Proceedings from the:
General Practice Anaesthesia in
British Columbia Symposium:
The Interface Between Policy,
Practice and Research

Sutton Place Hotel, Vancouver BC
September 23rd and 24th, 2010
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# Contents

Introduction..............................................................................................................1
Context of GPA Services in BC .............................................................................3
The “Virtual Birthing Suite” in the context of GPA Services ............................16
General Practice Anaesthetist Panel...............................................................20

## Working Groups

- Education ..................................................................................................22
- Policy ........................................................................................................24
- Practice ....................................................................................................26
- Research ..................................................................................................27

Conclusions ........................................................................................................28

Appendices ........................................................................................................29

- Acknowledgements and Appreciation ...................................................A
- Symposium Planning Committee ..........................................................B
- Symposium Agenda ...............................................................................C
- Index of Symposium Participants .........................................................D
Introduction

On September 23rd and 24th, 2010 the Centre for Rural Health Research (CRHR), the Rural Coordination Centre of BC (RCCbc), and Perinatal Services BC (PSBC) hosted a collaborative working meeting to address the issue of GP anaesthesia as a key component of health services to residents of rural BC. This invitational meeting, General Practice Anaesthesia in British Columbia: The Interface Between Policy, Practice and Research, was held in Vancouver, BC and was seen as a first step in addressing a number of complex integrated health human resource and services issues (surgical, obstetrical, nursing, midwifery) in rural BC.

The goals of the symposium, facilitated through small group discussion, were to:
1. Recognize and support the role of GPA’s in sustaining safe birth in rural communities;
2. Document current experiences of GPA’s in rural communities specifically with regards to maternity care and emergency services;
3. Create a structure for integrated knowledge translation by involving policy and decision makers; and
4. Formulate a plan of integrated action involving research, practice, education, and policy initiatives to address issues of accreditation, credentialing and a regulatory/quality improvement framework for guiding practice and facilitating the development of working groups in these areas.

The symposium began with an evening reception highlighting key individuals involved in the GPA agenda in BC in a panel discussion. The purpose of the panel was to stimulate dialogue and thought for the work on Friday. The speakers included:

- Louis Prinsloo, General Practice Anaesthetist, Northern Health Authority
- Peggy Yakimov, Kootenay Boundary Medical Director, Interior Health Authority
- Granger Avery, Executive Director, Rural Coordination Centre of BC
- Nevin Kilpatrick, Anaesthesiologist, BC Women’s Hospital & Health Centre with GPA background
- Kim Williams, Provincial Executive Director, Perinatal Services BC

Resonant with all of the speakers was the recognition of the need for GPA services in BC, especially in relation to health service provision in rural and remote communities. It was also noted that another health service, GP surgery, is closely linked to GP anaesthesia. Although the focus of the symposium was GP anaesthesia, the interrelationship with other services was kept in the foreground during the discussions.

The day long symposium was designed so that the multi-stakeholder group could establish a framework for action in the area of GP anaesthesia in BC. To accomplish this, the symposium was separated into four thematic sessions. The purpose of the first three sessions was to give participants an understanding of the current situation of GP anaesthesia services in BC, and the fourth session was designed to establish mechanisms to find solutions to address some of the issues that currently face GP anaesthetists. This involved establishing a “lead investigator” for each area who was responsible for following up on the discussions started at the symposium.

The sessions where as follows:
1. The Context of GPA Services in BC;
2. The “Virtual Birthing Suite”;
3. The General Practice Anaesthetist Panel; and
Introduction continued...

We extended our deepest gratitude to the 35 individuals who participated in the day, including 12 policymakers, 8 GPA’s (one recently retired) and 4 Anaesthesiologists. Their involvement and enthusiasm led to the day’s success and look forward to progress in the support of our provinces GPA’s.

The following proceedings reflect the thematic structure of the symposium including group discussions and slides from the PowerPoint presentations.

Deepest regards,

Stefan Grzybowski and Jude Kornelsen (Centre for Rural Health Research)
Context of GPA Services in BC

Speaker: Dr. Stefan Grzybowski

At the beginning of his presentation Dr. Stefan Grzybowski identified 3 key questions regarding GP anaesthesia services that he wanted the participants to think about during his presentation and the rest of the day.

1. How many GPA’s are there in BC?
   A. How do we count them? Full time versus part time?
      - CAS, 1996: 523 (>8hrs/wk anaesthesia or less than 200 anaesthetics/yr)
      - SRPC, 1995-1996: 498 (avg # cases 323/yr vs. 797/yr for anaesthesiologists)
      - CFPC: 751 of whom 604 were in rural or small town Canada

   According to CMA there were 2,287 anaesthesiologists in 2000 and there are 2,843 in 2010 in Canada.

2. What does a GPA do?
   A. What is their scope of practice?
      - A perioperative physician who provides medical care to patients before, during, and after surgical procedures;
      - Responsible for delivering (or ensuring the delivery of) anesthesia safely to patients in virtually all health care settings; Analgesia during labour, anaesthesia during c/s
      - Responsible for undertaking a preoperative medical evaluation of each patient before surgery, consultants with the surgical team and creates a plan for the anaesthesia tailored to each individual patient;
      - Undertaking airway management, intraoperative life support and provision of pain control, intraoperative diagnostic stabilization, and proper post-operative management of patients; Resuscitation services for newborn, maternal, trauma, cardiac patients Critical care, airway stabilization and
      - Preparing patients for emergency surgery. Emergency shifts, covering, running general practice
   B. How can we define their activities?
      - Northern Health Authority Data
      - Categories of GPA’s: Active (29), Provisional (8), Consulting (7), Locum (35)
      - Categories of Anaesthesiologists: Active (8), Provisional (9), Consulting (1), Locum (31)

3. What are the important problem facing GPA’s in 2010?
   A. Not enough GPA’s
      - Not enough applicants to the GPA programs
      - Failure of mentorship (2/3 Canadian trained, 1/3 international medical graduates (IMGs))
   B. Average lifespan of a GPA in Canada is 5 years, although it is currently longer in BC (data not available).

During his presentation Dr. Grzybowski also looked at how maternity services are supported by GPA services by looking at two previous studies.

Level of Maternity Service and Population Birth Outcomes for Rural British Columbia
The objective of this study was to compare population based provincial maternal and newborn outcomes by distance to access services and level of local services catchments for 2000-2004.

