Rural Health Services Research Network of BC

Rural Coordination Centre of BC

Rural Surgical and Obstetrical Networks
A JSC INITIATIVE

BC EMERGENCY MEDICINE NETWORK

Rural Emergency Services Research Symposium Proceedings

July 2020

Hosted by the Rural Health Services Research Network of BC, the Rural Coordination Centre of BC (RCCbc), and the BC Emergency Medicine Network

Location: Case Room, Liu Institute for Global Issues, University of British Columbia, Vancouver, BC

Date: June 7th, 2018

Partnerships

RHSRNbc's mission is to improve communication, build capacity and enhance collaboration in rural health services research.

The RCCbc's mission is to improve rural health education and work to advocate for rural health in BC.

The BC Emergency Medicine Network's mission is to share, support and innovate to improve patient care.

Authors

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We would also like to acknowledge Arlin Cherian, Evonne Tran and Nisrine El Amiri for their contribution to report.

Executive Summary

The Rural Health Services Research Network of British Columbia (RHSRNbc) hosted a research symposium focused on rural emergency services in partnership with the Rural Coordination Centre of BC (RCCbc), and the BC Emergency Medicine Network (BCEMN) on June 7th, 2018. A small strategic invite list of 30 participants consisting of academics, health administrators and leaders, physicians, key people from the Ministry of Health and health authorities in British Columbia, community members and students gathered at the University of British Columbia, on the unceded, traditional, ancestral territories of the Skwxwú7mesh (Squamish), xʷməθkʷəy̓əm (Musqueam), and səlílwətaʔɬ (Tsleil-Waututh) Nations to identify gaps and system challenges to providing rural emergency services in BC.

This gathering took place with the recognition that the capacity of small rural emergency services in not well understood. The area is under researched and the outcomes are frequently obscured by referral bias. Consequently, rural health service policy is built on an inadequate knowledge platform and rural emergency services are struggling with sustainability in many rural communities. The RCCbc, RHSRNbc and BCEMN have common goals in trying to understand and support rural emergency services. A research symposium will provide a forum for strategizing potential research questions that will strengthen the foundation for more effective rural health service policy.

The goal of the symposium was to identify the key gaps in understanding and important research questions that need to be answered to support rural emergency services. The objectives of the event included:

1. Generate a high-level overview of the existing evidence related to the capacity of smaller rural ERs and the support structures currently in place to sustain these services.
2. Identify important gaps in our current understanding.
3. Generate key questions that need to be answered to better understand how rural emergency services attempt to address the needs of the population they serve.
4. Examine the interface between the smaller rural ERs and the larger provincial system of emergency care including communication support (synchronous and asynchronous), the integration of care for high acuity patients, and strategies to sustain quality of care (CPD).
5. Consider the data needed to answer the questions generated.

To address the objectives of the symposium, the agenda was divided into three main focus areas: the current capacity and support for rural emergency services, the need for change of the current state, and the main barriers impeding best rural emergency care. Each session was led by panel presentations followed by larger thematic discussions on rural practice models, rural emergency care providers, training and certification of emergency care providers, telehealth, systems and relationship issues, research methodology and data access and availability issues. Questions for each of the themes are noted below.

The questions and ideas generated through the discussions held at the symposium and captured in this document will fuel a process of inquiry over the coming years. Our plans include reviewing the evolution of the knowledge base supporting rural emergency services within 5 years through a follow up symposium.

This report includes a brief background section on rural emergency departments, and a synopsis of thematic discussions developed during the discussions on the day of the symposium. Furthermore, the program schedule, attendee information and presentation slides are added as Appendices (A-C) to this report.

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Background

Emergency departments (EDs) in rural Canada are estimated to serve 20% of the overall national population. In comparison to urban residents, rural communities experience poorer health outcomes and are particularly susceptible to trauma and related mortalities (Fleet et al., 2013a). Service cuts from regionalization have resulted in the closures of rural EDs and removal of specialized diagnostic and therapeutic services. This compromises the ability of rural EDs to provide access to CT scanners, X-rays, ICUs, or general surgery to meet patients' needs (Fleet et al., 2013b). Rural hospitals are often located far from the nearest referral centers and as a result, patients who require specialized or time-sensitive emergency care are burdened with lengthy travel times to the nearest referral centre (Fleet et al., 2013b).

