

Report on the Invitational Meeting on the Research Agenda for Rural Surgical Services

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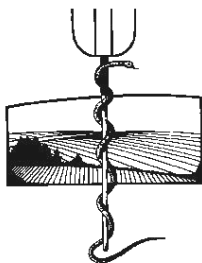


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Executive Summary

An "Invitational Meeting on the Research Agenda for Rural Surgical Services" was held April 8-9, 2005, hosted by Alberta Health and Wellness (AHW) in Edmonton Alberta. Present were 32 prominent researchers, policy advisors and medical leaders.

Dr. Keith MacLellan of the SRPC gave a presentation on the role of Generalism in rural medicine. He emphasized that rural is a determinant of health, with its people poorer, sicker and with less access to resources. Groups of rural doctors, usually general practitioners, have provided the triple pillars of anaesthesia, surgery and obstetrics needed to sustain locally high levels of care. Teaching programs that provide this level of training are closing with uncertain outcomes and unknown cost/benefits. A common cascade is that the surgeon (GP or specialist) retires without a replacement, then the anaesthetist leaves and Obstetrics is left without caesarean backup and is then lost.

Vietnam showed us that transport can be done, but huge amounts of resources can be spent on it and in the end human cargo is fragile. Some attempts to limit the erosion of rural health services have been done by the SRPC in association with the Canadian Anaesthesiologist Society (CAS) and the College of Family Physicians (CFPC) to train FP-anaesthetists. Similarly the SRPC and CFPC and the Society of Obstetricians and Gynaecologists (SOG) have established national curricula in caesarean training for rural family physicians.

Dr. Bill Pollet of CAGS highlighted the trends in General Surgery. General Surgeons are getting older and are not being replaced in adequate numbers as they retire. Furthermore, only half of recent graduates have the traditional scope of general surgery that is practiced in rural communities. Those that do are more likely to have had a rural rotation or have been from a smaller town (<100,000) and are more likely to practice in a smaller town.

Eric Ellehoj discussed new rural research methodologies recently developed and used by the organizers. For the purposes of researching surgical services the group chose to define urban as populations within 30 minutes drive time (or 80 min for Academic Health Science Centers) or a population center of over 35,00.

Dr. Stuart Iglesias described where surgical patients came from and where they received their surgery. In comparing rural Alberta with Northern Ontario, it was found that rural Alberta has a greater number of rural non specialist centers that provide surgical services. Ontario is composed of smaller numbers of middle population communities that could support GP surgery.

Dr Nancy Humber described a preliminary study of British Columbia's rural surgery services. They had twelve hospitals with GP based surgery, but this number has dropped to nine as physicians have not been replaced. Average case volume for any given procedure was low, but overall averaged 200 cases per year. Endoscopic procedures, hands, hernias, caesareans and appendectomies form the most common procedures.

Dr. Joshua Tepper presented the findings for rural surgical procedures in Northern Ontario and Alberta. Of the procedures studied only carpal tunnel surgery rates varied by travel time.

The group discussed options of enabling FP surgery training, increasing the numbers of specialist General Surgeons in rural areas, using International Medical Graduates to provide services and transporting patients to the city for surgical services. While all mechanisms are and will be used to varying degrees in Canada, there is a lack of evidence of the advantages and disadvantages of each to guide policy.

The group developed a research agenda with priorities on, Determining Community Needs, Health Human Resource Issues, Delivery Models, Education and Outcomes. Dr. Morris Barer's described three types of funding; principle investigator, operating team grants and research grants proper. Dr. Ian Bowmer discussed challenges for knowledge translation and progress. Lack of coordination within Canada leads to at least thirteen policy models. To be effective health policy research needs to be collaborative, clear, consistent and concise.

Next steps will be to form a research group to explore the issues needed to guide policy.

Evaluation of the enhancement of
Physician Health Human Resources in Rural Canada
Development of new models for access to rural surgical care

Over 25% of Canada's population live in rural areas but less than 14% of physicians practice in rural areas. This is despite evidence that rural populations have higher health needs and above average rates of many acute and chronic medical conditions. Rural physicians are also responsible for the care of a large percentage of Canada's First Nation and Inuit populations which mostly live in rural areas.

Canada has faced a chronic shortage of appropriately trained rural physicians due to the many professional and social challenges that come with rural practice. These clinical challenges include having to practice in isolation from peers, limited resources such as diagnostic equipment, and the demands of a very broad range of practice.

In order to help ensure the recruitment and retention of physicians in rural areas of Canada the Society of Rural Physicians (SRPC) was formed to serve as the only official voice for this group of providers. The SRPC has a long track record of strongly advocating for the needs of Canada's rural populations and for developing innovative education and practice improvement programs to help physicians working in rural areas of Canada. The SRPC also has a strong history of leading research and policy work on rural populations and Health Human Resource (HHR) needs.

In 2004 Health Canada funded the SRPC's proposal for "Development of new models for access to rural surgical care." (Appendix 1) This paper is the evaluation of the project.

Program Evaluation

An “Invitational Meeting on the Research Agenda for Rural Surgical Services” was held April 8-9, 2005, hosted by Alberta Health and Wellness (AHW) in Edmonton Alberta. (Agenda Appendix 2)

Present were 32 prominent researchers, policy advisors and medical leaders with representatives from the Royal College, Canadian Association of General Surgeons (CAGS), AHW, College of Physicians and Surgeons of Alberta (CPSA), Canadian Institute of Health Research (CIHR), Health Canada (HC), Institute for Clinical Evaluative Sciences (ICES), and the SRPC. The full attendance list with names and affiliations of attendees is attached (Appendix 3).

On April 8th the meeting started with presentations from the organizers. Dr. Keith MacLellan of the SRPC gave a presentation on the role of Generalism in rural medicine (Appendix 4). He emphasized that rural is a determinant of health, with its people poorer, sicker and with less access to resources, particularly specialized resources. Indeed it has been the broadly skilled generalist that has been the historically efficient and successful model from rural medicine. Groups of these doctors, usually general practitioners, have provided the triple pillars of anaesthesia, surgery and obstetrics needed to sustain locally high levels of care.

However, as Canada’s culture has promoted specialization, the rural health care system has eroded. Family doctors and specialists needed to provide this broadly based care are being trained in fewer numbers with a national shortage of generalist physicians. Programs are closing with uncertain outcomes and unknown cost/benefits. A common cascade is that the surgeon (GP or specialist) retires without a replacement, then the anaesthetist leaves and Obstetrics is left without caesarean backup and is then lost.

Vietnam showed us that transport can be done, but huge amounts of resources can be spent on it and in the end human cargo is fragile and doesn't transport well. Some attempts to limit the erosion of rural health services have been done by the SRPC in association with the Canadian Anaesthesiologist Society (CAS) and the College of Family Physicians (CFPC) to train FP-anaesthetists. Similarly the SRPC and CFPC and the Society of Obstetricians and Gynaecologists (SOG) have established national curricula in caesarean training for rural family physicians.

Dr. Bill Pollet of CAGS highlighted the trends in General Surgery (Appendix 5). General Surgeons are getting older and are not being replaced in adequate numbers as they retire. Furthermore, only half of recent graduates have the traditional scope of general surgery that is practiced in rural communities. Those that do are more likely to have had a rural rotation or have been from a smaller town (<100,000) and are more likely to practice in a smaller town.

Among General Surgeons there is a perception of poor remuneration/less prestige which may be contributed to having its graduates go on to formal subspecialties or to limit their scope of practice. Paradoxically this trend, almost universal in Academic Health Science Centers, is associated with a higher workload and more time on-call than community general surgeons. This leads to an opportunity to have medical students and general surgery residents rotate to community and rural settings. This would help with marketing

the skills needed in these settings and help the training programs better meet society's needs.

On April 9th Eric Ellehoj discussed new rural research methodologies recently developed and used by the organizers (Appendix 6). While even children have a sense of what is country and what is city, defining rural has been a methodological challenge. For the purposes of researching surgical services the group chose to define urban as populations within 30 minutes drive time (or 80 min for Academic Health Science Centers) or a population center of over 35,00. Further details are in the syllabus and on the Alberta Health and Wellness website under methodologies.

<http://www.health.gov.ab.ca/resources/publications/pdf/GeoDistances.pdf>

Dr. Stuart Iglesias described the results of a population based database for Alberta and Northern Ontario (Appendix 7). The study described where surgical patients came from and where they received their surgery. Facilities were characterized as being either Regional Urban programs or Rural Specialist (A), Rural Non Specialist (B) or Rural Non Surgical programs (C).

In comparing rural Alberta with Northern Ontario, it was found that rural Alberta has a greater number of rural non specialist centers that provide surgical services. Ontario is composed of smaller numbers of middle population communities that could support GP surgery.

Dr Nancy Humber described a preliminary study of British Columbia's rural surgery services (Appendix 8). They had twelve hospitals with GP based surgery, but this number has dropped to nine as physicians have not been replaced. In these hospitals there are twenty GP surgeons, of which half are foreign trained. Average case volume for any given procedure was low, but overall the nine programs performed 2,600 cases per year. Endoscopic procedures, hernias, caesareans and appendectomies form the most common procedures.

Dr. Joshua Tepper presented the findings for rural surgical procedures in Northern Ontario and Alberta (Appendix 9 and syllabus). Rural rates are higher for appendectomy and cholecystectomy. Rural Alberta rates are higher for total joint replacement. Rates of procedures were similar between rural communities with a specialist and GP based surgical services and communities that had to travel for the procedure. Of the procedures studied only carpal tunnel surgery rates varied by travel time.

Wide ranging discussions followed. The issues that were raised included those relating to community needs, outcomes, economic impact of local surgical services on rural communities, generic questions of continuing professional development and learning for general surgeons and family physicians, evaluation of foreign training, difficulties of getting privileges for these procedures from the CPSA, etc.

Options raised included enabling FP surgery training, increasing the numbers of specialist General Surgeons in rural areas, using International Medical Graduates to provide services and transporting patients to the city for surgical services.

While all mechanisms are and will be used to varying degrees in Canada, there is a lack of evidence of the advantages and disadvantages of each to guide policy.

The group developed a research agenda with the following priorities:

Research Priorities

Determining Community Needs

1. What is the surgical load that can be expected based on community factors?
2. Sorting out wants and needs (e.g. on site carotid endarterectomies)
3. How and why does a community become high outflow (why do people go elsewhere when the service is available locally)?

Health Human Resource Issues

1. What is driving specialization and what are the health human resource implications?
2. How do we determine the right HHR numbers and mix for every community?
3. Are there minimal HHR levels reflecting minimum service demands or lifestyle issues?

Delivery Models

1. Environment scan for HHR needs for current and new models and related efficiencies
2. Collaborative and communication issues among providers of procedural care

Education

1. What are the barriers to education of generalists for initial training or continuing professional development?
2. What are current models of CPD for procedural skill maintenance and new skill acquisition?
3. How does the training curriculum effect eventual practice location and skill set?