Retrospective cohort study using data from the British Columbia Perinatal Health Program [BCPHP] from Jan.1,
Context of GPA Services in BC continued...

2000 to Dec. 31, 2004. Outcomes were linked by postal code to one hour rural hospital geographic catchment areas for each rural facility in B.C. providing intrapartum maternity care. Hospital service level was defined using BCPHP data, and data was stratified by service hospital level.

Main outcome measures were intervention rates, including caesarean section and induction, and maternal morbidity.

Data was available for 49,400 women stratified over eight population catchment types, ranging from no local services to services provided by obstetricians and gynecologists. Caesarean section rates were highest in communities served by general surgeons (30.2%) and lowest in communities where women had to travel more than four hours to access maternity services (19%) or had local maternity services without local access to caesarean section (22.7%). The rate of induction of labour was highest for women 2 – 4 hours travel time from nearest maternity services (26%). Rates of postpartum transfer from delivery institution were highest in communities without caesarean section capability (7.4%) and communities served by general surgeons (8.8%). Regression analysis was undertaken to establish maternal and ecological predictors of key outcomes using services provided by OB/GYNs as the comparison community.

A look at B.C.:
- In rural British Columbia rates of caesarean section are highest in communities served by general surgeons
- Rate of induction was highest when women have to travel 2 – 4 hours to access services
- Post partum transfer of mother and infant occurred most frequently from the delivery institution in communities served by general surgeons.
- Some NICU admissions are thought to be due to lack of access to neonatal care in the local community as opposed to the child needing intensive care.

Rural Birth Index

The objective of this study was to develop and apply a population isolation model to define the appropriate level of maternity service for rural communities in British Columbia, Canada.

An iterative, mathematical model development supported by multi-methods research in 23 rural and isolated communities in British Columbia, Canada was used. The communities were selected for representative variance in population demographics and isolation. The main outcome measure was the Rural Birth Index (RBI) score for 42 communities in rural British Columbia.

In rural communities with 1 hour catchment populations of under 25,000 the RBI score matched the existing level of service in 33 of 42 (79%) communities. Measuring inappropriate service levels for the rural population was done through qualitative data from 6 of the 9 communities.

The RBI has become a pragmatic tool in British Columbia to help policy makers define the appropriate level of maternity service for a given rural population. The conceptual structure of the model has broad applicability to health service planning problems in other jurisdictions.
GP Anesthetists in Northern Health
March 2010
Context of GPA Services in BC continued...

General Practice Anaesthesia in British Columbia

Symposium
Sept 23 – 24, 2010
Vancouver

Stefan Grzybowski & Jude Kemelsen, Department of Family Practice, UBC/VCHRI & The Centre for Rural Health Research
September 24 2010

Objectives of the Symposium

• Recognize and support the role of GPA’s in sustaining safe birth in rural communities;
• Document current experiences of GPA’s in rural communities specifically with regards to maternity care and emergency services;
• Create a structure for integrated knowledge translation by involving policy and decision makers; and
• To formulate a plan of integrated action involving research, education, practice, and policy initiatives and establish working groups.

Objectives of the Presentation

• To identify some of the key questions that need to be answered about GPA’s;
• To look at maternal/newborn outcome data and relate it to GPA services; and
• To propose a potential planning model for GPA services.

Key Questions

• How many GPA’s are there in BC? (How do we count them? FTE’s?)
• What do GPA’s do? What is their scope of practice? How can we define their activities?
• What are the important problems confronting GPA’s in 2010?

An Anaesthesiologist is...

• A perioperative physician who provides medical care to patients before, during, and after surgical procedures;
• Responsible for delivering (or ensuring the delivery of) anesthesia safely to patients in virtually all health care settings;
• Responsible for undertaking a preoperative medical evaluation of each patient before surgery, consults with the surgical team and creates a plan for the anesthesia tailored to each individual patient;
• Undertaking airway management, intraoperative life support and provision of pain control, intraoperative diagnostic stabilization, and proper post-operative management of patients; and
• Preparing patients for emergency surgery.

Northern Health Authority 2010

<table>
<thead>
<tr>
<th>Categories of GPA’s</th>
<th>Categories of Anaesthesiologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active staff (29)</td>
<td>Active staff (8)</td>
</tr>
<tr>
<td>Provisional staff (8)</td>
<td>Provisional staff (9)</td>
</tr>
<tr>
<td>Consulting (7)</td>
<td>Consulting (1)</td>
</tr>
<tr>
<td>Locum (35)</td>
<td>Locum (31)</td>
</tr>
</tbody>
</table>
Context of GPA Services in BC continued...

Number of GPA’s in Canada

- CAS, 1996 – 523 (>8hrs/wk anaesthesia or less than 200 anaesthetics/yr)
- SRPC, 1995-1996 – 498 (avg # cases 323/yr vs. 797/yr for anaesthesiologists)
- CFPC – 751 of whom 604 were in rural or small town Canada
- According to CMA there were 2287 in 2000 and there are 2843 in 2010 anaesthesiologists in Canada

Problems

- Not enough GPA’s
- Not enough applicants to GPA programs
- Average GPA lifespan is 5 years

Scope of Practice of GPA’s

- Anaesthesia services for elective and emergency surgery;
- Analgesia during labour, anaesthesia during c-sections;
- Resuscitation services for newborn, maternal, trauma or cardiac patients; and
- Critical care support including complicated airway stabilization.
Context of GPA Services in BC continued...

**Background**

- Rural parturient women are increasingly being evacuated from their home communities to access services in referral centres [14-18].
- This is part of a general trend towards the centralization of care [19].
- Recent qualitative research has suggested that rural parturient women from communities without local maternity services experience high degrees of stress and anxiety due to the actual or potential evacuation from their community for labour and delivery [14,20-24].

**Objective**

To compare population-based provincial maternal and newborn outcomes by distance to access services and level of local services catchments for 2000-2004.

**Previous Research**

- Note: Studies mentioned in the text are not repeated here for brevity. However, key findings to support the objective are highlighted.

**Methods**

- Define unique catchment area for each rural hospital using postal codes
- Define obstetrical care service levels
- British Columbia Perinatal Health Database cohort analysis
- Link perinatal outcomes by residence of mother

**Rural Pregnancy Stress Scale (RPSS)**

- The RPSS is a reliable and valid measure of the stress rural parturient women experience during their pregnancy.
- Women without local access to obstetric services were 7 times more likely to experience moderate/high stress.
Context of GPA Services in BC continued...

