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Rural Obstetrics.
Joint position paper on rural maternity care

Joint Working Group of the Society of Rural Physicians of Canada, the College of Family Physicians of Canada Committee on Maternity Care, and the Society of Obstetricians and Gynaecologists of Canada

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[français]

This document has been prepared by the Joint Working Group of the Society of Rural Physicians of Canada (SRPC), the College of Family Physicians of Canada (CFPC) Committee on Maternity Care, and the Society of Obstetricians and Gynaecologists of Canada (SOGC), whose members were: Stuart Iglesias, MD, Hinton, Alta.; Stefan C.W. Grzybowski, MD, MClSc, Vancouver, BC; Michael C. Klein, MD, CCFP, FAAP (Neonatal-Perinatal), Vancouver, BC; Guy Paul Gagné, MD, FRCSC, FSOGC, LaSalle, Que.; André Lalonde, MD, FRCSC, FSOGC, MSc, Ottawa, Ont.

This document has been and approved by the Couuncil of the Society of Rural Physicians of Canada

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See also:

- Shared skill sets: a model for the training and accreditation of rural advanced skills
- Rural medicine NEEDS advanced skills

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The Society of Rural Physicians of Canada (SRPC), the College of Family Physicians of Canada (CFPC) Committee on Maternity Care and the Society of Obstetricians and Gynaecologists of Canada (SOGC) share a commitment to provide the best maternity care possible for Canadian women. Representatives of these 3 organizations have formed a joint working group to develop policies and guidelines to support rural maternity care. The working group recognizes that input from rural women, nurses, midwives and physicians will be essential to the ultimate success of the implementation of these guidelines.

Every woman in Canada who resides in a rural community should be able to obtain quality maternity care as close to home as possible. Whenever feasible she should give birth in her own community within the supportive circle of her family and friends. Respect for these women requires that public policy and clinical care guidelines support the provision of quality maternity care programs in rural Canada.

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The objectives

- To recognize and publicize that women should be able to give birth safely in rural Canada.
- To confirm that maternity care in rural communities is effective, appropriate and safe with particular attention to those communities without local cesarean section capability.
- To encourage organizers of rural maternity programs to adopt evidence-based best practice standards.
- To support rural physicians, nurses and midwives in acquiring the basic training, continuing professional education and special skills needed for rural maternity practice.
- To establish an evidence-based framework so that local risk-management policies for rural obstetrics formulated by the licensing bodies, referral hospitals and academic departments

are consistent across the country.

- To assist women, communities and local professional staff in gaining a greater sense of ownership in the local maternity service.
- To promote the development of high-quality rural perinatal databases.
- To provide a framework and criteria for audit and peer review.

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The definition of rural The definition of rural is multifactorial and necessarily somewhat arbitrary. It depends upon the size of the population, the size of the medical staff, the number of specialist medical staff on site, the health care facilities and level of technology available, and remoteness.

"In general terms, rural practice can be defined as practice in non-urban areas where most medical care is provided by a small number of general practitioners/family doctors with limited or distant access to specialist resources and high technology health care facilities." 1 This excludes all urban and suburban communities and all secondary care centres that enjoy reasonable access to tertiary care facilities. It is unclear whether some of the larger but very remote secondary care centres should be considered rural.

A practical definition in current Canadian application defines "rural remote" as communities ranging from about 80 to 400 km from a major regional hospital and "rural isolated" as communities more than 400 km away or about 4 hours transport time in good weather. In some of the agricultural zones of Canada, the population is widely dispersed and served by hospitals that are rural in nature but within 80 km of small urban centres. These small hospitals function relatively independently to provide safe and adequate maternity care. Facilities that meet these characteristics can be defined as "rural close."2

The recent publication of Leduc's General Practice Rurality Index (GPRI) provides a better tool for the assessment of a community's rural nature than one based on distance alone.3 The index assigns point scores to remoteness from the closest advanced referral centre, remoteness from the closest basic referral centre, catchment population size, number of general practitioners and specialists, and the presence of an acute care hospital.

