

Proceedings from the Invitational Meeting on Rural Surgical Services

Co-Chairs: Dr Stuart Iglesias and Dr Nadine Caron

June 22-23, 2007
Hyatt Regency Hotel
Vancouver, British Columbia

Edited by the Centre for Rural Health Research



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Table of Contents

Executive Summary / v

Preface / xiii

Map – Rural Surgical Services in BC / xiv

A. Introduction / 1

B. Presentations

I. What We Know

1. The Evidence Base for BC's Rural Small Volume Surgery Programs / 3
Stuart Iglesias

II. What We Need to Know

1. What We Need to Know / 14
Nadine Caron
2. Planning Allocation and Level of Maternity Service for Rural BC / 17
Stefan Grzybowski and Jude Kornelsen
3. GP Surgery within Regionalized Health Care / 20
Jude Kornelsen

III. How Do We Get There

1. Proposal for a Training Program for Rural Family Physicians in Surgery / 23
Nadine Caron and Nancy Humber
2. A Support Program for Small Volume Rural Surgery Programs / 29
Stuart Iglesias
3. Discussion: Articulating a Research Agenda / 32

IV. Conclusion

1. Recommendations for Rural Surgical Services / 35

E. Appendices

1. List of Participants / 38
2. Research Questions / 39
3. Poster Presentations / 40
4. Think Pieces
 - a) John Andruschak, British Columbia Reproductive Care Program, Provincial Health Services Authority / 42
 - b) Dr. David J.M. Butcher, Northern Health Authority / 44
 - c) Karin Olson, Vancouver Coastal Health Authority / 46
 - d) Bill Relph, Vancouver Island Health Authority / 49

EXECUTIVE SUMMARY

The Meeting

The Invitational Meeting on Rural Surgical Services (July 22-23, 2007, Vancouver, BC) aimed to share research, policy, and educational initiatives among key stakeholders in rural surgical care. Hosted by the Centre for Rural Health Research, the participants included researchers, GP Surgeons, specialist surgeons, and other practitioners from rural communities, Heads of the UBC Departments of Surgery and Family Practice, the Associate Postgraduate Dean of UBC Medicine, as well as representatives from the British Columbia Health Authorities, the BC Reproductive Care Program, and the BC Medical Association's Joint Rural Committee.

The meeting focused on current research and policy discussions in order to address the present need for solutions to the crisis in small volume hospital sustainability. Poster presentations showcased during the opening reception and throughout the weekend covered interrelated, emerging topics in rural surgical services:

- models and standards of rural surgery;
- rural surgical innovations; hospital infrastructure;
- administrative and policy challenges;
- health human resources; and
- research methods and background.

Representatives from British Columbia health authorities provided "Think Pieces" on rural surgical services in their region. They outlined current challenges and suggested research avenues for developing best practices. Administrators with the BC Reproductive Care Program and BC Health Authorities prioritized the following rural surgical service issues and needs:

- patient outcomes;
- team competence and specialized training;
- regularity or consistency of service availability;
- safe and timely access to services;
- support for staff ensuring recruitment and retention;
- use of Telehealth;
- local fundraising;
- economic impact on the community; and
- sound physical infrastructure.

The meeting culminated in the sharing of a proposal for a new formal accredited training program in Rural Surgery for Family Physicians, housed in the UBC Departments of Family Practice, Surgery, and Obstetrics/Gynecology. Research presented at the meeting illustrates that a training program is urgently needed to ensure the sustainability of small-volume rural surgical programs.

Background

Sustainable rural surgical care is an urgent priority. Surgical services are integral to the delivery of primary health care, maternity services, and to support trauma and acute medical services in rural communities.

The current research shows that rural surgical programs are closing rapidly:

- In 2000, out of 76 rural hospitals with surgical programs in western Canada, 20 were located in BC.¹
- By 2004, only 15 rural surgical programs remained in the province.²
- This rural hospital attrition has occurred solely in the small-volume hospitals with GP Surgeons that serve populations of 5,000-15,000.
- Physicians supporting these programs are either
 - Canadian-trained family practitioners with international postgraduate training in surgery or
 - International Medical Graduates (IMG's) with a foreign fellowship (two-third of the GPS population).^{3 4}

Rural communities face unique challenges to health care sustainability, causing stress for physicians and the community:

- Small volumes in the overall surgical program may cause professional dissatisfaction among highly-trained physicians.
- Where communities experience a reduction or loss in services, families face the social and financial difficulty of traveling significant distances for health care.

The sustainability of rural maternity care and surgical programs is closely linked:

- Hospitals that do not provide local cesarean section capabilities are unlikely to provide local maternity services.⁵
- Programs that do continue to provide local maternity care without access to local cesarean sections have a high maternity patient outflow⁶ and are not likely to be sustainable.⁷

Procedure volumes in rural hospitals may be small, but there is a significant and growing body of evidence that outcomes for these hospitals are safe.⁸ This includes cesarean section,⁹⁻¹⁶ appendectomy,¹⁷⁻¹⁹ gastroscopy,²⁰⁻²² colonoscopy,²³⁻²⁷ and anesthesia²⁸:

- The average procedure volume for individual BC rural surgical programs is 200 total procedures per year.²⁹
- Studies show that GP Surgeons do not need a particularly high procedural level to maintain competency³⁰ and they are skilled at identifying and referring complicated patients, leading to good rural surgical outcomes.³¹

Rural surgical programs are dependent on skilled practitioners, but policy planning, training, and professional support do not address the current challenges for rural physicians.

- Rural surgeons in small volume programs are primarily General Practitioner Surgeons (GPS) working solo or with General Surgeons (GS) or specialist surgeons.
- There are few skilled practitioners in Canada able to replace this retiring workforce.

- The important role of GP Surgeons is largely misunderstood and ignored in large-scale surgical service delivery planning.
- GP Surgeons in Canada have no credentialing, training, or examination process that can be used to transport their credentials, conduct research, or formally maintain competence.
- Canada needs an academic program of training, evaluation, accreditation, and professional support for General Practitioner Surgeons.

The lynchpin holding rural surgical programs together is the GP Surgeon, who is the “human resource underpinning the maintenance of sustainable maternity services in rural Canadian communities.”³²

New directions in research are necessary to support evidence-based decision making for rural surgical programs. Future studies may want to examine the following:

- Compare aspects of local surgical services with regional referral hospitals, including the outcomes of traveling patients and costs and benefits of local vs. regional service.
- Investigate rural health care programs other than maternity services to see if they are positively linked to sustainable surgical services.
- To determine appropriate rural service levels, determine the minimum volume and scope of service for a sustainable program and explore the role of itinerant surgery in rural surgical programs.
- For the successful implementation of a GP Surgery training and accreditation program, compare the outcomes of IMG's and GP Surgeons who completed a 12-month surgical training program.

Current studies in health care planning allocation at the Centre for Rural Health Research examine the appropriate level of sustainable maternity service for rural communities in relation to population need. The centre has developed and is currently validating the Rural Birth Index (RBI). The RBI is a tool that

- looks at community characteristics such as size, isolation, and vulnerability, and
- estimates/predicts the appropriate level of maternity services for a population.

Training and Support Programs

Central to the meeting was a discussion for a proposed training program in GP Surgery. Current training models and ad-hoc advanced skills programs are insufficient to meet the demands of fragile rural surgical programs on the brink of closure.

A study through the Centre for Rural Health Research on GP Surgeons' perspectives on training has determined that any formal program should have

- supportive mentors,
- a standardized curriculum for a portable skill set, and
- postgraduate support and training.³³

Interviewees also stressed that a GP Surgery training program should be separate from the training programs for surgical Residents.

The proposed Training and Support Program for GP Surgery would be

- housed within UBC and UNBC, through the departments of Family Practice, Surgery, and Obstetrics/Gynecology,
- accredited by the College of Family Physicians of Canada, and
- have satellite training sites in Prince George and rural communities.

Core teachings would include

- the historical rural surgical skill set, and
- common elective, and diagnostic and screening procedures.

The annual cohort would be small, allowing for one-on-one mentorship with established GP Surgeons in rural communities. Different models, such as the GP Anesthesia Training Program or the Australia Rural Surgery Program, would provide templates for a GP Surgery program.

In order to make rural GP Surgery an attractive and sustainable career path, the Support Program would include

- structures for professional support;
- continuing education;
- ways to reduce professional isolation;
- workplace emotional support;
- a 'point person' for GP Surgeons – a Rural Surgical Program Director; and
- an academic home for GPS within the UBC Department of Family Practice.

For rural surgical programs at large, a Support Program would

- benefit other care providers, including nurses and support staff;
- assist with human health resource issues such as locums, credentialing, and recruitment and retention; and
- help create bridges and communication between small volume hospitals and referral centres.

One model for the Support Program would be the United Church Health Services on the BC Central Coast, which includes a support structure for rural care providers that offers moral and advocacy support at the local and Health Authority levels. The program would be funded by UBC, the Health Authorities, Ministry of Health, and the BC Medical Association's Rural Committee.

Recommendations

The meeting culminated in a series of collective recommendations agreed to by all participants. These recommendations for rural surgical services in British Columbia address the current crisis in health human resources and state that the planning process for a training program in GP Surgery should include all key players, including rural family physicians and care providers, specialist surgeons, the universities, research community, Health Authorities, Ministry of Health, and community training sites.

The eight recommendations for rural surgical services include:

1) Building Research Capacity

All avenues should be explored to build an interdisciplinary team of stakeholders and clinical and academic researchers to articulate and implement a strategy to build capacity and infrastructure in rural surgery research. These new programs should be designed to include, within their formal structure, a capacity for audit and research in BC's small volume rural surgery programs. This reflects the need for an evidence base to inform policy and planning.

2) Sustaining Services

Based on the current evidence of safety and outcomes, and recognizing the linkages with sustainable rural maternity care and other local programs, small volume rural surgery programs, where they now exist, should be supported and sustained.

3) Regionalization

Rural British Columbia has been well served by both local surgery services for low risk patients/procedures and the availability of more advanced surgical programs for higher risk patients/procedures close to home in local regional centres. It is important that future planning and programs integrate these two delivery models in ways that are mutually supportive and sustaining in order to preserve the benefits of each to BC's rural communities.

4) Scope of Practice

Recognizing the threat to sustainability of low procedure volumes in these programs, specific policy objectives should include:

- supporting a scope of practice within the skill sets we know to be appropriate for rural GP surgeons,
- encouraging a low outflow of patients traveling for care when services are available locally, and
- providing recruitment and infrastructure support for itinerant surgery services.

5) Teams

Planning and programming activities should appreciate that

- safe and appropriate local surgical care is sustained by the successful recruitment, support, and retention of interdisciplinary teams of professionals including skilled nursing, lab, and transport personnel; and
- when most successful, these small volume rural surgical programs are supported within a regional surgical network of supportive specialist surgeons who provide training, consultations, and problematic case reviews. Without such mentorship from specialist surgeons, the small rural programs might not be sustainable.

6) Health Human Resources

Recognizing the current health human resource crisis in the supply of rural surgeons, UBC should offer a **formal accredited GP Surgery training program** for rural Family Physicians. This should

- provide a standardized core curriculum with a skill set that is portable between rural communities while allowing for a natural variation between communities in scope of practice; and
- include a formal attestation of the successful completion of the training program which will be suitable for the credentialing and privileging processes of the Health Authorities. Candidates for training should have demonstrated a strong interest in, and suitability to, rural practice. The training programs for Family Practice Anesthesiology have served rural Canada well and provide a template for this training program.

7) Curriculum for GP Surgery Training Program

Graduates of this program should have the following skills:

- Be able to competently assess, manage, and treat operatively, where appropriate, the surgical conditions that research has identified to belong appropriately to small volume rural surgery programs. These should include the newer diagnostic and screening procedures which might not otherwise be available in rural Canada.
- Be well trained in the substantial differences between rural and urban surgical practices. In particular, their case selection skills for local care versus referral to a regional centre should be excellent.

