Supporting Local Birth in Rural and Remote Canada: Towards A Networked Model of Care

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Speaker Disclosure

• I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.
• I do not intend to make therapeutic recommendations for medications that have not received regulatory approval (i.e. “off-label” use of medication).
Session Learning Objectives

• To understand rural maternal-newborn outcomes by level of service in Canada;
• To understand international evidence on the safety of rural maternity services without local access to cesarean section;
• To identify evidence-based best practice models for support the perinatal needs of women from rural and remote communities.
• I am a health services researcher and conduct primary research on models of rural maternity and surgical care focusing on outcomes of and satisfaction with the care;

• I have a particular interest in moving ‘evidence’ into policy and decision-making;

• I have an abiding interest in evaluating strength of evidence and its applicability to rural settings.
(Lived) Research Focus
Closer to Home

‘The Royal Commission on Health Care and Costs’ (The Seaton Report 1991)

“[M]edically necessary services must be provided in, or as near to, the patient’s place of residence as is consistent with quality and cost-effective health care” (B.C. Royal Commission on Health Care and Costs 1991: A-6).

Starbucks Coffee had 83 stores world-wide
Position Papers

• Joint Position Paper on Rural Maternity Care (2010: SOGC, CAM, CAPWHN, CFPS, SRPC)

Recommendations
1. Women who reside in rural and remote communities in Canada should receive high-quality maternity care as close to home as possible.

• Returning Birth to Aboriginal, Rural and Remote Communities Policy Statement (December 2010)

• Joint Position Paper on Rural Surgery and Operative Delivery (2015: SOCG, CAGS, CRSM)
Implemented within the context of *best available evidence.*
What evidence are we interested in?

- The safety of rural maternity care
- Provider sustainability
- Patient satisfaction
- Best practice models
- Cost-effectiveness
Re-considering (problematizing) evidence

- The output of primary research is rigorous evidence, which sheds light on a phenomenon under consideration;

Pioneered by Archie Cochrane, who advocated for Randomized Controlled Trials as the highest form of evidence.

- In the era of ‘evidenced based medicine’, health services research is at risk of normatively valuing scientific evidence (easily measurable) at the cost of alternative forms of knowledge (not easily measurable);

- This will be at the cost of pluralism – the acceptance of multiple points of view and experiences – that fulsomely represents reality.
What Does Evidence Include?

1. Experience of individuals
   - Understood through reflection

2. Community stories
   - Understood through dialogue

3. Expert opinion
   - Understood through science

4. Systems evidence
   - Understood through cost-benefit

5. Gestalt
   - The whole is greater…
Evidence

Maternal-Newborn Outcomes

Provider Outcomes

Patient Satisfaction
Closer to home (or farther from care)?
Systematic Needs-based planning

Birth Rate + Social Vulnerability + Distance to Nearest Cesarean Section = Rural Birth Index (RBI) Score
Based on POPULATION, ISOLATION and VULNERABILITY rural and remote communities can support:

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<td>A</td>
<td>Pre-post natal care only (no local intrapartum services)</td>
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<td>B</td>
<td>Local intrapartum services without cesarean section</td>
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<td>Local generalist (FP enhanced skills) services</td>
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<td>Mixed models (Specialist/GP services)</td>
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Focus on evidence for models of care for Aboriginal communities
Level of Maternity Services and Population Need

The number of adverse perinatal outcomes increases the more that maternity services are under serviced.

1. Increased travel for women to access services
   - Increased stress
   - Increased adverse outcomes

2. Increase out of hospital births

1. Increased Intervention Rates
2. Problem Retaining Provider
3. Undermining Surrounding Services
Optimally Served

Sustainable

- Meets the needs of the population (measurable through health and social outcomes)
- Meets the needs of the providers (satisfaction – enough volume, support, good outcomes)
- Cost-contained (?)
Rural Health Service Delivery Networks

Based on appropriate triage from low-resource levels of care (typically rural) to secondary and tertiary (typically large urban centre) care

– Not a new construct: current work involves formalizing and optimizing naturally occurring networks
Rural surgical and obstetrical programs become outreach extensions of core referral hospital surgical programs. 

Rural Health Service Delivery Networks

Based on geographic population catchments

Responsibility of the network to meet the health care needs of the entire population

Requires a regional organization of the scope of practice and resources required to implement surgical programs, decided through consensus agreement between the sites;

Rural surgical and obstetrical programs become outreach extensions of core referral hospital surgical programs.
Figure 1 Social accountability partnership pentagram.
Rural Maternity Networks
RESEARCH ARTICLE

Distance matters: a population based study examining access to maternity services for rural women

Stefan Grzybowski¹, Kathrin Stoll and Jude Kornelsen

Research article

The safety of Canadian rural maternity services: a multi-jurisdictional cohort analysis

Stefan Grzybowski¹, John Fahey², Barbara Lai¹, Sharon Zhang³, Nancy Aelicks³, Brenda M. Leung³, Kathrin Stoll⁴ and Rebecca Attenborough²