Maternity care in rural Canada will always be provided with various levels of intensity. Personal attitudes, staffing and resource issues, communication and transport obstacles and levels of training will influence more cautious risk-management strategies in some rural hospitals. Some

patients will choose, when fully informed of the risks and benefits, to travel to a larger centre to give birth. All of these decisions should be fully supported within this position paper.

However, there are other rural maternity programs where nurses, midwives and physicians who have excellent training and are involved with continuing professional education are committed to a much greater intensity of obstetrical care. They have the full support of their patients and their communities. They might wish to provide oxytocin augmentation of labour and induction of labour by various methods and/or to provide a full range of obstetrical analgesia options and/or to acquire special skills training. This position paper should provide the framework and mechanism to ensure that conditions for safety, appropriateness and accountability are met within a risk-management strategy that belongs to the women, their communities and their local professional staff.

This position paper should provide a platform sufficiently large to accommodate the variety of existing rural maternity programs while encouraging and validating the quality of rural maternity care.

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The evidence for the safety of rural maternity care A MEDLINE search of the literature (1980 to 1997) was done using key words rural and obstetrics and cross-searching with the MeSH headings of maternity, perinatal, asphyxia and cesarean section. Articles that were included were well-constructed retrospective or cohort studies and relevant to the questions postulated below. There were no relevant randomized controlled trials. This search was supplemented by consultations with Tom Nesbitt and Roger Rosenblatt, both of whom have conducted research in this area.4,5

To be considered valid in a Canadian context, we required that data be derived from organized perinatal systems facilitating consultation and transfer between the rural settings and the perinatal centres to which they referred.

Is a limited local rural obstetrical service better than no local obstetrical service?

The only studies available that address this question are from the United States. A study from Washington state showed that women who live in communities with poor local access (what Nesbitt called high-outflow communities) are more likely to bear infants who are premature, have prolonged hospitalizations with higher costs, or both.4 Larimore and Davis showed a significant quantifiable increase in infant mortality due to lack of maternity caregivers in rural Florida.6

Lack of local maternity services leads to potential isolation and compromise of women who do not have the financial means to travel to other communities to seek their routine antenatal and

intrapartum care. No one will be trained to handle emergencies. Absence of intrapartum care will lead to reduced resources and expertise for antenatal care.

Is a small rural maternity service safer with cesarean section capability than without?

A comparison of similar rural services with and without cesarean section capability has not been done. It would be essential for communities that presently have cesarean section capability to maintain this service until such evidence is available. It would also be appropriate for communities that are presently successfully providing maternity services without local cesarean section capability to continue to provide maternity service. There are 125 hospitals in Canada that provide maternity service without full time cesarean section capability on site.7

Are the outcomes of rural hospitals as good as urban maternity services?

The research envelope is thin. A limited number of studies have compared the outcomes of care in different size hospitals, the smallest of which do not have cesarean section capability. Black and Fyfe looked at pregnancies and deliveries in Northern Ontario.8 They attributed all pregnancy outcomes to the place of residence of the mother and the hospital within the catchment area in which she lived. They showed that populations served by small level I hospitals had perinatal loss rates similar to the rates in those served by larger secondary or tertiary care facilities, even when all adverse outcomes were attributed back to local hospitals.

In Nova Scotia, Peddle and colleagues9 showed that small community hospitals with less than 100 deliveries per year had the lowest perinatal morbidity and mortality rates in the province. These small hospitals did 23% of the deliveries in Nova Scotia.

A population-based study from remote British Columbia demonstrated no adverse perinatal outcomes attributable to lack of local cesarean section capability in 5 years of maternity care.10

International data from Australia and New Zealand show that women delivering in rural hospitals manned exclusively by GPs and midwives, with and without immediate cesarean section capability, have fewer premature births, and fewer hypoxic infants and lower birth-weight-specific mortality rates than the level II and III centres to which they refer.5,11

In summary, the available evidence suggests that rural hospitals with limited services and, in many cases, without local cesarean section capability, do offer acceptably safe maternity care. Furthermore, and perhaps more importantly, populations served by rural hospitals that do not offer maternity care seem to have worse perinatal outcomes.

Although limited, the data clearly support the maintenance of rural maternity care services for women in Canada.