8) Professional and Program Support

Recognizing that the sustainability of BC's small volume rural surgery programs is linked to the successful resolution of continuing health human resource issues of recruitment and retention, on-call and vacation relief, continuing professional development, and a reduction in the professional isolation of its staff, UBC, the Health Authorities, Ministry of Health, and the BCMA's Rural Committee should fund a **formal support program** to address these issues on an ongoing basis. Recognizing the relationship between sustainability and local mentorship, where possible, efforts during the training program to link trainees with mentors should be promoted.

Notes

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Preface

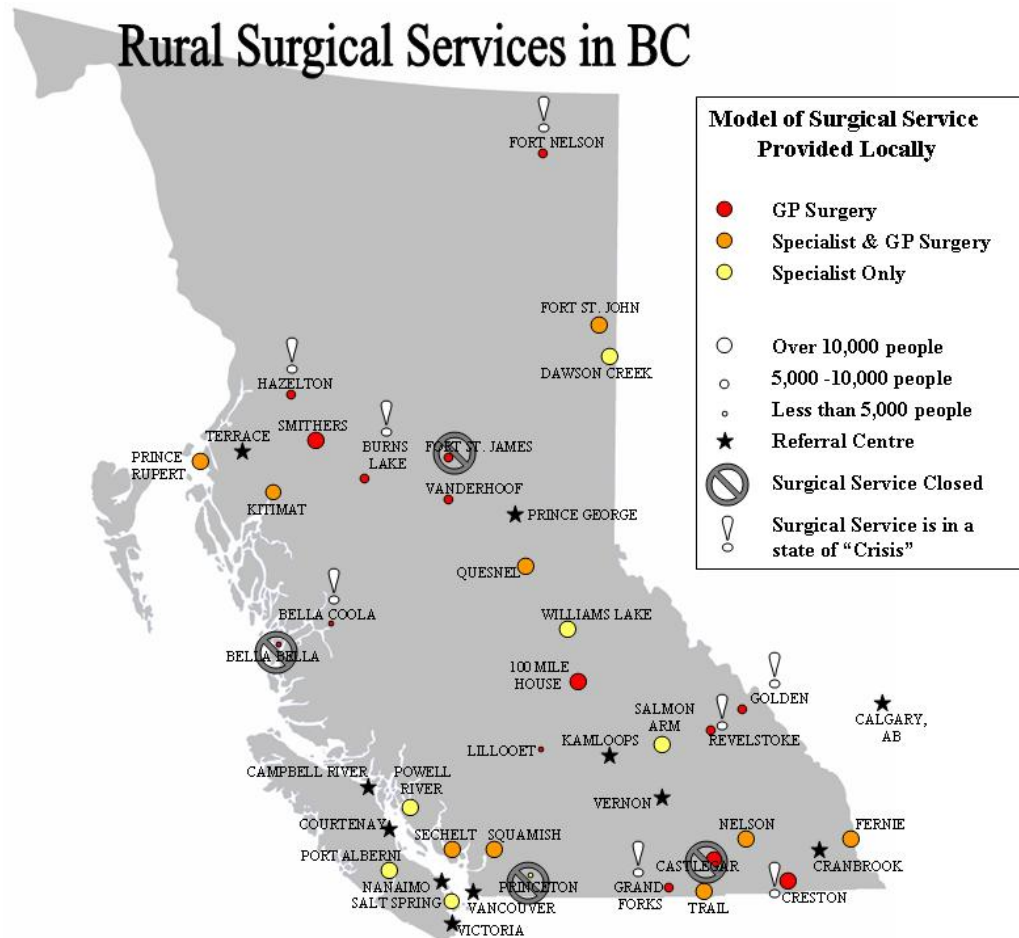
The topic of sustainable rural surgical care is an emerging health planning priority, the urgency increasing in proportion to the number of closures of small rural surgical services. The discussion is precipitated in part by recognition that the role of rural surgical programs supported by General Practitioner Surgeons (GPS) either alone or with solo General Surgeons (GS) or obstetricians is foundational to maternity care and the delivery of other “primary” health care to rural communities. Just as rural surgical care intersects with the delivery of other health services in small communities, so too do the policy issues intersect with the overall rural health planning priorities of the provincial government. These include consideration of health care costs, recruitment and retention, and the ‘crisis’ in maternity care faced by both urban and rural jurisdictions Canada-wide. Given this, a focused discussion on the current state and future of rural surgical programs involving key stakeholders from relevant professional perspectives, decision makers, practitioners, and researchers was not only timely, but also crucial.

This gathering, co-chaired by a GP Surgeon and a General Surgeon, heralds a shift in the attention of policy makers from re-active to pro-active planning and a willingness on the part of academia to respond to the unique needs for service delivery of rural communities. In the past, both of these domains have been influenced by the unrelenting work of individuals dedicated to the needs of rural communities but lacking the infrastructural support to implement new policy directions. It is our hope that policy and planning can now be informed by the growing evidence base, development of curriculum, and thoughtful discussion represented in the proceedings that follow.

The sustainability of rural maternity care is irrevocably linked to the sustainability of rural surgical care and likewise rural surgical care relies in part on the procedural volume created by surgical deliveries. Beyond pragmatics, many care providers speak of the joy of being able to support local maternity care in rural communities in a safe context that, for many, requires immediate access to operative delivery. For these reasons, there are clear convergences between the Rural Maternity Care New Emerging Team (RM-NET), with its five-year mandate to develop an evidence base to support decision making regarding the allocation of rural maternity services, and a rural surgical research, priorities, and planning agenda. This relationship has been advanced recently through the collaboration on a study looking at the practice and training experiences of GP Surgeons, the results of which may contribute to the structural planning of a new GPS training and accreditation program.

Taken together, these theoretical and practical convergences have highlighted the need for collaboration between disciplines (and professions) to understand and plan for the challenges facing rural maternity – and health – care. To this end it has been our delight to support this symposium and collectively focus attention on this urgent topic.

Jude Kornelsen & Stefan Grzybowski
Co-Directors, Rural Maternity Care New Emerging Team/
Centre for Rural Health Research



Map 1 – Rural Surgical Services in BC, 2007

A. Introduction

In June 2007, a panel of invited experts in BC rural surgical services met to address the role of General Practitioner Surgeons (GPS) in providing care to rural populations. The goal of the meeting was to support research into rural surgical services by providing a forum to encourage collaboration between practitioners, researchers, educators, decision makers, and health policy planners. The original objectives of the meeting were to

- share research findings, policy, and educational initiatives and promote discussion between key stakeholders on the topic of rural surgical services;
- explore key research themes that need to be investigated in the delivery of rural surgical services;
- discuss the development/submission of an infrastructure grant to investigate rural surgical services;
- provide a forum for the research community to hear from policy planners and the universities about the research agenda; and
- consider the issues related to educational programs for specialists and General Surgeons.

However, events affected the original research focus of the meeting and made it necessary to include opportunities for substantive policy discussions. These events were 1) the sense of urgency surrounding BC's small volume rural surgical programs, particularly health human resources, and 2) the possibility of an exploratory program initiative: a new formal accredited training program in Rural Surgery for Family Physicians with leadership from the UBC Departments of Family Medicine, Surgery, and Obstetrics/Gynaecology.

Due to the rising need for policy solutions in the area of rural surgical services the list of invitees was expanded to include policy makers in health authorities, as well as researchers and GP Surgeons. The dynamic list of panelists and participants thus included academics, practitioners from rural communities, Heads of the UBC Departments of Surgery and Family Practice, and representatives from British Columbia health authorities, the British Columbia Reproductive Care Committee, and the BC Medical Association's Joint Rural Committee (see Appendix 1 for full list).

The meeting was separated into three thematic sections on rural surgical services: "What We Know," the current research on rural surgery and GP Surgeons; "What We Need to Know," gaps in the knowledge and how to fill in such gaps; and "How Do We Get There," proposals for improving rural surgical services in British Columbia.

Poster presentations at the opening of the meeting illustrated the diversity and breadth of research taking place in rural surgical services, giving the participants the opportunity for animated discussion and a chance to encounter the work of other researchers involved in rural health care issues. Day two of the symposium consisted of presentations before the collected group and continuous dialogue about the existing research, gaps, and solutions for BC rural health services. In addition to presenting research, the agenda included an opportunity for substantive policy discussions in which the group unanimously agreed upon

a research agenda for improving General Practitioner Surgeons' accreditation and support, articulated through a mission statement and eight recommendations for change.

These proceedings reflect the thematic structure of the meeting – “What We Know,” “What We Need to Know,” and “How Do We Get There?” – including group discussion and slides from Power Point presentations included in the Appendix. The proceedings conclude with the participants' collective recommendations for the future of rural surgical services and training.

B. Presentations

I. What We Know

1. The Evidence Base for BC's Rural Small Volume Surgery Programs *Stuart Iglesias*

Overview

Maternity care is the lynchpin of rural surgical services. In order to make rural surgery sustainable and to meet the needs of communities, steps must be taken to turn existing research on rural health, and cesarean services in particular, into action. In his opening address to the invited participants, Dr Stuart Iglesias outlined the purpose of the Invitational Meeting on Rural Surgical Services and the current state of rural surgery in British Columbia. Dr Iglesias established the meeting's goals of confirming or invalidating the current research, brainstorming ways in which to fill gaps in the current knowledge, and coming up with solutions for improving the delivery of rural surgical services in British Columbia. While it may seem that we know very little about rural surgical programs, we in fact know a great deal. Dr Iglesias's presentation provided a detailed summary of the current evidence base for rural surgical programs. Key points include:

- *GP Surgeons' outcomes in rural programs are comparable to those in larger centres;*
- *there is a health human resource crisis that requires an influx of new GP Surgeons to replace the retiring population;*
- *cesarean section capability is instrumental to rural surgery sustainability; and*
- *the training program for GP Anesthesia may provide a model for a GP Surgeon training program.*

* * *

Environmental Scan

Rural Family Physicians with postgraduate training in surgery deliver surgical services for a significant proportion of the rural population in western Canada.¹⁻⁴ In a 2000 survey, there were 76 rural hospitals with surgical programs with the majority in Alberta (40) and BC (20).² These GP Surgeons (GPS) represent a mixture of i) International Medical Graduates (IMG) with a foreign fellowship and ii) Family Physicians trained either in Canada or internationally with 12 months or more of surgery. The IMG's with a foreign fellowship represent approximately two-thirds of the GPS population.^{1,3,4}

Specifically in British Columbia, in 2000 there were 30 GPS in 20 rural surgical programs where a GPS was defined as a non-specialist physician providing appendectomy and/or cesarean section services. Together, these GPS provided 71.9% of cesarean sections and 61.8% of appendectomies performed in these 20 hospitals in BC. The only study in the literature that has measured their share of the surgical workload for rural citizens, after including all those who travel to a referral centre for care, is an Alberta study – GPS

performed 28% of appendectomies, 28% of carpal tunnel releases, and 21% of herniorrhaphy for the entire rural Alberta population.

