Canadian Journal of Rural Medicine
CJRM CMR
Journal canadien de la médecine rurale

Original Article
Article original

"You don't know what you've got till it's gone"*: the role of maternity care in community sustainability

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This article has been peer reviewed.

**Joni Mitchell, "Big Yellow Taxi"*

Introduction: Many small hospitals in British Columbia are altering their role in maternity care or abandoning it altogether. This paper explores the role of maternity care in the sustainability of rural communities in northern BC.
Methods: We carried out a qualitative case study by conducting an ethnographic examination of 4 communities with varying levels of maternity care services.
Results: Although maternity care is not the only factor to influence community sustainability, it does intersect with other economic and social conditions. Maternity care affects a variety of forms of community capital, including economic development, social ties and relations, and the cultural meanings of childbirth.
Conclusion: Decision-makers should take into account the community-wide consequences of changes to the role and function of maternity care facilities.

Introduction : Beaucoup de petits hôpitaux de la Colombie-Britannique modifient leur rôle dans les soins en maternité ou l'abandonnent entièrement. Dans cette communication, nous analysons le rôle des soins en maternité dans la viabilité des communautés rurales du nord de la Colombie-Britannique.
Méthodes : Nous avons procédé à une étude de cas qualitative en analysant l'ethnographie de quatre communautés offrant divers niveaux de services de soins en maternité.
Résultats : Même si les soins en maternité ne sont pas le seul facteur qui joue sur la viabilité des communautés, ils se conjuguent à d'autres conditions économiques et sociales. Les soins en maternité ont une incidence sur divers aspects du capital communautaire, y compris le développement économique, les relations et les liens sociaux, ainsi que la signification culturelle de l'accouchement.
Conclusion : Les décideurs devraient tenir compte des répercussions à l'échelle communautaire de la modification du rôle et du fonctionnement des établissements de soins en maternité.

Introduction

The purpose of this paper is to explore the relation between maternity care services and community sustainability. It has been hypothesized that maternity care plays an important, yet often hidden, role in the life of communities and that service reductions or closures can result in a cascade of negative outcomes for individuals, families and communities.[1] In many instances, these changes disproportionately affect the poor, First Nation communities and other disadvantaged groups. We explore how decisions affecting maternity care services within rural communities can create changes to various aspects of community life, including economic sustainability, and pre- and postnatal care that women receive, as well as the social fabric of the community.

Background

In British Columbia, small hospitals are

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losing their capabilities for maternity care, and some centres with capability for cesarean delivery are closing or being downgraded. In 1997 in BC, there were 63 facilities providing maternity care and serving fewer than 500 births. By 2005, there were only 50 such facilities. This shrinkage is caused by a number of factors including the following: declining birth rates; extremely small delivery volumes, leading to concerns about the maintenance of competency of hospital staff to handle both normal and complicated births; the closure of operating rooms to perform cesarean deliveries; the loss of nursing staff specialized in maternity care; the loss of medical staff comfortable with maternity care; and, often, the ability of small surgical programs to support a continued maternity care service.[2,3]

Although this is a controversial issue, there is a literature base that shows that small units without capability for cesarean delivery can continue to function safely, provided that they are a part of a well-functioning perinatal regional system.[4,5] Although nurses in small units have always been generalists, nurses in larger rural hospitals have increasingly had to become generalists, while previously, when birth volumes were greater, they were able to specialize in maternity or maternal and newborn care.

When access to local maternity care is reduced and women travel to distant locations to give birth, problems of access and perinatal outcome ensue.[6–8] Although outcomes for small premature infants are improved by centralization, outcomes for babies of average size and weight are not.[9–10] When a community no longer has maternity care and the care is not available in another community relatively close by, premature births, neonatal asphyxia, and other maternal and newborn complications increase, despite women ultimately receiving competent care in a distant location.[11–15] Although the effects of centralization *in some settings* may not have a negative impact on the health of women and their babies, based on the general literature, we hypothesized that this change in the way in which maternity care is provided to small rural communities has wide-ranging effects, "including reduced patient choice, quality of care, safety and sustainability of maternity services, [and] lack of trained staff and professional development."[16]

METHODS

The structure for understanding the role of maternity care in community sustainability was interpreted based on qualitative methods. Methods of data collection consisted of key informant interviews, focus groups and observational data. To collect the relevant data from each of the case study communities, we conducted a series of interviews and focus group discussions with the following populations: physicians, nurses, midwives and other providers of maternity support services (e.g., doulas, childbirth educators, breastfeeding counsellors, outreach workers), hospital administrators, health officers, local business leaders, economic development officials, local elected officials (e.g., mayor, city and band councillors), social workers, pregnant women in their last trimester and women who had given birth within the past 12 months. Participants were selected using a snowball sampling technique. Key informants from each community were asked to suggest representatives from various stakeholder groups.

