Rural Health Services Research Network of BC

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RHSRNbc Rural Health Services Research Symposium Proceedings

RHSRNbc is a research network mandated to build research capacity, enhance communication, and facilitate collaboration to enhance rural health services research. The network is directed by Dr. Stefan Grzybowski and funded by the RCCbc.

Executive Summary

The Rural Health Services Research Network of British Columbia (RHSRNbc) hosted a research symposium focused on determining evidence needs for sustaining rural health services in Vancouver, BC May 6-8, 2015. The political and strategic context for rural health service planning in British Columbia has evolved over the past several years as 'rural' has become a strategic priority for the Ministry of Health. This is evidenced most clearly through the provincial policy paper on Rural Health and the focus on sustaining patient-centered and community care 'as close to home as reasonably possible.' This larger context creates opportunities to advance rural health planning, and thus the health of rural residents, based on consolidating evidence from BC and internationally.

The symposium agenda was divided into four thematic areas with half-day sessions on maternity services, small surgical services, emergency transport services, and clinical telehealth. A small strategic invite list of 30 participants consisted of Australian colleagues from the University of Sydney's University Centre for Rural Health, the RHSRNbc Advisory committee, nominated researchers representing post-secondary institutions across British Columbia, the Rural Coordination Centre of British Columbia (RCCbc), Perinatal Services of British Columbia (PSBC), the UBC Centre for Rural Health Research (CRHR), Applied Policy Research Unit (APRU), First Nations Health Authority (FNHA), Interior Health Authority, and students from the University of British Columbia (UBC).

The purpose of the symposium was to bring together researchers from Canada and Australia to facilitate a strategic discussion to advance and refine a rural health services research agenda that would focus on key questions that need to be answered. This was done by addressing four thematic areas to review existing evidence, identify knowledge gaps and propose strategic research questions to advance the rural health services research agenda. These activities where undertaken with recognition of the need to continue to develop rural health research capacity in British Columbia.

Overview of the symposium

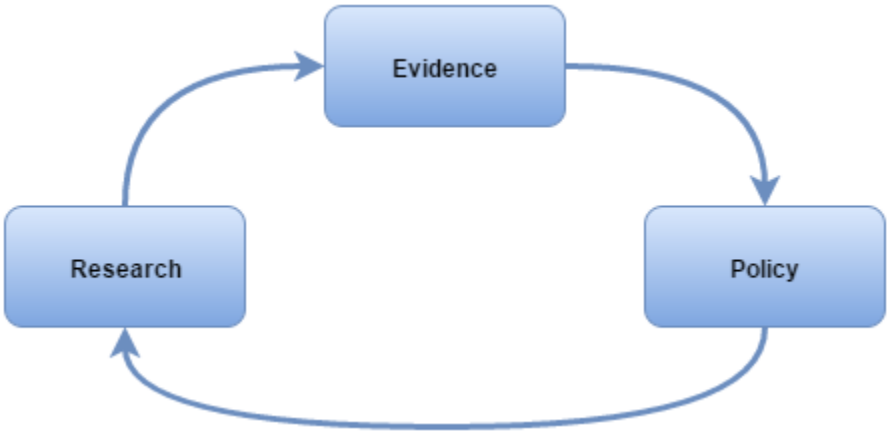
The agenda (Appendix 1) was co facilitated by Dr. Stefan Grzybowski (Rural Health Services clinician researcher), Lesley Barclay PhD (Rural health services Researcher and Australian rural health Policy

expert) and Jude Kornelsen PhD (Rural health services and Policy Researcher). The theoretical framework used to guide the discussion content areas included equal focus on *evidence*, *research* and *policy*. The assumptions guiding the discussion were that the smooth integration of these three perspectives provides a more thorough understanding of the phenomenon than any single concept would do in isolation, allowing meaningful expansion of ideas.