It is unusual for communities with a population of less than 5,000 to have local surgical programs. For larger communities there are, in general, 2 models for the organization of local surgical services. For populations from 5,000-15,000, surgical services are provided locally by one or more GPS. For populations from 15,000-25,000 there is usually a specialist surgeon supported by one or more GPS (“mixed” model). In these larger communities the GPS provide call relief and often cover the operative delivery program. With populations greater than 25,000 there are usually groups of specialist surgeons without any GPS.^{2,4}

Low Volumes

The procedures commonly performed in these GPS-only rural surgical programs are, by order of frequency – endoscopy, hand surgery, herniorrhaphy, cesarean section, tonsils, anal surgery, D&C, appendectomy, and laparoscopic tubal ligation.^{1,5,6} In a recent study of BC’s GPS-only programs, Dr. Humber found a procedure volume of approximately 200 total procedures per year in each rural surgical program.⁴ These and other studies have measured the average number of procedures done each year in each of these rural surgical programs for many of these common surgeries – appendectomy (8/yr), herniorrhaphy (11/yr), cesarean section (17/yr).³⁻⁶ The larger rural surgical programs with a specialist presence (“mixed” model) provide a larger volume of these services (2-3 times more) and a broader range of services (cholecystectomy).⁴

The small volumes of these programs are associated with important issues in the sustainability of GPS rural services:

- Small volumes generate maintenance of competency problems for the professional staff;
- Small volume practices might be less attractive to physicians and nurses wishing a more intensive application of their skills;
- Small volumes restrict the numbers of skilled providers who can be supported by the local service demand – this presents vacation and on call relief problems;
- Small volume programs are associated with high unit costs. The physical plant, anesthetic equipment, and on-call coverage must be maintained 24/7 regardless of the low utilization of the OR.

However, these small volume programs are not associated with poorer outcomes. There are no studies that document improved outcomes in surgical programs with larger volumes for the procedures usually performed in rural Canada. US data show that, for 9 specialized surgeries, better outcomes occur in larger volume centres.⁷ In a Canadian study that attempted to replicate these findings only 3 of the 9 highly specialized surgeries actually showed improved outcomes for high volume centres. None of these surgeries are performed in rural Canada.⁷

Safety of Small Volume Programs

There is a growing body of evidence to support the safety of GP Surgery. This includes cesarean section,⁹⁻¹⁶ appendectomy,^{8,17,18} gastroscopy,¹⁹⁻²¹ colonoscopy,²²⁻²⁶ and anesthesia.²⁷ Deutchman found the number of procedures to maintain competence in cesarean section to be low – between 5-23.¹⁰ The safe outcomes of GPS in part reflect their inclination and ability to refer more complicated cases. Iglesias⁸ compared outcomes for 4,587 appendectomies performed in rural hospitals by specialists and GPS. Most outcome measures were the same (mortality, length of stay, diagnostic accuracy rate, transfer rate). However, the patients operated on by specialist surgeons were older, more likely to have comorbid illness, more likely to have a perforation, and more likely to require a return to the operating room. The authors concluded that this reflected the ability of the GPS to identify and to refer the more complicated patients.

In addition, there is a widely held cultural perception that rural communities have been well served by their GPS. This was documented very clearly, first by Chiasson and Roy in their survey of rural hospitals in western Canada¹ and then repeated by Hayes in a similar Australian survey.²⁸

Finally, there is no published evidence in the world literature that shows outcomes for GPS in these small volume rural surgical programs are less safe than for specialist surgeons in programs with larger volumes.

The Sustainability of Rural Maternity Care

Without local cesarean section capability, many rural hospitals choose not to provide a local maternity care service.²⁹ Among those that continue to provide local maternity care without local cesarean section, patient outflows to referral centres range from 45-97% (median outflow is 80%).¹⁴ These rural maternity care programs are not likely to be sustainable.^{30,31} There is evidence from the maternity care literature in the rural US that high outflow communities (> 67% traveling for care) are at high risk of closure.³² This puts at risk most, if not all, rural units attempting to offer local maternity care without local cesarean back up.

Emerging evidence and experience suggests that GPS are an important, if not critical, human resource underpinning the maintenance of sustainable maternity services in rural Canadian communities.³¹

While there is now a solid evidence base for linkages between rural maternity care and rural surgical programs, it is possible that other local health care programs are also dependent on the support of surgical services. For example, there are strong intuitive and theoretical reasons to identify critical care, trauma, emergency room, and the recruitment and retention of medical staff as linked to the presence of a sustainable rural surgery program.

Attrition of Rural Surgical Programs and Services in British Columbia

In 2000 there were 20 rural surgical programs in BC.² By 2004, there were only 15 remaining.⁶ Over the same time period there were significant reductions in service level in many of the remaining programs.⁵ All of this attrition has occurred in the small volume GPS-only programs serving populations of 5,000-15,000. Research in progress has identified serious instability in many of the remaining programs.³³ Only 3 of the remaining GPS-only programs seem to have a secure future (see Map 1 – Rural Surgical Services in BC). It is possible that we are witnessing the unraveling of the infrastructure of rural health care.

These rural surgery programs are the cornerstone of rural hospital-based care. There have been large scale studies that link the presence of these programs to the sustainability of rural maternity care.^{7,30,31} The availability of surgical services plays an important role in the economic development and sustainability of rural communities. These are often strategically situated astride important, and vulnerable, transportation corridors, and are networked to agriculture, resource, tourist, and industrial economic activities. It is reasonable to expect there to be important health, economic, and social consequences to the erosion of these services.

The Health Human Resource Crisis in BC's Rural Surgical Programs

There is currently a human resource crisis in the supply of GPS to staff BC's rural surgical programs. While BC has no formal training program for GP Surgery, the Advanced Skills program in UBC's Department of Family Medicine has offered ad hoc training programs in surgery to candidates sponsored by rural communities that have identified a need for local services. Over the past 15 years, there have been 7 rural physicians trained to perform cesarean section of which 3 continue to perform these services in rural BC (Smithers, Revelstoke)² and 1 in rural Alberta (Hinton). There have been 4 rural physicians trained in a 12 month program to do both general surgery and operative delivery. Only 1 of these continues to be a full practice rural GP Surgeon (Lillooet).³³

With an aging workforce of GPS,⁶ the imminent retirement of several BC GPS has put in jeopardy several small volume rural programs.³³ As presently constituted, the BC training programs do not appear to have sufficient capacity to replace these GPS. Equally problematic, without any mechanism to evaluate and credential surgical training acquired overseas by IMG family physicians, the historically predominant source of supply for GPS is much more difficult to access.

Ongoing research has identified significant problems with present training models which have restricted practice opportunities for GPS and, potentially, have discouraged new applicants (there have been no applications for ad hoc training in surgery or operative delivery since 2003). In a large current research project, funded by the Michael Smith Foundation, a research team has visited 10 GP Surgery communities, plus interviewed by telephone a further 18 GPS in BC and Alberta. Their findings, still to be published, have identified several issues which could be addressed by a new GP Surgery training program³³:

- Training has been more successful where there is no competition from surgery residents;
- Without supportive surgery mentors, the trainees find themselves in hostile training environments;
- Without a standardized curriculum in a formal accredited training program, the Health Authorities have faced serious problems with credentialing and privileging the trainees;
- Without a standardized curriculum in a formal accredited training program, the skill set is not portable between rural communities;
- Without any postgraduate programs for professional support and continuing professional development, the trainees are isolated when they leave their training programs.

Lessons Learned from GP Anesthesiology

Rural surgery programs in Canada are supported by approximately 540 GP Anesthesiologists (50 in BC) trained in a 12 month Family Medicine postgraduate program at several of Canada's medical schools (UBC has 3 spots). There are more GPA than GPS because the GPA support the rural, and sometimes regional, specialist surgical programs.

Serious concerns over the sustainability of GPA services began to be raised in the mid 1980's.^{27,34} There were reductions in the number of training positions and the available positions were undersubscribed. There were controversies about curriculum and length of training. Morale amongst Canada's GPAs was low. They felt isolated without either professional support or opportunities for continuing professional development. One study measured the average practice life of a GPA to be five years.³⁵

Two invitational conferences – 1988³⁶ and 2001³⁷ – were convened to address these problems. Out of these have come a Joint Position Paper²⁷ and the present cooperative working arrangement – the Collaborative Committee on Anesthesiology (CCA) – between the Canadian Anesthesiology Society, the Society of Rural Physicians of Canada, and the College of Family Physicians of Canada. The CCA believes it can best support practicing GPAs through four main mechanisms:

- Supporting the development of national standards of training and accreditation;
- Supporting the development and promotion of continuing medical education opportunities that are appropriate for rural GPAs;
- Supporting the development of rural-appropriate clinical practice guidelines; and
- Developing ways to reduce the professional isolation of rural GPAs.

Summary

Currently in rural BC, there is an erosion of surgical services in the small volume programs serving communities of 5,000-15,000. This is happening at the same time as we are witnessing an accumulation of evidence that supports the safety and outcomes of these programs. The loss of these services is important. The presence of local surgical services, in

addition to the direct benefits of comprehensive and continuous care, sustains local maternity care and, possibly, other local programs.

A significant factor in the loss of local services is the lack of a formal accredited program to train rural Family Physicians in surgery in any of Canada's medical schools. Historical training efforts to deliver surgical training to meet specific community needs have not resulted in the standardized curriculum with a portable skill set that is required to attract suitable candidates to a career path in rural GP Surgery. Equally problematic has been the professional isolation of the GPS practicing in rural BC.

There is both a need and evidentiary support for a new formal accredited training program for rural Family Physicians in surgery. To be successful, this program needs

- to offer a standardized core curriculum with a portable skill set suitable to the processes of credentialing and privileging with the Health Authorities, and
- to include a postgraduate program of professional support and continuing professional development.

A template for a successful program for GPS would be the GPA program.

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Power Point Presentation

Rural Surgical Programs – What We Know

- Environmental scan
- Low Volumes
- Safety
- Linkages-maternity care
- Attrition of services
- Health Human Resource Crisis
- Lessons from GP Anesthesiology

11/19/2007 1

Environmental Scan

- 76 rural surgical programs in western Canada(2000) Alberta(41);BC(20)
- Specialist Surgeons(22) and GP Surgeons(128)
 - 2/3 IMG
- C/S (71.9%) Appy (61.8%) by GPS

11/19/2007 2

Environmental Scan

Delivery Models

no local surgery

- < 5000
- 5-12000 GP Surgeons only
- 12-25000 Spec + GP Sx (Mixed Model)
- > 25000 Spec Sx only

11/19/2007 3

LOW VOLUMES

TOTAL SURGICAL PROCEDURES FOR ALL GP-SURGEON HOSPITALS PER YEAR

Year	Procedures
96/97	2522
97/98	2402
98/99	2494
99/00	2327
00/01	2122

11/19/2007 4

SCOPE OF PRACTICE

11/19/2007 5

Procedure Volumes - BC

Procedure	Total	# of Hosp	Volume/hosp/yr
Hand Surgery	1035	8	26
C/S	917	11	17
Hernia	738	11	13
D&C	582	11	11
Appendectomy	347	9	8

11/19/2007 6

Safety of GP Sx

- Outcome Studies
 - appendectomy,cesarean section,endoscopy
- Perception of Safety
 - Chiasson and Roy 1995
 - Hayes 2005

11/19/2007

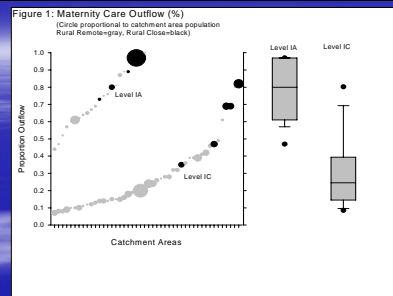
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Linkages

- Maternity Care- sustainability is linked to local C/S
- ER/ICU ?
- Recruitment and Retention ?
- Ability and Inclination of Hospitals to Care for the moderately ill patients ?
- Community sustainability ?

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Linkages

"If we are able to provide surgical skills we also provide anesthetic skills. We have an operating OR, we are able to do that many more things and when you do more things, you're better at more things. And the more you do, the more you can handle and the better your medicine is."