BMC Health Services Research 2015, 15:410
Composite forest plots demonstrating outcomes related to level of service
Composite forest plots demonstrating outcomes related to level of service
Composite forest plots demonstrating outcomes related to level of service

Communities of Concern

- >4h
- 2-4h
- 1-2h

Primary Care

GPESS

Mixed Model

General Surgeons

Perinatal Mortality
Prematurity (< 37 weeks)
Very Low Birth Weight (< 1500g)
Caesarean Section

Level of Service (≥ Table 1)

Odds Ratio

Composite forest plots demonstrating outcomes related to level of service
Communities of Concern

Perinatal Mortality
Prematurity (< 37 weeks)
Very Low Birth Weight (< 1500g)
Caesarean Section

Level of Service (*see Table 1)

Odds Ratio

>4h
2-4h
1-2h
Primary Care
GPRESS
Mixed Model
General Surgeons

Composite forest plots demonstrating outcomes related to level of service
1. What is the relative safety of rural maternity health services without local access to caesarean section?

2. Is it safer for a rural population to have no local intrapartum services, or primary maternity services?

- Realist Review methodology (Pawson)
- 158 articles included
- www.crhr.ca/apru
Rural maternity services without local cesarean section are safe with:

- Comprehensive risk screening
- Effective emergency transport
- Integrated and networked support for providers

First key message from the data
We haven't paid enough attention to communities without local cesarean section services.

Second key message from the data

Determine benchmarks for service level targets

Focus on resources for prenatal period, continuity of care

Support providers in low resource communities within a regional network of care
Third key message

(We have enough research evidence to inform planning.)
Level ‘B’ considerations

+++ Provider stress ('the buck stops here')

Closures precipitated by lack of HHR and adverse outcomes

We lack robust costing data; anecdotally, level II services may incur costs in emergency transport
The outcomes of perinatal surgical services in rural British Columbia: a population-based study

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Introduction: A substantial number of small surgical services in rural Canada have been discontinued in the past 15 years because of difficulties recruiting and retaining practitioners, health care restructuring and a lack of a coherent evidence base regarding the safety of small services. The objective of this study was to examine the safety of small perinatal surgical services.

Methods: We accessed perinatal data for singleton births that occurred in British Columbia between Apr. 1, 2000, and Mar. 31, 2007. We defined hospital service levels, population catchment areas surrounding each hospital and the postal codes linked to those catchment areas. Births were linked with specific catchment areas and amalgamated by service level. We made comparisons among service strata populations and adjusted for potentially confounding characteristics.

Results: A total of 87,294 births occurred during the study period. The births were distributed across 6 strata of services, which ranged from no local maternity services to services supported by obstetricians. Fifteen catchment areas were served by general practitioners with enhanced surgical skills (GPESSs), and 9,174 births were included from this obstetric service level. Outcomes for surgical services provided by GPs compared favourably to those provided by obstetricians.

Conclusion: Our results suggest that small surgical services supported by GPESSs are

Methods

• Perinatal data for singleton births that occurred in British Columbia between Apr. 1, 2000, and Mar. 31, 2007;
• Data requested by hospital service levels, population catchment areas surrounding each hospital and the postal codes linked to those catchment areas;
• Births were linked with specific catchment areas and amalgamated by service level;
• Comparisons among service strata populations and adjusted for potentially confounding characteristics.
FINDINGS

“The population outcomes for small surgical services staffed by GPRESSs were as good as the population outcomes for referral services staffed by obstetricians.”

Grzybowski et al 2011: p 128
Optimal Perinatal Surgical Services for Rural Women: A Realist Review

Prepared for BC Ministry of Health and Perinatal Services BC by the Applied Policy Research Unit (APRU)

Jude Kornelsen, PhD (Director)
Review team:
Kevin McCartney (Lead)
Meagan McKeen
Caitlin Frame
Taylor Fleming
Kelly Gorton
Penny Yang
Mary O’Sullivan

May 26, 2014

REVIEW QUESTION:

• Can we meet the perinatal surgical needs of rural women more effectively through an optimally centralized or optimally decentralized model of care?

• Realist Review methodology (Pawson)

• 145 articles.

• www.crhr.ca/apru
Key Findings by Theme

Safety and Outcomes

- There is no existing clinical, case study, or qualitative evidence that basic maternal surgical care, including caesarean section, is less safe when provided by GP proceduralists with enhanced surgical skills than when provided by specialist obstetricians;
- Volume-to-outcome associations are extremely variable across procedure and context, but evidence suggests greater birth volume does not improve birth centre outcomes in maternal surgical care in the Canadian context;
- Lack of any local maternity services is associated with worsened birth outcomes, with both the risk that women present to underprepared health service units, and distance to care affecting outcomes;
- Lack of local maternal surgical care is associated with a lesser ability to meet the needs of the community and substantially higher outflow;
The literature reviewed here demonstrates that higher costs are associated with greater distances that women must travel to access services, both in travel expenses and in the cost of managing poor outcomes due to delayed access.