Questions concentrated on participants' perceptions of the role of local maternity care in the sustainability of their communities. Focus group discussions and interviews were tape-recorded and transcribed. These transcripts, along with field notes, were analyzed using a grounded theory approach.[17] Transcripts were independently reviewed by the primary co-investigators and research assistants and grouped into themes that reflected similar opinions, experiences and attitudes. Contrary views and areas of disagreement among respondents were noted. Data interpretation was discussed and agreed on by the primary co-investigators and validated with a sample of those involved in maternity care in each community. This included sharing preliminary results with community members and asking them to verify, correct or enhance the thematic framework developed by the researchers.

Research sites

We studied 4 communities that were experiencing many of the key stresses in providing maternity care in rural and remote BC. These stresses include declining populations and lower birth rates, challenges in attracting and retaining health professionals interested in providing maternity care, and increasing economic pressures to centralize health care services.

Two communities, Quesnel and Vanderhoof, have hospitals with the full range of primary maternity services, including capability for cesarean delivery, and represent examples of relatively stable maternity care. Quesnel has a population of about 9000, with about 230 births in fiscal year 2006/07, and Vanderhoof has a population of about 4000 and had about 130 births in 2006/07.

In contrast, Fort St. James, with a population of

about 1400 and about 50 births in 2006/07, represents a much less stable situation. At the Stuart Lake Hospital in Fort St. James, the operating room closed in 2001, which means that pregnant women thought to be at risk of complications or who require epidural analgesia are sent to larger hospitals, usually Vanderhoof, which is 60 km away. In the summer of 2007, the hospital suspended maternity care because of a physician shortage. Thus, most births took place outside of the community.

Finally, Fraser Lake, with a population of about 1200 and about 18 births in 2006/07, is an example of a community without capability for any intrapartum maternity services. Women receive prenatal care at the Community Health Centre until between 32 and 36 weeks' gestation, at which point they are referred to a physician in Vanderhoof for late third trimester, delivery and immediate postpartum care. Fraser Lake is unique in our sample in that all staff are on salary and group care is common for prenatal and other types of care.

RESULTS

We conducted 51 interviews and 12 focus group discussions with members from the following sample populations: physicians, nurses, midwives and other providers of maternity support services, hospital administrators, health officers, local business leaders, economic development officials, local elected officials, social workers, pregnant women and new mothers. The themes that emerged speak to the various ways in which respondents felt that maternity care affects community sustainability. These relationships touch on economic, social and cultural capital, all of which are critical for community sustainability. The quotes used in this paper have been chosen because they typify a common view or theme.

Theme 1: maternity care affects current and future potential for economic development

A number of studies have noted the relation between health care services and economic development, particularly for rural communities.[18–22] Although most respondents in this study felt that the lack of maternity care services would not cause long-established families to leave the area, it would have a potentially negative effect on the recruitment of young families to the region.

> Health care is a major concern … for young families. … One of the things that we've targeted is not just retirees … but also "footloose entrepreneurs," people who can have their businesses anywhere. There are lots of people out there in the weeds like that in rural communities, as broadband telecommunications improve. … Living here isn't for everybody, obviously, but it's very appealing to some people. So if health care gradually is ground away, then living here may not be as attractive to those people. — Community leader

In addition to difficulties in attracting new residents, the lack of maternity care services can have a negative effect on local businesses. Work absences would be predicted to increase if residents had to go out of town for appointments, which would affect the productivity of an operation. Finally, attracting young people to rural communities is particularly important as the existing population ages and the younger generation moves away.

> The other part of [community sustainability] is people coming in, which is a future life blood for you in terms of your business, in terms of your community and some of the livelihood or identity for the community, [it] just doesn't exist anymore because people are going to be hesitant [to move here]. — Human resources manager

Theme 2: maternity care affects other maternal and health care services and continuity of care

Labour and delivery services are embedded within much larger systems of health services and supports, including pre- and postnatal care. Having access to these services is held to be critical for the health of both the mothers and their babies. However, the availability of these services may also be reduced or eliminated when most births take place outside of the community. In addition, the loss of maternity care services to hospitals may affect the provision of other linked medical and surgical services.

Those in the health care field that we spoke with suggested that intrapartum maternity services were critical to the continuity of antenatal and postpartum services. However, in communities in which women were sent elsewhere to give birth, there was the feeling that continuity of care was lacking.