While some studies have investigated the effects of the lack of available services locally on patient outcomes, costs, and demands on interfacility transport overall there is a lack of adequate evidence to plan appropriate and effective services (Fleet et al., 2013a). Additionally, there is no standardization for databases on a national level to compare access to services and patient outcomes across rural EDs provincially (Fleet et al., 2014). Further research is needed to understand the impacts of centralizing services in regional centres on rural EDs and rural populations for both patient outcomes and access to care. Health professionals and decision-makers need to consider geographic variations and reflect on existing resource allocation to provide quality rural emergency care and improve patient outcomes (Fleet et al., 2016).

Presentations Overview

The following presentations given during the symposium summarized various aspects of rural emergency care:

1. Framing the national landscape, *Etienne van der Linde*
2. Collaborative working group on the future of emergence medicine Canada: Findings and data access opportunities, *Riyad B. Abu-Laban*
3. What is the capacity and current support for rural emergency services? The BC landscapes, *Julian Marsden*
4. EM Needs Assessment, *Ray Markham*
5. BC Emergency Medicine Network, *Jim Christenson*
   See Appendix C *for presentation slides*

Synopsis of Thematic Discussions

**The following section is formatted by themes based on questions generated during the symposium. See Appendix D for a list of all the questions.

Focus area 1: What is the capacity of rural ERs?

This is a key issue that needs to be considered in planning and supporting rural emergency services. It includes the foundational elements of What should, and could the capacity of rural ER services be? How are ER services currently planned and the service profile established at the community level? What is the system of accountability that ensures we get this right and adapt to changing circumstances appropriately?

A. Rural practice models

"If you have seen one rural community you have seen one rural community" is a quote that recognizes the unique characteristics of each rural setting, population, and service needs. Given this perspective can we a range of models in a tier like fashion that will serve rural communities well and efficiently. What are the principles underpinning this approach?

Meeting Population Need

1. Can we systematically measure the need for emergency services of a given rural community population and align this level of need with an appropriate and sustainable emergency services model? (A Rural Emergency Services Index (RESI))
2. What data should inform the modelling of the rural emergency index? Can we align service levels/models with different levels of need?
3. Should we describe all the community emergency resources?
4. What are the models of emergency services that correspond to increasing population need? (providers, equipment, infrastructure)
5. Can we define the range of models that might meet the needs of communities based on basic fundamentals – skill sets, diagnostic resources, telehealth resources? (maybe 6-10 models).
6. What is an appropriate and sustainable level of emergency care for a given community? For patients? For providers? (equity, equality)

Conditions/ expectations to be considered:

- We need to understand current patterns of practice and patient access to ER services as well as outcomes before proposing solutions (e.g. utilization data, outcomes data for the population.)

- Population catchments can be created around each existing community service and the population that is captured can be characterized.
- The needs of the population catchment can be approximated based on the demographic characteristics with adjustment for social vulnerability.
- The level of service can be parametrized against this need and adjusted for the degree of isolation of the community from other services.
- We can co-develop a plan for emergency services through discussion between community representatives, local health care providers, health authority, and health system planners to determine the service profile that is appropriate and sustainable for the community.
- Need to respect the challenges associated with change.

Meeting Patient Need

1. What do rural patients present with at the local ER level? How appropriately are they utilizing the ER?
2. What are the drivers around patients seeking emergency services?
3. What are the patterns of patients accessing the ER at the community level? Do they vary in a systematic way? Can we define the patterns?
4. What are the costs to the system? To the patient?
5. What are the emergency services capacities of the community members themselves and how can they be enhanced?