11/19/2007

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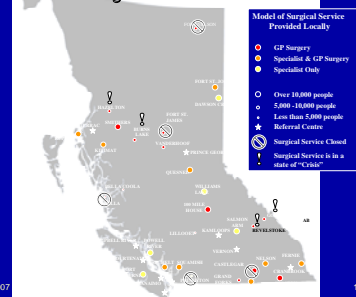
Attrition of BC's Rural Surgery Services

- Program closures (Fort St James, Bella Bella, Princeton, Castlegar)
- Reduction in services (Hazelton, Burns Lake, Bella Coola, Golden, Nelson, Revelstoke, Grand Forks, Creston)
- Only a few without sustainability issues

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11

Rural Surgical Services in BC



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12

Human Resource Crisis

- U of Alberta closed it's R3 GP Sx program(2004)
- No similar accredited program in any of Canada's medical schools
- Very difficult to credential surgical training of IMG's

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13

Grande Prairie 1992-2002

- 16 Graduates
- 10 currently in full service rural surgery
 - Alberta (8)
 - BC(1)
 - Sask(1)

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14

UBC 1992-2002

28 Trainees

7-- learned C/S
4 still providing C/S
Hinton, Revelstoke(2), Smithers

4 – 12month surgery plus OB
1 still in rural surgery

11/19/2007 15

What the GPS Told Us

- Hostile training environments
- Importance of mentors, relationships with referral hospitals
- Credentialling and privileging is difficult
- Skill set isn't portable
- No CME
- Professional isolation

11/19/2007 16

Lessons Learned-GP Anesthesia

- Standardized curriculum
- Portable skill set
- Certificate of successful completion
- CME
- Professional support

11/19/2007 17

Discussion:

Following Stuart Iglesias' presentation, participants posed a number of discussion questions on the subject of deteriorating rural surgical services, highlighting in particular the costs of regionalization, community fragmentation, cultural impact, and the importance of preserving rural maternity care:

Financial costs

- Has any research been done on GPS and reducing wait lists in regional areas or on the cost effectiveness of doing surgery locally versus sending patients to referral centres?
- What is the impact of taking work away from regional centres? What are the key negative impacts of high outflow centres?
- A study conducted by the Northern Health Authority considered the cost of appendectomies in the rural community of Vanderhoof compared to its regional centre, Prince George. The study found that appendectomies were more cost effective when performed in Vanderhoof than in Prince George, and that wait times were also shorter when the procedure was performed locally.

Social costs

- In addition to financial costs, expectant mothers and their families and communities are affected by rural surgical and referral programs. A study by the Centre for Rural Health Research found that stress and other psychosocial costs were

- experienced by pregnant women and their families traveling to referral centres for access to maternity care services.
- Expectant mothers are advised to leave their communities for the referral centre 4-6 weeks before their expected due date placing unreasonable financial burdens on families due to lost work opportunities, living expenses, and costs for family and labour support.

Cultural impact

- Jude Kornelsen expressed that First Nation communities experience a deep cultural impact as a result of taking birth out of the community. This causes the community to experience only death locally. Therefore the traditional circle of life, which is evidenced in many First Nations cultures, is not witnessed.

Health impact

- There are health outcomes that cause women greater stress, leading to increased rates of cesarean section services and social inductions.
- Patients are reluctant to have elective or urgent surgeries outside of their communities and tend to put off such procedures because they do not like the experience of traveling and waiting at a hotel in preparation for a surgery.

Sustainability

- For the rural community's medical staff, high outflow prevents building confidence and local surgical skills. From the physicians' perspective, it is stressful to try to decide who should stay and who should be transferred.
- When a rural community's service is already fragile, all it takes is one care provider to say, "I don't want to do this," and maternity services end. Once the program is closed, it is difficult to reopen.

Michael Klein concluded the discussion with a general observation that when you start losing maternity care you lose what it takes to make a town. Though the medical community is not responsible for the community's integrity, there are consequences to medical decisions.

II. What We Need to Know

1. What We Need to Know

Nadine Caron

Overview

In the first of her two presentations on rural surgical services, Dr Nadine Caron articulated the gaps in current evidence through a list of research questions. Although the research outlined by Dr Iglesias in the previous discussion demonstrates that there is a knowledge base, particularly in maternity service, from which to advance future research in rural surgical services, Dr Caron shows that there is a need for evidence regarding outcomes of patients who are required to travel for specialized surgeries to show the importance of local, rural care. She also states that researchers need to analyze the outcomes of procedures based on different training levels of GP Surgeons, the procedure volumes of rural practices, and itinerant surgery. These findings would lead to better evidence-based decision making for improving training and services for rural surgical programs.

* * *

Research Questions

- **Outcomes** – How do outcomes compare between programs in which all patients are obliged to travel for care (no local surgical services) and those in which low risk patients receive surgical services in local programs? There is evidence from the maternity care literature that the worst outcomes are found in those rural programs where all women are obliged to travel out of their community for care. Similar studies have not been done for surgical services.
- **Linkages** – Are there rural health care programs, other than maternity care, where positive outcomes are linked to the presence of a sustainable local surgical program? There are intuitive reasons why we might expect rural emergency, trauma, and critical care programs, as well as recruitment and retention programs for professional staff, to be related to the presence of local surgical services.
- **Training** – Are the outcomes of procedures performed on a similar patient population by rural Family Physicians with a 12-month training program in surgery comparable to outcomes of procedures performed by rural specialist surgeons or by the international medical graduate (IMG) surgeons with foreign fellowships? Because of methodology and privacy issues associated with small numbers, and because the information on level of training has not been available in Canada's administrative databases, this crucial comparative data is not available.

- **Economics** – What are the costs and benefits of a local surgical program when compared to the costs and benefits of regionalizing surgical care?
 - **Volumes and Scope of Practice** – What are the formulae that translate scope of practice and population base into an expected procedural volume for a rural surgical program? Is there a minimum scope of practice (procedure volume) below which a rural surgery program becomes unsustainable? A corollary question is whether a stand-alone cesarean section program, representing an effort to support local maternity care, is sustainable?
 - **Itinerant Surgery** – What role does itinerant surgery play in the sustainability of rural surgery programs?
-

Discussion:

The discussion following Nadine Caron's presentation highlighted the group's interest in improving support and training for GP Surgeons. The participants first addressed the current relationship between general practitioners and the surgical specialist community, and then turned to the challenges faced by Family Physicians in becoming GPS. Some of the themes discussed were:

Surgical community

- What are some of the obstacles that specialists pose and what is the critical mass or tipping point for creating a push back on the part of GPS and others?
- Some members of the surgical specialist community hold concerns and/or negative perceptions regarding GPS (length/level of GPS training, responsibility for poor surgical outcomes, reducing specialist procedure volume, financial loss). Such perceptions have been addressed in part by Dr. Humber's work detailing the actual scope of surgery for GP Surgeons and educating people on what a GP Surgeon does.
- GP Surgeons have demonstrated judiciousness in referring to specialists; there is no desire on the part of GP Surgeons to deal with complex cases.

Regional centre relationships

- Some of the benefits of having strong relationships between regional centre specialists and GPS include a clear understanding by the specialists of the capacity, skills, and training of the GPS, thereby engendering confidence.
 - It would be advantageous to see the outcomes and costs of transfers from GP Surgeons versus keeping a patient in the rural surgical setting.
 - We could also explore the quality of relationships and interactions between GP Surgeons and their referral communities, for example between Prince George and Vanderhoof surgeons.
-

GPS training

- If a GP Surgeon training program was created, sustainable networks of potential recruits would be needed to support rural surgical programs. Are there prospective recruits to training programs? If we build a surgical training program, is anyone interested?
- Are there general surgeons who are prepared to support this? In Prince George, the UNBC surgical club's most recent info session was on GP Surgery and medical students expressed an interest in the potential program.
- A training program for GP Surgeons could be offered as a re-entry for GP's. However, it would be difficult for the individual and her community if she were to leave to do the training. Recruits may have concerns about the impact on their lifestyle.

Keys to GPS success

- To facilitate the entry of trained GP Surgeons into rural communities, physicians should be given a clear understanding of the challenges and lifestyle of rural practice. We need examples of functional communities that have GP Surgeons.
- In order to create successful GP Surgeon training programs, there needs to be a dynamic of confidence in the medical community that rural surgical services work effectively. The current system works because of dedicated individuals.
- The challenge is to build a program that is attractive to the average practitioner and average community, not the just the "superhero," and that has an infrastructure that will be sustainable in the long term.

Challenges

- System influences and system forces from regional health authorities have affected rural surgical services.
- In historical and anthropological contexts, North America has had an unfettered love of specializations.
- There is a perception that GP Surgeons are only a temporary solution filling the gaps until a specialist is available.
- There is a need to show that GP Surgeons provide good care and benefits are gained from the continuous relationship that GPS have with their patients.

Teamwork

- Beyond GP Surgeons, rural surgical services depend on an entire team, including anesthesiologists and nurses, all of whom need to be included in the discussion.
- Support is also needed from Health Authorities.

Planning Allocation and Level of Maternity Service for Rural BC

Stefan Grzybowski and Jude Kornelsen

Overview

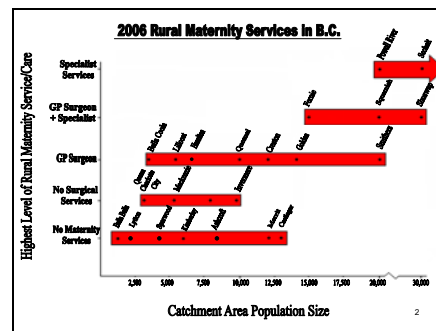

To date, decision making for maternity care services in BC has not relied on systemic planning and has often responded to a local or regional sense of crisis. Drs Grzybowski and Kornelsen presented their findings from two projects: 1) Planning Allocation and Level of Maternity Service for Rural BC, and 2) GP Surgery within Regionalized Health Care. The first presentation introduced the Rural Birth Index (RBI), a tool designed to estimate/predict the appropriate level of maternity services for a given population based on population characteristics and isolation score. With the goal of providing a benchmark for rural maternity health service planning, the RBI is based on intensive research in 21 rural BC communities and was designed using an iterative, mathematical approach theoretically informed by complex adaptive systems theory. This research links with the issue of GP Surgery by attempting to predict the appropriate level of sustainable maternity service for a rural community based on population need. The second presentation, on regionalization, follows the RBI Power Point slides below.

Power Point Presentation

**Planning allocation and level of
maternity service for rural B.C**

DFP 2007

Stefan Grzybowski MD & Jude Kornelsen PhD
Centre for Rural Health Research,
UBC/VCHRI



The RBI Model

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

3

Methodology

- Complex adaptive systems modeling recognizing that small rural maternity health services are at the edge of the complexity of health systems
- Privileging the dominant nature of population need and degree of isolation in predicting level of service for small rural populations
- Comparing service levels for rural BC hospitals to RBI scores to establish the phase transition points (the derivation sample)

4

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.

5

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.
www.bcstats.gov.bc.ca/data/sep/1_lha/lha_main.asp

6

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 as if existing local service was closed.

7

RBI Formula

$$RBI = (PBS \times APV) + IF$$

RBI: Rural Birthing Index

PBS: Population Birthing Score

APV: Adjustment for Population Vulnerability

IF: Isolation Factor

8

What does the RBI Score mean?

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

- 0-6.5:** No local intrapartum services
- 6.5-9:** Local intrapartum services without operative delivery
- 9-14:** Local GP Surgical Services
- 14-27:** Mixed model of specialists and GPS
- >27:** Specialist service

9

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 average across the LHA and may underestimate the degree of vulnerability of the women who will make up the parturient population.