> There was a huge disconnect on the continuity of the care because … [the women were] taken on as an emergency case so that [the doctors at the referral hospital] really didn't develop the relationship with the mom. So the mom went there, she delivered and sometimes they would send her back within a couple of hours the next day and it was like "off we go." Then we would try and pick up the pieces here. I found that really disjointed and disconnected and I'm sure lots [of women] did too because we weren't sure what they were told there and what we needed to tell [them] here. — Nurse

For hospitals, having a full range of maternity care services, including capability for cesarean delivery, requires the maintenance of an operating room and trained staff. The skills and equipment necessary to provide cesarean deliveries benefit the community in other ways through supporting the maintenance of a functioning operating room in the hospital. The existence of an operating room available for general surgery helps maintain the anesthetic and surgical skill sets required but, alone, is not sufficient for maintaining cesarean delivery capability. Physicians from a hospital with full maternity services stressed the relationship between having an operating room on site and maintaining maternity care in the community. According to one physician,

> We wouldn't have maternity care if we didn't have OR. If we didn't have the kind of backup and [other] stuff that we do. Likewise, we've always made the argument that we need the OR because we do maternity care. So I think it is almost foundational to what we have.

Theme 3: maternity care affects retention and recruitment of physicians and other health care providers

The recruitment and retention of physicians and other medical staff is vital to the sustainable functioning of both hospitals and the wider community.[25–26] Within small communities, medical staff can play critical social roles within rural communities. They are often embedded within the larger social fabric and may participate in "organizing local events and arbitrate in disputes among neighbours; findings that infer a role in community 'leadership.'"[27] However, an unstable maternity care situation, decreasing birth volume and concerns about the safety of local maternity care without cesarean delivery can result in stress for providers of rural maternity care, and affect retention and recruitment.[28]

The loss of maternity care may result in some doctors leaving the area. In our study, physicians in stable maternity care situations enjoyed providing maternity care and stated that they would leave their current position if maternity care was reduced or eliminated. It was seen as "part of who we are and why we came here." A point mentioned by several participants was that a different type of physician would then arrive, one whose motivations were different and less committed to the community. One hospital administrator noted that,

> I think that it is the provision of care through that continuum that is one of the reasons why GPs are GPs. If they wanted to focus on pathology they would become a specialist. They are a GP because they have an interest in the delivery of service through the continuum of care from birth literally right through to palliative care or old age. If you pull out the maternity part in the middle, I don't see how stable the rest of it can actually be. I would think it would have an impact on your ability to attract and retain physicians.

In addition, general or family physicians providing anesthetic services (general practitioner anesthetists) would lose a significant proportion of their professional practice and ongoing experience. According to one nurse,

> If maternity goes then you've lost half your docs and … you're probably going to lose your GPs doing anesthesia along with the maternity because they are called on a fair amount with those maternities. These docs are in their professions for certain reasons and they have these specialties they need to practise. And if they can't practise it in the community they're in, and they can go somewhere else and practise it, then they aren't going to stay in that community.

There were skeptics about the importance of maternity care to the retention of providers. Apart from an emotional attachment by the health care providers and the community at large, 2 interviewees (a hospital administrator and a health officer) felt that removing maternity services would not affect any other aspect of health service delivery:

> If it was neutral, if emotions weren't involved, then notionally [removing maternity services from a community] shouldn't affect [any other aspect of health care]. Logically, it shouldn't affect anything. [However] it would because it would create a huge uproar in the community. Not just the community at large, but the health care community itself as well. — Hospital administrator

Though we did not find this in our study, the younger generation of family physicians in rural settings may be willing to give up the burdens of complete continuity for a system of "hard call," in which they attend births for all the family physicians in the group on a rota system and take care of needed pre- and postnatal care as well.[9]

Theme 4: maternity care affects the social fabric and sense of place within a community

Health care facilities can also play an important role in how the community interacts with health care services. For many respondents, the ability of women to give birth in their community was an important part of creating and maintaining positive social ties within the community and between the community and the hospital. Having women give birth outside of the community was viewed as a major disruption.

Participants commented on the effect that requiring women to leave the community to give birth has on the community, the family and the woman.