Conditions/ expectations to be considered:

- We can define emergency care.
- Need data about present services before we strive to achieve better healthcare services
- The quality and accessibility of local family practice services will influence the way patients use emergency services.
- Patient needs must be taken into consideration – they may want to be treated in their home community which might make a visit to the hospital ER appropriate even for low intensity care?
- The costs of accessing care away from home when unavailable locally are paid by the patient. (transportation and other costs). These need to be considered as health system access costs associated with the health systems responsibility to provide care to rural patients.
- Lack of transparency and lack of community representation in service planning is challenging and can contribute to dysfunction in the planning process.
- It is unethical that in 2018 any community should go without access to Emergency services.

Facility resources

1. What is the core infrastructure needed in emergency rooms based on the model of care being provided? (Based on projected scope of practice dependent on size of population served, local geography….)
2. What are the appropriate and sustainable diagnostic and therapeutic resources a specific rural site would need, and how do we support communities to be able to provide this care?
3. How are innovative tools like bedside ultrasound incorporated into the emergency room?

Conditions/ expectations to be considered:

- Each emergency department is different. (How?) Can we define tiers of services?
- The resources of rural ERs are very variable as is the history that has contributed to the variation.
- It is logical and feasible to standardize models of rural ER care within available resources.
- Resource attainment for rural ERS may need to go beyond governance sources to include local fund raising.
- Care closer to home should be realized within the limits of local competency and clinical resources.

Transport

1. What are, and what should be, the key considerations that underpin the decision to keep a patient in a rural community setting rather than transport the patient to a higher level of care?
2. If the decision is to move the patient, then how is the mode of transport decided on and how much input does the local ER team have?
3. What is the significance of rural ambulance services being staffed by BLS level paramedics and what impact does this have on retention of local physicians and nurses?
4. Can improving the system of transport affect the recruitment and retention of health care providers staffing rural ERs?
5. What are the contemporary outreach modes (e.g. HART program in Interior health) and how do these impact the patient being managed locally as opposed to being transported?
6. Can support for providers who are, and will soon be engaged in managing high acuity patients be more effectively systematized through the 911, transport to local ER, local facility care, interfacility transport (if necessary) and specialized care? (Regional monitoring, Team decision making, Progressive expansion of communication circle as the situation dictates).

Conditions/ expectations to be considered:

- Patient transport is one of the biggest challenges for rural ER health care providers.
- Physicians and nurses having to leave the community in order to escort patients to higher levels of care is an important problem that is undermining the sustainability of small rural ER services.
- Transport coordination should be provided by someone who understands the context of care in rural communities.
- Relationships across the transport web need to be enhanced.

Governance Issues

1. Do we have the resources needed to address healthcare in rural BC in a cost-effective manner?
2. What model of governance will reflect the functionality that is intended?
3. How can we strengthen meaningful local community partnerships in governance and accountability for health care services?

Conditions/ expectations to be considered:

- We need to re-conceptualize risk at a health system level. We may be increasing clinical risk by not providing local services and we are still responsible for our patients who may have to leave the community to access care.
- Policy initiatives can be modelled on solutions from other jurisdictions such as Australia which uses community paramedics as full-time providers
- Expert nurses could contribute more to local rural clinical governance if they were supported.

B. Rural Emergency Care Providers

Rural emergency room health care providers are generalists and almost universally serve in other health care roles in the community. Most of the ER coverage is provided by nurses and doctors who work a rotation in the ER as part of a schedule of services that includes hospital work on the wards, and ambulatory services outside of the facility. Generally, most providers provide a range of care services beyond the ER which might include medical and surgical services, obstetrical care, palliative care and other services defined by the needs of the local population within the range of competency of the providers. Consequently, patients who come to the ER are often known from other health interactions and care is provided by a team with a high degree of not only medical but social accountability and continuity.

Team Based Care in the ER

1. What is an emergency practitioner?

2. Should we redefine emergency care as simply a more acute form of general practice?
3. What is the optimal structure of the emergency care team for different levels of need? (By size of population and distance to alternative services)
4. What are innovative team models of ER care that are being used in some jurisdictions and what are the outcomes associated with these models? (e.g. Nurse practitioners, paramedics)
5. What is the blend of skill sets we are aiming for in order to meet patient need and who could provide these skills? Does it vary by size of community? How?

