



Mothers, babies, and communities

Centralizing maternity care exposes mothers and babies to complications and endangers community sustainability

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Under budgetary strains, regional health authorities across Canada are looking to cut costs by restructuring and consolidating services. Often undertaken in the guise of regionalization, centralization frequently appears to be applied without considering the consequences to patient and family care. Regionalization is distinct from centralization. Regionalization is the rational organization of services among level I, level II, and level III facilities, recognizing the contribution of all levels to the care and support of patients, practitioners, and communities.¹

In maternity care, for example, a well developed system of regionalization would lead to all premature infants being delivered in a level III facility, and all women with severe preeclampsia giving birth in a level II or III centre. On the other hand, in such a system, women at term and expecting an uncomplicated pregnancy and birth would be best served at level I or II facilities close to their homes, where they would have support from family and friends. In fact, the average-sized term baby does best in a level I or II facility.²⁻⁴ When women requiring level I or II care are in a level III environment, there is a tendency to apply technologies that benefit women in need of such care to all women, and to inadvertently “cause” poorer outcomes for women needing less intervention.⁵⁻¹³

While it is desirable to have cesarean section capability on site, many level I hospitals in Canada

and elsewhere have a history of excellent outcomes for mothers and babies even when transfer is required for operative birth.¹⁴⁻¹⁶ This is achieved by a complex anticipatory decision-making process that leads to appropriate transfer of women to level II or III settings during pregnancy or early in labour. Infant transfer follows the same principles. In the context of regionalization, this is possible because of well developed relationships between staff at level I facilities and consultants at the next level. They know each other well; the transport system functions effectively; and the level II and III centres respond quickly and supportively and participate as colleagues in the decision-making process as indicated and as possible.

Maternity care first to go

At first, centralizing services seems to make sense, as it is claimed that larger units function more efficiently. Regional managers, faced with demands from higher authorities to cut costs and balance budgets, look for areas in their budgets where services either are rarely used, are having difficulties with staffing or providing specialized services, or seem to be consuming more of the budget than simple economic analysis indicates is justified. Therefore, in level I and even level II centres, because of medical and nursing staffing difficulties and superficial analysis of budgetary “inefficiencies,” maternity care is often selected for cutting.

Also, as the population ages, managers might feel they must choose among competing services. But when centralization occurs without full appreciation of the consequences for rural and small urban communities, serious unintended effects can result. Cost savings might prove elusive, because the decision to close hospitals or operating or emergency rooms in smaller communities carries health and economic risks.

Maternity care is particularly vulnerable to the negative effects of centralization. Most physicians who practise in rural and small urban areas do so because they are drawn to the variety and scope of practice and have a commitment to community as a core value. When confronted with problem births, local colleagues can get backup from either generalists or specialists with surgical and anesthetic skills. There is a synergy between general and specialist physicians, nurses, and regulated midwives. Each profession is key to an adequate and safe maternity service.¹⁻²⁰

Most importantly, the false economy of centralization is revealed when women have to travel long distances to seek services. It is much more than an inconvenience for them and their families—it can be dangerous.²¹⁻²³ And while governments might not pay these costs directly, women and their families do. Yet patients are denied access to care, a basic element of the Canada Health Act.

While not every community in Canada can expect to receive all medical services, the loss of such services at the local level releases a cascade of adverse consequences for mothers and babies:

Physicians and nurses stop doing maternity care or provide only limited services.



Level I settings accustomed to providing cesarean sections by general and family practitioners resist being downgraded to centres without operating capability, and they too stop maternity care.



Women and their partners and sometimes other support people from rural and remote communities must travel, often at great expense financially and personally, to be cared for in distant centres by strangers. The cost to families is enormous in travel, time lost from work, and accommodation in the “big city.”



Having lost its maternity capability, a community becomes what is known as a “high outflow community.”²¹ The number of premature infants increases, as does the number of maternal and newborn complications, even though the women (most but not all) have

traveled to good places to be delivered by good people.^{21,23} This is due to lack of support from family and friends, delays in transfer, and other complex issues.



These complications dramatically escalate health care costs. The cost of caring for premature infants or newborns with birth complications is high for families and society.