10

Summerland



11

Summerland

Data:
Average # of births (5 years): 71 →

RBI Factors:
PBS: 7.1

Socio-economic Status: -0.79 → Adjustment for Population Vulnerability (APV): 0.84

Travel Time to cxion: 17 minutes → Isolation Factor (IF): -3

RBI = (7.1 X 0.84) - 3 = 3.0

Recommended level of service: No Local Intrapartum Services

12

Merritt



13

Merritt

Data:
Average # of births (5 years): 105 → **RBI Factors:**
PBS: 10.5

SIV: 0.87 → Adjustment for Population Vulnerability (APV): 1.35

Travel Time to cxion: 53 minutes → Isolation Factor (IF): -1

RBI = (10.5 x 1.35) - 1 = 13.2

Recommended level of service: Local intrapartum services with operative delivery

14

Communities with Surgical Services Provided by GP Surgeons

	Hospital Catchment Population	PBS	APV	Nearest C-Section Service	Travel Time	Isolation Factor (IF)	Rural Birthing Index (RBI)	Predicted Level of Service
*Shredonia	6,393	7.9	0.99	Sahone Area	1hr 23m	1	8.1	B
*Gibson	7,814	8.4	0.93	Chamberland	1hr 04m	3	9.9	C
Grand Forks	10,092	7.2	1.03	Trail	1hr 44m	2	8.2	C
Lillooet	4,460	7.4	1.23	Kamloops	1hr 53m	3	8.8	C
Islands Code	1,394	8.8	1.29	Williams Lake	~8m	4	9.9	C
Kilmer	11,721	10.3	0.99	Trail	1hr 09m	1	11.1	C
Vanderhoof	6,080	10.3	1.26	Prince George	1hr 19m	1	11.2	C
100 Mile House	14,945	10.2	1.05	Williams Lake	1hr 25m	1	11.7	C
Burns Lake	7,889	8.9	1.18	Vanderhoof	1hr 25m	2	12.3	C
Creston	12,961	12.0	0.98	Chamberland	1hr 24m	2	11.8	C
Fort Nelson	6,742	9.3	1.09	Fort St. John	~8m	4	11.9	C
Smithers	16,095	12.4	0.97	Trail	1hr 41m	3	14.8	D

15

Three-stage planning process for Rural Maternity Care Services

1. Projecting the appropriate service level to meet the needs of 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;
3. Considering potential implementation within the planning priorities of the Health Authority.

16

2. GP Surgery within Regionalized Health Care

Jude Kornelsen

Overview

Data supporting the RBI presentation suggested that some communities may require significantly higher levels of services based on population, vulnerability, and degree of isolation. With the goal of making spending and allocation of services more efficient, health care reform in the 1990s led to the concentration of services in regional centres motivated by the goal of fiscal constraint. This strategy, however, has led to diminished access to primary care in small rural surgical units because of high outflow to regional centres. Dr Kornelsen's presentation considered the question, what is the appropriate allocation of services between small/medium-sized rural surgical units and regional centres? With that knowledge, how can we improve access to local care in small rural communities?

Power Point Presentation

GP Surgery within Regionalized Health Care

What does the interface between small/medium sized rural surgical units and regional centres look like?

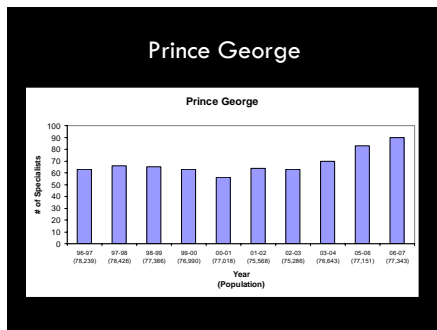
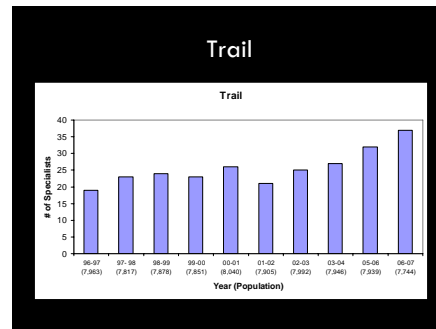
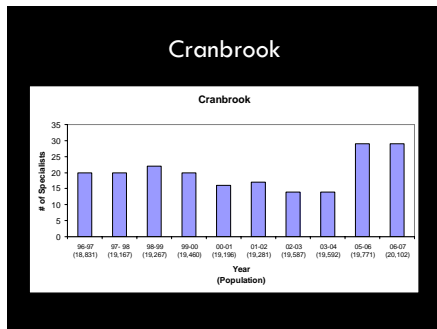
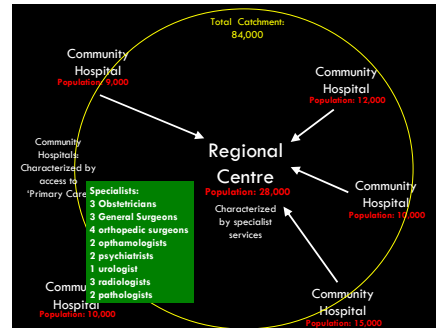
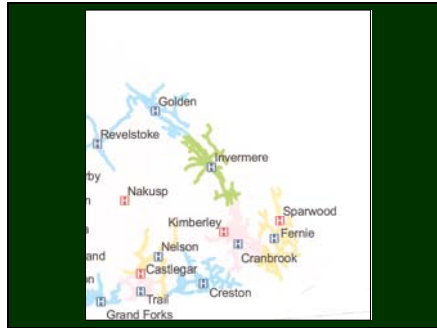
The Imperative to Centralize Services in Regional Hospitals

- The 1990s was marked by health care reform across Canada to address:
 - Rise in public expectations
 - Restraint or retrenchment of health spending
 - Increasing costs of care
 - Proliferation of new and expensive technologies

The Imperative to Centralize Services in Regional Hospitals

- Characteristics include
 - Efficiencies of expenses
 - Focus and valuation of specialized services for a region
 - Intermediary governance structures (Health Authorities) responsible for decision-making/planning
 - Aims for better distribution of financial resources





What is 'primary care'?

- prevention and treatment of common diseases and injuries
- basic emergency services
- referrals to/coordination with other levels of care (such as hospitals and specialist care)
- primary mental health care
- palliative and end-of-life care
- health promotion
- healthy child development
- primary maternity care
- rehabilitation services

Health Canada, 'About Primary Health Care'
http://www.hc-sc.gc.ca/hcs-ss/prim/about-apropos/index_e.html

Rethinking 'Primary Care' terminology

- 'Primary care' is an urban concept that assumes one location/multiple levels of providers
- Does not account for geographic realities that limit access to specialist care
- Does not acknowledge the advanced procedural care that may be necessary to facilitate primary care (e.g., access to cesarean sections to support all birthing women)

Key Questions

- What are the human resource effects of the decision to create a regional centre?
- What are the fiscal implications of regionalization?
- What are the effects of regionalization on communities (regional and outlying)?
- How does GP Surgery fit within a regionalized health care structure?

Discussion:

The importance of considering the community and the differences between individual rural surgical programs emerged in the discussion following the presentations. Some of the topics that participants discussed were:

Community voice

- What level of health service do patients want in their communities?
- Why do patients choose to stay in their home communities or go to referral centres for care?
- How do practitioners help patients to consider changing their referral patterns?

Community support

- GP Surgery does not exist by accident; it is based on determined personalities, but it is not systemized.
- Do we know of countries that have developed a system of GP Surgery that addresses the needs of communities and simultaneously respects the skills of generalists? Are there other jurisdictions that we can use as models? South Africa, for instance?

Community choice

- How much free choice or planning do we want to establish in the system?
- We want to create a model that respects patient choice, not a system that is restrictive and tells people who they need to see and where.
- We need to discriminate between descriptive and prescriptive models.

Community individuals

- The relationships in place between GP Surgeons and referral hospitals are key because in those communities where the relationship works, it is due to the will and effort of individuals.
- When developing models, we need to be flexible to allow individuals and communities to make it work of their own volition. The system cannot be too rigid.

Community in perspective

- We need to consider the many levels needed to build a model of GP Surgery: individual, geographic, community, bureaucratic. There may not be only one model to encompass the different levels.

III. How Do We Get There

1. Proposal for a Training Program for Rural Family Physicians in Surgery *Nadine Caron and Nancy Humber*

Overview

Drs Caron and Humber outlined a proposed program initiative to create a formal accredited training program in Rural Surgery for Family Physicians at UBC. Dr Caron began with a review of the GP Surgeons Project (Rural Maternity Care Research NET), highlighting the issues of greatest pertinence to GP Surgeons in BC: importance of mentorship, appropriate training environments, barriers to credentials and privileges, lack of continuing medical education (CME), and lack of professional support. A new program in GP Surgery would address these needs and barriers and work in collaboration with different university departments and specialists to provide graduates with a well-rounded surgical technique and decision-making education. In detail, the program elements would be based on current training models in other countries and in GP Anesthesia, and a proposed training site was Prince George and rural satellite communities. Dr Humber outlined the curriculum of the GP Surgery program, emphasizing the rural focus of the training, and detailed the components of certification.

Power Point Presentation

Proposal for a Training Program for Rural Family Physicians in Surgery

- Ad hoc Committee
 - Family Medicine
 - R Woollard, P Newbery, Nancy Humber, S Grzybowski, S Iglesias, J Kornelsen
 - Surgery
 - E Webber, N Caron

Interviews with GP Surgeons (what they told us)

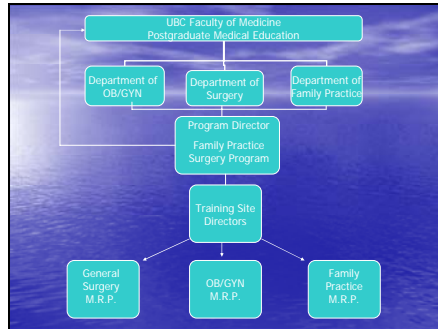
- Importance of mentorship
- Training environment w/o surgical residents
- Hostile training environments
- Difficulties with privileging / credentialing with a skill set that isn't portable
- Lack of CME
- No professional support

Principles of a New Program

- Training is located in a formal accredited postgraduate program within the Department of Family Medicine with collaboration from the Departments of Surgery and Obstetrics/Gynecology

Principles of a New Program

- Graduates receive a certificate from Family Medicine attesting to their successful completion of the program (model is the GPA program)
- Certificate will be signed by representatives from all 3 Departments (Family Med, Surgery, OB/GYN)



Principles of a New Program

- Curriculum includes the historical rural skill set as well as newer diagnostic and screening procedures, particularly endoscopy, which have been shown to be appropriate for Family Physicians.

Principles of a New Program

- Curriculum should support a wide scope of practice - including those procedures known to be safe and appropriate for the level of GPS training
- Curriculum development recognizes the association between scope of practice and volumes in the rural surgery programs
- Core skill set with options for additional skills

Principles of a New Program

- Programs which offer professional support, facilitate continuing professional development, and reduce professional isolation are required to make GP Surgery an *attractive and sustainable career path*

Program Elements

- Models
 - Grande Prairie - GPS
 - GP Anesthesia
 - Australian Rural Surgery Program