Research agenda

The above studies, with the exception of the New Zealand data,5 are small in size. The New Zealand study is large but weakened by the fact that outcomes are correlated with hospital of delivery rather than with the hospital of residence of the mother, as was done by Black and Fyfe in Northern Ontario.8 There is an urgent need for Canadian research on the maternal and neonatal outcomes of births in small hospitals. We need to compare the care and safety of populations served by similar rural hospitals, with and without local cesarean section capability, and we need more information about the outcomes for rural communities that have lost their local maternity service.

Audit of outcomes

We need to establish large coordinated databases at provincial and national levels that have the ability to compare practices and outcomes. Ideally, results should be attributed to maternity services by maternal residence within the catchment area of each hospital rather than by place of birth. This will measure the outcomes for the system of care rather than for a selected population that delivers locally. At the same time the population-based ratio of local delivery and intrapartum transfer will provide important quality-of-care indicators.

Hospital-based statistics will allow assessment of hospital and practitioner practices and will provide the basis for feedback, which should promote quality improvement initiatives at a local level. The Northern and Central Alberta Education and Audit Program (NCAEAP) is an example of a hospital-based audit system that is already up and running. It was established in 1991, includes most level I, II and III hospitals in the province and provides comparative hospital statistics and confidential physician statistics to participants. Similar databases exist in British Columbia and Nova Scotia. What is required is a national collaboration with standardized data collection. This should be available in due course through the Canadian Perinatal Surveillance System.

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Defining principles Regionalization

Women at higher risk for adverse maternal and/or perinatal outcomes should deliver in centres with the facilities to manage the complications of labour and delivery. The regionalization of maternity care, similar to the regionalization of all medical and surgical care in Canada, appears to serve rural communities very well. Regionalization is widely accepted by patients and health professionals, especially in rural Canada, and is perceived to be an excellent organizing principle for maternity care.

Risk management

Risk can never be completely avoided. As long as communities include women of childbearing age, obstetrical risk will exist. Although some risk can be anticipated, a substantial portion of adverse outcomes is unexpected. For example, in a Manitoba general hospital, 10% of infants with a low-risk score prior to delivery required resuscitation at delivery.12

Some patients at increased risk can be identified during the antepartum period and transferred prior to delivery; however, transfer itself is associated with risk. Intrapartum events require frequent assessment of risk, disclosure of this risk and informed consent.

The responsibility for the management of complications and risks in maternity care rests with the local care unit. Local professional staff, hospital boards and the local community need to develop and maintain a comprehensive system to deal with complications that may develop. Practice and procedures should be evidence- and guideline-based.

In addition, a formal risk-management process should be in place. Risk management is a continuous process.13 It starts with identification and analysis of risk, proceeds to the establishment of actions to manage risk and evaluates the results, which leads to further identification and analysis in a cyclical fashion of continuous quality improvement.

Guidelines

The SOGC has developed a number of guidelines that provide a basic strategy for managing common maternity care issues (see Appendix 1). The SRPC and the CFPC Committee on Maternity Care also endorse them as appropriate and applicable for rural practice except for minor concerns related to the Fetal Health Surveillance guidelines (Appendix 1). In principle, guidelines should be applied uniformly to the care of all low-risk maternity care in Canada. Future maternity care guidelines issued by any of the 3 organizations should be subject to an expeditious and effective process of joint consultation and approval.

The SOGC has stated that "Clinical Practice Guidelines do not define the standard of care nor are they intended to dictate an exclusive course of treatment to be followed."14 The organization has further asserted that "Variations of practice, taking into account the needs of individuals, patient resources, and the limitations unique to the institutions or type of practice may be appropriate. A guideline can, and will, be modified according to local conditions. If so, it should be documented in individual departments and/or hospitals."

This tolerance of flexibility in local application of SOGC guidelines should not be construed as an acceptance of a lower standard of care in rural Canada. The standard of care for a low-risk maternity patient should be the same in the smallest level I hospital as it is in tertiary care centres.

In order to achieve this, (1) we must sustain a commitment to providing the human and financial resources necessary to meet national maternity care standards in rural Canada, and (2) it is critical to appreciate that the loss of local maternity services for rural communities may well be associated with worse perinatal outcomes for the population served, even when patients travel to maternity centres with an excellent standard of care.