Conditions/ expectations to be considered:

- Most rural and remote care including ER care is provided by generalists.
- Community members could be part of the team providing care. (First responders, volunteers, in support roles)
- Could use rural paramedics more effectively. We could learn from other jurisdictions (Australians) (70% are part time, low wages)

Sustainability of Rural Providers

1. What are the effects of a "bad" patient outcome on local emergency service providers and what programs are in place in rural settings to mitigate the effects?
2. How can we better support rural Emergency health service providers to cope with the stress of their practice and enhance their contribution to rural community care?
3. What is the impact of telehealth outreach, real time support, on the sustainability of rural ER providers?
4. How do we most effectively systematize outreach support so as to sustain rural ER providers? (compensation models, Regional or Provincial approach)

Conditions/ expectations to be considered:

- ER care providers will actually leave/quit if there is bad outcome.
- Providing better support for ER care providers may enhance retention.
- We lose staff when they don't feel supported by the tertiary centres.
- We could encourage physicians to talk with each other to mitigate stress. (e.g. list serve, RuralMed, Balint Group model)

C. Training and Certification of Emergency Care Providers

This is a contentious and largely unresolved issue. Most rural emergency care is provided by general practitioners without specialized certification through either the CFPC or the Royal College. The standards of competency for practicing in the rural ER vary considerably and skill support is provided through short courses. Generally, the system of care works across rural Canada and the realities of rural practice present formidable obstacles to change.

Highlights of Etienne van der Linde's presentation – Canadian Association of Emergency Physicians (see appendix X for slides):

- 87.6% non-EM certified; 12.4% EM certified (locums may be under-reported and may skew in favour of EMs)
- The Final Report of the Collaborative Working Group Emergency Medicine (CWG-EM) estimated a current national shortfall of 478 certified emergency physicians, expanding to 1 071 by 2020 (rural data penetration only 9 %) http://http://www.cfpc.ca/uploadedFiles/CWG0001_CWG-EM_Report-FINAL_WEB_Final_2.pdf
- Canada's national annual EM training capacity is currently 190 (https://phx.e-carms.ca/phoenix-web/pd/main?mitid=1327# and https://phx.e-carms.ca/phoenix-web/pd/main?mitid=1330)
- Based on the Final Report of the CWG-EM their shortfall translates to 2.5 years and 5.6 years of current national training capacity.
- This study, however, achieves a national staffing data penetration of 67.9 % of Small Urban and Rural EDs, and
- 2 301 non-EM certified MDs (87.6 % of small urban and rural staffing) provide care in this unique ED setting (Quebec not included).
- This alone would currently consume 12.1 years of national EM training capacity and note this is based only on only 67.9 % national small urban and rural data penetration / excludes Quebec.

Training/Education

1. What is the optimal skill mix for emergency room providers for specific levels of emergency room care?
2. How could community-based paramedics play a more significant role in rural community ER care? (Models from other jurisdictions, start by building a stronger foundation at the university level for paramedics. Improve paramedics' education and pay to eventually improve health outcomes.
3. How can we strengthen rurally specific education: throughout the career lifecycle (school, training, residency, career changes)?
4. Can we match training to rural community deployment, and could this strengthen sustainability? (i.e. cultural preparation, coping strategies, support)

5. How can we best support interprofessional training to contribute to team function in Emergency Care? How best can we provide CME for the interprofessional team working in the rural ER? (e.g. CARE course)
6. How are locums recruited with respect to ensuring that they are capable of meeting the expected challenges of emergency care in the community?
7. Could locums contribute to local community competencies in ways that go beyond just replacing on site physicians and nurses? (e.g. enhanced skills training like ultrasound, or simulation leadership)
8. Could we restructure rural UG education and PG residency training to incorporate more onsite training opportunities in ER care? (e.g. Team building education and ER competency enhancement through rotating integrated resources through rural communities).