I think it fragments the community when you take women and ship them out to give birth. It creates a big distance between the natural support that a woman and her partner need during that process, both with the bonding and with community acceptance of this new community member. As soon as you lose those services and start shipping these women out you really start fragmenting families and fragmenting communities. I think that we have to go back to that ability to attract and retain people in the communities and build the community bonds. — Hospital administrator

One community leader articulated the difference between the significance of birth compared with other hospital procedures, such as surgery. He said that he would be fine to have his appendix removed in Prince George, but he thought that his being born and his children giving birth in Quesnel was a whole other matter:

[If deliveries were not performed in the community anymore] I suppose that the community would still be here, but I think that there are certain aspects of health care, maternity is one of them and end of life is another one of them, where there's a need for family and friends to be around. That's particularly true with maternity and much more so with end of life care. So I think that those 2 elements are very important to the sustainability of the community. — City councillor

According to one community member, being able to provide maternity care may also be a source of pride to the community:

I think it strengthens the community and its growth. With death comes birth and the idea that you're getting new community members born and raised in our community, it may not have a real, [but] it has a very symbolic impact on the community in the sense that "Oh. That so and so, he was born and raised in our town." … The thought of a child not being born here when 5 generations are, that could be very upsetting, and that is that strong sense of connection to the community which, with our town, they definitely have. Having to go away is significant — you break the chain.

Providing maternity services is also viewed as a positive function of hospitals:

I think [maternity care] is an important service from a general hospital vibrancy standpoint. Hospitals without maternity services, I think, sort of become elder care centres. It keeps us full spectrum and it keeps us vibrant. It keeps young people coming here. It gives people that initial good feeling about the organization so you don't start skewing toward [the perception that] it's the place to go when you are really sick and/or dying. In a community like this that kind of feel can start to become a spiral downwards. — Hospital administrator

DISCUSSION

The purpose of this research was 3-fold. First, we sought to situate maternity care within the spectrum of goods and services that contribute to a healthy and sustainable community. Based on our research, we argue that maternity care can affect the physical, cultural, spiritual and economic makeup of a community. It is not a service that can be removed or altered without having some effect on a variety of other sectors of the community. This is particularly true for rural areas that depend heavily on available local resources.

What we found by examining communities with different levels of services for maternity care is that it is the lack of stability that creates the greatest impact. In Fraser Lake, which in recent history has never had services for maternity care, structures have been put in place to mitigate problems that might arise. For example, physicians in Fraser Lake have a set protocol for transferring their patients to Vanderhoof, mitigating continuity of care issues. In settings where the maternity care services are uncertain, it is difficult for staff and women to be fully prepared for what may come, though contingency plans are in place. For those communities with stable maternity care services, maternity care is considered an important or essential resource. Yet, even apparently stable systems can come under intermittent internal or external pressures.

Second, we argue that when maternity care decisions are made, based on legitimate safety issues or severe financial or funding constraints, they nevertheless need to be made with an appreciation of the broad context of community sustainability. Although communities may adapt to changes in maternity care services, the secondary effects of such changes should be taken into consideration. For women living in rural areas, and particularly for First Nation women, loss of control about where they give birth may have significant effects on their perceptions and feelings about birth.

Third, we suggest that when maternity care must change, policy-makers need to put systems or programs in place that buffer any losses. This is particularly true as the demographics of rural BC ages and the need for, or appropriateness of, local maternity care changes. At the same time that health policy must ensure that services meet the needs of an aging population, it is vital to also acknowledge the needs of younger generations. Although the existent system of maternity care may not be feasible or even desirable in some rural communities, ensuring that

the continuum of maternal and child health does not collapse is vital for community sustainability. This means developing creative alternatives that meet the specific needs of each community and ensuring that a continuum of care remains in place, even if some elements cannot be provided locally. New organizational models of care also need to be developed to support and preserve the precious resource of physicians providing maternity care.[29]

CONCLUSION

The role of maternity care in community sustainability is a complex one, with various factors interacting. For example, a declining birth rate means that general practitioners may not be able to keep up their skills and, therefore, may be reluctant to include intrapartum maternity care because of difficulties in coverage schemes when fewer physicians are available to attend births. This would result in more women being referred outside of their communities. At the same time, a nonexistent or unstable system of maternity care may be a factor influencing where young families locate. The lack of a young workforce may affect decisions around potential for economic development and could be a factor contributing to the viability of other services, which further diminishes the social and economic life of a community. The relationship between medical services and population trends is an area that demands further study.

Acknowledgements: The authors thank Glen Hearns and William Trousdale for advice on rural decision-making; Lela Zimmer, Karen MacKinnon, Ronald Lindstrom and John Andruschak for advice and support; and Oralia Gómez-Ramírez for her interviewing and work as a research assistant.

Competing interests: None declared.

Funding: This research was supported by grants from the Vancouver Foundation and Michael Smith Foundation.