Outcomes

1. Clinical outcomes relating to level of training
2. What are the clinical, economic and social consequences for a community to lose a program?
3. Cost benefit and effectiveness evaluations of different models of service provision

Discussion turned to research funding as detailed in Dr. Morris Barer's talk (Appendix 10).

He described three types of funding:

1. PI funding difficult as not structured to support p/t rural clinicians
2. Operating team grants to maintain the research infrastructure
3. Research grants, to do the needed investigations

Dr. Ian Bowmer discussed challenges for knowledge translation and progress. The health bureaucracy has a high turnover of staff. Lack of coordination within Canada leads to at least thirteen policy models. To be effective health policy research needs to be collaborative. The message needs to be clear and concise, as well as consistent and collaborative for policy change. Some of the most difficult areas to change will be the academic training centers.

Feedback was obtained at the end of the session and is synthesized in Appendix 11.

Next steps will be to develop a working party of researchers to explore the subject to help inform policy.

Appendix 1 Development of New Models for Access to Rural Surgical Care

Background:

Several models to deliver surgical care to rural Canada currently exist, from highly centralized or regionalized models such as in Northern Ontario, to more local care with the contributions of non-specialist general practitioner-surgeons as in Alberta. It is unclear which model works best, if any, nor how to distribute rural surgical care in these days of rapidly evolving technologies.

The “Access to Surgical Care for Rural Canadians” was a federally funded project (\$83, 000 to be spent between March 2002 and March 2003) prompted by the SRPC and the CAGS) to look at how rural Canadians gained access to surgical care. The results of such research would have clear implications on models of care, human resource planning, training and equipment.

Initially the project received the valuable assistance of the Canadian Institute for Health Information (CIHI) to bring together researchers in Ontario (ICES) with those in the Government of Alberta (GOA). This is the first time two separate provincial health care data gathering bodies have cooperated in such a manner, underlining the importance of the questions being asked.

Another first for the project was an innovative and practical way to approach the thorny issue of the definition of “rural”, using the services of a professional geographer. We were able to create unique “catchment areas” for rural hospitals in both provinces and to identify the level of surgical services locally. We were also able to create procedure specific “travel webs” tracking travel requirements of rural Canadians for their surgical services. The results of these methodologies alone could probably spawn several papers of national and international interest.

Several teleconferences and one face to face meeting resulted in an agreed upon research methodology, the input of the two professional associations being invaluable.

AHW was first off the mark in “crunching the numbers”, producing solid results of practical importance in matters of the access to surgical services in its province. AHW dedicated a senior scientist full term for three years to develop the methodologies and the Alberta database. In addition they provided a senior biostatistician to oversee the research modeling.

ICES in Ontario is currently running the same research model as used in Alberta on its Ontario database. These results should be known soon. The delicate matter of sharing, comparing and combining research results between provincial databases (a process never before attempted until this project) has been settled to everyone’s satisfaction. It is expected that the combined results will yield valuable and new information on how rural Canadians currently get surgical care.

The original funding was used to purchase the services of the geographer, the Ontario database from ICES and one face to face meeting. Presently AHW is prepared to utilize their provincial database for their own internal planning purposes. We are prepared to share the ICES database with them. By any credible analysis, the amount, quality and innovative aspect of the work done to date has been exceptional, especially when one considers it was done with only \$83,000 and given the apparently insurmountable jurisdictional and professional barriers present at the start. However, if there is to be a serious attempt to construct a model of rural surgical care utilizing databases from two provinces, and if there is to be an equally serious effort to bring these research issues into both academic and public policy forums, then there is a great need for all involved in this project to sit down together and look at the results to settle the questions outlined above. This will be particularly important for the best way to disseminate the results with a view to aiding policy development in models of care, human resource planning and training.

Objectives:

- To bring together the researchers and policy analysts involved in the “Access to Surgical Care for Rural Canadians” project for a final pre-publication meeting;
In addition to the initial researchers we will invite representatives from CIHI, Health Canada and the provincial governments to demonstrate a successful model of inter-governmental cooperation, offering the project as a model for future projects of similar nature. Observers from such bodies as the academic departments, the CFPC, RCPSC or Task Force 2 will also be invited with a view to dissemination of the results. The meeting could also be advertised and open to other self-funded participants such as academics, researcher and policy makers with an interest in the topics.

Outcomes:

- To identify the final conclusions to be extracted from the databases assembled in two provinces;
- To decide how these conclusions might best be presented to academic and public policy forums
- To reach consensus on the following aspects of this project:
 - a) Evaluation of the success and challenges to inter-provincial sharing of data bases in health care, the role of Health Canada, CIHI and professional associations in facilitating such sharing;
 - b) Initial evaluation of the policy impact of the research results on human resources planning and the dissemination of these results to appropriate policy-making bodies (governments, task forces, analysts and training institutions).

Dissemination:

A series of published articles are likely to result. Dissemination will also follow from this meeting through the participation of the several key stakeholders as listed in Appendix 3

Evaluation:

- The minutes of the meeting and resulting policy related decisions
- The final articles and academic posters
- Government actions that reflect the results of this study

Appendix 2 Meeting Agenda

Agenda



Friday, April 8

5:00 Reception

6:00 Welcome from Alberta Health and Wellness – Annette Trimbee, ADM
Dinner

7:00 Presentations

- The Generalist Physician, Dr. K. MacLellan
- The Generalist Surgeon, Dr. W. Pollett

Saturday, April 9

8:00 Breakfast

8:30 Presentations

- New Rural Methodology, E. Ellehoj
- Utilization Rates for Surgical Procedures in Rural Canada, Dr. J. Tepper
- Delivery Systems for Rural Surgical Service in Two Provinces, Dr. S. Iglesias
- Rural Surgical Services in British Columbia, Dr. N. Humber

9:30 Discussion

10:00 Coffee

10:30 What are the Issues facing the rural population with access, appropriateness and outcomes of surgical care?

12:00 Lunch

1:00 What are the research themes and/or questions?

2:30 Coffee

3:00 How might the research be supported?

4:00 How can the research be translated to policy?

5:00 Dinner

Appendix 3 Attendees

Attendee List and Affiliations

Title	First Name	Last Name	Affiliation
Dr.	Morris	Barer	Canadian Institute for Health Research
Mr.	Brendan	Barrett	
Dr.	Audley	Bodurtha	University of Ottawa Royal College Specialty Committee
Dr.	Ian	Bowmer	Health Sciences Center Health Canada
Mr.	Barry	Brayshaw	Alberta Health and Wellness
Mr.	Erik	Ellehoj	
Dr.	Bill	Fitzgerald	Canadian Association of General Surgeons
Ms.	Temma	Frecker	
Dr.	Stefan	Grzybowski	
Dr.	Charles	Harley	Alberta Health and Wellness
Dr.	Hugh	Hindle	
Dr.	Raymond	Howard	Alberta Health and Wellness
Dr.	Nancy	Humber	
Dr.	Peter	Hutten-Czapski	
Dr.	Stuart	Iglesias	
Mr.	Yan	Jin	Alberta Health and Wellness
Dr.	Keith	MacLellan	
Ms.	Linda	Mattern	Alberta Health and Wellness
Ms.	Sharon	McCaughan	Alberta Health and Wellness
Mr.	Murray	McKay	Alberta Health and Wellness
Dr.	Peter	Miles	
Mr.	Shaukat	Moloo	Alberta Health and Wellness
Mr.	Raymond	Pong	Centre for Rural & Northern Health Research (CRaNHR) Laurentian University
Ms.	Elaine	Stakiw	Alberta Health and Wellness
Dr.	Mark	Taylor	
Dr.	Joshua	Tepper	
Ms.	Annette	Trimbee	Alberta Health and Wellness
Ms.	Corrine	Truman	Capital Health
Dr.	Bryan	Ward	College of Physicians and Surgeons of Alberta
Dr.	Rob	Wedel	The College of Family Physicians of Canada
Ms.	Sylvia	Wilson	Alberta Health and Wellness

Appendix 4 Rural Health Care Models

Rural Health Care Models Dr. Keith MacLellan

Rural Characteristics

- Older, sicker, poorer, more accident prone
- “Rural” is a determinant of health
- Generalism, “Jack-of-all-trades”
- Community is key
- Mechanic example
- All communities different
- Generalism essential for nurses, social workers, physio, etc
- Specialization can have wide-spread negative effects for community

Generic Rural Model

- Foundation of broadly-skilled generalists
- Constant fluctuation between primary/secondary/tertiary levels
- Constant challenges of uncertainty and limits of competence
- Twin pillars of anesthesia and surgery

Environmental Erosion

- Humans, when it is possible/affordable, value specialization
- “Modern” societies, when it is possible/affordable, encourage specialization
- Canadian leadership sees itself as “rural” only in myths, songs, legends, tourism

Erosion of Foundation

- Urban model of family practice
- Restricted to primary care, prevention, chronic diseases, “worried well”, gate-keeper, coordination
- Specializations in emergency, geriatrics, palliative care, hospitalists

Erosion of Pillars

- Explosion of knowledge base
- Uncertain quality control/outcome analysis
- Cost/benefit calculations
- National standards/guidelines
- Medico-legal issues
- Lifestyle/support

Current/Future Situation

- Closure of many rural hospitals
- Mandate of triage, geriatrics, palliative care
- Demoralization of rural populations/workforce
- Impediment to rural economic development
- National shortage of physicians
- Lack of “community” general surgeons, internists
- No specific “rural” models
- Local rural obstetrics extinct? Palliative care next?
- Absence of even basic “specialized” knowledge/care

Loss of Surgery

- No anesthesia (+/- resp.techs)
- No blood bank

- No thrombolysis (variable)
- No ICU
- No CT
- Basic lab, if any
- No surgical clinical knowledge/judgment
 - abdominal/pelvic pain
 - wound infections
 - lacerations, tendons, grafts
 - fever
 - trauma
 - fractures
- No C-Sections, ectopics, D&C

Proposed Remedies

- Better transport ? - best solution for dense populations - Vietnam
- Telemedicine ? - disappointing to date; inherent contradictions; destructive to generalism?
- Regionalization? - rarely with rural priorities; urban areas consume budget; uncertain costs/outcomes
- Nurse Practitioners? - mostly primary care, but colonoscopy, anesthesia?
- “Primary Care Reform”? Urban concept; rural teams not considered

SRPC Initiatives

- Joint Position Papers on Training Rural FP/s in Advanced Maternal Care, including C/Sx
- (SRPC/SOGC/CFPC)
- Collaborative Committee On Rural Anesthesia, joint position paper (SRPC/CAS/CFPC)
- Advocating for more research on modelling, outcomes, guidelines
- Concept of “limited skill sets”

Rural Surgery

- SRPC/CAGS \$86,000 federal funding “Access to Surgical Services For Rural Canadians”
- ICES - AHW, with CIHR help
- Innovative definition of “rural”
- Two models of surgical care, regional vs. local

SRPC Opinion - Rural Surgery

- Some kind of regionalization needed in many areas
- Boosting of local resources needed in most areas, (esp lab, CT, OR)
- Research and models of care
- Promote generalism and local care where feasible
- Rural surgeons have formed the backbone and heart of rural care
- Of necessity (choice?) rural surgeons were broadly skilled with many limited skill sets (ortho, urology, gyne, plastics, ICU, trauma, etc)
- Far more rural general surgeons need to be produced and supported
- If a general surgeon needs a population of at least 15,000 to keep fully occupied/skilled; and
- If a general surgeon should be on call no more than 1:5 to keep a sustainable lifestyle; then
- All rural Canadian surgical services should be concentrated in areas of more than 75,000?