Research was recognized as the process leading to the production of evidence. In the context of the symposium, research was considered from the perspective of gaps, i.e. the issues we don't have information about. Underscoring this was the assertion that rural health services are under-researched and there is a pressing need to engage more researchers in answering questions of importance to sustaining and improving rural health services. Driving this approach is the belief that new knowledge can lead to better health policy, better health services and, ultimately, better population health outcomes.

Evidence was recognized as the consolidation of research in a format useful to patients, clinicians and decision makers. It consists of concrete and less concrete categories, the former including traditional epidemiological and administrative data while the latter may include psycho-social or spiritual consequences of decisions. Evidence was also seen as multi-dimensional and expanding beyond traditional data to include good ideas, cultural beliefs, experience and expertise, values and insight from other countries. The challenge is to find rigorous and meaningful ways to integrate all facets of evidence into health care planning decisions.

Policy is the end-result of the process of research implementation; the strategic application of what is known about a topic or phenomenon. It involves relationships with communities, other key stakeholders and policy makers and is an *inherently political act*. Successful implementation of research in to policy requires awareness of timing and ways of bringing rural realities to policy makers.



The research-evidence-policy lens was overlaid on the four content areas, questions for each of which are noted below. Added value of the discussion was gained from the inclusion of colleagues from Australia who are challenged with similar rural health planning issues within a remarkably similar socio-economic and health services setting, and in many cases have arrived at alternative health services policy solutions. Recognizing the creative synergy that drove the process we attempted to capture the broad range of ideas in the following notes and recognize that in most of the material only a bare introduction to the issue in question is presented. We leave it to participants and those who read this document with an interest in moving forward some of the work to explicate and actualize the ideas.

Section I: Maternity Care
Panel: Jude Kornelsen, Stefan Grzybowski, Lesley Barclay, and Margaret Rolfe.

Research gaps and associated questions included:

1. Definitions of risk
    a. What is the holistic risk (clinical, health service and social risks) of our current models of maternity care? How can we improve our research modeling and communication of that risk (using probability)?
    b. What is the model of care for communities with (A) RBI scores* below 7? 'How low can we go' (least number of births in a community) and still support local birthing services?
    c. What is the role of birth centres and how can this model be actualized?
    d. What other supportive infrastructure is needed?
    e. How do seasonal travel conditions affect the risks for local birthing in a community with limited services?
2. Access barriers/features to Service in Care Hubs/Referral Centers
    a. Regionalization in BC and Australia has meant moving patients to providers under a clinical risk management model. Recognizing the risks of birthing in a satellite community and the social risks related to travelling away from home to birth – how do we balance risk overall?
    b. What are the costs associated with accessing services in hubs? How many people are experiencing cost barriers?
    c. What are the roles of subsidized accommodation (a hidden/downloaded cost of centralization) and transportation? (See transport for research questions on effectiveness of public transport subsidies).
3. Patterns of service provision: predicting service crisis and opportunity for growth/re-opening
    a. Questions
        i. What are the patterns of in-flow and out-flow of service provision and families seeking care in other communities? What is determining these patterns?
        ii. What if there was a score (metrics) based on patterns of access to identify communities in pre-crisis?
        iii. Can we perform an historical analysis of service evolution / closure that would show indicators?
        iv. What proportion of births away relate to patient choice, clinical risk management, or health services structure?
    b. Research Issues
        i. Communities in crisis case study approaches may be useful.
        ii. Collaborative approach with decision makers to identify decision metrics
4. Recruitment and integration of Indigenous people into health care careers
    a. How do we integrate Indigenous people into Health Services Training Opportunities?

