at the end of the tunnel for other GPs to come, we approached one of the midwives in the area that we both really worked well with ... and we both had sort of a lot of confidence in her ability, and worked really well with her. (Participant D4, line 2)

To create stability and reduce such stress, two communities (A and D) considered creating 'mixed models' of shared primary maternity care between physicians and midwives. Community A abandoned the notion of shared care for a variety of reasons, including concerns about the midwife's professional sustainability if she were to contribute to the physicians call schedule. In Community D, which established a shared care practice, professional burn-out ultimately affected the midwife: she participated

in a 1 in 4 hospital birth on-call schedule with family physicians while offering coverage for home births on her days off-call. She described this work arrangement as a 'juggling act' and noted that, while the physicians in her practice now had greater stability, she had an increased workload from taking on more postpartum responsibilities. The increase in her postpartum practice was a strategy to offset the financial loss of attending fewer deliveries.

#### *Midwives*

For midwives in this study, the most significant challenge to interprofessional collaboration was resistance from physicians and nurses, stemming from care providers' negative perceptions of midwifery practice. The safety of midwifery-assisted home birth in rural environments was of thematic concern among physician and nurse participants. Although there was general acceptance that the majority of births are uncomplicated, some participants had concerns about medico-legal liability should they become involved in a difficult situation, the safety of distance from homebirth to hospital, and the lack of a protocol for hospital transfers. Some physicians and nurses expressed concern that they would have to 'pick up the pieces' if a homebirth resulted in an urgent hospital transfer, particularly in communities with no local surgical back-up. Midwives observed that such fears reflect some care providers' lack of education regarding midwives' scope of practice and the safety of home birth in British Columbia, as well as lack of experience working interprofessionally with midwives.

Where these discrete concerns existed, physicians and hospital-based nurses were more likely to resist the introduction of rural midwives. The resistance manifested itself through caustic relationships between midwives and nurses and some physicians' refusal to support home births. In extreme cases, resistance to rural midwifery practice led physician-based Medical Advisory Committees to reject a midwife's application for hospital privileges, essentially barring her from practice in the community. Midwives in this study cited other systemic barriers to integration in rural communities, including restrictive hospital bylaws, the limited inclusion of midwifery in rural health service planning, and the absence of rural regional departments of midwifery.

#### *Physicians*

Barriers to interprofessional collaboration highlighted by physicians focused on *inequities in payment* and *differences in scope of practice* between physicians and midwives. Existing remuneration structures pose 'a huge barrier to collaboration' (A10:184). The barrier was two-fold: physicians perceived that midwives receive greater pay for the obstetrical care they provide, and with regard to shared care, physicians and midwives cannot easily combine their funding into a shared salary pool as their remuneration models are arranged differently. In the absence of a formal model for shared practice, participants were curious as to how midwives and physicians could reasonably pool their billings. In Community D, where physicians and a midwife shared practice, the lack of a remuneration structure for their innovative model was their most significant barrier to sustainable interprofessional collaboration at the time of the study.

Many participants suggested that *shared care* between midwives and physicians would be impossible without first making some adjustment to each profession's scope of practice. Hospital staff in Community A suggested that midwives would have to forego certain aspects of their model of care – such as hour-long appointments, postpartum home visits, and even homebirth – in



order to reduce variation between the practitioners. Alternately, some physicians in the community expressed interest in the possibility of making their practice more like midwifery care by offering long clinic visits. However, participants had few solutions on how to consolidate and compromise their scopes of practice in a manner that honoured each profession's unique model of care. For instance, in a shared care scenario not all physicians may be able or willing to offer homebirth as part of their scope of practice.

#### Nurses

The nurses we interviewed worked in two different environments – public health and labour and delivery – and expressed different perspectives on the impact of interprofessional collaboration on their practice. Those who worked in public health managing postpartum care for rural birthing women expressed that increased interprofessional collaboration with midwives would be advantageous. Public health nurses in Community D suggested creating a postpartum call group between nurses, a local breast-feeding support counsellor, and midwives to facilitate quick, in-home breast-feeding support for new mothers.