- “Generalism” a concept that unites rural doctors and general surgeons
- Uncertainty, limits of competence, proper training, life-long learning and limited skill sets
- Also implies quality: overall quality of generalist care is more than the sum of atomized, disease-specific measures.
- Generalism reflects rural imperatives and is socially responsive

Generalism

- Can J Surg. 1992 Apr;35(2):131-5
 - “There are cogent arguments, based on economics and care-delivery issues, to preserve general surgery. Making this choice will commit general surgeons to accept the concept of scientific generalism and to the development of the specialty of general surgery in a social context.”
- Logical positivism vs. pragmatism
- Flexner vs. Osler/Peabody
- Vector from lab to patient, at the expense of clinical.
- Academic Health Science Centres

Osler

- “No more dangerous members of our profession exist than those born into it, so to speak, as specialists... (...)....no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public.”

Flexner

- "The small town needs the best and not the worst doctor procurable. For the country doctor has only himself to rely on: he cannot in every pinch hail specialist, expert, and nurse. On his own skill, knowledge, resourcefulness, the welfare of his patient altogether depends. The rural district is therefore entitled to the best-trained physician that can be induced to go there."

Generalist Training

- Students entering medical school are interested in the whole person
- Students leaving medical school are interested in the hole in the person
- The two top careers most related to age of student at medical school graduation were family medicine and rural general surgery.
- There was a 144 % increase in choice of rural family medicine from graduates age 25 to those age 30.
- There was a 90 % increase for rural general surgery for the older vs. younger.
- Studies involved all 1987 - 2000 grads in US.
- Current family medicine - “learned helplessness” vs. “clinical courage”
- Current general surgery - fragmentation, sub-differentiation
- Which is better to support effective generalism?
- Role of community-based training?
- Royal College Initiatives
- Dealing with uncertainty
- Sense of time/natural history
- Larger/social context
- Flexibility
- Knowing limits
- Limited skill sets

Limited Skill Sets

- Defined, restricted practice within a discipline, e.g. Nurse Practitioners, GP anesthesia, General surgeon doing some ortho
- Lower volume but same or better outcomes. Identical standards of care.
- Initial, basic training is key
- Knowing limits
- Life-long education, MOC and quality control an integral part

Generalist Support

- Fee structure
- Guidelines and norms
- Medical legal
- Peer to peer
- Research, research, research

SRPC Proposal

- Allow and explore the concept of “limited skill sets” in surgery
- Extend the same concept to rural GP/FP
- Incorporate this and other aspects of generalism into basic and advanced training
- Properly trained (by surgeons) GP/FP’s with a limited skill set in surgery (C-sections, scopes, certain abdominal/pelvic procedures) can support the rural specialty surgeons’ working conditions and scope of practice
- Major support to the rural community for access to all kinds of care beyond abdominal cases
- Needs to be a pan-Canadian process with proper certification, quality control and maintenance of competence
- International model
- Will provide more control and better service than nurse-anesthetists, colonoscopists etc.
- All future rural health care research should be influenced by the concept of generalism
- Far more rural research needs to be done - urgently and impeccably

“The success of our health care system as a whole will be judged not by the quality or services available in the best urban facilities, but by the quality of service Canada can provide to its remote and Northern communities” - Jose Amaujaq Kusugak to the Romanow Commission

Appendix 5 the Generalist Surgeon

The Generalist Surgeon Issues in Rural/Regional Surgical Care – CAGS Perspective Dr. Bill Pollet

Objectives

- Background
- Generalism in decline
- General Surgeons in decline
- Training Issues
- The Challenges

Background CAGS / SRP Collaboration

Agreement on principles

- Access
- Quality

Disagreement on Delivery Models

- Centralized v decentralized
- Role of “GP Surgeons”

Decline of Generalism

- Tertiary care model encourages subspecialization
- Volume / outcome equation
- CAPER Paper

Background

Concern re:

- Declining number and increasing age of General Surgeons
- Apparent declining interest in General Surgery
- Trend towards subspecialization
- Declining number and increasing age of General Surgeons
- Apparent declining interest in General Surgery
- Trend towards subspecialization
- Surgical needs in non-University communities

Research Objectives

Determine

- Scope & practice location of recent graduates of GS programs
- Rates & pattern of subspecialization
- Factors influencing career decisions
- Patterns of practice in relation to community size

Solicit open ended comments regarding attitudes and perceptions about General Surgery as a career

Study Cohort

R3 residents registered in Canadian General Surgery programs from 1988-1997 782
782 (Canadian citizens or permanent residents of Canada)

Of these:

42 (5.4%) transferred to non-surgical disciplines

103 (13.2%) transferred to another primary surgical specialty

637 (81.4%) completed certification in General Surgery

Questionnaire Outline

- Surgical Certification
- Training and Demographic Details
 - Nature, location and duration of training
 - Size of work and high school community
- Nature of Clinical Practice
 - Scope of Current Practice
 - Hours of Work
 - On-call frequency
 - Endoscopy activities
 - Teaching, Administration, Research, etc.
- Factors Influencing Career Choice
- Request for Narrative Comments (Optional)
- Specialty Mix of 385 Respondents Who Exited Training as Surgeons

Completed General Surgery (GS) Training – 345 total

- 209 – GS Only
- 136 – GS + Subspecialty

Transferred to another primary surgical specialty

- 39.4 – 10.4%

Additional subspecialty training by general surgeons

- 68 (32.5%) of the 209 surgeons in the GS cohort, completed 6 or more months additional subspecialty training that did not lead to certification
 - 6-11 months - 13
 - 12 months - 42
 - >12 months - 13

Actual Rate of Subspecialization by General Surgeons

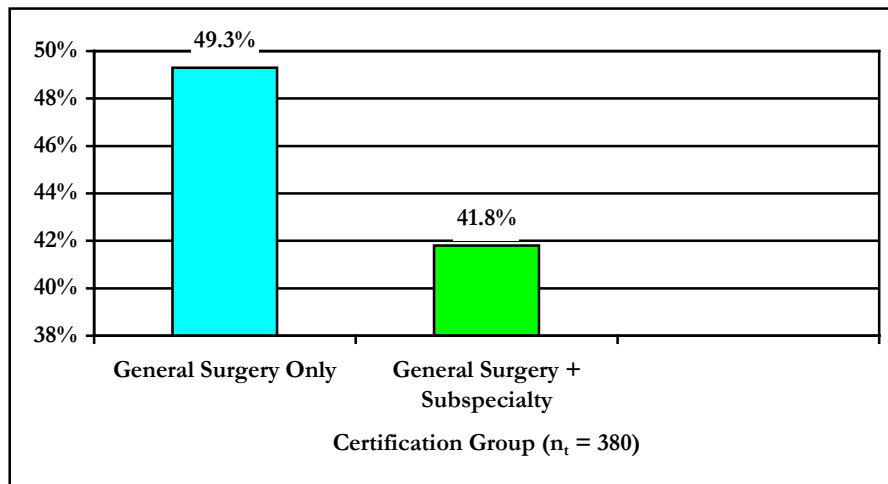
- GS with subspecialty certification 136
- GS with 6 or more mos. subspecialty training 68

Total 204 – 59%

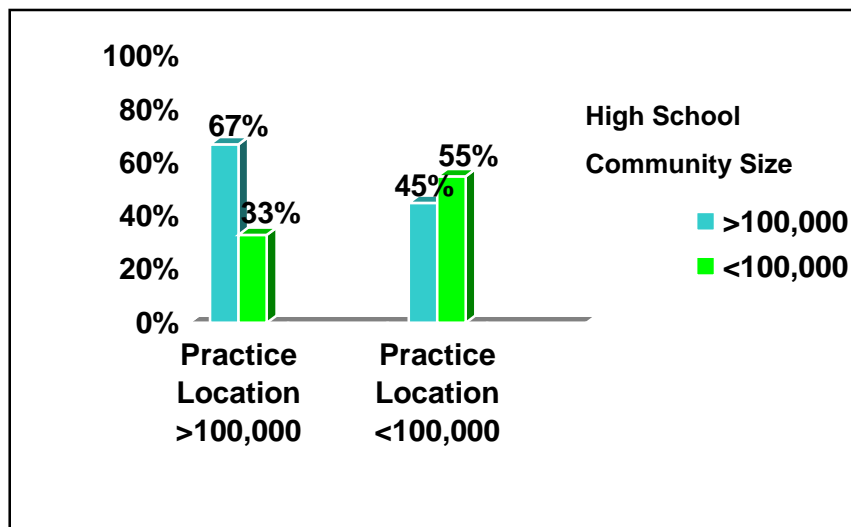
Scope of Elective Practice		
	General Surgeons	GS Subspecialists
“Traditional” General Surgery	108 (52%)	7 (5%)
General Surgery with some practice in other primary specialties	11 (5%)	-
General Surgery with a Subspecialty focus	70 (34%)	60 (45%)

Practice Location		
Population	General Surgeons	GS+ Subspecialty
> 100,000	108 (52%)	119 (88%)
50,000 – 100,000	40 (19%)	8 (6%)
< 50,000	59 (29%)	8 (6%)
No. respondents	207/209	135/136

