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.