* The Rural Birth Index (RBI) and Australian RBI were introduced in the context of the discussion. More information can be found in Grzybowski S, **Kornelsen J**, Schuurman N. Planning the optimal level of rural maternity service for small rural communities: a systems study in British Columbia. Health Policy, 2009; 92(2): 149-157.

    b. How do we work with our Indigenous colleagues to increase capacity in Indigenous communities? (Innovative models of care such as Birthing Centres)
5. Re-opening closed maternity services
    a. Questions
        i. What do we need to do to open or re-open Level 2 (Australia) Tier 1A (British Columbia) services in rural communities?
        ii. How do we develop a toolkit / test it? And how do we parameterize the outcomes?
    b. Research Issues
        i. Physical infrastructure and community confidence levels to be considered
6. Impact of the closure of rural maternity services
    a. What are the effects of closure of rural maternity services for the long-term outcome of families and communities?
    b. What are the longitudinal outcomes of high-stress births, or those pregnancies without proper antenatal care? In other words, how do barriers to access to primary maternity impact the health of baby and mom outside the maternity care silo?
7. Succession planning
    a. What are the models that will support the integration of care between rural physicians, nurses and allied health professionals?
8. Experience of internationally trained medical providers
    a. What factors influence the recruitment of internationally trained maternity care providers? What are the enablers and what are the constraints?
9. How to women decide where they should birth when faced with the limitations of small rural community services?

Section II: Small Surgical Services

Panel: Stuart Iglesias, Stefan Grzybowski and Austin Curtin.

Research gaps and associated questions included:

1. Care providers / Health Human Resources (HHR)
    a. What compliment of care providers are best suited to provide surgical care in small rural settings?
    b. What is the sustainability of different surgical models related to generalist services?
    c. Can we overcome professional constraints in a research environment to test the potential contribution of generalist surgical models?
    d. What is the impact of the centralization of the staffing/HR process? (On call and replacement staff). Note: It is speculated that a loss of local health care practitioner responsibility to the patient, hospital, and health care team occurs as a result.
    e. What is the optimal structure for clinical governance to support small surgical services? How do surgical networks contribute?
    f. How do we teach the skills (soft and hard) of rural service provision?
2. Training programs

    a. What kind of training models exist, and what is appropriate it terms of training length and curriculum type?
    b. What models work, which do not, and how do models compare in various countries and communities?
3. Outcomes
    a. What are the procedural outcomes related to rural generalists with enhanced surgical skills compared to rural specialists, particularly for procedures that are less frequently performed?
4. Accreditation, CPD, and CQI
    a. What are the models and programs to maintain competence and credentialing?
5. Cost
    a. Question
        i. What is the cost effectiveness of ESS in small rural communities?
    b. Research Issues
        i. All aspects of cost considered (holistic cost).
        ii. What are the fixed vs. marginal costs? How does practice habit/model affect the costs?
6. Sustainability
    a. What are the optimal models to support the sustainability of small surgical services? Succession planning
    b. How do we promote rural surgical networks? Are models of care that integrate outreach specialist care more effective?
    c. How do we optimize locum coverage?
    d. What is the place of telehealth in sustaining rural surgical services?
7. Attributes
    a. Amongst medical students and residents, what are the intrinsic motivators that support individuals to pursue enhanced skills such as surgical or anesthetic care? What is the place of mentorship? How do we facilitate this growth?
    b. Qualities and attributes of a rural generalist – how can we teach these qualities?
    c. What is the value of the apprenticeship model of training?
8. Relationships & networking
    a. What is the relationship between Specialists and GPESS? How can this relationship be improved?
    b. How do we meet the needs of rural populations most effectively? What are rural populations' expectations of physicians?

Section III: Emergency Transport
Panel: Brent Hobbs, Jennifer Pilcher and Stefan Grzybowski.

Research gaps and associated questions included:

1. Models of high acuity patient transport
    a. How do we put the needs of the patient that needs to be transported first?
        i. What provider model most supports meeting patient need?
        ii. How do we modify industrial constraints while still respecting their importance?
    b. What are the models of High Acuity transport in various jurisdictions?
        i. What is the role of paramedics in primary care (in Saskatchewan)?