Rural Rotations

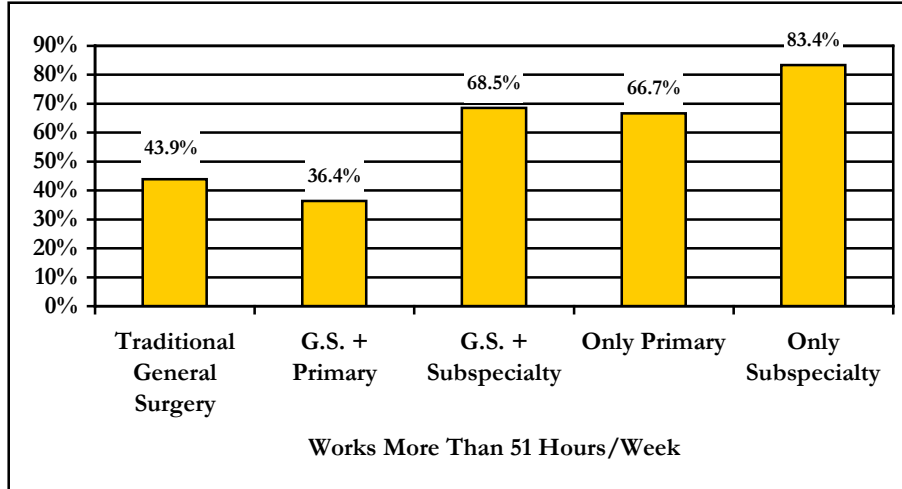


General Surgeons Practicing In Communities <100K



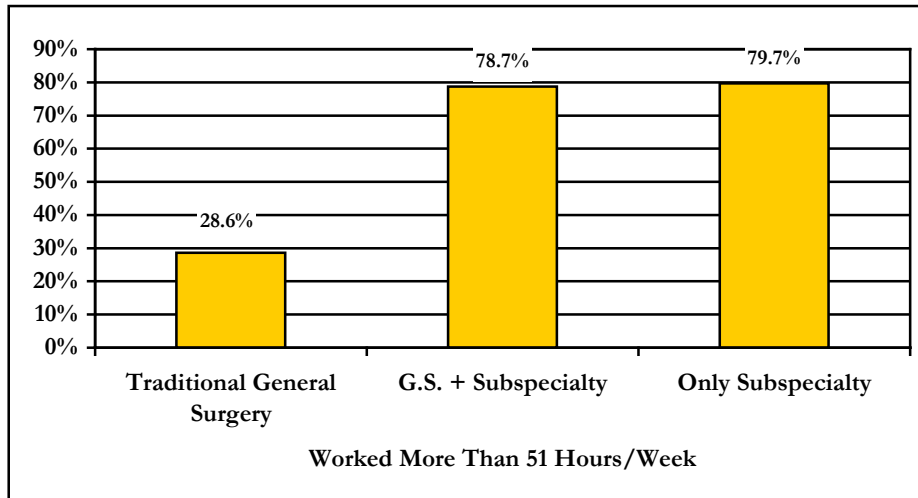
Hours Worked and Elective Practice

General Surgeons Only

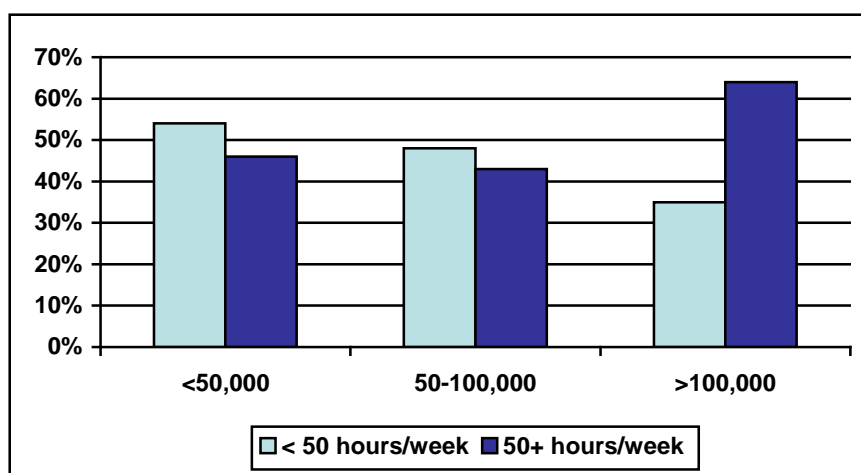


Hours Worked and Elective Practice

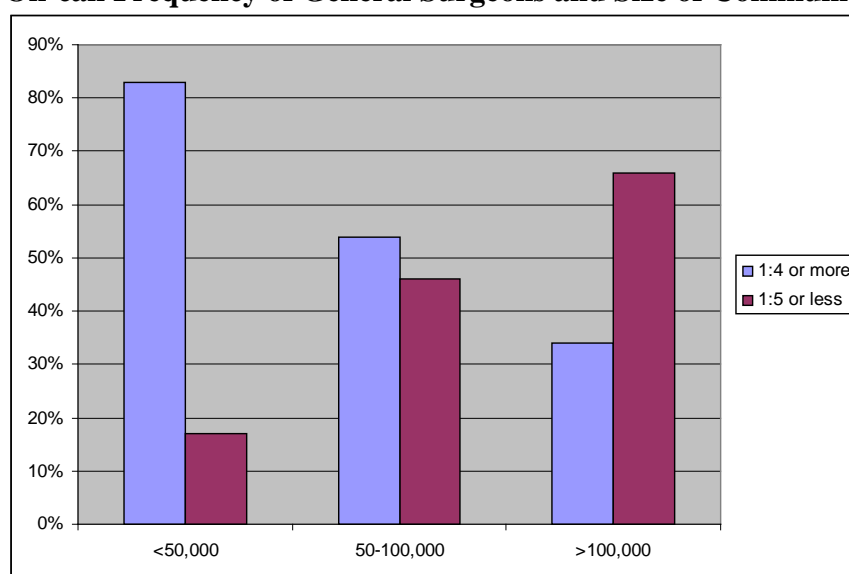
General Surgery Subspecialists Only



Hours Worked per Week by General Surgeons In Relation to Community Size



On-call Frequency of General Surgeons and Size of Community



Factors Influencing Career Choice

- Specific activities in selected surgical field
- Encouragement by faculty members
- Role models you wished to emulate
- Lifestyle as a surgical resident
- Perceived lifestyle of surgical mentors
- Personal life balances
- Debt load as resident
- Remuneration
- Career opportunities at completion of training
- Physician requirements in area you want to live
- Potential research opportunities

Career Decision Influences (Somewhat to Very Important)	General Surgeons	Subspecialists
Specific activities in selected field	99%	98%
Lifestyle during residency	35%	39%
Perceived lifestyle of mentors	36%	36%
Debt load as a resident	7%	6%
Remuneration	21%	18%
Physician requirements where you want to live	26%	24%
Personal life balances	41%	33%

****No Significant Difference Between Generalist and Subspecialty Groups**

Career Decision Influences (Somewhat to Very Important)	General Surgeons	Subspecialists	Chi2 <i>p</i> value
Encouragement by faculty	46%	61%	.008
Role models you wished to emulate	57%	71%	.010
Career opportunities	49%	62%	.020
Potential research opportunities	13%	29%	.001

****Significantly More Important For Those Who Elected to Subspecialize**

Optional “Narrative” Question

- Asked to”provide a personal perspective based on experience to date on relative merits of practicing as a traditional general surgeon, a general surgery-based subspecialist or in the domain of another primary surgical field; and the advice you might give to a student inquiring about career options in surgery”.

Dominant “Messages” About General Surgery From Narrative Comments

- Broad-based, more interesting and gratifying
- Diminished quality of life
- Poor remuneration in relation to other surgical fields
- Relatively less prestige
- Call too demanding
- Subspecialty needed for jobs in academia and larger cities
- Need for rural community surgeons not being met
- More mandated training in community settings away from traditional academic health centres is desirable

Summary and Conclusions

- There is a high rate of subspecialization in recent GS graduates

- Subspecialists work in larger university centres, spend more time in teaching and research, and work significantly longer hours than “General Surgeons”.
- Subspecialists more influenced by faculty role models and mentors as well as academic career opportunities.
- There is a perception that General Surgeons are overworked, underpaid and enjoy less prestige than subspecialists and other surgery specialties
- General Surgeons in smaller communities in fact work fewer hours than larger center subspecialists
- General surgeons in intermediate sized communities do less call than subspecialists in larger centres
- General Surgeons do more rural electives in training
- There is a correlation between size of High School Community and practice community for General Surgeons

Suggestions for Recruitment of General Surgeons

- Raise profile of General Surgery in training programs
- Hire generalists in academic centres
- Increase elective and mandatory rotations in community/rural hospitals
- “Marketing” of community General Surgery; the lifestyle may be better
- Negotiate remuneration packages which reflect true value of General Surgery

General Surgeons in Decline

- Numbers
- Prestige
- Aging
- Skill Mix

Barer Stoddard Report 1991

- 10% decrease in medical school enrollment
- PG complement = graduating class
- There should be an increase in the number of “generalist specialists”

Evidence for Deficient Supply of General Surgeons

- ICES
- NCCPMT
- CAPER
- RCPS
- CMA

ICES-Supply of Physicians Services in Ontario			
	1991-1992	1997-1998	% change
Head count	693	628	-10
Active MD's	590	525	-11
FTE's	598	541	-8

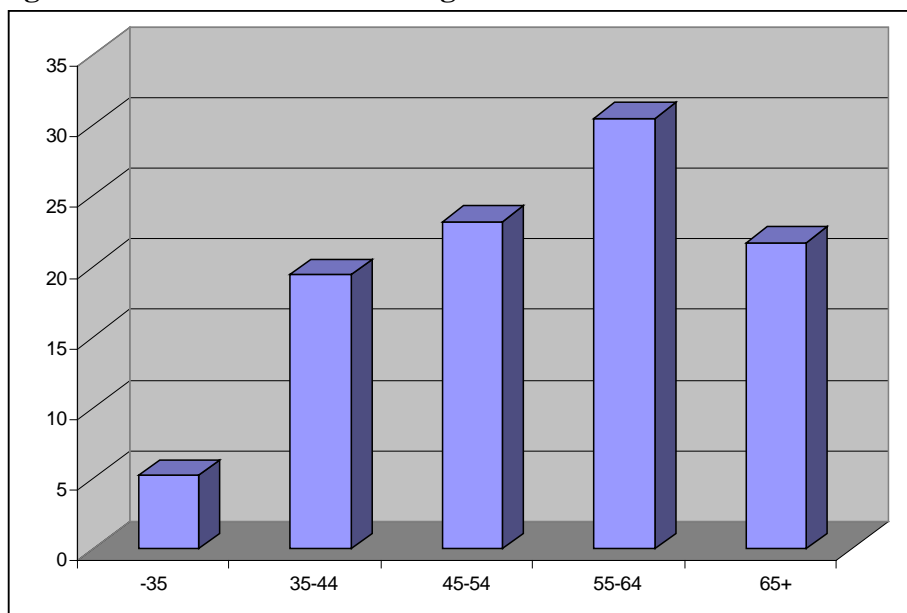
NCCPMT- Generalist Specialist Training in Canada –General Surgery	
% distribution specialists in active practice	7.1
% distribution PGY-4 positions	5.6