REFERENCES

1. Klein M, Johnston S, Christilaw J, et al. Mothers, babies, and communities. Centralizing maternity care exposes mothers and babies to complications and endangers community sustainability. *Can Fam Physician* 2002;48:1177-9.
2. Lynch N, Thommasen H, Anderson N, et al. Does having cesarean section capability make a difference to a small rural materntiy service? *Can Fam Physician* 2005;51:1238-9.
3. Iglesias S. The future of rural health: Comprehensive care of triage? *Can J Rural Med* 1999;4:32-3.
4. Leeman L, Leeman R. Do all hospitals need cesarean delivery capability? An outcomes study of maternity care in a rural hospital without on-site cesarean capability. *J Fam Pract* 2002;51:129-34.
5. Peddle LJ, Brown H, Buckely J, et al. Voluntary regionalization and associated trends in perinatal care: the Nova Scotia Reproductive Care Program. *Am J Obstet Gynecol* 1983;145:170-6.
6. Reynolds JL, Klein M. Recommendations for a sustainable model of maternity and newborn care in Canada. In: *Proceedings of the future of maternity care in Canada: crisis and opportunity*. London (ON): University of Western Ontario; 2000.
7. Walker DE. The obstetric care crisis facing Ontario's rural hospitals. *CMAJ* 1993;149:1541-5.
8. Nesbitt TS, Connell FA, Hart LG, et al. Access to obstetric care in rural areas: effect on birth outcomes. *Am J Public Health* 1990;80:814-8.
9. Larimore WL, Davis A. Relation of infant mortality to the availability of maternity care in rural Florida. *J Am Board Fam Pract* 1995;8:392-9.
10. Nesbitt TS, Larson EH, Rosenblatt RA, et al. Access to maternity care in rural Washington: its effect on neonatal outcomes and resource use. *Am J Public Health* 1997;87:85-90.
11. Samuels S, Cunningham JP, Choi C. The impact of hospital closures on travel time to hospitals. *Inquiry* 1991;28:194-9.
12. Black D, Fyfe I. The safety of obstetric services in small communities in northern Ontario. *CMAJ* 1984;130:571-6.
13. Chamberlain M, Barclay K. Psychosocial costs of transferring indigenous women from their community for birth. *Midwifery* 2000;16:116-22.
14. Frankenberg E, Thomas D. Women's health and pregnancy outcomes: Do services make a difference? *Demography* 2001;38:253-65.
15. Grzybowski SC, Cadesky A, Hogg W. Rural obstetrics: a 5-year prospective study of the outcomes of all pregnancies in a remote northern community. *CMAJ* 1991;144:987-94.
16. Ireland J, Bryers H, van Teijlingen E, et al. Competencies and skills for remote and rural maternity care: a review of the literature. *J Adv Nurs* 2007;58:105-15.
17. Strauss A, Corbin J. *Basics of qualitative research: techniques and procedures for developing grounded theory*. 2nd ed. Thousand Oaks (CA): Sage Publications; 1998.
18. Doeksen GA, Johnson T, Biard-Holmes D, et al. A healthy health sector is crucial for community economic development. *J Rural Health* 1998;14:66-72.
19. Holmes GM, Slifkin RT, Randolph RK, et al. The effect of rural hospital closures on community economic health. *Health Serv Res* 2006; 41:467-85.
20. Thompson JG. Economic effects of the outmigration of obstetric services in a rural county. *J Rural Health* 1996;12:100-9.
21. McDermott RE, Parsons R, Cornia G. The role of community hospitals in the performance of local economies. *J Health Care Finance* 1994;21:55-65.
22. Christianson JB, Faulkner L. The contribution of rural hospitals to local economies. *Inquiry* 1981;18:46-60.
23. Pope A, Grams G, Whiteside C, et al. Retention of rural physicians: tipping the decision-making balance. *Can J Rural Med* 1998;3:209-16.
24. Morrisey MA, Kletke PR, Marder WD. The role of local hospitals in physician rural location decisions. *Inquiry* 1991;28:7-18.
25. Medves JM, Davies B. Sustaining rural maternity care — Don't forget the RNs. *Can J Rural Med* 2005;10:29-35.
26. Rourke JT. Politics of rural health care: recruitment and retention of physicians. *CMAJ* 1993;148:1281-4.
27. Farmer J, Lauder W, Richards H, et al. Dr John has gone: assessing health professionals' contribution to remote rural community sustainability in the UK. *Soc Sci Med* 2003;57:673-86.
28. Grzybowski S, Kornelsen J, Cooper E. Rural maternity services under stress: the experience of the providers. *Can J Rural Med* 2007; 12:89-94.
29. Orrantia E, Poole H. Evaluation of a novel model for rural obstetric care. *Can J Rural Med* 2010;15:14-8.