### Definition of Service Level

<table>
<thead>
<tr>
<th>Service Level</th>
<th>Definition of Service Level</th>
<th># of Catchment Areas</th>
<th># of Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>201+</td>
<td>Greater than 200 minutes (4 hours) from maternity services</td>
<td>15 504</td>
<td></td>
</tr>
<tr>
<td>121-200</td>
<td>121-200 minutes (2-4 hours) from maternity services</td>
<td>15 747</td>
<td></td>
</tr>
<tr>
<td>41-120</td>
<td>41-120 minutes (1-2 hours) from maternity services</td>
<td>30 1,359</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>No local Obstetrical availability (Mid Care Via Family Physicians)</td>
<td>16 2,804</td>
<td></td>
</tr>
<tr>
<td>CP Surgery</td>
<td>C-section provided by CP surgeon only</td>
<td>30 1,247</td>
<td></td>
</tr>
<tr>
<td>OB/GYN</td>
<td>C-section provided by Obstetrician</td>
<td>17 30,462</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>137 49,492</td>
<td></td>
</tr>
</tbody>
</table>

### Data Analysis

- Exclude mothers who gave birth to twins and multiples and babies with fetal anomalies
- Bi-variate analysis to test sig. associations between outcomes and obstetric service levels
- Regression modelling to test predictors of neonatal and maternal outcomes.

### Location of Birth by Service Level of Mother's Catchment Area (Phase 2)

#### Newborn Outcomes
Context of GPA Services in BC continued...

- Perinatal Deaths by Service Level of Mother’s Catchment Area
  - p = 0.001

- Prematurity by Service Level of Mother’s Catchment Area
  - p = 0.004

- NICU 2 admissions by Service Level of Mother’s Catchment Area
  - p < 0.01

- NICU 3 admissions by Service Level of Mother’s Catchment Area
  - p = 0.01

- Average # of days in NICU 2 by Service Level of Mother’s Catchment Area
  - p = 0.000

- Average # of days in NICU 3 by Service Level of Mother’s Catchment Area
  - p = 0.003
Context of GPA Services in BC continued...

Costs of NICU days in BC

- Average public cost of a NICU 2 Day:
  - $1300
  - Private Cost - $4300
- Average public cost of a NICU 3 Day:
  - $250
  - Private cost - $4300

Conclusions

- In British Columbia lack of local access to intrapartum services is associated with increased rates of neonatal admission to NICU 2 beds and longer stays in both NICU 2 and NICU 3 beds
- Greater than 4 hour travel time to access services is associated with 3 times higher perinatal mortality

Maternal Outcomes
Context of GPA Services in BC continued...

**Conclusions**
- In British Columbia women who have to travel 2 to 4 hours to access maternity services are 1.3x more likely to receive an induction.
- In British Columbia women who live in a community in which Cesarean services are provided by General Surgeons are 1.2x more likely to have a section.

**Summary Conclusions**
- Lack of local access to maternity services in British Columbia is associated with significant perinatal consequences for rural women and families.
Context of GPA Services in BC continued...

**Defining Service Level**
- How do we rationally determine what level of maternity care a community should have?
- How would the process differ for anesthesia services?

**The RBI Model**
A health service delivery tool to determine where maternity care services should be placed in rural British Columbia.

**Methodology**
- Complex adaptive systems modeling recognizing that small rural maternity health services are at the edge of the complexity of health systems.
- This reflects the dominant nature of population need and degree of isolation in predicting level of service for small rural populations.
- Results were compared to existing community service levels and used to establish the phase transition points.

**Three-stage planning process for Rural Maternity Care Services**
1. Projecting the appropriate service level for a given community based on size of birthing population and degree of isolation using the Rural Birth Index (RBI);
2. Assessing the feasibility of implementing the proposed model of care based on community characteristics; and
3. Considering potential implementation within the planning priorities of the Health Authority.

**Component parts of the RBI**
To project the appropriate service level for a given community, the RBI Model takes into account 3 factors:
- Birth rate;
- Social vulnerability,
- Proximity to nearest cesarean section service.

**Birth rate**
The Birth rate is transformed into a Population Birth Score (PBS).

**Population Birth Score (PBS):**
Average # of births in catchment area of hospital over 5 years divided by 10.
Context of GPA Services in BC continued...

Adjustment for Population Vulnerability (APV)

Social vulnerability is represented by a score derived from a BC stats composite score (range -1 to +1) of several social indicators* and is weighted in the RBI between:

0.8 (advantaged) to 1.4 (disadvantaged)

* Overall regional socio-economic index including levels of: human economic hardship, crime, health problems, education concerns, children and youth at risk.

RBI Model: Proximity to nearest cesarean section service

Measured by an Isolation Factor (IF):
Surface travel time is weighted as follows:

- 30 minutes = -3
- 31-45 minutes = -2
- 46-60 minutes = -1
- 61-90 minutes = 1
- 91-120 minutes = 2
- 2-4 hours = 3
- > than 4 hours = 4

* If Cesarean Section provided locally then distance to next service is calculated.

RBI Formula

\[ RBI = (PBS \times APV) + IF \]

RBI: Rural Birthing Index
PBS: Population Birthing Score
APV: Adjustment for Population Vulnerability
IF: Isolation Factor

What does the RBI Score mean?

The calculated score corresponds to the appropriate level of service for a given rural service catchment population:

- 0–7: No local intrapartum services
- 7–9: Local intrapartum services without operative delivery
- 9–14: Local GP Surgical Services
- 14–27: Mixed model of specialists and GPS
- >27: Specialist service

Level of Maternity Services and Population Need

RBI Model: Limitations

- Intended for application to rural populations of under 25,000 and has been developed within the context of British Columbia's geography and health policy structure.
- Population and Birth data is reported using Local Health Area mapping rather than 1 hour surface travel time.
- The adjustment for population vulnerability is an approximation based on our in-depth understanding of social characteristics of the communities.
Context of GPA Services in BC continued...