        ii. How do the models actually work, and how can local knowledge be respected?
    c. Beyond the dollar per activity metric, how can we measure where transport systems should be?
        i. Equally, what the appropriate metrics of good transport care?
    d. Is Interior Health's High Acuity Response Team (HART) model effective? [Currently under study]
        i. Improving sustainability
        ii. Cost effectiveness
    e. How is transport involved in a functional system of networked care?
2. Governance and management
    a. What does triage look like in a functional transport model?
        i. Can a local physician make the call?
        ii. Can we bypass local facilities toward definitive care?
    b. How can we shift the culture and paradigm of legislation?
        i. Can we demonstrate how legislative barriers are impacting care in rural communities?
    c. How can we demonstrate how legislation supporting transport nurses and paramedics providing pre-hospital and inter-facility transport is challenging to providing integrated critical care in rural communities? What is the impact on patients?
3. Cost issues
    a. What is the relative cost value of retrieval in comparison to preventative care or local services?
        i. Why are people transferred, and what do the outcomes for transferred patients look like? (Need comprehensive data).
        ii. Can we develop holistic outcomes? (e.g. Stress indicators, PROMs…?)
4. Effectiveness
    a. What is the effectiveness of public transport subsidies for improving access under centralized conditions for low acuity patients?
    b. What is the relative effectiveness of a retrieval / transport system on service sites?
        i. What is the stress on providers of delays in transport?
        ii. What is the effect on scope of practice at the small facility of enhanced transport? Outcomes?
    c. What proportion of patients transported to an emergency department after calling 911 did not need to be transported based on clinical assessment? (Frequent flyers).
5. Training transport providers
    a. Where does transport medicine fit in a rural nurse's curriculum?
    b. How can we teach an urban-centric system how rural works? (Simu-training; team-based training; Case studies and Stories)
6. Social and rural community issues
    a. How does social health (vulnerability, ethnicity, SES) impact transfer and retrieval use?

b. What is the role of local advocacy in the changing culture of data security? What about legislative priority setting? (Historically?)
c. What is the stress on patients and families related to emergency transport? How could this be mitigated?

7. Clinical tools to support transport
    a. What is the potential effectiveness of an Early Warning Score (EWS)?
        i. Is the EWS a valid tool to evaluate care quality?
        ii. Can EWS be reliably used to trigger a HART team response in Interior Health?
    b. What are each of the delays in the services system? Note: Current data doesn't have this capacity.
        i. Delay 1: patient seeking care
        ii. Delay 2: patient to definitive care (e.g. Expected pre-term delivery with non-ruptured membranes)
        iii. Delay 3: Delay at the definitive care facility (e.g. ED wait times)
    c. Can we develop a validated scale for pre-hospital care assessment that is more nuanced than the triage level? (Not only in terms of patient acuity but also patient stability)
8. Innovation in Patient Transport
    a. How many retrievals can be avoided with telehealth?
    b. Telemedicine – can we integrate telehealth into transport? (e.g. tablet or iPad that is a live feed of the patients status during transport)
    c. Can we avoid transporting a 911 call to an ED? Can a transport professional provide in-community care?

<u>Research Issues</u>

1. We already have research on time to care and outcomes for cardiac and trauma, can we have it for maternity or other services?
2. Relationships are the basis of model success. We *know* this – do we have it organized as evidence we can point to, leverage, use, etc.
3. Challenges to accessing and integrating data held by different organizations (EMS, health authority, community service).
4. Could we use local ambulance data to assess the utilization and effectiveness of ambulance usage? (Frequency of "lights and sirens" going out vs. coming home).

IV: Clinical Telehealth

Panel: John Pawlovich, Scott Lear, and Stefan Grzybowski.