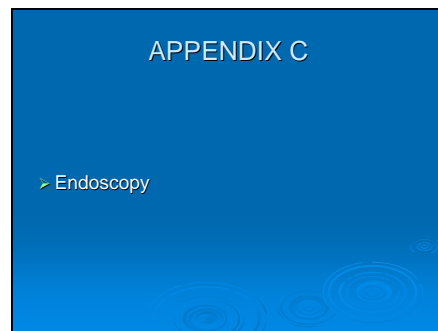
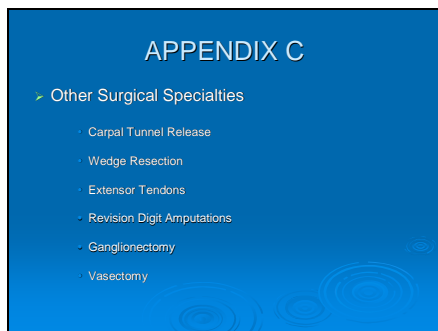
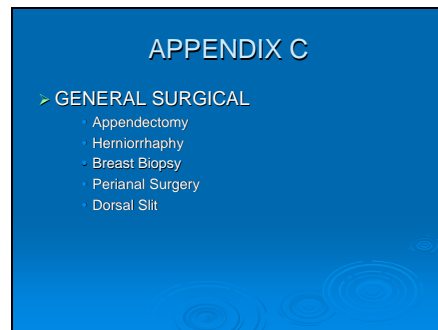
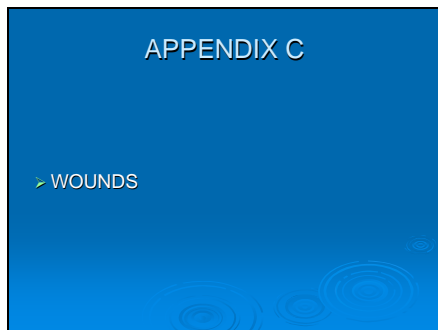
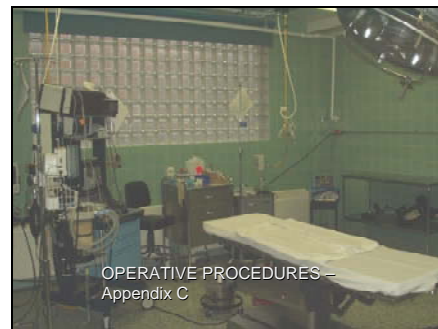
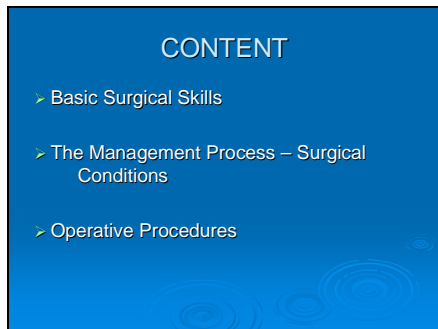
Program Elements

- To be determined
- 12 months?
- 6 month Surgery / 6 month OB
- Prince George (?), plus satellite rural centres
 - sufficient volume
 - w/o senior surgery residents
- 2 trainees per year (maximum)

Curriculum

- Goal - a broad scope of practice that includes
 - emergent procedures
 - common elective procedures
 - screening and diagnostic procedures
- *suggested but also supported by research and statistics known to date







Evaluation

- Continuous throughout program - formal and informal
- Consistent with:
 - CFPC (4 principles of Family Practice)
 - RCPSC (CANMEDS)

Certification

- Model is GP Anesthesia
- Documentation that the trainee has successfully completed the GP Surgery Program in Family Medicine, UBC
- Program is accredited by the CFPC
- All 3 Departments involved (FP, Surgery, OB/GYN)

Post Grad CME

- GP Sx "day" once yearly (model: Dr Bolton's GP A "day")
- Spend a day in the urban OR
- Return to training sites prn for refresher/volumes
- Education AND networking with other GPS and specialists supporting GPS (especially those they originally trained with)

Post Grad COI

- Log books
- Regional M&M rounds
- Provincial database – surgeons and cases
- Audits and research

Discussion:

Different suggestions were put forth by the participants to improve the design and implementation of a GP Surgery training program. The “workshopping” discussion covered the following topics:

Training models

- We should draw on the experiences of the Oregon Health Sciences program in general surgery; use their model of training in a “mother house.”
- The Pacific Northwest WAMI program, a distributed program, can also be considered. American College of General Surgery has curricula we should be consistent with.
- We can look to the GP Anesthesia program and use it as a model to see whether it is working for trainees.

Mentorship

- Supportive mentors underscore successful training. In GP Anesthesia training, the candidates must spend at least 6 months in a community with a GP Anesthetist.
- Rural surgical training is an iterative process, requiring ongoing, collegial support.

Location

- The education site needs to be carefully selected. The program will need to match trainees with communities that need GP Surgeons.
- Trainees may experience frustration in communities lacking infrastructural resources for a surgical program. How do small communities acquire the infrastructure to sustain rural surgical programs?

Budget

- Nursing is the primary budgetary challenge (e.g., the availability of OR nurses).
- Program availability is not based on the skill set of practitioners, but is dictated by available resources.

Sustainability

- Without a local surgical program, sustainability of medical services is difficult.
- The volume of services is also important – volume dictates scope of practice.

Community support

- The community is key in helping acquire new equipment.
- With the concentration of newer technologies in regional centres, older equipment is being handed down to smaller centres (e.g., Lillooet).
- It will require the support of individuals from many levels to establish a GP Surgery system that will work.

Communication

- Examples of strained communication between patients in satellite communities and surgeons in referral communities were noted.

- Participants acknowledged the positive contribution GPS make. Proximity to patients creates continuity of care.

Recruitment and Retention

- The lifestyle of practitioners and the need for resources in the community (e.g. schools) needs consideration.
- We also need to pay physicians the appropriate amount to entice them to work in a rural community and stay.
- The Rural Education Activities Program (REAP) can fund rural physician training and may augment the surgical resident's salary.

Curriculum

- The program needs to address core skills that can be transported, but also needs to give an opportunity for individuals to get additional training in skills that will meet specific community needs.
- We need to be flexible about how we train people so that skills are community-specific.
- Core teachings should cover surgical knowledge of physiology, pathology, procedures, and enhanced skills.

Public Awareness

- Do medical students know that GP Surgery exists? Many recruits go back into rural communities, learn of the need, and then go back for additional training.
- An existing program may draw more attention to rural surgery and attract young medical students, especially those who do not yet have families and commitments.

At the conclusion of the discussion, before breaking for lunch, Garth Warnock, Head of the UBC Department of Surgery and Editor of the Canadian Journal of Surgery, offered his support for publishing a consensus paper in the journal. He also suggested that the group present at the annual meeting of the British Columbia Surgical Society.

2. A Support Program for Small Volume Rural Surgery Programs Stuart Iglesias

Overview

All British Columbia hospitals today are struggling with a lack of health human resources. For rural communities in particular, the struggles of local surgical programs are compounded by challenges in recruitment and retention of physicians and nurses. One model support program is the United Church Health Services, which provides not only financial but also moral support for its practitioners and nurses through site visits, problem solving, and advocacy at both a local and Health Authority level. Dr Iglesias proposed a similar structure for the GP Surgery training program, providing trainees with a 'point person,' a Rural Surgical Program Director, and a supportive academic 'home' within the Department of Family Practice. Educational benefits offered by the program could extend to other care providers as well in the form of inter- and intra-professional training of rural surgical teams (nurses and physicians).

Power Point Presentation

A Support Program for Small Volume Rural Surgery Programs

Rural Surgery Support Program

- Model is the UCHS (Bella Bella, Bella Coola, Hazelton)
- Support for local physicians and their programs

Rural Surgery Support Program Why??

- Small isolated programs with common problems
- All have sustainability issues
- Each plays an important role in local health care

Rural Surgery Support Program Why??

- Health Human Resource Issues
 - recruitment and retention
 - credentialing/privileging
 - locums
 - continuing professional development

Rural Surgery Support Program
Why??

- Training
 - appropriate training sites
 - fostering relationships with referral centres
 - development/support for a new GPS training program
 - upgrading/refresher programs

Rural Surgery Support Program
Why??

- Continuing Professional Development
 - CME for professional staff
 - courses
 - visits to urban OR's
 - mentorships

Rural Surgery Support Program
Why??

- Continuing Quality Improvement
 - database (log books, registry)
 - regional M&M Rounds
 - audit and research

Rural Surgery Support Program
Why??

- Advocacy

"It isn't that anyone is trying to end rural surgery services, it's that no one is trying to save them." *Society of Rural Physicians of Canada*

Rural Surgery Support Program
Resources

- Staffing
 - one full time position
 - physician?

Rural Surgery Support Program
Resources

- Financial
 - admin support
 - travel
 - locum support
 - CME
 - audit and research

Rural Surgery Support Program

- UBC Family Medicine
- Health Authorities
- BCMA - Rural Coordinating Centre

Rural Surgery Support Program
When??

- 5-10 years ago

Discussion:

During the discussion, participants articulated the university's role and the responsibilities of the program director and instructors:

University's role

- The program would be housed under the UBC Faculty of Medicine which would support the Departments of OB/GYN, Surgery, and Family Practice to aid the Program Director of the Family Practice Surgery Program.

Program Director

- This director would be the program's point person providing guidance to training-site directors and Most Responsible Persons and mentors from General Surgery, OB/GYN, and Family Practice.
- The program director would be responsible for finding locations and rotations, and liaising with the postgraduate medical office.

Instructors

- There is a general sense of 'teaching fatigue' in Prince George and concerns that GPS residents would not get the experience needed if they were learning alongside General Surgery (GS) residents. A solution may be to alternate between GS and GPS residents throughout the year.

Discussion: Articulating a Research Agenda

One of the challenges facing the growth and evolution of GPS in British Columbia is the lack of an evidence base from which to make decisions. All participants recognized the importance of continued research in parallel to program implementation and articulated the following main thematic research areas. An extended list of research questions can be found in the Appendix 2.

What kind of evidence do Health Authorities and decision makers need?

- *Measure costs and outcomes.*
- *Review the decision-making process and assess its deficits.*
- *Broaden the agenda of what we need to know in order to make decision making as evidence-based as possible.*
- *Analyze and measure the process and consequences of the decision making of policy makers in order to show them the results of their decisions (i.e. financial, social, etc.).*
- *Explore the barriers between the groups involved – Obstetrician-Gynecologists, General Surgeons, GP Surgeons – in order to see where each group stands and how we can move forward in consensus.*

What are the most important factors in allocating services in small rural hospitals? Is the most important factor budget allocation?

- *Not every site can provide local surgical care, so we need to know what care providers are capable of and what they do best.*
- *We need to find incentives for keeping and maintaining resources (i.e. salaried physicians).*
- *Safety, financial, and efficiency concerns are the three main items of consideration from the Northern Health Authority.*
- *In Sechelt, the community took matters into its own hands. They were struggling to recruit a General Surgeon. The community recognized that there might not be a surgical program in the future if they did not acquire a CT scanner. The community realized they had a voice and fundraised to purchase the technological infrastructure.*

How important is cost-effectiveness in decision making?

- *If rural surgical programs are not cost-effective, and that is the only measure of success, then we should close them down. Just because a program is cost-effective, doesn't mean that it's better.*
 - *The issue is having better outcomes while being cost-effective.*
 - *It's important to consider where the costs are incurred – community level, individual level, regional health authority level.*
-

- *Costs are not just monetary. There are political and social costs as well. There are also hidden costs – costs of recruitment and retention, costs of poor health, ambulance transfers.*
- *There will always be a cost. If the health care system is not paying for it, then the patient is paying for it.*

At what size of hospital does quality of care begin to decrease?

- *Let's not assume that regional care is better. We need to conduct a full assessment of regional and smaller centres and study both sides equally.*
- *The current definition of rural health care is 'one physician from disaster.' People are leaving not because of payment but because of limited numbers of team members. One can measure the team's sustainability according to their critical mass factor. The magic number seems to be 7-10 physicians.*

Would different payment models for rural GP's enhance and maintain rural surgical services?

- *Put physicians on salary, because if you want to attract someone to a job, you need to support their lifestyle.*
- *There needs to be evidence about alternative payment schemes.*

Is there a way to investigate what influences retention of a level of service in a rural community?

- *Historically things were simpler. When there was a need, somehow the service persevered to meet that need. With regionalization things have changed and now the equilibrium has shifted and we have lost services in some communities.*
- *The viability of the hospital community is another issue. You need to build a team that will work together; these are the essentials in an immediate community.*
- *We need to consider measurable variables: make-up of team, mode of payment, quality of care.*

What are the barriers to communication among health care administrators?

- *Communicating with the health authorities on short and long term consequences is a real challenge.*
- *It's good to ask hospital administrators what they need to know to make decisions, but it's equally important to tell them what they should know to make decisions.*

What are the key elements of a sustainable rural surgical program?