**Summerland**

- **Data:** Average # of births (5 years): 71 → RBI Factors:
- **RBI Factors:** Average value (PST): 7.1
- **Socio-economic Status (APV):** 0.79 → Adjustment for Population Vulnerability (APV): 0.84
- **Travel Time to clinic:** 17 minutes → Isolation Factor (IF): -3

\[
\text{RBI} = (7.1 \times 0.84) - 3 = 3.0
\]

**Recommended level of service:** No Local Intrapartum Services

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**Merritt**

- **Data:** Average # of births (5 years): 105 → RBI Factors:
- **RBI Factors:** Average value (PST): 10.5
- **SIV: 0.87** → Adjustment for Population Vulnerability (APV): 1.35
- **Travel Time to clinic:** 53 minutes → Isolation Factor (IF): -1

\[
\text{RBI} = (10.5 \times 1.35) - 1 = 13.2
\]

**Recommended level of service:** Local Intrapartum services with operative delivery

---

**Queen Charlotte City**

- **Data:** Average # of births (5 years): 30 → RBI Factors:
- **RBI Factors:** Average value (PST): 3.0
- **SIV: 0.29** → Adjustment for Population Vulnerability (APV): 1.06
- **Travel Time to clinic:** 4 hours → Isolation Factor (IF): 4

\[
\text{RBI} = (1.06 \times 3.0) + 4 = 7.2
\]

**Recommended level of service:** Intrapartum services with no c/s
The “Virtual Birthing Suite” in the context of GPA Services

Speaker: Dr. Nevin Kilpatrick

Dr. Nevin Kilpatrick, an Anaesthesiologist with BC Women’s Hospital and Health Centre (BCWH) opened his presentation on the Virtual Birthing Suite (VBS) by giving an overview of the current situation of maternity care in BC.

To put things in perspective there are roughly 41,000 deliveries in BC a year, 7,500 of which are at BCWH. Of those, 80% are low risk deliveries that could be delivering elsewhere. Because of the large volume of women delivering at BCWH, and because 20% of those women are high risk, the number of maternity related procedures and interventions is dramatically higher than those seen in small centres. If you were to put rates to procedures, at BCWH you would see:

- 1 baby every hour
- 1 epidural every 2 hours
- 1 c-section every 3 hours
- 1 STAT c-section is done every 3-4 days
- 1 epidural blood patch is done every 10 days
- 1 massive transfusion every few weeks

On the other side of thing, communities with GPA-only anaesthesia support deliver more than 6000 babies yearly, most of which have been identifies as low risk, spread over about 25 rural birthing centers. This means that the rate at which they do specific procedures drops dramatically, and instead of per unit, over the entire year at all sites combined you would see:

- 1500 c-sections a year
- 1 STAT c-section a week
- 1200 regionals and 300 GA’s a year
- 120 ‘failed’ regionals; 5-6 ‘failed’ intubations a year
- 2500 epidurals a year
- 30 epidural blood patches a year
- 300 post-partum hemorrhages a year

In the case of a STAT c-section, where every minute delay is a threat to a babies IQ, or a post-partum hemorrhage, if a GPA only sees this once a year, what are they to do if policies and procedures that are not in place? This is where the VBS comes into play.

By aggregating the 6,000 plus deliveries by GPA’s a year into a VBS it will allow a comparison of resource levels between all of these communities and hospitals with a similar volume of deliveries.

Table 1. Things to consider when comparing large urban with rural hospitals:

<table>
<thead>
<tr>
<th></th>
<th>Larger Hospital</th>
<th>Rural Hospital - GPA-only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead in Safety</td>
<td>Anaesthesiologist</td>
<td>Needs to be the GPA’s</td>
</tr>
<tr>
<td>Administration</td>
<td>Administrative staff and Department Head</td>
<td>Who does this?</td>
</tr>
<tr>
<td>Practitioner gets sick/injured</td>
<td>No effect</td>
<td>Services could close</td>
</tr>
</tbody>
</table>

To encourage GPA’s to continue serving our rural communities we need to:

1. Make their job as fun as a BCWH anaesthesiologist
2. Make their lives as easy as a BCWH anaesthesiologist
3. Make their birthing centers as safe and reliable as a BCWH anaesthesiologist
The “VBS” in the context of GPA Services continued...

**FPA’S & RURAL MATERNITY CARE**

Nevin Kilpatrick
September 2010

**Connecting the dots......**
- Swellendam, South Africa 1991
- Leader, SK 1997
- Summerland, BC 2000
- BCWH 2006

**BCWH**
- 1 baby is born every hour
- 1 epidural is done every 2 hours
- 1 c/section every 3 hours
- 1 STAT c/section is done every 3-4 days
- 1 epidural blood patch is done every 10 days
- 1 massive transfusion every few weeks

**Connecting the dots......**
- FPA's: 100 working in
- 25 Rural Birthing Centers
- Delivering 6000 babies a year
- Within BC where 41,000 babies are born each year
- BCWH

**6000 deliveries a year**
- 1 ‘stat’ section a week
- 1500 caesarean sections
- 1200 regionals / 300 GA’s
- 120 ‘failed’ regionals; 5-6 ‘failed’ intubations a year
- 2500 epidurals a year
- 30 epidural blood patches a year
- 300 post-partum hemorrhages a year

*Number of Births at Home*

*Registered Nurses*
The “VBS” in the context of GPA Services continued...

The Virtual Birthing Suite
Communities with GPA-only anesthesiology support represent 6000+ deliveries per year.
Aggregating these into a Virtual Birthing Suite allows us to compare resource levels between these communities and hospitals with a similar volume of deliveries.
This is a powerful analytic tool that shows the need for resources and support for these communities.

Department of FP Anesthesia
- Department Head
- Call roster
- Staffing
- Meetings
- Quality and Safety
- Educational rounds / Knowledge transfer

Provide reliable, safe and sustainable service

What can we do?
1. Make their job as much fun as mine.
2. Make their lives as easy as mine.
3. Make their birthing centers as safe and reliable as mine.

For the benefit of BC women having babies as close to home as possible.
The “VBS” in the context of GPA Services continued...

**Speaker:** Dr. Louis Prinsloo

Dr. Louis Prinsloo, a GP Anaesthetist with Northern Health, focused on the state of GPA Services in BC.

He started his presentation by reminding us that although we are often critical of intervention in maternity care, the fact that we’ve come so far in making birth safe is due to interventions when they are needed. So although he is not pro intervention he cautions the group to be wary of low or no intervention models.

Consequently when considering the VBS, it is important to consider what portion of it is low risk. This population should be compared to the low risk population at BCWH as opposed to the whole of the BCWH population as roughly 20% of the whole population is high risk. We tend to get focused on the actual birth, but the consult, support and screening of women in prenatal care to ensure they are delivering in the right place is hugely important and should involve the GPA’s as well.