Labour and delivery nurses, in contrast, expressed concerns about the division of roles and responsibilities between midwives and nurses at hospital births. Nurses described scenarios where limited communication with midwives and lack of clarity around roles and responsibilities left them feeling their role was superfluous. As one participant noted:

They [midwives] do all of the pain control and comfort measures, and everything. So we felt like we were being pushed out, like there was no place for us. So there's a lot of discomfort ... It's hard to change the way you've seen things done. We found a lot that midwives tend to let things go a lot more naturally and longer, where we feel, 'Okay, it's time to intervene!' (Focus Group A5, line 133)

#### Birthing women

Most birthing women in this study had strong convictions regarding the model of maternity care and the type of care provider that best suited their needs. When their preferred model of care was not available in their home community, some women travelled significant distances to access the care of their choice. Some women noted that a mixed model of shared care between physicians and midwives would be unsatisfactory and make care unpredictable. One woman felt that accessing maternity care from a shared care practice would be like 'playing poker,' as she would never know which type of practitioner would be on-call during her labour (A8:68–69). Another described that mixing family physicians and midwives together in shared practice would 'dilute' the qualities that make each specialty unique and valuable.

#### Administrators and decision makers

Interviews with administrators and decision makers, the individuals responsible for service planning and management, revealed that a lack of community and care provider education on midwifery creates significant challenges for interprofessional collaboration. At the time of the study, rural midwives entering new practice were solely responsible for providing their patient population and other local care providers with education on midwifery (i.e. scope of practice, training, accreditation). There were no formal mechanisms for support midwives entering practice in a new rural community or for explaining to local care

providers how midwifery works in concert with existing primary maternity services. Administrators and decision makers also felt that the Health Authorities could do more to support midwives seeking rural hospital privileges, particularly in communities where physician-based Medical Advisory Committees were resistant to integration.

#### Attributes of collaboration

In addition to describing the barriers to interprofessional collaboration, participants cited the attributes of successful partnerships with midwives, including mutual learning, a lightened workload, and providing choice of care to women. Successful examples of midwifery integration depended on strong relationships between the midwives and hospital staff. For instance, the midwives who had practiced as nurses in Community B, prior to establishing community-based midwifery practice, gained support from nursing peers at their local hospital who had a high degree of trust in their skills. Participants emphasized that midwives' integration should include participation in formal team-building activities, such as department meetings and in-service education, as well as informal activities, like sharing a cup of tea with nurses or building friendships with staff outside the hospital. These activities require time so that trust can be built.

Many participants were unable to specify how collaboration between midwives and other care providers might work and instead acknowledged that collaboration is a necessarily complex and organic process: 'True inter-professional collaboration is much more than one plus one equals two ... it really is synergistic' (A10:153). Despite the lack of specifics, many participants had a clear sense of the qualities that make collaboration successful, including mutual respect and trust, open communication, clarity around roles and responsibilities, shared decision making, and flexibility and adaptability in approaches to care.

Participants also noted that local midwifery helps to make a community's maternity services more sustainable by enhancing the local care provider complement and skill set through local professional development or in-service education. Enhancing the confidence and competence of all maternity care providers was particularly salient for communities where local services had an uncertain future or where women 'vote with their feet' and access midwifery care in distant locations (A12:53). Mixed models of shared care presented benefits for rural communities with small care provider complements and geographically isolated birthing populations. Some participants in this study, particularly nurses, felt that their skills were enhanced through exposure to midwives' approach to care and specialized skill set.

#### Limitations

The findings from this study reflect the experiences of British Columbia participants and may not be relevant to care providers in other Canadian or international jurisdictions, which have different midwifery regulations and geographic conditions. Participant comments were selected for thematic relevance and impact and may not reflect the experiences of all persons interviewed.

#### Discussion

Participants in this study indicated that interprofessional collaboration between midwives and other primary care providers is a complex and synergistic process. While in most cases participants were eager to improve interprofessional relations, many expressed that they were unsure of how to facilitate

collaboration, particularly in the face of systemic restrictions imposed by financial, legal, and regulatory structures. For participants navigating interprofessional collaboration in a complex and restrictive maternity care system, these macro-level barriers resulted in micro-level interpersonal conflicts. For instance, inequitable funding models between physicians and midwives resulted in physicians' territorialism about their client base. Historical concerns about home birth on the part of the College of Physicians and Surgeons of BC created a culture of physician resistance to planned home deliveries (College of Physicians and Surgeons of BC, 2009). Additionally, physician-led Medical Advisory Committees responsible for reviewing midwives' applications for privileges created atmospheres of hostility between midwives and physicians.