1. Telehealth models
    a. What type of clinical telehealth model works for small rural communities?
        i. Could it consist of a mixed model of in-person care complemented with daily access to telehealth services?
        ii. The combination of telehealth and face-to-face relationships was highlighted several times as the key to the successful delivery of care – do we have any

proof of this? Any way to measure/evaluate this and/or compare it to other models?

   b. Which telehealth modalities are most effective for which clinical interactions? (Video links, audio links, synchronous vs. asynchronous?)
   c. What are key program characteristics essential for a successful program?
2. Costing issues
   a. Is the utilization of telehealth cost effective? (Considering comprehensive costing)
   b. How do models of compensation (physician, RN, etc.) effect the sustainability of clinical telehealth in the rural context? (I.e. APP vs. FFS vs. others)
3. Knowledge diffusion:
   a. How can we most effectively teach clinicians to use clinical telehealth?
      i. Does telehealth training happen in medical school and/or residency programs?
   b. Why isn't clinical telehealth more utilized?
      i. How do we scale up successful models?
4. Satisfaction and effectiveness
   a. What is the level of satisfaction for participants with clinical telehealth? (Providers, patients, etc.)
   b. What evidence do we have related to the effectiveness of telehealth interactions?
   c. Which delivery models of care do patients (and physicians) prefer?

<u>Research Issues</u>

1. The need for implementation studies (as opposed to pilot studies) was highlighted by panel members and participants in the audience.
2. There are lots of telehealth models that are already up and running, and the evidence for the effectiveness of these models is circumstantial at best, though admittedly compelling. How do we solidify evidence supporting programs that are well established? How do we scale up these programs?
3. Recognizing that telehealth is a collection of communication tools, what kind of evidence do we actually need to support the activities that are already taking place naturally? Maybe the agenda is not whether or not we should use telehealth, but rather what is the potential application of the telehealth tools.

Section V: Overarching issues: Recommendations for Building Rural Health Research Capacity

Throughout the each of the sessions, key issues were identified as being necessary for building rural research capacity. They included:

1. Data issues
   a. Access to data (highlighted as a challenge across all thematic areas). A particular need for ease of access to pan-Canadian data was mentioned.

        - Recognizing that each province acts somewhat independently with respect to data management and sharing. This is true also across regions within a province, and across organizations; even those directly supported by government.
    b. Developing a common dictionary of data elements in and across jurisdictions to help answer questions that involve the amalgamation of data, and to support the scaling up of research.
    c. 'Clearing house' for rurally focused data based studies and progress that could be repurposed to do secondary analysis of interesting questions
2. Collaboration
    a. Collaboration was highlighted multiple times as a key for advancing the rural research agenda
    b. Enhance bi-national collaboration between Canada and Australia
3. Knowledge diffusion and scaling-up effective innovations
    a. Demonstration projects structured to provide an opportunity to evaluate innovative models of rural health service provision. (suspend the constraints within a research bubble)
    b. Recognize the opportunity provided by communities in crisis to innovate and demonstrate solutions that might be difficult or impossible to attempt in other communities.

The RHSRNbc Rural Health Services Research Symposium brought together key stakeholders from BC post-secondary institutions, the Rural Coordination Centre of BC and Perinatal Services BC to develop a consolidated and prioritized rural health research agenda. With input from international colleagues from Australia, the coherence of the proposed agenda was confirmed. The next phase includes broader circulation of these proceedings for additional feedback and comment, prioritizing rural patient participants and community leaders.

Appendix 1 – Symposium Agenda
May 6-8, 2015
Liu Institute, Vancouver, BC

Evening Reception May 6th, 2015			
Topic	Person Responsible	Time	Location
Evening Reception (all guests invited)		5:00-7:00	Green College (UBC Point Grey Campus)

Day One: May 7th, 2015			
Topic	Person Responsible	Time	Location
Breakfast		8:00-8:30	Multi-Purpose Room
Welcome & Introduction to Symposium and Rural Health Services 1) Evidence (10 minutes) 2) Policy (10 minutes) 3) Research (10 minutes)	 Jude Leslie Stefan	8:30-9:00	Case Room
Theme 1: Maternity Services			
Panel Proposed agenda: 1) Overview of the current state of knowledge about rural maternity services. 2) What are the gaps in knowledge? 3) What might the research questions be that would address these gaps?	**Panel Members:** Leslie Jude Stefan	9:00-10:30	Case Room
Break		10:30-11:00	Multi-Purpose Room
Instructions for Small Group Discussion	Stefan	11:00-11:15	Case Room
Small Group Discussion ⇒ Groups of approx. 10 participants will be assembled ⇒ Panel members will circulate through the room to facilitate discussion and answer questions ⇒ Task for each group: 1) Brainstorm research questions that need to be answered 2) Prioritize research questions		11:15-12:00	Multi-Purpose Room