The VBS is important because every woman in BC should have a right to expect excellent maternity service close to home if she’s low risk and it’s feasible to maintain services in that community as calculated by the RBI score. So the questions that need to be ask are:

1. How do we allow this GPA service to be as good as possible?
2. How do we support GPA in their own communities to do an excellent job?

The answer is the VBS, using a team that is the sum of its parts. For a safe and successful delivery you need access to a:

1. GP Anaesthetist
2. GP Surgeon so that you have the ability to progress towards a c-section
3. GP-OBGYN or OBGYN or Midwife to deliver the baby
4. Nurse for support

The power of the VBS is to draw attention from individual focuses to address global challenges.

During his presentation Dr. Prinsloo identified some issues, as well as positive aspects, of being a GPA. The four issues he identified that are facing GPA’s today are:

1. Staffing
   - Nursing shortages
   - Policies or guidelines that are not reflective with staffing numbers, needs, or capabilities
2. Training and support
   - Training and support for GPA’s needs to be similar to that received by the Anaesthesiologists at BCWH
3. Numbers
   - Who is out there? Credentialing and privileging lists are not reflective of who is actually on the ground.
4. Quality Assurance
   - There are no standards and therefore no performance evaluations or surveillance, so GPA’s are not aware if they are doing a good or bad job if the outcomes are good.

The positive aspects of being a GPA that Dr. Prinsloo focused on were specifically related to his involvement in maternity services. Because of the nature of the job, GPA’s involvement in a woman’s pregnancy, as opposed to an Anaesthetists, is often throughout the pregnancy beginning with prenatal care, through to the obstetric component and delivery. Dr. Prinsloo identified this as giving him great pride in his job.
General Practice Anaesthetist Panel

As the focus of the symposium was General Practice Anaesthesia in BC, a large portion of the morning was dedicated to the panel and hearing the lived experiences of the GPA’s that were able to attend the symposium. The GP Anaesthetist Panel gave the group much to think about and identified priorities that the group would address in the afternoon during the four working groups for Education, Policy, Practice and Research. In attendance there were seven practicing GPA’s and one retired GPA:

- Dr. Charlie Eckfeldt, Hazelton
- Dr. Brad Gullason, Fort St. John
- Dr. Rahul Khosla, Nelson
- Dr. Faye MacKay, Creston
- Dr. Ray McIlwain, Bella Coola (Retired GPA)
- Dr. Paul Michal, Fernie
- Dr. Louis Prinsloo, Vanderhoof/Prince George
- Dr. Donald Young, Campbell River

All but one (Vanderhoof) of the GPA’s was Canadian trained in Edmonton (3), Montreal (1) and Vancouver (3). The international medical graduate (IMG) trained in South Africa and received a Diploma in Anaesthesiology from the College of Medicine of South Africa, as well as working for six years full time in anaesthesiology before coming to Canada.

The level of services that the GPA’s are able to provide, and the diversity of procedures that they do, are closely tied to the size of their communities and the surrounding communities that they serve, better known as the catchment area. In this case the catchment areas ranged from 2000 (Bella Coola) to over 65,000 (Campbell River) with no two GPA’s serving catchments of similar sizes. As to be expected, those communities with larger catchment areas had more specialists and offered more services (i.e. Campbell River and Fort St John) than those with smaller catchment areas (i.e. Creston and Hazelton). What was not expected was that occasionally smaller communities had specialists that one would usually only see in larger centres because of the desirability of the community as related to lifestyle. An example of this would be Fernie (18,000) where they have a gastroenterologist.

All of the GPA’s were involved in maternity services, but the level of involvement varied by community. Table 2 illustrates some specific numbers and rates of maternity-related services.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Dr. Eckfeldt (Hazelton)</th>
<th>Dr. Gullason (Fort St. John)</th>
<th>Dr. Khosla (Nelson)</th>
<th>Dr. MacKay (Creston)</th>
<th>Dr. McIlwain (Bella Coola)</th>
<th>Dr. Michal (Fernie)</th>
<th>Dr. Prinsloo (Vanderhoof)</th>
<th>Dr. Young (Campbell R.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliveries</td>
<td>600/yr</td>
<td>300/yr</td>
<td>100/yr</td>
<td>30-60/yr (decreased in later yrs)</td>
<td>100-120/yr + 20% leave</td>
<td>300-350/yr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-section</td>
<td>25%</td>
<td>25%</td>
<td>10%</td>
<td>20%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epidural</td>
<td>10%</td>
<td>25%</td>
<td>10%</td>
<td>20%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood patch</td>
<td>3 in career</td>
<td>9 in 20 years</td>
<td>1 in 2 years</td>
<td>0</td>
<td>1 in 10 years</td>
<td>3 in 3 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBAC</td>
<td>Advised not to b/c no Paediatrician or Anaesthesiologist</td>
<td>Yes when RC OBs in town, otherwise elective c-section</td>
<td>Yes, VBAC and operative.</td>
<td>Only if there is surgical backup</td>
<td>Send to Cranbrook</td>
<td>If OR is open. No paediatrician.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
General Practice Anaesthetist Panel continued...

Table 2. Maternity related services.

Major concerns raised by the GPA’s included:
1. Continuing medical education (CME)
   - Loss of confidence in skills
     - Low scope/diversity of practice
     - Low volume of procedures
   - Having to leave the community
     - Community without care
     - Leaving family
     - Colleagues upset with you for leaving
   - Costs associated with CME
   - Frequency and availability of academic courses
2. High BMI’s without consultation before delivery
3. Lack of protocols for major trauma
4. Loss of services
   - Regionalization
   - Performance based funding
5. Human resources
   - Staffing is an issue
     - Not only with practitioners or nurses
     - Vulnerable to illness and injury

Things that BC is currently doing well for CME of GPA’s includes:
1. Video rounds through the UBC Rural CME program
2. Academic courses through UBC - excellent teachers
3. REAP funding

In order to maintain skills many of the GPA’s do locums to increase their diversity of practice and management of more difficult cases.

In all but one case the GPA’s were in highest level of care, and in Campbell River although Dr. Young was not the highest level of care in the ICU, he would be the ‘go to’ person for lines or intubation.