% distribution attrition active practice 1995-1997	11
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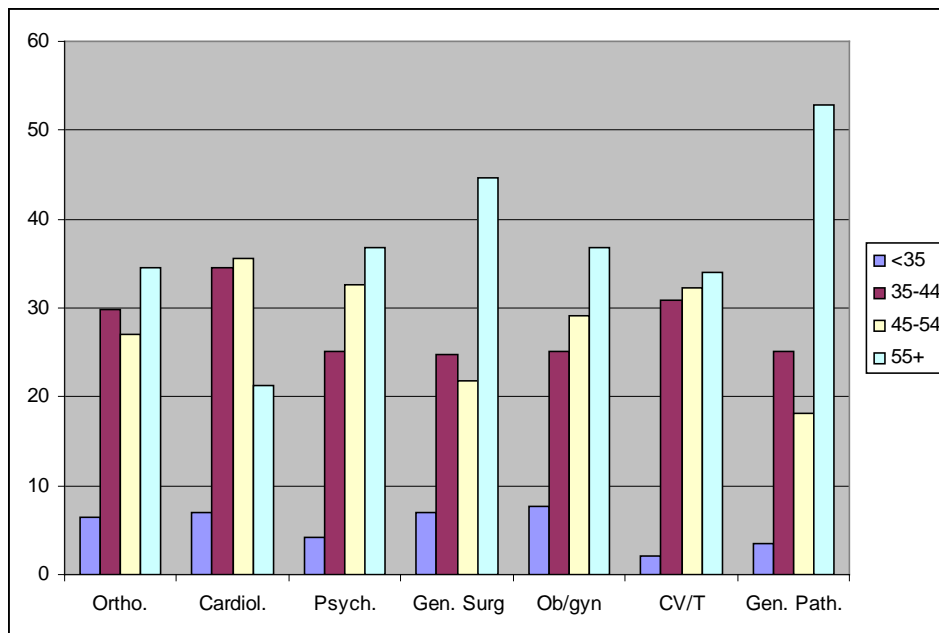
CAPER - General Surgery				
1994	95	PGY-1	34	Practice
1995		115		29
1996		107		49
1997		105		50
1998		110		58
1999		105		61
2000		97		55
2001		100		46
Total		744		382 (51.3%)

CAPER-Other Surgical Specialties				
1994	102	PGY-1	96	Practice
1995		107		100
1996		109		103
1997		107		135
1998		99		133
1999		107		133
2000		102		130
2001		106		121
Total		839		951 (113%)

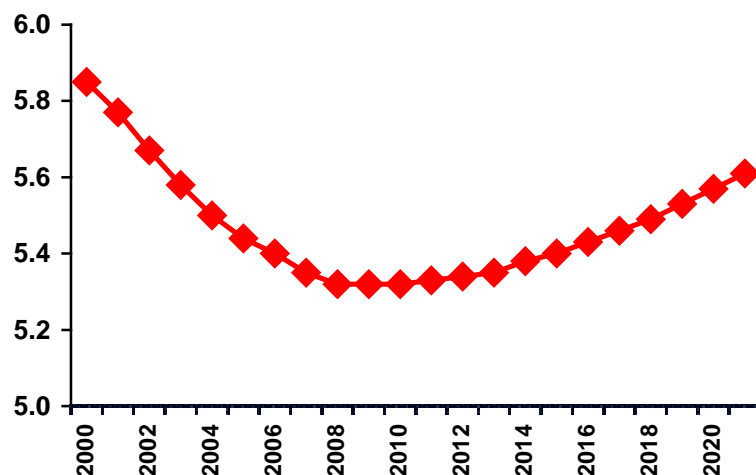
Age Distribution of General Surgeons in Canada



Aging of the Specialist Population



Future Supply - General Surgery



Rural General Surgeons

Age

- 57% - 55 or older
- compared with :
 - 48% all General Surgeons

- 28% all physicians
 - CMA Postal Code mapping & Masterfile

Do Canadian General Surgery Training programs teach the right skills for community practice?

CAGS Questionnaire on Surgical Training

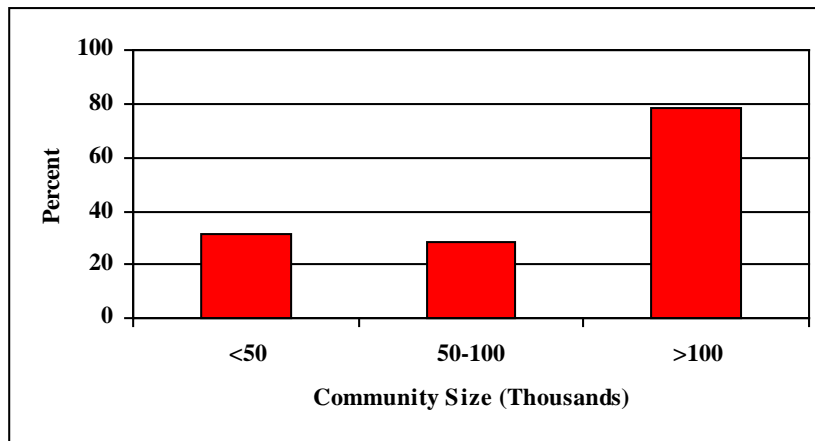
Do you perform procedures in these other sub/specialties?

- Plastics
- Ob/Gyn
- Orthopedics
- Urology
- Head & neck/ ENT
- Vascular
- Thoracic

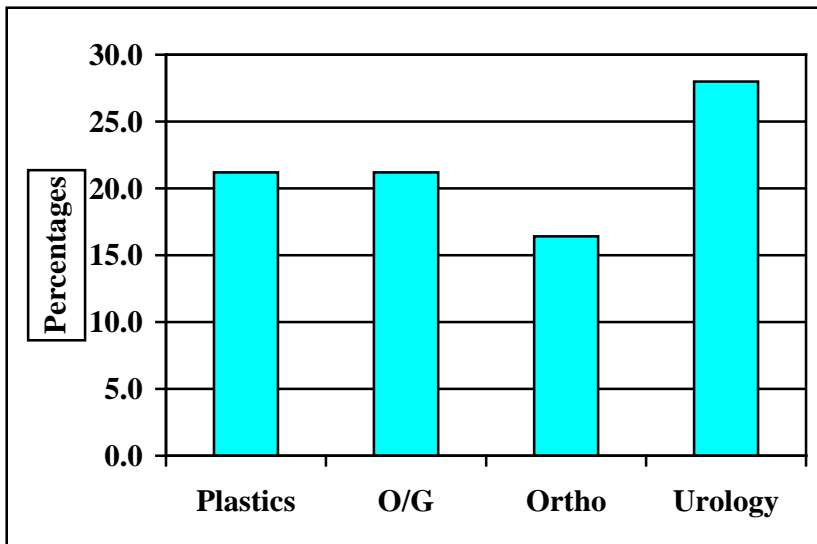
Has primary fellowship prepared you for your current practice?

Comments

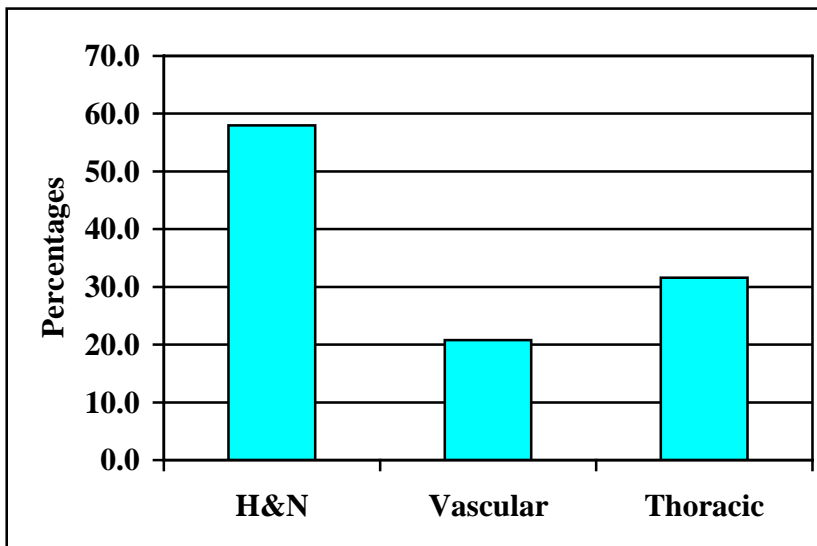
Size Community vs. Post FRCS Training



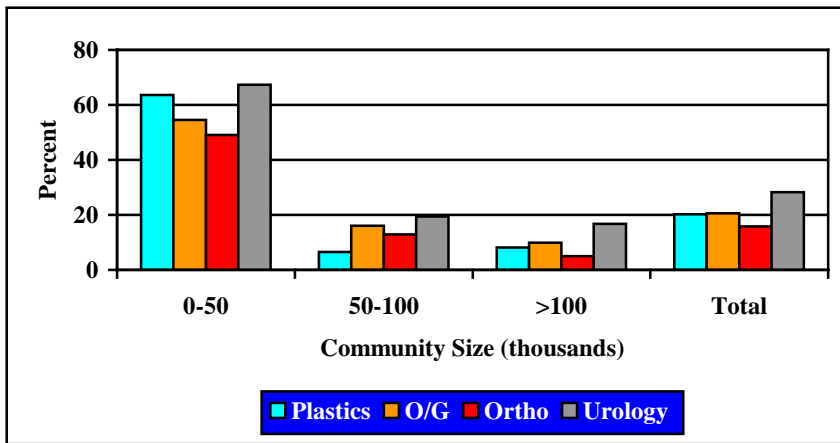
Rate of Other Specialty Practice



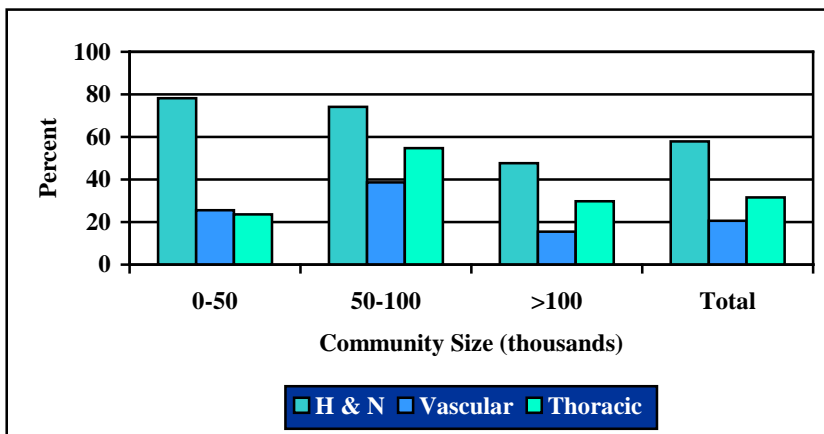
Rate of Subspecialty Practice



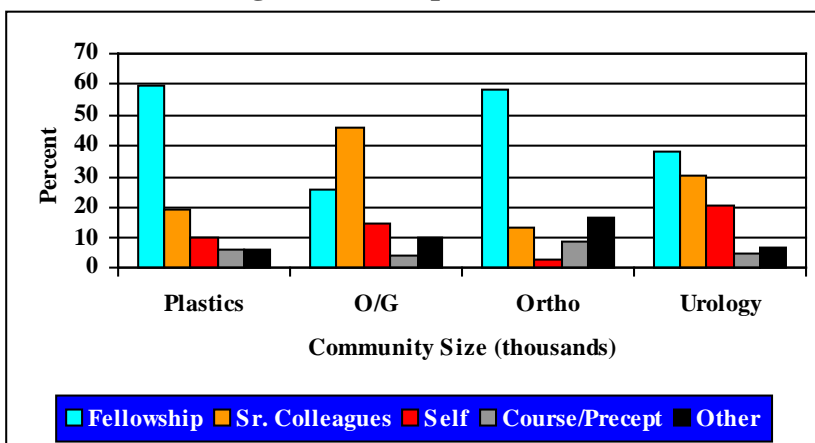
Size of Community vs. Other Surgical Practice