Regulated midwifery practice in such communities is made difficult or impossible, because midwives need physician and institutional backup to practise.



The departure of qualified, regulated midwives could well lead directly to re-establishment of unlicensed, unregulated midwifery. Turning the clock back and encouraging this type of midwifery practice will undo the gains made in many jurisdictions across Canada that led to regulated midwifery in the first place.



Physicians and nurses become less satisfied with their work and less committed to their communities.^{24,25}



Other aspects of women’s health care, such as prevention, counseling, and office gynecology, begin to disappear.



Many of the remaining physicians, suffering under impossible on-call schedules and isolation, retire or relocate.²⁶⁻²⁹



The community finds it even harder to attract and replace physicians and nurses skilled in maternity care.



Physicians, nurses, and the community itself suffer the loss of an entire skill set related to reproductive and women’s health.



Student physicians, midwives, and nurses, seeing discouraged teachers, choose not to enter this field of practice, selecting settings with fewer on-call duties and less stress. This further restricts women’s access to high-quality maternity care.



But it is not just about maternity care. Ultimately, emergency room, surgery, and anesthesia services sometimes collapse because the number of physicians required to sustain on-call coverage no longer are available.



Businesses find it difficult to recruit employees to communities where medical and health services are limited.^{30,31}



Many residents of the community, especially those in their reproductive years, begin to wonder why they are living in the community and try to move (many cannot).



The community itself becomes dysfunctional and unstable. Maternity and newborn care is realized too late as being a linchpin for sustainable communities, medically, socially, and economically.

This negative cascade of events occurs in other medical fields as well. We could just as well talk about the loss of general surgery, rehabilitation, mental health services, and general pediatric beds in small community hospitals, but the loss of maternity and newborn services offers one of the clearest examples of the consequences of poorly planned centralization.

Resist the urge to consolidate

All levels of government need to consider seriously the unintended "costs" of centralization and resist the urge to consolidate services solely for apparent short-term economic reasons. We need to be alert to the interdependence of a series of skills to the very life of a community, and we need to support maternity care providers in rural and urban settings so that they can continue to care for a precious resource: the women and children in our society.³²