Focus Area 2: The Support of Rural ERs.

Rural emergency services are an essential component of rural health care. Rural citizens need to know that if unexpected serious health issues occur (trauma, medical compromise) emergency services are available 24/7 to provide needed care. The viability of a specific rural community service depends on networking. Practitioners faced with challenging clinical cases need support and the opportunity to transport patients to larger services with greater resources when necessary. There is also a burgeoning recognition that capacity of rural services can be extended by outreach support in the form of telehealth or consultant visits.

A. Telehealth

1. What effect will telehealth have on recruitment and retention?
2. What is the extent of support that could be provided by telehealth in different clinical situations?
3. What about where there is no clinic and ED open - could telehealth link patients with health care providers directly? How would this work?
4. How can telehealth provide more equity of access in rural settings to healthcare services?
5. Does the presence of a synchronous telehealth link enhance the competency of a local provider? If so then how much? In what areas of care?
6. What is the distribution of resources? How does tech fit into this?
7. What is the optimal compensation model for ER physicians to provide real time support via distance tech?

Conditions/ expectations to be considered:

- Telehealth connectivity can replace some aspects of direct, on site, care whether it is generalist or specialist.
- Telehealth support of rural patients and rural providers will enhance care and sustainability.

- Telehealth support is likely to be cost effective for the health care system.
- The advent of telehealth raises questions around scope of practice. – No policy or data around using virtual presence of a doctor with physical presence of nurses doing the actual on the ground procedure. What are the legalities around this? When you humanize the case you know it is right thing to do, we don't have a policy level.

B. Systems Issues

1. What are the boundaries of telehealth mediated care? (Cultural, language, provider relationships?
2. What are the technological limitations of telehealth? (bandwidth, terminal capacity, operator capability)
3. Will communication across the system be enhanced for those patients who need it the most?
4. How will telehealth interactions be recorded?
5. How will telehealth connectivity affect the relationships between on-site providers and consultant providers be they generalists or specialists?

C. Relationships Issues

1. How will increasing reliance on communication technology affect the patient-doctor relationship? (patient-centered vs provider-centered)
2. How can we extend the use of telehealth past the consultations and into a continuum of relationship? (growing, learning, monitoring, supporting)
3. What are the barriers to building strong relationships in the consultative processes? Identify barriers.
4. How do synchronous and asynchronous modalities of telehealth communication affect the relationship between provider and patient? (video link, audio link, vs messaging and imaging)
5. How might new technologies like Google glasses contribute? (can see what the doc at the bedside is seeing)

Conditions/expectations to be considered:

- Communication technology helps us build and maintain relationships – so it's not the technology in and of itself that is important, but the relationship built and maintained.
- Communication can do harm as well as good – judgment, belittling.
- The process needs to increase confidence, safe space for learning, and improve outcomes. Intentional communication.

Focus Area 3: Research and Data

Health services research is not yet well developed in comparison to the societal investment in biomedical, clinical and population health pillars. This is even more so true for rural health services research. Recent overviews have been carried out related to both funding and publications with the key search term of rural and have demonstrated a disproportionately small scale of activity. There are relatively few graduate students who have dedicated their careers to rural health services research such that most of the research outputs come from clinical investigators. The research questions and methods invoked are generally embedded in clinical practice and population outcomes.

A. Research methods (Qualitative, Quantitative, Costing, and Mixed Methods)

1. What do we already know about rural emergency services? (Need a series of systematic and realist reviews)
2. How can we measure holistic cost such that increased costs associated with access to services away from home are included in the analysis?
3. How can we best measure the effects of relationships in the ER team on patient and performance outcomes?
4. How can we measure the effectiveness of the overall emergency care system on patient outcomes? (rural populations)
5. How can we quantitate risk associated with access or lack of access to local services?