When discussing major trauma two issues, blood supply and limited intensive care capabilities (Table 3), were discussed. In the case of one community, Nelson, Dr. Kholsa expressed his frustration at not being able to keep patients for any length of time in the OR (using it as a mini ICU), especially with overdoses and alcohol related admissions where the protocol would be to observe them for two to six hours. Instead the have to send them to Kelowna, which in the end can be much more risky, especially dependant on the weather conditions.
Working Groups

A priority for the day was establishing working groups to carry on the initiatives discussed by the group and contribute to the growth of the profession. The focus of the groups included Education, Policy, Practice and Research and each thematic area was led by an individual responsible for continued discussion.

Working Group - Education

The Working Group for Education consisted of Peter Newbery (facilitator), Rahul Khosla, Ron Ree, Brenda Wagner, Peggy Yakimov and Leslie Carty (minutes).

There were three main priorities that the group focused on.

1. Training pathways for new GPA’s including certification

Currently there is space in the UBC GPA program for a maximum of three physicians and the class is generally made up of a mix of new graduates and community practitioners. There are multiple other options in Canada to train as a GPA, one of which is Alberta that takes roughly five practitioners a year, generally from communities. The current problems facing recruitment and retention of practitioners include:

   A. Residents do not see the GPA program as a credible option because there is currently no accreditation process.

   B. The funding for practitioners to leave their communities to be trained as a GPA falls short and will not support them to take the year off.

As such, the group had the following recommendations:

   A. Develop a certification exam within BC for the 12 month program that will lead to accreditation. Although the group is wary of not wanting to obstruct GPA’s already practicing, they felt as though a certification exam will go a long way to establishing credibility in GP Anaesthesia. Issues that will have to be overcome include who will administer the exam and how would IMGs be included?

   B. Provide more funding for GPA training to relieve the economic burden of people coming back to obtain the skills necessary to practice anaesthesia in small centres.

2. Evaluation and integration of international medical graduates (IMGs)

Currently there are no standards or certification exam for IMGs to practice anaesthesia. Within BC a 12 month program is required to become a GPA, although this does not lead to accreditation, but will allow a GP to practice anaesthesia in smaller centres. There is an assessment of skills before IMGs can practice medicine in BC, but there is no specific assessment of anaesthesia skills and as a result some IMGs who have 6 months of training and 6 months of experience are currently practicing within BC when this does not meet the 12 month requirement. Recommendations from the group are as follows:

   A. Have a standard 12 month program (for both IMGs and local GP’s) with criteria for credits related to previous training and experience.

   B. During the assessment of skills to enter BC, include a section on anaesthesia.

3. Continuing medical education (CME) (maintenance and skill competency)

An issue that came up time and again during the GPA Panel in the morning was CME and the GPA’s confidence, or lack thereof, in their skills due to both the low diversity and low volume of procedures. Although Vancouver has a CME program for GPA’s, as does Alberta, they are not offered regularly and difficulties lay in leaving the community, family and finding someone that can fill in for you during your absence. To this end the group recommended to:
Working Group: Education

A. Develop videos and web-based learning for continued professional development.
B. Develop a travelling “GPA Road Show” that could address CME without placing the burden on the GPA to leave their community and find a locum. To do this it would require a group of GPA’s and Anaesthesiologists getting together to develop a package of skills to take around to the communities where there is low diversity and volume of procedures.

When the entire group reformed various leads for the specific tasks were identified as outlined Table 4.

Table 4. Task and lead identification for the Education Working Group.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Task</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training pathways</td>
<td>Develop certification exam for 12 month program</td>
<td>TBD</td>
</tr>
<tr>
<td>Training pathways</td>
<td>Funding for GPs to return for GPA training</td>
<td>Peter Newbery and Bob Woollard (RCCbc)</td>
</tr>
<tr>
<td></td>
<td>Make GPA more evident in medical school (1 rotation spot?)</td>
<td></td>
</tr>
<tr>
<td>Evaluation and integration of IMGs</td>
<td>Standard 12 month training program with credit for previous training and experience</td>
<td>Peter Newbery and Bob Woollard</td>
</tr>
<tr>
<td>Evaluation and integration of IMGs</td>
<td>Have original assessment of skills include a section on anaesthesia</td>
<td>TBD</td>
</tr>
<tr>
<td>CME</td>
<td>Videos, web-based learning, simulation</td>
<td>Brad Gullason (online)</td>
</tr>
<tr>
<td>CME</td>
<td>Travelling “GPA Road Show”</td>
<td>GPA’s to develop course material with RCCbc</td>
</tr>
</tbody>
</table>
Working Group - Policy

The Working Group for Policy consisted of Erin O’Sullivan (facilitator), Faye MacKay, Paul Michal, Patricia Osterberg, Rose Perrin, Alex Scheiber, Kim Williams and Mike Kehl (minutes).

There were five main priorities that the group focused on.

1. Equipment at Rural Sites
An issue that GPA’s brought forth during the panel was the quality and standards for equipment at rural sites. There needs to be a standardization of equipment in order to have improved standards, consistent protocols and to support recruitment and retention. The following recommendations were made:
   A. Inventory of the required high quality equipment to support the standards of practice and which in turn needs to be combined with adequate training.
   B. Identification of tech toys that will attract other specialists.

2. Locum and Locum Provisions
As the current issues facing locums are mostly based on provisions for coverage for a GPA to leave the community, the recommendations focus on increased financial support for the incoming practitioner. The following recommendations were made:
   A. Approach the rural GP locum and rural specialist program to revise placement criteria specific to GPA’s.
   B. Improve coverage parameters so GPA’s can leave the community in a supported manner for: (a) competency experiences; (b) time off; and (c) continuity of care for the community members.

3. Provision of a System of Quality Assurance
Because there is currently no certification exam, the group looked at this issue from the perspective of Health Authority and Provincial governance in order to increase quality, support and communication with GPA’s. The following recommendations were made:
   A. Develop a set of provincial protocols that consider the reality of rural GPA practice
   B. Develop an Anaesthesia Working Group, much like is present in Interior Health, through recruitment via the BC Anaesthesiology Society and the current Health Authority knowledge of practicing GPA’s.