Due to the lack of literature on comprehensive costs of either centralized or decentralized models and the tremendous variation in health service models, we are unable to determine if one is necessarily more cost-effective.
Key Findings by Theme

Safety and Outcomes

Costs and Cost-Effectiveness

Sustainability

- Lack of sustainability is due largely to workforce shortage issues including recruiting and retaining care providers in low volume settings;
- Sustainability is also related to challenges with training and preparedness for rural practice for both GPs and rural General Surgeons;
- Perinatal surgical services are the ‘lynchpin’ in sustainable rural health care;
- Educational programs have a significant role in attracting new practitioners to rural practice; strategies include recruiting students from rural settings, although evidence of effectiveness of this strategy is mixed;
- Social drivers influencing decisions to pursue rural procedural practice include personal/family reasons and positive rural exposure;
- Effective rural training contributing to rural sustainability for GP proceduralists and rural General Surgeons should include broad procedural competencies (not limited to cesarean section);
Key Findings by Theme

Safety and Outcomes

Costs and Cost-Effectiveness

Sustainability

Satisfaction

- In all jurisdictions covered in this review, rural perinatal surgical care providers feel extended in their roles: this limits satisfaction and leads to burn-out and attrition;
- Rural surgical providers that persist are highly motivated by ideals of equity and access to care for rural populations;
- Continuing professional development for rural providers is essential and difficult to achieve due to lack of local opportunities;
- There is equivocal data on the importance of practice thresholds in provider confidence and/or stress: overall the relationship is weak;
- Models of care that are highly integrated with specialist colleagues lead to increased practice satisfaction;
System Enablers of Distributed Maternity Care for Aboriginal Communities in British Columbia: Findings from a Realist Review

Prepared for the First Nations Health Authority
April 24, 2015

Applied Policy Research Unit (APRU)
Jude Komelsen, PhD (Director) & Kevin McCartney (Lead Reviewer)

Review Question:

• “What systemically enables the decentralization of maternity services while maintaining safe birth outcomes in rural and remote communities?”

• Realist Review methodology (Pawson)
• 145 articles.
• www.crhr.ca/apru
Literature (models) organized by level of care available locally:

① pre-post-natal care (no local intrapartum)
② Primary maternity care (no local c-section)
③ Local FPRESS cesarean section
Key Findings by Theme

Cross-cutting system enablers:
Include the need for cultural competence among maternity care providers. Providers must understand the reverberations of colonialism, recognize the importance of place beyond geography and recognize the importance of collaborative care that respects the contribution of all members of a community.
Key Findings by Theme

Pre- and post-natal-only care

Health Human Resource Enablers

• The importance of an expanded definition of the care team inclusive of locally-defined members contributing to the psycho-social, emotional and physical health of the birthing woman; and

• The appropriate orientation of care providers towards First Nations health and wellness.
Key Findings by Theme

Pre- and post-natal-only care

System Enablers

• The need for health services to be owned and controlled by the community;
• Infrastructure such as maternal waiting homes or birthing centres to facilitate referral from remote communities;
• Acknowledgement of the importance of social resources for women leaving the community for birth (i.e., family); and
• An exploration of the appropriate and/or necessary skill requirements for antenatal care givers,
• escorts in referral transport, and traditional healers and health workers.
Key Findings by Theme

Enablers of midwifery-led primary maternity services

• The need for an expansive definition of a care team to meet the needs of local communities;
• The need for recruiting strategies that include privileging local communities members to receive education and training;
• Innovative infrastructure models (i.e., Birth Centres);
• Recognition of the importance of allied staff;
• Appropriate attitudes of care providers;
• Recognition of the importance of multidisciplinary care planning that includes both physical and
• biological concepts of risk as well as social, cultural and personal concepts.
Enablers of physician-led primary maternity services

- There is an under-representation of Aboriginal physicians in Canada despite educational and incentive programs to increase recruitment;
- Overseas trained doctors are often recruited to rural and isolated communities to meet Canadian practice requirements but are not prepared in settings where cultural competence is a priority;
- There is a lack of description of physician-based clinical competencies necessary for safe sustainable services;
- Evidence suggests that physicians would benefit from public health training to better serve First Nations communities where social health needs are prominent;
- Salary is a potential incentive for collaborative practices between physicians and community practitioners;
- Models of physician-led rural maternity care that may be conducive to Aboriginal settings include Networked models and Alternative Payment Plans.
Implications of the (collective) evidence

• Challenges the *status quo*
• ‘Constructive disruption’
• Potential to initiate paradigm shifts
Our mandate

• Political, social and moral mandate to provide maternity care locally

• Evidence to support local care as an appropriate health services delivery option when certain conditions are met

• Importance of using best evidence to inform models of care

• Importance of integrated CQI and real-time data analysis
How?

1. Evidence, evidence, evidence!
2. Real partnership and collaboration with communities
3. Start in small rural communities and fix things from the ground up; (ideal setting)
4. Value innovative ideas and solutions and pilot test them
5. Build a comprehensive cost effectiveness evaluation framework