- *Sustainability is linked to volume and there are three ways to increase volume: scope of services, capture your population (less outflow for services), and providing itinerant care.*
- *The root to sustainability is 'more not less.' We want to have on-going and elective surgery to support a sustainable practice service. We want to support smaller centres*

- to do as many procedures as possible (always considering quality of care; meet the surgical needs of their community).*
- *We need Health Authority support and that can be through increased funding for nurses.*
 - *OR nursing is a key part of this. Maybe we could consider training rural surgical teams. The volume issue is linked to sustainability and the importance of inter-disciplinary teams.*

If we build a surgical training program, is anyone interested? Are there specialist surgeons who are prepared to support it?

- *There needs to be a willingness to work together between disciplines to explore common ground.*
- *The group is going on a 'road show' to speak to communities that could be involved and will bring them up to speed on some of the issues and research that have been generated.*
- *We need to consider professional and program support: vacation relief, CME, reduction of professional isolation.*
- *We need to provide surgeons with nursing and full staff support in order to create an interdisciplinary collaborative model of team-based care.*
- *There is a clear need for GP Surgery, but we have traditionally faced challenges in getting our evidence across. If we face obstacles now, that does not mean we should stop.*

IV. Conclusion

At the conclusion of the Invitational Meeting on Rural Surgical Services the group turned their round table discussion to the consideration of a list of recommendations. These recommendations were prepared in advance by the meeting's co-chairs, added to during the symposium's mid-day lunch break, and work-shopped by the participants as a group at the conclusion of the meeting. The following mission statement and 8 recommendations were approved by the group. Garth Warnock, Department Head of the UBC Department of Surgery, invited the group to publish their collective recommendations in the Canadian Journal of Surgery.

1. Recommendations for Rural Surgical Services

Guiding Principles

The evolution of training and support programs for BC's small volume rural surgery programs should proceed within the framework of collaboration, consultation, and a shared planning process that includes specialist surgeons, rural family physicians (including GP Surgeons), the universities, the research community, the Health Authorities, and the Ministry of Health. In particular, any site chosen to be the home for these programs should be invited to play a major formative role in the planning of these programs.

The eight recommendations for rural surgical services include:

1) Building Research Capacity

All avenues should be explored to build an interdisciplinary team of stakeholders and clinical and academic researchers to articulate and implement a strategy to build capacity and infrastructure in rural surgery research. These new programs should be designed to include, within their formal structure, a capacity for audit and research in BC's small volume rural surgery programs. This reflects the need for an evidence base to inform policy and planning.

2) Sustaining Services

Based on the current evidence of safety and outcomes, and recognizing the linkages with sustainable rural maternity care and other local programs, small volume rural surgery programs, where they now exist, should be supported and sustained.

3) Regionalization

Rural British Columbia has been well served by both local surgery services for low risk patients/procedures and the availability of more advanced surgical programs for higher risk patients/procedures close to home in local regional centres. It is important that future planning and programs integrate these two delivery models in ways that are mutually supportive and sustaining in order to preserve the benefits of each to BC's rural communities.

4) **Scope of Practice**

Recognizing the threat to sustainability of low procedure volumes in these programs, specific policy objectives should include:

- supporting a scope of practice within the skill sets we know to be appropriate for rural GP surgeons,
- encouraging a low outflow of patients traveling for care when services are available locally, and
- providing recruitment and infrastructure support for itinerant surgery services.

5) **Teams**

Planning and programming activities should appreciate that

- safe and appropriate local surgical care is sustained by the successful recruitment, support, and retention of interdisciplinary teams of professionals including skilled nursing, lab, and transport personnel; and
- when most successful, these small volume rural surgical programs are supported within a regional surgical network of supportive specialist surgeons who provide training, consultations, and problematic case reviews. Without such mentorship from specialist surgeons, the small rural programs might not be sustainable.

6) **Health Human Resources**

Recognizing the current health human resource crisis in the supply of rural surgeons, UBC should offer a **formal accredited training program** in surgery for rural Family Physicians. This should

- provide a standardized core curriculum with a skill set that is portable between rural communities while allowing for a natural variation between communities in scope of practice; and
- include a formal attestation of the successful completion of the training program which will be suitable for the credentialing and privileging processes of the Health Authorities. Candidates for training should have demonstrated a strong interest in, and suitability to, rural practice. The training programs for Family Practice Anesthesiology have served rural Canada well and provide a template for this training program.

7) **Curriculum for GP Surgery Training Program**

Graduates of this program should have the following skills:

- Be able to competently assess, manage, and treat operatively, where appropriate, the surgical conditions that research has identified to belong appropriately to small volume rural surgery programs. These should include the newer diagnostic and screening procedures which might not otherwise be available in rural Canada.

- Be well trained in the substantial differences between rural and urban surgical practices. In particular, their case selection skills for local care versus referral to a regional centre should be excellent.

8) Professional and Program Support

Recognizing that the sustainability of BC's small volume rural surgery programs is linked to the successful resolution of continuing health human resource issues of recruitment and retention, on-call and vacation relief, continuing professional development, and a reduction in the professional isolation of its staff, UBC, the Health Authorities, Ministry of Health, and the BCMA's Rural Committee should fund a **formal support program** to address these issues on an ongoing basis. Recognizing the relationship between sustainability and local mentorship, where possible, efforts during the training program to link trainees with mentors should be promoted.

E. Appendices

1. List of Participants

Co-Chairs

Stuart Iglesias, MD, GPS, Gibsons

Nadine Caron, MPH, FRSCS, MD, GS, Prince George

John Andruschak, Provincial Director, BC Reproductive Care Program, Provincial Health Services Authority

Stefan Grzybowski, MD, CCFP, MCISc, FCFP, Co-Director of Centre for Rural Health Research

Nancy Humber, MD, GPS, Lillooet

Stuart Johnston, MD, GPS, Vanderhoof

Janusz Kazorowski, PhD, Medical Sociologist, UBC Department of Family Medicine

Michael C. Klein, MD, CCFP, FCFP, FAAP

Jude Kornelsen, PhD, Co-Director of Centre for Rural Health Research

Trina Larsen-Soles, MD, GPS, Golden

Don Lewis Watts, MD, GPS, Golden

Dona MacKie, RN, BScN, OR Supervisor, Saltspring Island

Maria Mascher, Surgical Nurse, Lillooet

Peter Newbery, MDiv, MD, CCFP, FCFP, Director of United Church Health Services

Rose Perrin, Director of MOREOB, Northern Health Authority

Bill Relph, Manager of Rural Health (Gulf Islands and Bamfield), Vancouver Island Health Authority

Garth Warnock, MD, Head of UBC Department of Surgery

Eric Webber, MD, FRCSC, Pediatric General Surgeon

Carl Whiteside, MD, UBC Department of Family Practice

Bob F. Woollard, MD, CCFP, FCFP, Head of UBC Department of Family Practice

2. Research Questions

1. How does a rural GP Surgery program support the Health Authorities and Ministry of Health in meeting the needs of the local rural community?
2. How does a community effectively decide what its health care needs are?
3. Is GP Surgery cost effective?
 - a. for Health Authorities
 - b. for patients
 - c. for the business community
 - d. in terms of social cost
4. Is GP Surgery safe?
5. How much GP Surgery is being done?
6. What surgery is being done?
7. What are the community-professional conditions that foster GP Surgery? Having determined this, what organizational structures best serve those conditions?
8. What kind of evidence/database do we need to show/identify the best/optimal model of rural surgical services?
9. What are the implications of GPS to a centralized regional health service delivery system?
10. What are the implications of a centralized regional health service delivery system to GPS?
11. How do we support existing GPS programs?
12. How much training is enough (time based) to assume safe outcomes?
13. What factors currently determine resource allocations at the regional level? What additional factors should impact such decisions?
14. How can we deliver optimal knowledge in each of these areas to the site of appropriate decision making? One concern is not *what* decisions should be made, but *where* decisions should be made – neighbourhood, community, region, province.
15. Who is going to do the teaching? Will this be an issue considering the lack of support that currently exists?
16. What is the likelihood of personnel being able to support and sustain a surgical service for a community?
17. What is the likelihood of commitment of the team members to sustain a surgical program?

3. Poster Presentations

Conference coordinators asked participants to contribute either a poster or a 'think piece' that reflected their area of interest or concern related to rural surgical care. The posters were the focal point of the opening reception and were displayed throughout the meeting, providing a visual reminder of the context of the discussion. Thematically they represented topics ranging from research infrastructure and background; innovative methods applied to the study of rural surgical care; standards of practice, outcomes, and challenges for rural practitioners; program infrastructure and context; and policy and decision-making processes. Beyond the value of the individual contributions was a remarkable synergy between topics and approaches that truly led to the whole being greater than the sum of its parts. The following is a list of posters presented.

Grzybowski, Stefan, and Jude Kornelsen (2007). "The Evolution of Rural Maternity Care: A Predictive Model for Planning Level of Services."

Grzybowski, Stefan, Robert Woollard, and David Adams (2007). "The Community-Based Clinician Investigator (CBCI) Program."

Humber, Nancy (2007). "Models of Rural Surgical Service Delivery in BC."

Humber, Nancy (2007). "Scope of Practice of 12 GP-Surgery Hospitals in BC."

Iglesias, Stuart (2007). "Training for Non Specialist Surgeons – How Much is Enough?"

Johnston, Stuart (2007). "GP Surgery in Vanderhoof, 1989-2007."

Johnston, Stuart (2007). "GP Surgery versus Specialist Surgery – Is the Patient Safe?"

Kaczorowski, Janusz (2007). "10 Steps for Writing a Successful Grant Application or How to Stack the Deck in Your Favour."

Klein, Michael (2007). "Informed Decision Making: The Interaction Between Sustainable Maternity Care Services and Community Sustainability Data Processing Map."

Klein, Michael (2007). "Informed Decision Making: The Interaction Between Sustainable Maternity Care Services and Community Sustainability Methodology."

Kornelsen, Jude, and Stefan Grzybowski (2007). "A Program Logic Model for GP Surgery Training: GPS's Experiences."

Larsen-Soles, Trina (2007). "On the Cutting Edge: Does the Availability of Surgical Services Affect the Stability of Rural Medical Communities?"

Mascher, Maria (2007). "Snapshot of Rural Surgery in BC: A Nurses' Perspective."

Newbery, Peter (2007). "Supporting Rural Medical Services: The United Church Health Services Model."

Schuurman, Nadine (2007). "A Method to Allocate Hospital Services in Rural and Remote British Columbia Based on Travel Time Catchments."

4. Think Pieces

a) John Andruschak, British Columbia Reproductive Care Program, Provincial Health Services Authority

Thank you for the opportunity to participate.

The provision, maintenance, subsequent changes and absence or loss of surgical services in any setting presents significant dilemmas and challenges to the community and operation of a local health service area.

The patient and family expect a quality service by competent care providers, and trust the health system to maintain and provide the same. The accountability and assurance of quality while shared by many in some sense, becomes the dilemma of local administrators. How to ensure:

- Patient outcome; the need for a quality service
- Team competence; all members of the surgical team need a volume of patients to ensure skill maintenance
- Regularity or consistency of service availability (access); something the community is able to understand
- Ease of staffing, including vacation relief, absence coverage, and recruitment
- Capital and operating equipment, stock and maintenance

The absence of service and especially the loss of service can cause inconvenience to significant hardship for patients and family seeking care and access to services. Travel for service when living in a rural community may be understood, but still does not dilute the impact both financially and in the absence of family or community supports.

