Editor's key points

- Anesthesia, surgery, and operative delivery programs provided locally sustain rural maternity care close to home. The development of networks of specialist and non-specialist providers is the recommended policy option to sustain these local programs.
- Safety and quality must be demonstrated to be equivalent across similar patients and procedures, regardless of network site. Clinical coaching between rural and regional centres can be helpful in building and sustaining high-functioning networks.
- Maintenance of quality and the provision of continuing professional development in low-volume settings represent a mutual value proposition. Because they are both foundational and challenging, they deserve to be addressed collaboratively by the organizations that developed this consensus statement.

Consensus statement on networks for high-quality rural anesthesia, surgery, and obstetric care in Canada

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Abstract

Objective To describe the essential components of well-resourced and high-functioning multidisciplinary networks that support high-quality anesthesia, surgery, and maternity care for rural Canadians, delivered as close to home as possible.

Composition of the committee A volunteer Writers' Group was drawn from the Society of Obstetricians and Gynaecologists of Canada, the Society of Rural Physicians of Canada, the Royal College of Physicians and Surgeons of Canada, the Canadian Association of General Surgeons, the College of Family Physicians of Canada, and the Association of Canadian University Departments of Anesthesia.

Methods A collaborative effort over the past several years among the professional stakeholders has culminated in this consensus statement on networked care designed to integrate and support a specialist and non-specialist, urban and rural, anesthesia, surgery, and maternity work force into high-functioning networks based on the best available evidence.

Report Surgical and maternity triage needs to be embedded within networks to address the tensions between sustainable regional programs and local access to care. Safety and quality must be demonstrated to be equivalent across similar patients and procedures, regardless of network site. Triage of patients across multiple sites is a quality outcome metric requiring continuous iterative scrutiny. Clinical coaching between rural and regional centres can be helpful in building and sustaining high-functioning networks. Maintenance of quality and the provision of continuing professional development in low-volume settings represent a mutual value proposition.

Conclusion The trusting relationships that are foundational to successful networks are built through clinical coaching, continuing professional development, and quality improvement. Currently, a collaborative effort in British Columbia is delivering a provincial program—Rural Surgical Obstetrical Networks—built on the principles and supporting evidence described in this consensus statement.

This consensus statement has been endorsed by the Canadian Association of General Surgeons (CAGS), the College of Family Physicians of Canada (CFPC), the Society of Obstetricians and Gynaecologists of Canada, the Society of Rural Physicians of Canada (SRPC), the Association of Canadian University Departments of Anesthesia, the Canadian Association of Midwives, the Canadian Medical Association, the Royal College of Physicians and Surgeons of Canada, and the Canadian Association of Surgical Chairs.

> Based on a review of international literature and outcomes and personal observations from services in Canada, we believe the most effective way to provide a robust rural surgical infrastructure is through a networked system of specialist–generalist surgical care. This model has been well-documented in other jurisdictions, including Australia, as a "hub and spoke" model. Within Canada, networks of care that include community specialists and family physicians with enhanced training and bridge the urban–rural divide have demonstrated success in cancer care, palliative care, HIV care and psychiatric care, among others. Some perinatal programs in Canada are examples of well-documented network models with positive outcomes. This paper [the 2015 Joint Position Paper on Rural Surgery and Operative Delivery] describes the "network model" as a health human resources solution to meet the surgical needs, including operative delivery, of rural residents.[1]

The Joint Position Paper on Rural Surgery and Operative Delivery, published in 2015 with the endorsement of the CFPC, the Society of Obstetricians and Gynaecologists of Canada, CAGS, and the SRPC, documented the "urgent need for a solution to the downgrading and loss of surgical services in rural Canada."[1] In that document, our organizations identified, among other imperatives, the need for surgical first responders in rural Canada and highlighted the linkages between local surgical programs and sustainable rural maternity care. We recommended that "network models of integrated rural surgical services be established and maintained by all key professions in rural Canada."[1] The Joint Position Paper on Rural Surgery and Operative Delivery built upon earlier individual papers on rural anesthesia (2001)[2] and rural maternity care (1999, 2012).[3,4]

The invitational Summit on Rural Surgery and Operative Delivery, convened in January 2016 by the contributors to the joint position paper, had as 1 of its 3 goals "to plan the building of networked surgical and maternity care in rural Canada."[5] The summit concluded with a commitment to the development, implementation, and evaluation of generic rural networks for surgery and maternity care. This work was to be accomplished under the umbrella of a new multiorganization collaboration that would continue the work that led to both the joint position paper and the summit.[5]

Inspired by the ideas set out in the joint position paper and raised during the summit, the British Columbia provincial government, the provincial health authorities, the provincial association of physicians (Doctors of BC), and the Rural Coordination Centre of BC collaborated to launch a 5-year, $25 million program to grow, support, and evaluate networks in 10 of the smallest and most remote surgical and maternity programs; this program is known as Rural Surgical Obstetrical Networks (RSON).[6] Other provinces, most notably Alberta, have started their own, albeit considerably smaller, network projects.