Conditions/expectations to be considered:

- We need to maintain a state of clinical equipoise as to our biases about the effectiveness of generalist models and rural health services.
- A more productive research strategy will likely prioritize large cohort studies over RCTs. (complex adaptive systems, costs of research)
- Outcome and utilization data can be linked to postal codes through population catchments around services. (The Rural Research Advantage)
- Health care system is pushing risk onto the patients instead of owning the risk (holistic risk), pushing the cost onto the patient (financial, health, safety of travel, family relationships (destabilizing)
- There is not much rural research output considering the size of the population that lives in rural settings. Why?
- We could develop a framework for level of service and quality of care for rural communities if we had better evidence about the effectiveness of different models of health services.

B. Data Access & Availability (Population, Utilization, and Costs)

1. What data do we need? (outcomes, rural services models, costs (health system and patient)
2. Where can we get the data we need?
3. How can we get data on the risks associated with leaving the community to access care elsewhere?

Conditions/expectations to be considered:

- There are systematic inequities of care based on living in a rural or remote site. What is reasonable to expect?
- Population outcome data could form the basis for a quality improvement framework at the rural community level.
- Utilization patterns could provide a first level of reporting on local quality of care for a rural service. (e.g. 35% of the catchment births delivered at the local hospital)
- We could integrate local data such as provider characteristics, patient morbidity and co morbidities, degree of geographic isolation, transport factors (ambulance availability), referral patterns with system data (Pop data BC) to enhance our understanding of the efficacy of rural health services

Parking lot conversations:

Rural emergency services demand

- Need to understand what the demand for services is rather than start where our assumptions lie, start with the population needs
- To determine what the needs are, we need to find the level of community morbidity based on demographic profiling and then adjust for community specific characteristics. (e.g., may be increased rates of trauma related to the rural communities' location on a high traffic highway.
- We need to look at valid data and include perspectives from an expert panel.
- Input from experts who know the patients is important. We need an inclusive approach to understanding risks which includes consideration of care in and out of the community if unavailable locally.

What factors make it difficult to even have some of these conversations?

"The discussions start and end with money and somewhere in the middle the patients are talked about" – anonymous

- Miscommunication is the greatest evil we have in our system. Transform the system so we don't feel threatened talking to a peer – reduce isolation through people helping people, humanizing the experience – systematized versus humanized help. Human relationship versus system driven. Valued added by working through a case together
- All those costs [referring to transportation and other costs] are hidden in the pocket of the patients. We need to pull out what costs are being downloaded onto the rural patients especially.
- Case study of John – costs, acceptability, outcomes (Lesley)

References

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2. Fleet, Richard,M.D., PhD., Audette, L., M.D., Marcoux, J., Villa, J., Archambault, Patrick,M.D., M.Sc, & Poitras, J., M.D. (2014). Comparison of access to services in rural emergency departments in quebec and british columbia. *CJEM : Journal of the Canadian Association of Emergency Physicians, 16*(6), 437-48. Retrieved from http://ezproxy.library.ubc.ca/login?url=https://search-proquest-com.ezproxy.library.ubc.ca/docview/1625385031?accountid=14656.
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4. Fleet, R., Tounkara, F., Ouimet, M., Dupuis, G., Poitras, J., Tanguay, A., . . . Legare, F. (2016). Portrait of trauma care in quebec's rural emergency departments and identification of priority intervention needs to improve the quality of care: A study protocol. *Bmj Open, 6*(4), e010900. doi:10.1136/bmjopen-2015-010900

Appendices

Appendix A – Symposium Schedule

Section	Time	Location
BREAKFAST & REGISTRATION	8:00am-8:30am	Multi-Purpose Room
Welcome & Introduction to Symposium and Rural Emergency Services	8:30am-9:00am	Case Room
What is the capacity and current support for rural emergency services? (What are we doing well and not so well? Where are the opportunities?)		
Presentations • *Etienne van der Linde*: Framing the national landscape • *Riyad Abu-laban*: CWG-EM Findings & Data Access Opportunities • *Julian Marsden*: BC landscape	9:00am-9:30am	Case Room
Large Group Discussion	9:30am – 10:40am	Case Room
BREAK	10:40am-11:00am	Multi-Purpose Room
What do we want to change about the current state and support available? What are the main barriers impeding best rural emergency care?		
Presentations • *Ray Markham*: Rural Emergency Needs Survey • *Jim Christenson:* BC Emergency Medicine Network	11:00am-11:20am	Case Room
Large Group Discussion	11:20am-12:30pm	Case Room
LUNCH	12:30pm-1:00pm	Multi-Purpose Room