The diverse and community-specific nature of interprofessional models in this study illustrates that 'one size does not fit all' and that no single model of interprofessional collaboration would facilitate the needs of birthing women throughout the province. While existing maternity care initiatives such as MCP<sup>2</sup> aim to create flexible, adaptable interprofessional models, and some studies have explored decision makers' perceptions of the barriers and facilitators of these models (Peterson et al., 2007), the issues unique to rural communities have not been fully addressed and rural voices have been relatively absent from the discussion. Through knowledge translation activities at the Centre for Rural Health Research, including three symposia on barriers to sustainable midwifery, regional, provincial, and national decision makers shared their perspectives on the key issues for rural interprofessional maternity care (Centre for Rural Health Research, 2008a, 2008b, 2011). They observed that, without macro-level system changes to reduce the structural barriers to interprofessional collaboration (i.e. reforming rural midwives' hospital privileging process and creating innovative interprofessional funding models), the issues that underpin interpersonal conflicts in rural communities will likely persist. Policy makers' progress on these reforms has been slow, in part due to the fact that professional organizations conduct their contract negotiations with the government separately from one another. Without an integrated, interprofessional approach, involving physicians, midwives, and government, stakeholder organizations are likely to pursue only the issues of importance to their individual profession. As well, there are few mechanisms for 'scaling-up' innovative interprofessional models from the community to the regional or national level (Begin et al., 2009).

Research into policy and institutional barriers to interprofessional models has found that challenges can include regulations surrounding scopes of practice and economic factors including coverage of services and remunerative models such as salary or fee-for-service (Alberta Health and Wellness, 2000; Bourgeault and Mulvale, 2006; Centre for Rural Health Research, 2008a, 2008b, 2011). One creative solution to the lack of appropriate remuneration structures is the creation of demonstration projects to secure funds for non-physician members of a collaborative team. In British Columbia, the only formal interprofessional primary maternity care team in the province, the South Community Birth Program in Vancouver, BC, initially funded midwives and family physicians through federal Primary Health Care Transition funds (2003–2006) before creating an alternative payment arrangement with the BC Ministry of Health (South Community Birth Program, 2006; Lee Saxell, personal communication). Despite the success of this model, the lack of alternative long-term funding arrangements for interprofessional teams has prevented the pilot project from being adapted for elsewhere in the province.

Future research investigating models of effective interprofessional collaboration is warranted in to further explore the

qualities and mechanisms that facilitate the sustainable integration of midwifery into primary maternity care teams. Investigation of successful programs, such as the South Community Birth Program and the midwifery-led Aboriginal birthing unit in Nunavik, Quebec, could lead to methods for adapting these models for other jurisdictions, particularly for populations with limited access to local, culturally appropriate maternity services. Given the widespread policy support in Canada for interprofessional collaboration and bringing culturally appropriate models of maternity care back to rural and remote communities (SOGC, 2008), decision makers should take action to create the conditions and structures necessary to support these policies and guidelines. At minimum, measures should be taken to alleviate two significant barriers to interprofessional collaboration identified in this study: inequitable funding and differences in models of care between rural midwives and physicians. We have commented elsewhere on the need for an alternative payment scheme for midwives and physicians working in shared care practice (Kornelsen, 2009), as well as on-call funding for maternity care for rural physicians to mitigate burn-out (Kornelsen and Grzybowski, 2010). With regard to resolving differences in models of care, decision makers may consider expanding and adapting interprofessional education programs that instill maternity provider students with the benefits and tools of collaboration, such as the Collaboration for Maternal and Newborn Health developed in British Columbia (Saxell et al., 2009) and the MORE<sup>OB</sup> (Managing Obstetrical Risk Efficiently) professional development programme, which strives to develop a focused and sustained patient safety culture among disciplines (Milne and Lalonde, 2007).

This study highlights that barriers to interprofessional collaboration are more than professional 'turf battles' and reflect genuine concerns for professional sustainability and safety in low-resource, low-volume rural practice environments. In establishing midwifery practices in rural communities, there must be ongoing dialogue between key stakeholders to collaboratively establish standards of care for each community.

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