Composition of the committee

More recently, the collaborating organizations have continued to discuss, largely in bilateral conversations, the possibility of a new national organization, fashioned after the proposal from the Summit on Rural Surgery and Operative Delivery. During the SRPC's 27th Annual Rural and Remote Medicine Course held in Halifax, NS, in spring 2019, leaders of the organizations that issued the joint position paper, along with the Royal College of Physicians and Surgeons of Canada, met informally and committed to the new umbrella organization, with structures and resources to be determined later. There was a strong consensus that the most pressing need was to develop a consensus statement on rural surgery, anesthesia, and maternity networks. There was an equally strong consensus that leaders from anesthesiology were missing from our work and should be invited to join.

Methods

A volunteer Writers' Group, drawn from all of the organizations (**Appendix I**, available from **CFPlus***), was convened to draft the consensus statement. The group worked virtually and by teleconference between November 2019 and March 2020 to prepare a draft consensus statement for the first formal meeting of the collaborative umbrella organization, which was planned to take place in Ottawa, Ont, in April 2020 in conjunction with the SRPC's 28th Annual Rural and Remote Medicine Course. The COVID-19 pandemic delayed this meeting until April 2021, where the consensus statement was endorsed for publication.

Objectives

The objectives of the consensus statement were the following:

- to support rural anesthesia, surgery, and maternity care and the providers of such care as the core services required for small hospitals to be sustainable;
- to maintain local access to maternity, surgery, and trauma services, including access to local birth services, especially in Indigenous communities, or to return such services to communities where they have been discontinued;

- to support sustainable rural operative delivery services within a quality framework, nesting them within larger high-quality rural anesthesia and surgical programs;
- to support high-quality anesthesia and surgical first response services provided locally for rural trauma patients, integrated within provincial trauma networks;
- to support the creation of continuing professional development programs for the professional work force in low-volume rural anesthesia, surgery, and obstetric programs;
- to support the training needs for a specialist and a generalist, non-specialist work force where individual professional cohorts use more than 1 skill set, such as family medicine combined with anesthesia, intrapartum obstetrics combined with operative delivery, anesthesia combined with emergency medicine, operative delivery combined with general surgery, or midwifery with surgical first assist;
- to support the framework and processes by which the quality of care in rural anesthesia, surgery, and maternity programs can be documented, reported, and evaluated within regional programs;
- to support the sustainability of rural hospitals by ensuring the presence of highly effective rural teams (providing anesthesia, surgery, and maternity care) as an anchor for the recruitment and retention of staff, as well as for the quality and sustainability of services;
- to support regionally networked anesthesia, surgery, and maternity providers with enhanced capacity for fluctuations in physician resources; and
- to support surgical and maternity triage in regional models to address sustainability and quality while maximizing local access to surgery, trauma, and maternity services.

Report

Characteristics of successful networks. The following components have been shown to be important in successful networks[7]:

- the existence of trusting relationships between stakeholders residing and working in rural communities and those residing and working in urban communities;
- resources to support the administration and functioning of such networks (as outlined in **Appendix II**, available from **CFPlus***);
- a culture of safety and collaborative, respectful teamwork, with appreciation that competence is a team characteristic to be earned and maintained;
- the presence of on-the-ground leadership from clinical staff, both local and regional;
- a formal organizational structure that provides designated leadership, administrative support, defined communication platforms, specific algorithms for patient triage, defined services for a given community, and pathways for patient care within a regional program;
- an explicit agreement between rural providers and regional specialists concerning the nature of the clinical activities to be performed by rural providers, as well as their scope of practice, patient selection and triage criteria, and procedures for communication, escalation of care, and transport of patients to regional hospitals;
- opportunities for ongoing mentorship;
- programs to support continuing professional development;
- the inclusion of voices for patients, communities, and health authorities within the formal networks; and
- acknowledgment that the sustainability of small hospitals is based upon teams of generalist nursing, midwifery, and physician providers of anesthesia, surgery, and maternity services, with better sustainability being achieved if the small hospitals operate within regional networks.