What are specific priority research questions that we can and should ask?		
Large Group Discussion (Part 1) ● Brainstorm research questions that need to be answered ● Categorize questions according to importance/relevance	1:00pm-2:30pm	Case Room
BREAK	2:30pm-2:45pm	Multi-Purpose Room
Large Group Discussion (Part 2) ● Explore issues of methodology and feasibility ● Finalize list of high priority questions	2:45pm-4:15pm	Case Room
Conclusion & Day Debrief	4:15pm-4:30pm	Case Room

Appendix B – Attendees

Key people from RHSRNbc, RCCbc, and BCEMN were in attendance. The RHSRNbc Advisory Committee and research designate consisting of a representative from each university in British Columbia + a member of their organization they each invite to attend. Strategic invitees were included from health authorities, MoH, and BC Emergency Health Services

Name	Organization
Nisrine El Amiri	RHSRNbc
Stefan Grzybowski	RHSRNbc
Urvee Karve	RHSRNbc
Jim Christenson	BC EMN / UBC Dept of Emergency Medicine
Riyad Abu-laban	BC EMN / UBC Dept of Emergency Medicine
John Pawlovich	REAP; UBC; Carrier Sekani Family Services
Sharla Drebit	BC EMN
John Tallon	BC Emergency Health Services
Afshin Khazei	Vancouver General Hospital; UBC
Brent Hobbs	Interior Health
Etienne van der Linde	Memorial University, Newfoundland
Ray Markham	Rural Coordination Centre of BC
Carolyn Canfield	University of British Columbia
Floyd Besserer	University Hospital of Northern British Columbia
Joe Acker	BC Emergency Health Services
Jonathan Vanderhoek	Selkirk College
Takaia Larsen	Selkirk College
Sara Bergen	Ministry of Health
Kendall Ho	Digital EmerEM / UBC Dept of Emergency Medicine
Julian Marsden	BC EMN / UBC Dept of Emergency Medicine
Frank Scheuermeyer	St.Paul's hospital / UBC Dept of Emergency Medicine
Colleen Price	Vancouver Island University
Trevor Connolly	Penticton Regional Hospital
Ruth Lavergne	Simon Fraser University
Tracy Christianson	Thompson Rivers University
Lesley Barclay	University of Sydney
David Durksen	Ashcroft community member
Nelly Oelke	University of British Columbia - Okanagan
Anshu Parajulee	Centre for Rural Health Research
Lisa Hodgson	Centre for Rural Health Research

Appendix C – Presentation slides

- Abu-Laban, R. B. (2018, June 7). *Collaborative working group on The Future of Emergency Medicine Canada: Findings and Data Access Opportunities*. Lecture presented at RCCbc Rural Emergency Services Research Symposium, Vancouver.
- Christenson, J. (2018, June 7). *BC Emergency Medicine Network*. Lecture presented at RCCbc Rural Emergency Services Research Symposium, Vancouver.
- Markham, R. (2018, June 7). *Emergency Medicine Needs Assessment*. Lecture presented at RCCbc Rural Emergency Services Research Symposium, Vancouver.
- Marsden, J. (2018, June 7). *What is the capacity and current support for rural emergency services?* Lecture presented at RCCbc Rural Emergency Services Research Symposium, Vancouver.