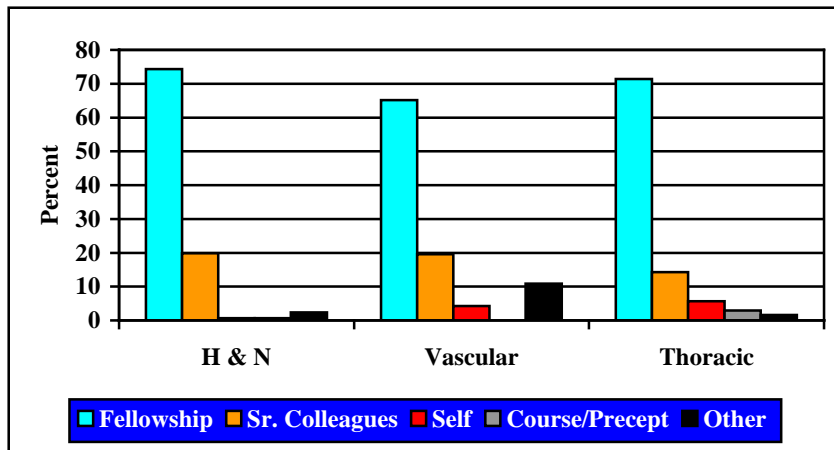
Size of Community vs. Subspecialty Practice



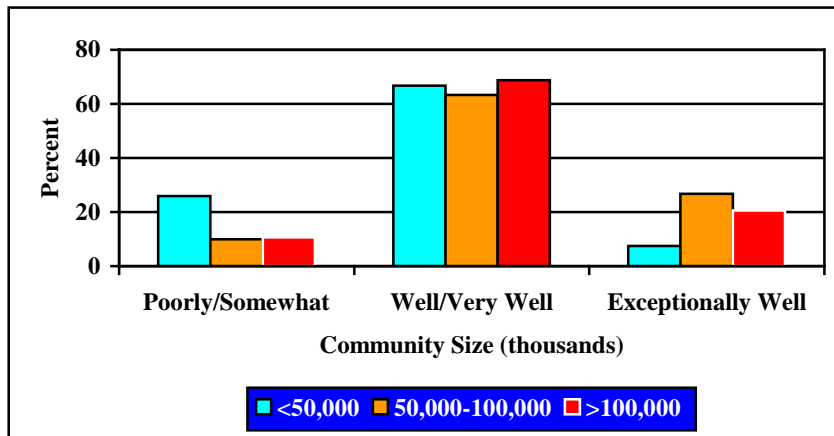
Sources of Training for Other Specialties



Subspecialties Sources of Training for Subspecialties



Preparedness vs. Size of Community



Summary and Conclusions

- Canadian General Surgeons provide significant subspecialty and other specialty services, particularly in smaller communities
- Primary Canadian training programs fail to provide adequate training for many of these services
- General Surgeons in smaller communities are significantly less likely to take additional “fellowship” training than those in communities of >100,000
- General Surgeons in the smaller communities (<50,000) are more likely to feel less than well prepared by their primary fellowship.

Summary Summary

- There is a real and increasing deficiency of General Surgeons in Canada
- This is more pronounced in Rural Canada
- Training models encourage subspecialization
- Training programs do not prepare graduates for multi-specialty surgery
- General Surgery not perceived as attractive career path (Call/Pay/Prestige/Lifestyle)

The Challenges

- Increase #'s of General Surgeons
- Address barriers to recruitment
- Produce efficient delivery models
- Match training programs to community needs
- Optimize teamwork

Appendix 6 Geographic Research Techniques

Alberta and Northern Ontario Geographic Techniques Erik Ellehoj

Geographic Techniques

- Geography forms an important component of this project, including:
 - Geographic Setting
 - Calculating Distances
 - Defining urban and rural
 - Creating Hospital Service Areas

Geographic Setting

- The project examined data for Alberta and Northern Ontario.
- Alberta has a rural (not living in an organized community) population in agricultural areas.
- There is little agricultural land in Northern Ontario because the Canadian Shield is the prominent landscape.
- Population is clustered near communities, usually mining sites.
- Larger concentrations of population are observed in the southeastern area, and near Thunder Bay.

Distances

- Many of the analyses performed on the data required calculations of distance.
- The simplest technique for calculating distance is using straight lines (as the crow flies).
- Straight line distances ignore roads (or the lack of them) and provide inaccurate results in lower population density areas.

Using Drive-Time Distances

- Differences between drive-time and straight-line distances are small in densely populated areas.
- The core population examined in this project is in lower population density areas.
- Straight-line distances are not appropriate for these populations.
- An alternative method is to use the road network and assign speed limits to all road segments.
- A certain amount of delay may also be assigned for level crossing and they may differ according to the types of roads intersecting and the chosen direction through the intersection (i.e. left turn).
- The following map shows the road network for the community of Taber in Southern Alberta to demonstrate the technique.
- Speed limits were assigned to ALL roads.
- All streets and roads (major and minor) are used as part of the network.
- In a simple scenario a speed of 80 km/hr could be assumed to create a circle around Taber
- The following slide shows the 15 minute drive-time zone using speed limits and accounting for intersections
- Starting point is at the intersection of Hwy 3 and Hwy 36
- Note the compressed shape in the north-west portion which results from having to cross the entire town at slow speed with a large number of intersections
- As the drive-time is increased to 60 minutes, the region takes a diamond-shape in more densely populated areas

- This map shows a compression on the west side which is a result of crossing through Lethbridge and the fact that the main highway veers north and then west again.
- There are two methods to perform the analysis: shortest path and shortest drive-time
- Shortest path is normally used when speed limits are too difficult (or time-consuming) to assign to road segments
- The following two maps demonstrate the differences that may be observed

Calculating Distances

- All distances were calculated as drive-times using shortest times.
- Conservative settings were used to ensure that the results are representative of year-round conditions.

Defining Rural

- A definition of rural was an essential part of the analysis because one of the central questions was “are there differences between urban and non-urban areas?”
- The challenge in defining rural is that it is context sensitive.
- The definition must fit the research needs of all participants.
- An alternative is to define urban and thus rural becomes “not urban”

Postal Codes

- Urban postal codes are identified by a non-zero character in the second digit
- Only suitable for mail delivery purposes
- Too many exceptions
- Postal code-based definition not suitable for rural surgery

Population Density

- The literature offers a bewildering number of options. Which to choose?
- Town boundaries are small enough that they generate high population densities
- As reporting boundaries are made larger, it becomes very difficult to differentiate regions using only population density

(CMAs) and (CAs)

- Statistics Canada examines the Enumeration Areas and classifies them into 5 rural categories: Urban Core, Urban Area, Urban Fringe, Rural Fringe, and Rural.
- Statistics Canada uses these to create Census Agglomerations (CAs) and Census Metropolitan Areas (CMAs).

CAs and CMAs

CMA	Population (2001)
▪ Calgary	951,395
▪ Edmonton	937,845
▪ Sudbury	155,601
▪ Thunder Bay	121,986

CA	Population
▪ Brooks	11,604
▪ Camrose	14,854
▪ Cold Lake	27,935
▪ Grande Prairie	36,983
▪ Lethbridge	67,374
▪ Lloydminster	20,988

- Medicine Hat 61,735
 - Red Deer 67,707
 - Wetaskiwin 11,154
 - Wood Buffalo 42,602
 - Elliot Lake 11,956
 - Haileybury 12,867 (inc. New Liskeard)
 - Kenora 15,838
 - North Bay 63,681
 - Sault Ste. Marie 78,908
 - Timmins 43,686
-
- Urban = all the CMAs and the CAs with populations greater than 35,000.
 - In Alberta, this includes Calgary, Edmonton, Grande Prairie, Lethbridge, Medicine Hat, Red Deer, and Wood Buffalo (Ft McMurray).
 - In Northern Ontario, the list includes Sudbury, Thunder Bay, North Bay, SS Marie, and Timmins.

Analysis

- Urban zones of 60 minutes were created for Edmonton, Calgary, and London.
- Urban zones of 30 minutes drive-time were created for the remaining CAs and CMAs.
- All residents within these 30 or 60 min drive-time zones are also considered urban due to their proximity to these larger centres.
- The facility where the surgical service is provided was chosen as the starting point for the drive time calculations.

Hospital Catchment Areas

- Hospital catchment areas (hospital service areas) were also an essential component of the analysis.
- Residents of catchment areas with different levels of service can be compared against each other.

Alberta General Hospital Districts (GHD)

- In Alberta, a set of Hospital Catchment Areas (GHD) were created for a separate project. These represent the service area for each facility.
- In most GHDs, the majority of the services are provided by the facility in the GHD.

Alberta

- The GHDs were classified according to the level of service provided by the facility
- All cases and population within each category were aggregated in order to calculate rates and other measures

Ontario GHDs

- A set of hospital catchment areas were created for Northern Ontario.
- These are based on amalgamated census Enumeration Areas.
- Travel distances, postal code assignments, and Voronoi polygons were used to amalgamate EAs.
- Postal Code admission data was used to adjust the boundaries and create the final General Hospital Districts.

Further Information

- AH&W has created a number of Geography Methodology reports.

- These outline the use of postal codes, sub regional boundaries, mapping template, etc.
- Individual reports were written to address issues on distance calculation, definition of rural, use of GHDs, and interactive hospital service areas.

Future Research

- Research and Evidence has started to examine methods to create service areas by procedure type and time period.
- The changes in the boundaries are observed instead of changes in the data for a consistent set of boundaries.
- Minimum Population Regions were created in order to allow for interactive amalgamation.
- The method also allows for the examination of flows from demand points to supply centres and changes over time by procedure.