Programs to build successful networks

Clinical coaching: Clinical coaching programs, involving urban and regional specialists and local family practice anesthesiologists (FPAs), family physicians with enhanced surgical skills (FPESS), and family physicians with obstetric surgical skills (FPOSS), are formal programs that are appropriately resourced, evaluated, and accredited. The relevant template is the Clinical Coaching for Excellence program offered through the University of British Columbia Department of Continuing Professional Development, both for the province's FPAs and for the local surgery and maternity teams in the RSON.[6] Ideally, these coaching programs embrace all members of the anesthesia, surgery, obstetrics, physician, midwifery, and nursing teams within the network. Such coaching programs build the trusting relationships and effective communication on which successful networks are constructed.

Remote real-time presence: Remote real-time presence technology brings anesthesia, surgery, and maternity support and mentoring from specialists working remotely to the trauma bay, operating room, or delivery suite, in real time. It thus allows regional expert care to be provided through the local program, on either an emergency basis or an elective basis. The RSON program in British Columbia has deployed this technology at its smaller surgical sites.[7]

Quality improvement: The need to demonstrate high-quality care in low-volume programs is the existential challenge for these programs. The standards and outcomes of care for elective procedures must be the same and must be shown to be the same as for appropriately selected procedures provided to appropriately selected patients wherever care is provided. Effective patient triage by matching each patient to the site best able to meet their anticipated needs is a quality outcome metric deserving of rigorous iterative scrutiny.

A strong culture of safety and quality of care is foundational to both high-functioning relationships and

quality of care within networks. A patient's experience of care and a 30-day follow-up of outcome and process metrics through a locally networked quality team support a culture of safety and quality.

The process of collaborative regional quality improvement is on a par with clinical coaching in terms of its efficacy in building trusting relationships. Models for quality improvement in these rural programs are the Managing Obstetrical Risk Efficiently (MORE) programs, specifically MORE OB (consisting of original maternity care tools) and MORE EX (for other health care teams, including anesthesia and surgery) as offered by Salus Global Corporation.

Ensuring quality of care in these low-volume programs is both foundational and challenging, and thus it deserves the same stand-alone attention and advocacy that we have directed at this consensus statement on networks.

Excellence in training programs. Trusting relationships are contingent on recognition by the various partners that all the care they provide is based on a foundation of high-quality training. The introduction of Certificates of Added Competence for FPAs, FPESS, and FPOSS by the CFPC and the elevation to category 1 status of the FPESS and FPOSS CFPC enhanced skills programs have done much to build this trust. Improving the pathways to surgical obstetrics skills for rural general surgeons is presently under consideration by the Rural Surgery Committee of CAGS.

Continuing professional development. The low volume of procedures in these networks, together with the small number of providers and the remoteness of the locations where they live and work, presents challenges to maintaining and advancing the skills of anesthesia, surgery, and maternity providers and to maintaining and advancing the overall quality of each network. Promising work is under way, particularly in anesthesia, with simulation of high-occurrence, low-volume clinical emergencies. Historically, anesthesia has facilitated access to urban or regional high-volume centres that are prepared to support rural professionals for short, intense clinical experiences. However, similar clinical experiences have been inaccessible to FPESS and FPOSS. At present, some FPESS practitioners are seeking these high-volume experiences in the field of global surgery.

For these rural teams, continuing professional development, like quality of care, is both foundational and challenging. It deserves the same stand-alone attention and advocacy that we have directed at this consensus statement.

Conclusion

- Anesthesia, surgery, and operative delivery programs provided locally sustain rural maternity care close to home.
- The development of networks of specialist and non-specialist providers is the recommended policy option to sustain these local programs.
- Networks require financial resources and high-functioning relationships.
- Surgical and maternity triage needs to be embedded within networks to address the tension between sustainable models of delivery and local access to care.
- Safety and quality must be demonstrated to be equivalent across similar patients and procedures, regardless of network site. Triage of patients across multiple sites is a quality outcome metric requiring continuous iterative scrutiny.
- Clinical coaching between rural and regional centres can be helpful in building and sustaining high-functioning networks.
- Maintenance of quality and the provision of continuing professional development in low-volume settings represent a mutual value proposition. Because they are both foundational and challenging, they deserve to be addressed collaboratively by our organizations.

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Contributors
All authors contributed to the literature review and interpretation, and to preparing the manuscript for submission.

Competing interests
None declared

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