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References

- Peddle LJ, Brown H, Buckley J, Dixon W, Kaye J, Muise M, et al. Voluntary regionalization and associated trends in perinatal care: the Nova Scotia Reproductive Care Program. *Am J Obstet Gynecol* 1983;145:170-6.
- Rosenblatt RA, Reinken J, Shoemack P. Is obstetrics safe in small hospitals? *Lancet* 1985;2:429-32.
- Black DP, Fyfe IM. The safety of obstetrical services in small communities in Northern Ontario. *Can Med Assoc J* 1984;130:571-6.
- Woolard LA, Hays RB. Rural obstetrics in New South Wales. *Aust N Z J Obstet Gynaecol* 1993;33(3):240-2.
- Klein M, Lloyd I, Redman C, Bull M, Turnbull AC. A comparison of low-risk pregnant women booked for delivery in two systems of care: shared-care (consultant) and integrated general practice unit. I. Obstetrical procedures and neonatal outcome. *Br J Obstet Gynaecol* 1983;90:118-22.
- Klein M, Lloyd I, Redman C, Bull M, Turnbull AC. A comparison of low-risk pregnant women booked for delivery in two systems of care: shared-care (consultant) and integrated general practice unit. II. Labour and delivery management and neonatal outcome. *Br J Obstet Gynaecol* 1983;90:123-8.
- Klein M, Elbourne D, Lloyd I. *Booking for maternity care: a comparison of two systems*. Occasional Paper No. 31. Exeter, Engl: Royal College of General Practitioners; 1985.
- Klein M, Zander L. The role of the family practitioner in maternity care. In: Chalmers I, Enkin M, Keirse MJNC, editors. *Effective care in pregnancy and childbirth*. Oxford, Engl: Oxford University Press; 1989.
- Rosenberg E, Klein M. Is maternity care different in family practice? A pilot matched pair study. *J Fam Pract* 1987;25:237-42.
- Krikke EH, Bell NR. Relation of family physician or specialist care to obstetrics interventions and outcomes in patients at low risk: a western Canadian cohort study. *Can Med Assoc J* 1989;140:637-42.
- Klein M. The effectiveness of family practice maternity care: a cross cultural and environmental view. In: Smith M, editor. *Primary care obstetrics*. Philadelphia, Pa: W.B. Saunders Co; 1993. p. 523-36.
- Reid AJ, Carroll JC, Ruderman J, Murray MA. Differences in intra-partum obstetric care provided to women at low risk by family physicians and obstetricians. *Can Med Assoc J* 1989;140:625-33.
- Carroll JC, Reid T, Ruderman M. The influence of the high risk care environment on the practice of low risk obstetrics. *Fam Med* 1991;23:184-8.
- Grzybowski SCW. Problems of providing limited obstetrical services to small, isolated, rural populations. *Can Fam Physician* 1998;44:223-6 (Eng), 230-3 (Fr).
- Iglesias S, Grzybowski S, Klein MC, Gagne GP, Lalonde A. Rural obstetrics. Joint position paper on rural maternity care. *Can Fam Physician* 1998;44:831-7 (Eng), 837-43 (Fr).
- British Columbia Reproductive Care Program. Report on the findings of the Consensus Conference on Obstetrical Services in Rural or Remote Communities, Vancouver, BC, Feb. 24-26, 2000. *Can J Rural Med* 2000;5:211-7.
- Leeman L, Leeman R. Do all hospitals need cesarean delivery capability? *J Fam Pract* 2002;51:129-34.
- Franks P, Eisinger S. Adverse perinatal outcomes. Are family doctors a risk factor? *J Fam Pract* 1987;24:152-6.
- Mengel MB, Eisinger S. The quality of obstetric care in family practice: are family physicians as safe as obstetricians? *J Fam Pract* 1987;24:159-64.
- Taylor GW, Edgar W, Taylor BA, Neal DG. How safe is general practitioner obstetrics? *Lancet* 1980;2(8207):1287-9.
- Nesbitt TS, Connell FA, Hart LG, Rosenblatt RA. Access to obstetric care in rural areas: effect on birth outcomes. *Am J Public Health* 1990;80(7):814-8.
- Allen DT, Kamrath MS. Relationship of infant mortality to the availability of obstetric care in Indiana. *J Fam Pract* 1991;33:609-13.
- 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.
- MacLeod M. "We're it": issues and realities in rural nursing practice. In: Ramp W, Kulig J, Townshend I, McGowan V, editors. *Health in rural settings: contexts for action*. Lethbridge, Alta: University of Lethbridge; 1999. p. 165-78.
- Kulig JC. Sensing collectivity and building skills: rural communities and community resiliency. In: Ramp W, Kulig J, Townshend I, McGowan V, editors. *Health in rural settings: contexts for action*. Lethbridge, Alta: University of Lethbridge; 1999. p. 223-44.
- Thommasen HV. Physician retention and recruitment outside urban British Columbia. *BC Med J* 2000;42(6):304-8.
- Rourke JTB. Trends in small hospital obstetric services in Ontario. *Can Fam Physician* 1998;44:2117-24.
- Kaczorowski J, Levitt C. Intrapartum care by general practitioners and family physicians. Provincial trends from 1984-1985 to 1994-1995. *Can Fam Physician* 2000;46:587-97.
- Hart GL, Pirani MJ, Rosenblatt RA. *Rural hospital closure and local physician supply: a national study*. Rural health working paper series, No. 16. Seattle, Wash: WAMI Rural Health Research Center; 1991.
- McDermott RE, Corina GC, Parsons RJ. The economic impact of hospitals in rural communities. *J Rural Health* 1991;7:117-32.
- Doeksen GA, Johnson T, Willoughby C. *Measuring the economic importance of the health sector on a local economy: a brief literature review and procedures to measure local impacts*. Southern Rural Development Center publication number 202. Mississippi State, Miss: Mississippi State University; 1997.
- Reynolds L, editor. *Recommendations for a sustainable model of maternity and newborn care in Canada*. Proceedings of Conference: The Future of Maternity Care in Canada: Crisis and Opportunity; 2000 November; London, Ont. 2001.