Further Information

- The Geography Methodology Reports can be downloaded from the AH&W web site.
- Five of the twelve reports are currently available, the remaining seven will be available soon.
- www.health.gov.ab.ca

Appendix 7 Rural Surgical Programs

Rural Surgical Programs Alberta, Northern Ontario 1997-2001 Dr. Stuart Iglesias

Procedures

- Carpal tunnel
- Inguinal hernia
- Appendectomy
- Cholecystectomy

Specialist vs. Non Specialist Surgeon?

Methodology

Rural

- Population
- Distance
- Services

Classification

- RA = specialist
- RB= non specialist
- RC= no local surgery program

Demographics I

	Alberta	Northern Ontario
Size	662,000 km	910,000 km
Rural Population	600,166	315,958
Rural Surgical Programs	39	14
Specialist Surgeons	14	16
Non Specialist Surgeons	59	<6

Demographics II

Surgical Services and Populations – Northern Ontario/Alberta						
	RC*		RB**		RA***	
	NO	AB	NO	AB	NO	AB
Population >Age 5	89,823	203,088	48,742	267,981	110,872	144,455
# Facilities	18	40	4	27	10	12
Average Pop per Facility	4990	5077	9385	9554	11,087	12,038

Figure 1: Surgical Programs, Northern Ontario, by Level of Service

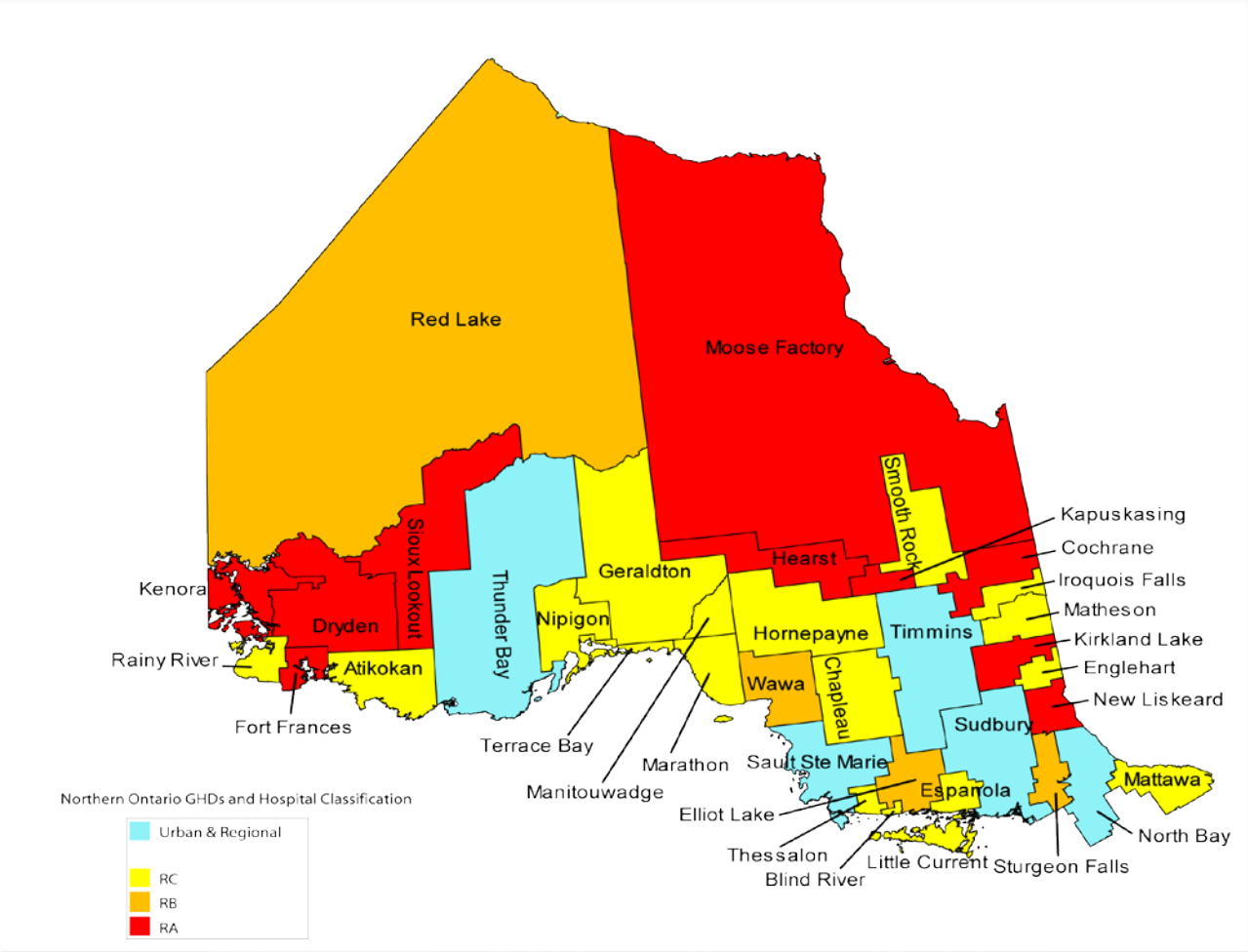
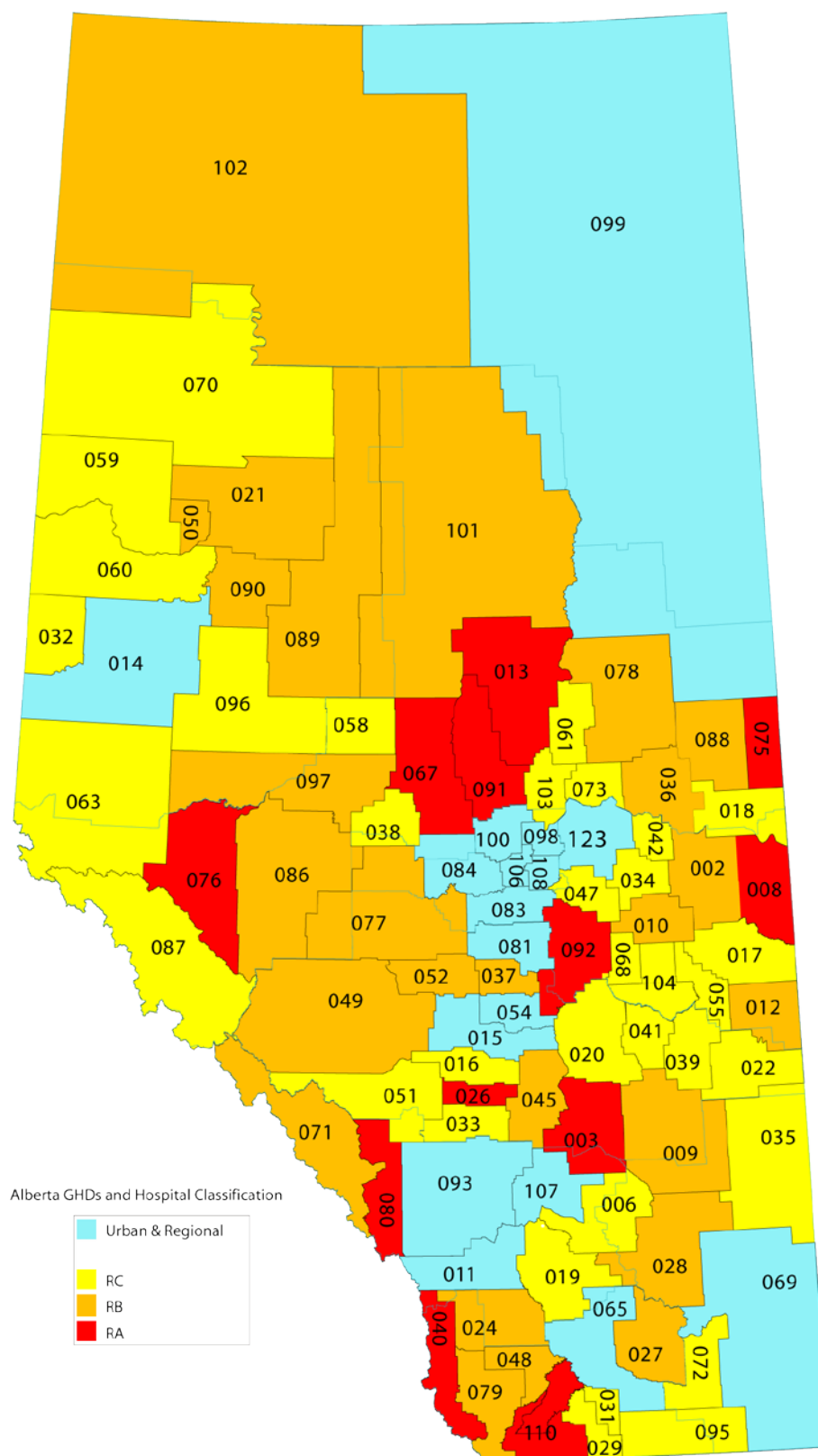


Figure 2: Surgical Programs, Alberta, by Level of Service



Procedure Volumes

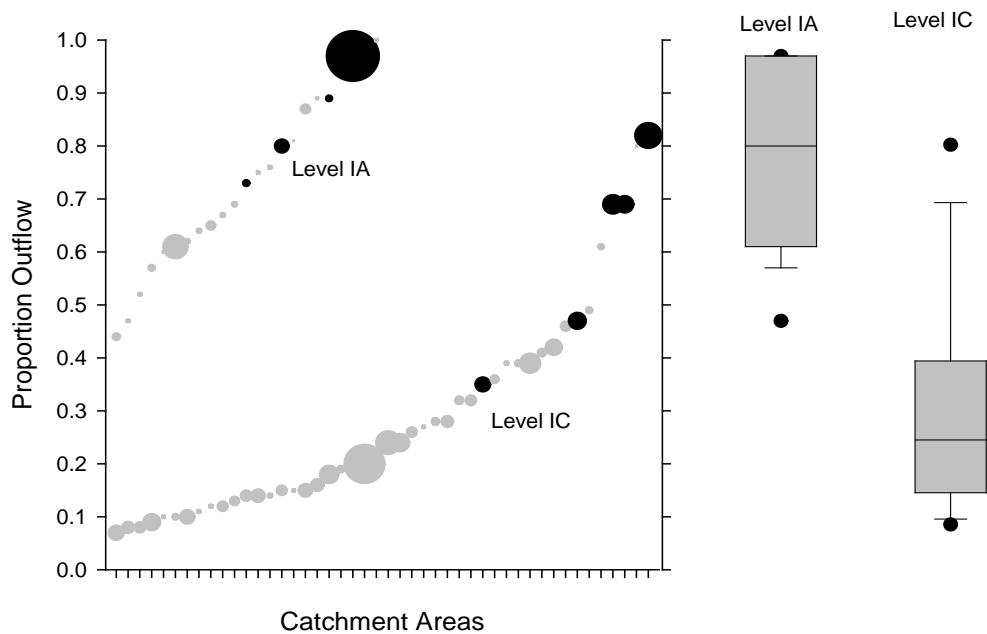
	RA		RB		REG
	AB	NO	AN	NO	
Appendectomy	15	18	7	6	138
Carpal Tunnel	16	15	8	10	83
Cholecystectomy	45	47	6	9	315
Hernia	31	21	11	14	168