Evidence-based medicine

We should all strive to practise according to the best evidence-based information available. Critical appraisal of relevant literature should guide policy and practice guideline development. A summary and meta-analysis of randomized controlled trials is presented in the Cochrane Library.15 Where the information does not yet exist we should encourage appropriate research to be done.

Informed choice

Women and their maternity care providers should be partners in choice. Informed consent requires full disclosure to prospective mothers of the advantages and limitations of the local maternity care service, consistent with guidelines and audit of local outcomes. This should include a discussion of anticipated obstetrical risk as well as time-frame modality and risk of transport to a secondary or tertiary care centre. Each woman should have the opportunity to choose where she will seek her maternity care. This process of disclosure and consent must continue through the intrapartum period as risk is periodically re-evaluated during the progress of labour.

Characteristics of a safe rural maternity service

A rural risk management strategy should include, as a minimum:

- A qualified, competent and committed professional staff.
- Sufficient financial and technical resources to meet national standards of care.
- Detailed written transport protocols.
- Open lines of communication and collaboration with regional referral centres.
- Continuing audit and quality improvement programs.

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The recommendations

1. Women in Canada who reside in a rural community should receive high-quality maternity

care.

2. Rural hospitals should, within a regionalized risk management system, offer maternity care to a low-risk population. While anesthetic and surgical services are desirable, the available evidence suggests that good outcomes can be sustained within an integrated risk-management system without local access to operative delivery.

3. There should be a single standard of care for the provision of maternity care services to low-risk women.

4. A formally documented risk-management strategy should be developed by rural maternity care services. It should include issues of management of obstetrical risk, regionalized care, local resources and transfer options.

5. Maternity care providers should be skilled in a recognized emergency skills and risk-management course such as Advanced Life Support in Obstetrics/ Advanced Labour and Risk Management (ALSO/ALARM) and Neonatal Resuscitation Program (NRP). This should be consolidated in a single program and delivered throughout rural Canada.

6. The SOGC, CFPC and SRPC should promote the general application of the SOGC guidelines to rural Canada. In order to reflect a single standard of perinatal care, the guidelines will be amended, where appropriate, to recognize the realities of rural practice. The pertinent obstetrical guidelines and policies are listed in Appendix 1.

7. Regional perinatal databases should be population based. Linkages between these databases should be created to advance the rural maternity care research agenda and allow for the effective comparison of outcomes.

8. Regional perinatal databases should provide hospitals and maternity care providers with the information required for audit and Continuous Quality Improvement (CQI).

9. Future maternity care guidelines issued by any of our 3 organizations should be subject to an expeditious and effective process of joint consultation and approval.

[Contents]

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[Contents]

Appendix 1. Society of Obstetricians and Gynaecologists of Canada guidelines for obstetrical care

Title	Publication date

Statement on the prevention of early-onset group B streptococcal infections in the newborn	June 1997
HIV testing in pregnancy	June 1997
Post-term pregnancy	March 1997
Number of deliveries to maintain competence	November 1996
Early discharge and length of stay for term birth	October 1996
Induction of labour	October 1996
Attendance at labour and delivery: guidelines for physicians	August 1996
Antenatal corticosteroid therapy for fetal maturation	December 1995
Task force on cerebral palsy and neonatal asphyxia	December 1995
The safe and appropriate use of forceps	December 1995
Healthy beginnings: guidelines for care during pregnancy and childbirth	December 1995
Guidelines for the management of nausea and vomiting	November 1995
Dystocia	October 1995
Canadian consensus on breech management at term	November 1994
Maternal/fetal transport	December 1992
Toward the rational management of herpes infection in pregnant women and their newborn infants	August 1992
Routine screening for gestational DM in pregnancy	June 1992

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*Fetal health surveillance in labour (parts 1 to 3 and conclusion)	October 1995 to January 1996

*This guideline is generally appropriate for rural practice. There needs to be further discussion on 2 points. First, the recommendation to submit cord gases routinely is primarily a risk-management strategy, and the evidence demonstrating an improvement in perinatal outcomes is still under study. Second, if evidence confirms the benefits of fetal scalp blood sampling, a single standard of care would preclude special exemption for rural Canada.

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