4. Recruitment and Retention
Often practitioners will migrate to the smaller centres because of family, friends or they like the area. This results in more services being pushed into that area. An example would be Fernie. As a lifestyle community people want to live their, so as a result they have a gastroenterologist which you would usually only see in a larger centre. Regardless, the volume of practice is always an issue as well as other human resources including nurses. Although a specialist may enjoy an area, if they are only doing one or two procedures a week, that is a big deterrent. The following recommendation was made:
   A. Develop partnerships and strategies to target specialists through service placements in smaller centres (i.e. dental)

5. Policy Effectiveness
In order to ensure that the above recommendations are recognized on all levels within BC the following recommendation was made:
   A. The committee structure for each of the above applicable recommendations should include community, regional and provincial representation and the communication mechanism of decisions should be purposeful and two-way.
Working Group - Policy

When the entire group reformed various leads for the specific tasks were identified as outlined in Table 5.

Table 5. Task and lead identification for the Policy Working Group.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Task</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Inventory of required high-quality equipment to support standards of practice</td>
<td>HA lead from respective anaesthesia working groups</td>
</tr>
<tr>
<td>Equipment</td>
<td>Identify ‘tech toys’ that will attract other specialists</td>
<td>Sub-activity of Inventory mentioned above</td>
</tr>
<tr>
<td>Locums</td>
<td>Approach rural GP locum and rural specialist program to revise placement criteria specific to GPA’s</td>
<td>Granger Avery and John English</td>
</tr>
<tr>
<td>Locums</td>
<td>Allowing leave for competency experiences, time off, continuity of care for community members</td>
<td>Granger Avery and John English</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>Working groups in each HA with membership recruited via BCAS and HA anaesthesiology working groups</td>
<td>TBD)</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>Develop set of provincial protocols that consider rural/GPA practice reality</td>
<td>Teaching Centres (TBD)</td>
</tr>
<tr>
<td>Recruitment and Retention</td>
<td>Develop partnerships and strategy to target specialists recruitment, retention, service placements in smaller centres (e.g. dental)</td>
<td>HA medical leadership (TBD) Surgical council (Andy Hamilton)</td>
</tr>
<tr>
<td>Policy Effectiveness</td>
<td>Consideration of committee structures including community, regional, provincial representation, and a communication mechanism that is purposeful and two-way</td>
<td>TBD)</td>
</tr>
</tbody>
</table>
Working Group - Practice


There were two main priorities that the group focused on as outlined below.

1. GPA buy-in and creating a community
In order to create a community, which would require GPA buy-in, the group recommended the following:
   A. Consider creating a department for rural GPA practice that includes GP Anaesthetists and Anaesthesiologists, GP Surgeons and Royal College Surgeons, Primary Maternity Providers, Midwives and Nurses.
      • To fit within the Society of Rural Practitioners of Canada (national) or with the RCCbc (provincial)?
   B. Create a GPA driven network within BC so that practitioners know who is around, who needs locum coverage, and upcoming training opportunities.

2. Relationships between generalists and specialists
Currently the relationship between generalists and specialists is friendly at best and a contentious at worst. In order to facilitate the two groups working together the following recommendations were made:
   A. Secure locum privileges at regional hospitals in IHA (locum/clinical fellows).
   B. Advocate for Anaesthesiology Working Group in the Health Authorities (Interior Health is currently the only Authority that has a functioning group).

When the entire group reformed various leads for the specific tasks were identified as outlined in Table 6.

Table 6. Task and lead identification for the Practice Working Group.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Task</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA buy-in and community</td>
<td>Consider creating dept/division for rural/GPA practice</td>
<td>Bob Woollard and Bob _____??</td>
</tr>
<tr>
<td>GPA buy-in and community</td>
<td>Create a network for BC GPA’s</td>
<td>Louis Prinsloo</td>
</tr>
<tr>
<td>Relationships</td>
<td>Secure locum privileges at regional hospitals in IHA</td>
<td>Andy Hamilton</td>
</tr>
<tr>
<td>Relationships</td>
<td>Advocate for Anaesthesiology Working Group</td>
<td>NH - Louis Prinsloo VIHA - TBD</td>
</tr>
</tbody>
</table>
Working Group - Research

The Working Group for Research consisted of Stefan Grzybowski (facilitator), Ray McIlwain, Marty Willms, Donald Young and Caitlin Blewett (minutes).

There were four main research themes that the group focused on. The GPA Panel in the morning provided an overview and answered some of the questions partially, but more in-depth interviews are needed to really nail down the answers.

1. What is the experience of GPA’s in BC qualitatively?
   Specific questions include:
   A. What is a GPA?
      • Lived experience
      • Anaesthesia support
      • Training issues
      • Regulatory framework
      • What do they do
      • Range of communities
      • Relationship with specialist colleagues
      • Supporting critical care and emergency room
   B. Why do GPA’s have a short lifespan?

2. What are the practice outcomes of GPA’s in BC?
   A study to look at the outcomes through database analysis as compared to published outcomes with a focus on GPA vs. small centre Anaesthesiologists. Specific questions include:
   A. Where are the GPA’s and how many are there?
   B. What is the scope of your practice and the number of hours you spend on each procedure?
   C. What is the need for a GPA within a given community and rural health system?

3. What are the community characteristics to define the need for GPA services?
   In order to assess the need for GPA services it is necessary to look at specific communities. Specific questions include:
   A. What are we doing well from the eight GPA’s present?
   B. What are the characteristics of communities that preclude GPA services?
      • What is the size of the catchment and volume of procedures?
      • What's the minimum volume to maintain skills?

4. What are the support networks for GPA’s?
   In order to be able to offer better support for GPA’s it is necessary to look at what is already in place through a systems study both within and outside of the province. Specific questions include:
   A. What are the existing networks of GPA’s in BC?
   B. What are the informal networks? (if we could understand this we could better understand what formal options there are)

With the exception of the first theme of research which Stefan Grzybowski volunteered to take the lead on, the remaining research questions were identified, but not claimed when the entire group reformed.
Conclusions

The GPA symposium led to inspiring discussion that re-affirmed the commitment of key stakeholders to work to strengthen the profession. It also led to an appreciation of the contribution that GP Anaesthetists have made to rural health services in British Columbia, a contribution that has gone largely unnoticed. The challenge we now face is to maintain momentum and focus on the issue to bring about political and professional change in support of GP Anaesthetists roles in rural health services.

One direction is to integrate what we know about the experience and practice of GP Anaesthetists into the larger framework on interdisciplinary contributions to rural care, acknowledging the crucial role of all players. It is our intention to bring key stakeholders from all disciplines together for thoughtful discussion and to identify priorities in strengthening the fabric of rural care.

Please contact the Centre for Rural Health Research (info@ruralmatresearch.net) for updates.