The British Columbia Perinatal Health Program (BCPHP, formerly the BC Reproductive Care Program) has been called throughout the province many times to provide expert opinion on whether standards of care are being met and for assistance in stabilizing perinatal services. Suggestions for alternate service delivery models are frequently sought as a means of addressing provider shortage or where traditional staffing models can no longer be maintained. As a result I would pose the following questions to the research community:

1. When considering several of the confounding issues surrounding staffing of surgical services are there models of care that go beyond “quick fix” and provide a sustainable approach?
 - a. The model keeps existing providers engaged
 - b. The model is appealing and will attract new providers
 - c. The model does not establish an unrealistic financial burden

2. What is the model for competency maintenance in the rural setting and how does it work for nurses, physicians, and midwives? (Especially skill areas, which require adequate or regular volume in order to be performed well.)
3. When a service does have to close is there adequate planning undertaken by the region to ensure service referral and support for patient and family are taken on. (It may be better for a patient to have the service delivered elsewhere, but have resources invested in improved support, established referral streams, accommodation, and transport assistance.) Investigate models of support to actively manage the care plan for the rural patient in the receiving hospital. Liken it to a concierge service or intensive case management to ensure convalescence, rehab, and the family support have a plan.
4. Is there modeling or a point when assessing the financial aspects of maintaining certain services that suggest costs are too great, from both direct and indirect sources?
5. How do we organize the partners to work in concert to identify, experiment with implementation, and then evaluate the alternate models for service, education, and support in order to move forward on arriving at solutions and strategies that work?

The BCPHP has a mandate to move new knowledge into the field of perinatal operations to optimize neonatal, maternal, and fetal care. We welcome the opportunity to be part of acquiring new knowledge, developing best practices, and then to advance dissemination of best practices to our stakeholders.

b) David J M Butcher MD, Vice President Medicine, Northern Health Authority

Surgical services are a mainstay of rural hospital care in Canada. Surgical services are integral to the delivery of obstetrical/maternity services, as well as to support trauma care and acute medical service delivery. However, the sustainability of surgical service in rural settings is extremely fragile. Often, surgical services are the clinical domain of a single physician, leaving the service vulnerable to collapse should the individual physician not be available. Further, the provision of surgical services requires a team of surgeon, anesthetist, and trained OR nursing staff, working in conjunction with support personnel for surgical equipment maintenance and sterilization. Each of these individuals requires specific skills and experience that must be maintained in order to provide safe care.

Evidence is emerging to support centralization of certain surgical procedures, based on volumes of procedures done, in order to optimize patient outcomes. Removing specific surgical procedures from the range of procedures performed by a rural surgeon based on low volumes may jeopardize the viability of a surgical practice. The rural surgeon may be called on to perform a wide range of procedures on an emergent basis, while not performing the same procedure on a regular basis.

General Practitioners with additional training in surgery provide surgical care in rural communities across Canada. However, their role is poorly understood in planning for surgical services on a large scale, provincial basis. Unlike surgeons with credentials based on fellowship in the Royal College of Physicians and Surgeons of Canada, GP Surgeons have no standardized training programs, examinations, or credentialing in order to create a base of comparability for purposes such as portability of credentials, research, or maintenance of competence.

The challenge of rural surgical service delivery is to provide high quality surgical care, with a broad range of surgical procedures, while performing relatively low volumes of any particular procedure. Surgical programs are expensive for health authorities to set up and maintain. However, the absence of surgical coverage is often not an option for rural community hospitals.

Research is necessary to provide an evidence base for the design and provision of surgical services in rural communities. A rural surgical research agenda could focus on the examination of:

- Models of sustainable rural surgical service delivery
- Training requirements for the provision of surgical services in rural communities
- Maintenance of competence for rural physicians, nurses and hospital personnel involved in surgical care
- Outcomes of surgical care for rural patients
- The effect of surgical programs on rural community development and economic stability
- The use of Telehealth to support rural surgical programs
- The role of surgical programs and surgical availability on recruitment and retention of physicians and nurses to rural communities

The results of such research and the evidence base produced would be of fundamental importance to health authorities, hospitals, and provincial/territorial Ministries of Health as they make decisions on the allocation of resources in support of clinical services. It would also inform the process of granting and reviewing credentials and clinical privileges for medical staff. The emerging emphasis on patient safety, along with the desire to provide the best clinical outcomes for all patients requiring surgical care, dictates that there be an evidence base to support rural surgical programs with small procedural volumes.

As a physician with an administrative mandate that includes recruitment and retention of medical staff, medical services design and delivery, and patient safety and risk management, I am acutely aware of the challenges of providing surgical care in rural communities. As a GP Anesthetist, I am also personally committed to ensuring that the practice of surgery in rural communities continues to be central to hospital-based services. Research that examines this practice and provides evidence to guide improvements and ensure sustainable surgical care in rural communities is both welcome and overdue.

c) Karin Olson, Director of Coastal Health Services Delivery Area, Vancouver Coastal Health Authority

Population Trends:

1. Population – 2003 (Powell River)
 - In 2003, the population estimate of the Powell River Health Area was 20,300, with the Municipality of Powell River accounting for 66% of the area with 13,400 residents. The total population in the area increased by 4.8% in the past decade. Approximately 6% of the population is of First Nations or Aboriginal identity.
2. Population – 2004 (Sea to Sky Corridor)
 - In 2004, the population estimate in Sea to Sky Corridor was 30,780 residents
 - 16,431 in the District of Squamish (53%)
 - 9,933 in the Resort Municipality of Whistler (32%)
 - 4,416 in the Village of Pemberton and surrounding region (14%)
3. Population Projections – 2019 (Sea to Sky Corridor)
 - In 2019, the projected population in the Sea to Sky Corridor is 45,631
 - 22,489 in the District of Squamish (49%)
 - 16,197 in the Resort Municipality of Whistler (35%)
 - 6,945 in the Village of Pemberton and surrounding region (15%)
4. Population Projections – 2029 (Sea to Sky Corridor)
 - In 2029, the projected population in the Sea to Sky Corridor is 59,956
 - 30,753 in the District of Squamish (51%)
 - 17,830 in the Resort Municipality of Whistler (30%)
 - 11,373 in the Village of Pemberton and surrounding region (19%)
5. Summary
 - 33% growth in population for Sea to Sky between 2004 and 2019 (next 15 years)
 - 100% growth in population for Sea to Sky between 2004 and 2029 (next 25 years)
 - 0.40% growth in population for Powell River in the next 10 years.

Core Acute Services by Facility:

1. Pemberton Health Care Centre (PHCC)
 - Urgent Care Centre
 - Laboratory services
 - General Radiology services

2. Whistler Health Care Centre (WHCC)
 - Emergency Room
 - Laboratory services
 - Radiology services
3. Squamish General Hospital (SGH)
 - Emergency services
 - Surgical suite
 - Labour and Delivery suites
 - 21 inpatient beds for inpatient acute, sub-acute, and alternative Levels of Care
 - Chemotherapy
 - Radiology
 - Support services – pharmacy, dietician, rehabilitation, social work
4. Powell River General Hospital (PRGH)
 - Acute and Sub-Acute medicine
 - Maternity
 - Pediatrics
 - Surgery
 - Emergency
 - ICU
 - Capability for 24-48 hour ventilation
 - Heli-pad for transferring critically ill patients

Vision for the Future – Expansion Opportunities:

Sea to Sky Corridor will have the following facilities and services:

- Local Health Care Centre in Pemberton
- Local Health Care Centre in Whistler
- Sea to Sky Community Hospital in Squamish
- Expand diagnostic services to include a CT scan at WHCC in a PACS environment
- Expand diagnostic services to include an ultrasound at PHCC in a PACS environment
- Expand maternity program at SGH

Major Facilities Projects – In Progress:

- Whistler D & T – CT scanner
- Squamish Hilltop House – 49 bed addition
- Squamish General Hospital Emergency Department

Minor Capital Improvement Projects – Complete:

- Squamish Mental Health Team – new offices
- Pemberton – piping replacement
- Whistler Health Centre – Renovations for Mental Health offices
- SGH maternity enhancement
- Pemberton Lab Renovations (in progress)

Challenges:

- Staff recruitment and retention in light of increasing population growth

d) Bill Relph, Manager, Rural Health, Vancouver Island Health Authority

Rural Health is a component of the Medicine, Chronic Disease Management, and Primary Health Care portfolio of the Vancouver Island Health Authority (VIHA).

Rural sites dot the health authority from the Mount Waddington area on northern Vancouver Island, to the west coast, including Kyuquot, Zeballos, Bamfield, and the islands. These areas are serviced in a variety of ways, including single nurse outpost stations, health centres, diagnostic and treatment centres, and primary care hospitals.

Some of the issues facing surgical services in these rural areas are:

1. Access to Services

Most areas are within 2 hours of a receiving facility by land ambulance. More urgent cases are flown to one of the receiving centres. For the local populations in the rural areas, this means traveling the day before a procedure to ensure timely arrival, and may necessitate a stay after the procedure in a hotel prior to going home, depending on time of discharge, travel time, and ferry schedules. With an increasingly aging population (many of whom do not drive), having services closer to home is important.

Lady Minto Hospital is the only rural site with a surgical service.

2. Financial Pressures for Patients

Accommodation costs the night before and after a hospital stay present a financial concern for some.

3. Recruitment/Retention

The OR runs cases 10 days per month. This limited service can have an impact on recruitment of surgeons, nurses, and unit nurses. Finding trained OR and PARR nurses is difficult, and having adequate casual staff is also a challenge due to limited and unpredictable work for them at the rural site.

4. Nursing vs. OR Technicians

With the looming retirements in nursing and other health-related fields, it is important to explore new ways of maintaining the service. Hiring trained OR technicians may be one solution.

Although having an OR technician may at first appear to be an answer to staffing difficulties in the rural OR setting, the present Canadian standards would make it very difficult to have them as part of a very bare bones staffing model. Technicians would be unable to be utilized for emergency surgery, and cannot circulate, making their usefulness limited.

5. Degree of Difficulty of OR Cases

Nursing staff in rural areas, including hospitals, are generalists. The procedures performed at the facility need to reflect the staff's ability to monitor and maintain a safe environment. Staffing quotas are different from urban centres and clients range from newborns, to trauma patients, to palliative care and cardiac patients.

6. Educational Opportunities

Maintaining skills presents a challenge for both medical and nursing staff who do not have opportunities to practice procedures such as advanced laparoscopies on a regular basis. In addition, anesthetists (GP Anesthetists are used at Lady Minto Hospital) may not have exposure to more complex cases on a regular basis, yet may have a difficult case on an emergency basis. Ward nurses are not regularly exposed to the complex post-op surgical patient, and thus do not have a comfort level with some situations.

Access to ongoing in-servicing and upgrading is difficult due to both geographic and funding challenges. Nurses and medical staff must attempt to self-educate through professional groups, etc., and travel time can be substantial due to distance from urban centres. This may present a financial burden on staff to attend regional and national meetings, as costs include a loss of salary as well as fees, hotel, and food expenses.

7. Standards of Practice

Small rural centres require staff flexibility and the ability to multi-task; therefore an OR nurse may be called upon to work in the CSR to help autoclave the instruments and LPNs are called upon to be Unit Clerks to transcribe post-op orders. This makes it difficult to keep abreast of new standards.

8. Capital Costs

Finite capital dollars and increasing numbers of services competing for this funding have an impact on distribution of these funds to the smaller rural sites proportional to the more urban and community sites. One result is often a lack of back-up equipment.

In the case of Lady Minto Hospital, the hospital's Foundation has played a major role in providing much of the funding for capital equipment over the years.

9. Operating Costs

Budgets for operational costs are limited, and there is a tendency to attempt to keep stock to a minimum, which leaves a small rural facility vulnerable when items are back-ordered or late delivery becomes an issue.

Purchasing departments of a large health authority are not geared to small sites. For instance, we are sometimes forced to order by the case from stores, when all we need is a single item. Purchasing staff do not want to do the paperwork to separate out single items, and splitting orders with other small facilities is discouraged. This practice has a large impact on local budgets.

10. Sustainability

Maintaining a surgical service is vital to the role of a small community hospital such as Lady Minto, which has a population of 10,000 permanent residents and at least double that number in the summer months and is separated from tertiary care by a body of water not serviced by ferries after 2100h.

However, rural health services are vulnerable to staff turnover, population growth, budget adjustments, and referral patterns. There is little flexibility to adapt to changes in any of these areas and no opportunities for economies of scale either in staffing or purchasing.