  The capacity and current support for rural emergency services in BC is best understood through the 2014 BC emergency physician workforce and training survey involving physician leads of emergency departments (EDs). An ED was defined as an area of the hospital that provided acute care of patients who presented without prior appointment, either by their own means or by ambulance.
  The survey showed that in 2013, 1024 physicians provided emergency medicine (EM) care at 92 sites in BC with just under half of these physicians doing so as part of their family practice (FP). Approximately half of physicians providing EM care in BC have EM certification with 70 percent being the CCFP(EM). The certification breakdown varied by type of site, with more sites having physicians providing EM care as part of their FP, however the majority of patients in BC seen by EM certified physicians, particularly in larger centers. Finally, there was an estimated need for 20 percent more physicians to provide EM care in BC in 2014.

- Van der Linde, E. (2018, June 7). *Framing the national landscape*. Lecture presented at RCCbc Rural Emergency Services Research Symposium, Vancouver.

Appendix D - A Selection of Research Questions/Topics Generated

1. Description of the care in all communities in terms of the context of catchment areas
2. Define the range of models of care and resources that we can apply across a range of communities (defined needs)
3. Pull together current evidence of the determinants in rural recruitment and retention for rural emergency medicine (generalist providing emergency care) – going beyond the Center for Rural Health Research rural evidence review
4. What financial implications are implied by the models that we put out to strengthen rural care (Holistic costs)?
5. How does policy act as a facilitator or a barrier to rural health services delivery and how does culture influence these models of care?
6. What are the current policies that are barriers to improving rural health in BC and what policies are facilitating this? What is the current legislative, regulative, and policy frameworks that work and which ones are inhibitors?
7. Investigate the effects on physician wellness and anxiety. Putting "care" rather than "services" at the centre.
1. What is the quality of care associated with physicians' certification?
2. What emergency medicine training is required for emergency services in the rural context?
3. CTAS levels distribution by site (grouping)
4. What does the community and population need?
    a. Focus on acute categories
5. Develop a model of needs and then test it (e.g., Delphi)
6. What are the models of emergency medicine care driven by?(community needs)?
7. What are the outcomes of interest?
8. How do we determine what communities need?
9. What are the barriers to telehealth that would support certain remote model of care?
10. Develop systematic reviews of success of various models
11. Define community by community
    a. Number of emergencies
    b. Number of transports (appropriate, inappropriate)
    c. Number of emergency medicine care practitioners
        i. Physicians certified vs non-certified
        ii. Nurse Practitioners
        iii. Physician assistants
        iv. Nurses
        v. Paramedics
12. Has the implementation of community paramedicine in the current 99 communities included?

    a. Ambulance response
    b. Visits
    c. Transports out
13. How can telehealth services provide better quality/access to emergency care?
    a. I.e., Is it equivalent to face to face care?
14. What skills are needed for certain principles of presentations?
15. How do we better categorize or "score" communities so we can compare across communities?
    a. Presentations on acuity
    b. Expert contextualization
16. What is the menu of skill mix and remote support available that can be used as a pick list for individual community needs?
17. Conduct holistic risk evaluations (patient perspectives)
18. Develop a holistic costing model – is a saving a *real* saving?
19. Quantify relationships in local teams and associations with quality of care
20. Is a relationship with consultation in telehealth related to quality of care?
21. How do we measure quality of care
    a. Does this improve quality of care?
    b. Holistic – patients, providers and system
22. Added value of human interaction vs simple sharing of information +/- longer term relationship

**** Have indigenous and patient representation in all these topics.****

Key Research Questions Identified by Participants

1. Description of all EM care communities, presentations and resources (include catchment areas)
    a. Identify short comings
    b. Potential data source: administrative data or local data
2. What range of models might meet the needs of the communities (+ fundamental principles)? (*Brent)*
    a. Skill set of providers
    b. Diagnostic resources
    c. Telehealth
    d. Treatment resources
    e. Develop models or pick list of resources
        i. Then co-production with communities
3. What financial implications are implied by better support for rural settings to strengthen capacity?

    a. Balance with savings (with holistic costs)
    b. How can we make this efficient?
    c. Case study of telehealth + *John's* support
4. What evidence exists about determinants of recruitment and retention for rural generalism? – *Jude Kornelsen*
5. What legislation, regulations and policies are facilitating rural health support? What can we improve? Include MoH staff?