Deepest Regards,

Stefan Grzybowski and Jude Kornelsen, Centre for Rural Health Research
Granger Avery and Bob Woollard, Rural Coordination Centre of BC
Kim Williams and Marty Willms, Perinatal Services BC
Acknowledgements and Appreciation

This symposium would not have been possible without the support of a number of organizations and individuals. We would like to express our thanks to all who helped with the symposium for their contribution to planning this successful event.

For ongoing support of rural health research:
Canadian Institutes of Health Research
Michael Smith Foundation of Health Research

For welcoming us onto traditional Lheidli T’enneh First Nations land:
Elder Jewel Thomas, Musqueam Indian Band

For travel support for the General Practice Anaesthetists to attend this event:
Rural Education Action Plan (REAP)

For supporting the symposium:
Centre for Rural Health Research
Rural Coordination Centre of BC
Perinatal Services BC

The Symposium Planning Committee

Photo credits:
Katrina Bepple
Symposium Planning Committee

Bob Woollard, Chair - Associate Director, Rural Coordination Centre of BC
Granger Avery - Executive Director, Rural Coordination Centre of BC
Katrina Bepple - Project Manager/Financial Administrator, Centre for Rural Health Research
Leslie Carty - Project Manager, Centre for Rural Health Research
Elisa Chan - Project Manager, Rural Coordination Centre of BC
Stefan Grzybowski - Co-Director, Centre for Rural Health Research
Nevin Kilpatrick - Anaesthesiologist, BC’s Women’s Hospital and Health Centre
Jude Kornelsen - Co-Director, Centre for Rural Health Research
Peter Newbery - Director, Enhanced Skills Program, Department of Family Practice, UBC
Louis Prinsloo - General Practice Anaesthetist, Northern Health Authority
Kim Williams - Provincial Executive Director, Perinatal Services BC
Marty Willms - Provincial Leader, Perinatal Networks, Perinatal Services BC
## Agenda

**Objectives:** The goals of this symposium are to:

1. Recognize and support the role of GPA’s in sustaining safe birth in rural communities;
2. Document current experiences of GPA’s in rural communities specifically with regards to maternity care and emergency services;
3. Create a structure for integrated knowledge translation by involving policy and decision makers; and
4. Formulate a plan of integrated action involving research, practice, education, and policy initiatives to address issues of accreditation, credentialing and a regulatory/quality framework for guiding practice and facilitate the development of working groups in these areas.

### Thursday September 23rd, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 6:30pm - 9:30pm | Evening Reception including Key Speakers, Initial Dialogue and Poster Discussion  
|               | Louis Prinsloo, General Practice Anaesthetist, Northern Health Authority  
|               | Peggy Yakimov, Kootenay Boundary Medical Director, Interior Health Authority  
|               | Granger Avery, Executive Director, Rural Coordination Centre of BC  
|               | Nevin Kilpatrick, Anaesthesiologist, BC Women’s Hospital & Health Centre with GPA background  
|               | Kim Williams, Provincial Executive Director, Perinatal Services BC  |

### Friday September 24th, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am - 8:00am</td>
<td>Breakfast</td>
</tr>
</tbody>
</table>
| 8:00am - 8:15am | Introduction  
|               | Granger Avery, Executive Director, Rural Coordination Centre of BC  
|               | Kim Williams, Provincial Executive Director, Perinatal Services BC  
|               | Stefan Grzybowski, Centre for Rural Health Research  |
| 8:15am - 9:00am | Context of GPA services in BC  
|               | Stefan Grzybowski, Centre for Rural Health Research  |
| 9:00am - 9:30am | The use of the “Virtual Birthing Suite” in the context of GPA services  
|               | Louis Prinsloo, General Practice Anaesthetist, Northern Health Authority  
|               | Nevin Kilpatrick, Anaesthesiologist, BC Women’s Hospital & Health Centre with GPA background  |
| 9:30am - 11:00am | GPA’s Role in Rural Maternity Services Dialogue  
|               | Facilitated by Stefan Grzybowski, Centre for Rural Health Research  |
| 11:00am - 11:15am | Morning Break                                                        |
| 11:15am - 12:45pm | GPA’s Role in Rural Emergency Services Dialogue  
|               | Facilitated by Stefan Grzybowski, Centre for Rural Health Research  |
| 12:45pm - 1:00pm | Identification of Themes for Afternoon Working Groups  
|               | Facilitated by Bob Woollard, Rural Coordination Centre of BC  |
| 1:00pm - 2:00pm | Lunch                                                                |
| 2:00pm - 3:30pm | Initial Working Group Meeting (small groups) 1 hour and Reporting 0.5 hour  
|               | Facilitated by Bob Woollard, Rural Coordination Centre of BC  |
| 3:30pm - 3:45pm | Afternoon Break                                                      |
| 3:45pm - 4:15pm | Wrap Up and Next Steps  
<p>|               | Facilitated by Bob Woollard, Rural Coordination Centre of BC  |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Caitlin Blewett</td>
<td></td>
<td>Master of Public Health, Work Study Student</td>
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<td>Interior Health Authority</td>
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<td>Director, Performance Accountability</td>
<td>Provincial Health Authority</td>
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<td>Regional Coordinator, Perinatal, Child and Youth Planning</td>
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<tr>
<td>Paul Michal</td>
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<td>General Practice Anaesthetist</td>
<td>Elk Valley Hospital</td>
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<td>Peter Newbery</td>
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<td>Louis Prinsloo</td>
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<td>General Practice Anaesthetist</td>
<td>Northern Health Authority</td>
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<td>Andy Hamilton</td>
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<td>Program Medical Director</td>
<td>Interior Health Authority</td>
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<td>Brenda Wagner</td>
<td><a href="mailto:brenda.wagner@northernhealth.ca">brenda.wagner@northernhealth.ca</a></td>
<td>Program Medical Director</td>
<td>Northern Health Authority</td>
</tr>
<tr>
<td>Marty Willms</td>
<td><a href="mailto:marty.willms@phsa.ca">marty.willms@phsa.ca</a></td>
<td>Provincial Leader</td>
<td>Perinatal Services BC</td>
</tr>
<tr>
<td>Peggy Yakimov</td>
<td>Senior Medical Director, Acute East</td>
<td>Clinical Professor</td>
<td>Northern Health Authority</td>
</tr>
<tr>
<td>Donald Young</td>
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