according to their importance and relevance to the current health care context			
Large Group Discussion ⇒ Regroup to present each group's questions ⇒ Establish a tentative research plan	Jude Stefan Leslie	12:00-12:30	Case Room
Lunch		12:30-1:30	Case Room
Theme #2: Small Surgical Services			
Panel Proposed agenda: 1) Overview of the current state of knowledge about small surgical services. 2) What are the gaps in knowledge? 3) What might the research questions be that would address these gaps?	**Panel Members:** Stu Iglesias **Facilitator:** Jude	1:30-3:00	Case Room
Break		3:00-3:15	Multi-Purpose Room
Instructions for Small Group Discussion	Stefan	3:15-3:30	Case Room
Small Group Discussion ⇒ Groups of approx. 10 participants will be assembled ⇒ Panel members will circulate through the room to facilitate discussion and answer questions ⇒ Task for each group: 3) Brainstorm research questions that need to be answered Prioritize research questions according to their importance and relevance to the current health care context		3:30-4:15	Multi-Purpose Room
Large Group Discussion ⇒ Regroup to present each group's questions Establish a tentative research plan		4:15-4:45	Case Room
Conclusion & Day Debrief	Stefan Jude Leslie	4:45-5:00	Case Room
Symposium Dinner (Potential)			
Dinner		6:30-8:30	Venue TBA

Day Two: May 8th, 2015

Topic	Person Responsible	Time	Location
RHSRNbc Advisory Committee – Breakfast Meeting	Stefan	8:00-9:00	Case Room
Breakfast		8:30-9:00	Multi-Purpose Room
Theme 3: Emergency Transport Services			
Panel Proposed agenda: 1) Overview of the current state of knowledge about emergency transport services. 2) What are the gaps in knowledge? 3) What might the research questions be that would address these gaps?	**Panel Members:** Brent Hobbs **Facilitator:** Stefan	9:00-10:30	Case Room
Break		10:30-11:00	Multi-Purpose Room
Instructions for Small Group Discussion	Stefan	11:00-11:15	Case Room
Small Group Discussion ⇒ Groups of approx. 10 participants will be assembled ⇒ Panel members will circulate through the room to facilitate discussion and answer questions ⇒ Task for each group: 1) Brainstorm research questions that need to be answered 2) Prioritize research questions according to their importance and relevance to the current health care context		11:15-12:00	Multi-Purpose Room
Large Group Discussion ⇒ Regroup to present each group's questions ⇒ Establish a tentative research plan		12:00-12:30	Case Room
Lunch		12:30-1:30	Case Room
Theme #4: Models and Strategies to Sustain Rural Health Services			
Panel Proposed agenda: 1) Overview of the current state of knowledge about models and strategies to sustain rural health services. 2) What are the gaps in knowledge? 3) What might the research questions be that would address these gaps?	**Panel Members:** John Pawlovich Scott Lear (?) **Facilitator:** Stefan	1:30-3:00	Case Room

Break		3:00-3:15	Multi-Purpose Room
Instructions for Small Group Discussion	Stefan	3:15-3:30	Case Room
Small Group Discussion ⇒ Groups of approx. 10 participants will be assembled ⇒ Panel members will circulate through the room to facilitate discussion and answer questions ⇒ Task for each group: 1) Brainstorm research questions that need to be answered 2) Prioritize research questions according to their importance and relevance to the current health care context		3:30-4:15	Multi-Purpose Room
Large Group Discussion ⇒ Regroup to present each group's questions ⇒ Establish a tentative research plan		4:15-4:45	Case Room
Conclusion & Conference Debrief	Stefan Leslie	4:45-5:00	Case Room