Outflow from Rural Surgical Programs (%)

	RA		RB	
	NO	AB	NO	AB
Appendectomy	7	31	69	62
Carpal Tunnel	17	25	53	43
Cholecystectomy	9	27	64	83
Hernia	9	23	34	53

Figure 1: Maternity Care Outflow (%)

(Circle proportional to catchment area population
Rural Remote=gray, Rural Close=black)



Appendix 8 BC Rural Surgical Services

Rural Surgical Services in BC Dr. Nancy Humber

Overview of Presentation

- Data Collection
- Models of Delivery
- Scope of Practice:
- Emergency
- Elective
- Changes
- Conclusions

Data Collection

PURRFECT 6.0 and 9.0

- 12 Hospitals
- 1996/97 – 2000/01
- CCP Procedure Codes
- Hospital Comparative Reports
- Limitations

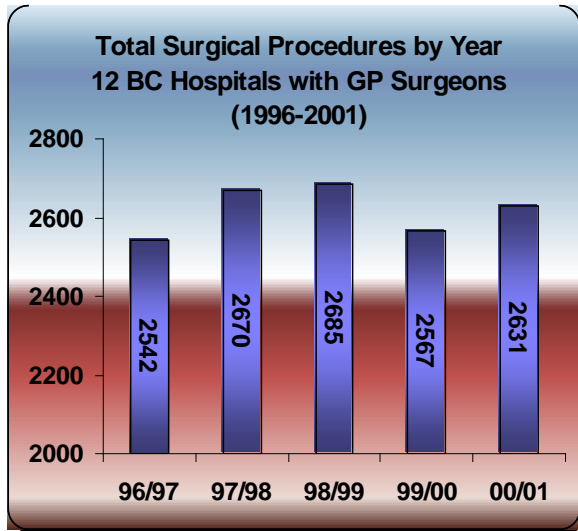
Phone Interviews

Models of Delivery

- Specialist Surgeons
- Specialist and GP mixed
- GP and Itinerant Surgeons
- GP only
- Primary Care only

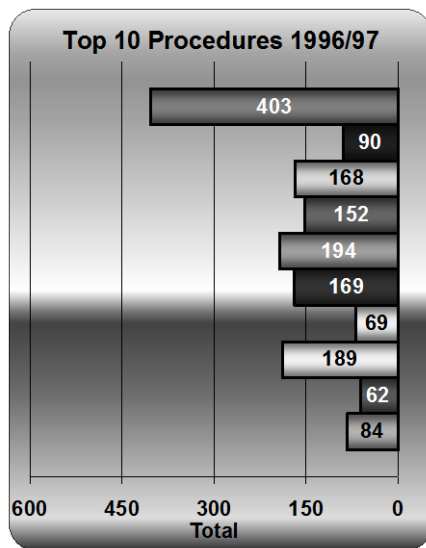
* *Reduced service since 1996*

Rural Surgical Service in BC: 1996 - 2001

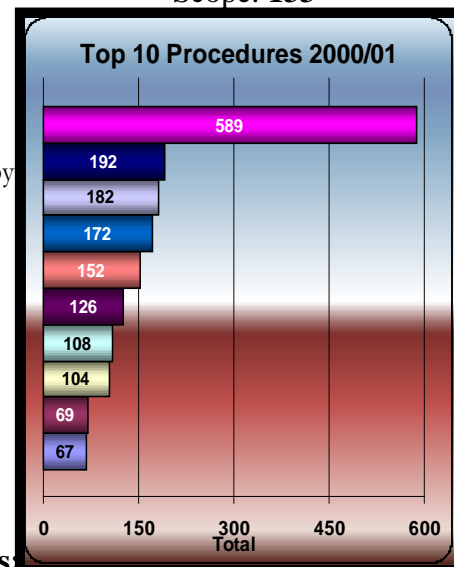


Observations

- Includes Itinerant
- Av.: **2619**
- Volume
- Scope: **133**



Gastroscopy
Colon/Sigmoidoscopy
Hand Surgery
Herniorrhaphy
C/S
T +/- A
Anal Sx
D & C



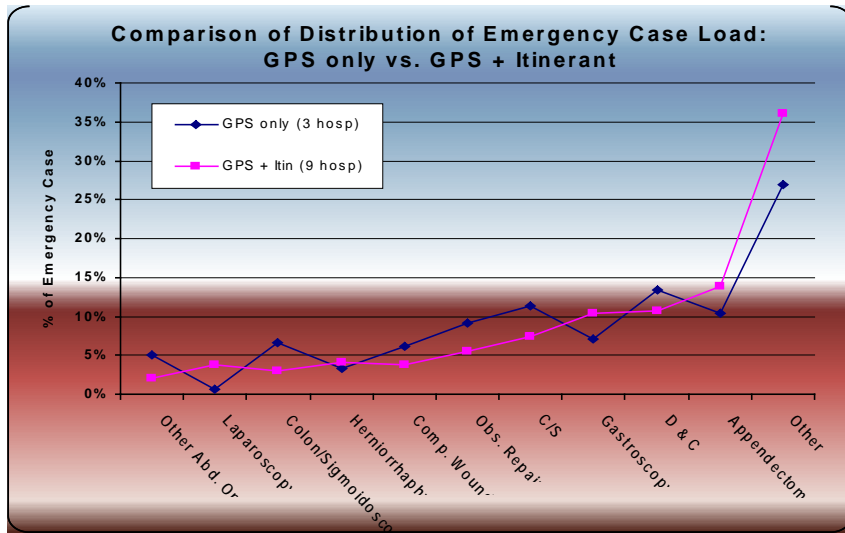
Top 10 Procedures

- Gastroscopy : **↑** 403 – 589
- Colon/Sigmoidoscopy : **↑** 90 – 192
- Obst.: **↓** (C/S, D&C, Obst. Repair)

Procedure Volumes

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

A Comparison of Hospitals with Only GPS vs. GPS + Itinerant



Observation: Similar distribution of emergency procedures

Conclusions/Closing Notes

- Models
- Common Procedures
- Emergency Procedures
- Rural Program Reductions/Closures
- Future Research

Appendix 9 Utilization Rates

Utilization Rates of Surgical Services in Rural and Urban Communities Dr. Joshua Tepper

Review of Procedures

- appendectomy
- carpal tunnel release
- closed hip # repair
- rectal cancer surgery
- joint replacement
- thyroidectomy
- unilateral or bilateral inguinal herniorraphy
- cholecystectomy

Methods

- The Bonferroni method for multiple comparisons.
 - T square and F ratio statistics for comparing rates and rate variation between the two provinces
- Age-sex-adjusted rates for comparisons among residents' locations using direct standardization.
 - The standard population for the adjusted rates was the Alberta population on September 30, 1999.
 - In Alberta, the population used in age-sex-region specific rates was from AHCIP registry database.
 - In Ontario, the population was from the intercensal estimates using the 1996 census data.
- To test a possible association between travel times and utilization rates, Hierarchical Linear and Non Linear Modeling was used to analyze a two level model with patients nested within rural hospital catchment areas in the province of Alberta

Alberta vs. Ontario

- Alberta higher utilization:
 - Thyroidectomy $P < .05$
- Ontario higher rates:
 - carpal tunnel release, closed hip # repair, joint replacement, herniorraphy, cholecystectomy $P < .01$
- No stat. sig. difference: Appy, rectal CA sx
- Comparison is combination of urban and rural - ? Need to split out

Alberta vs. Ontario

Table 1: Age-Sex Standardized Average Annual Rates per 1000 Population for Selected Procedures: 1997-98- 2001/02			
Procedure	Alberta	Ontario	T2
Appendectomy	1.10 (1.06 – 1.14)	1.06 (1.01 – 1.12)	0.86
Carpal Tunnel Release	0.95 (0.91 – 0.99)	1.58 (1.51 – 1.66)	241.48**
Closed Hip #	1.45 (1.37-1.55)	1.74 (1.62 – 1.87)	14.10**
Rectal Cancer Surgery	0.44 (0.39 – 0.49)	0.47 (0.41 – 0.54)	0.80
Joint Replacement	3.01 (2.91 – 3.11)	3.47 (3.33 – 3.61)	28.56**
Thyroidectomy	0.35 (0.32 – 0.38)	0.29 (0.25 – 0.32)	6.36*
Unilateral Bilateral Inguinal Herniorraphy	1.89 (1.83 – 1.95)	2.22 (2.14 – 2.31)	39.24**
Cholecystectomy	3.11 (3.03 – 3.19)	3.53 (3.42 – 3.65)	39.22**

*=P<.05

**=P<.01

Rural vs. Urban

- Greater rural rates in both provinces: Appendectomy, cholecystectomy, carpal tunnel release ($p < .01$).
- Alberta rates for joint replacement are higher in rural areas. ($P < .01$)
- No difference in either province: hip fracture, rectal cancer surgery, thyroidectomy, and inguinal herniorraphy

Table 2: Utilization Rates by Rural and Urban Residence in Alberta			
Procedure	Rural	Urban	T2
Appendectomy	1.20 (1.12-1.29)	1.07 (1.02-1.11)	8.17**
Carpal Tunnel Release	1.39 (1.28-1.50)	0.83 (0.78-0.87)	116.25**
Closed Hip #	1.44 (1.27-1.63)	1.46 (1.36-1.57)	0.03
Rectal Cancer Surgery	0.42 (0.33-0.53)	0.44 (0.39-0.50)	0.19
Joint Replacement	3.36 (3.15-3.58)	2.90 (2.80-3.02)	14.53**
Thyroidectomy	0.36 (0.30-0.43)	0.34 (0.31-0.38)	0.13
Unilateral or Bilateral Inguinal Herniorraphy	1.93 (1.81-2.06)	1.88 (1.82-1.95)	0.38
Cholecystectomy	3.62 (3.44-3.80)	2.98 (2.89-3.06)	45.66**

Table 3: Utilization Rates by Rural and Urban Residence in Ontario			
Procedure	Rural	Urban	T2
Appendectomy	1.24 (1.12-1.37)	1.00 (0.94-1.07)	12.09**
Carpal Tunnel Release	1.95 (1.78-2.13)	1.47 (1.39-1.55)	27.12**
Closed Hip #	1.81 (1.54-2.12)	1.73 (1.59-1.87)	0.25
Rectal Cancer Surgery	0.45 (0.34-0.60)	0.48 (0.41-0.56)	0.11
Joint Replacement	3.21 (2.94-3.51)	3.53 (3.38-3.69)	3.44
Thyroidectomy	0.27 (0.20-0.35)	0.29 (0.25-0.33)	0.29
Unilateral or Bilateral Inguinal Herniorraphy	2.07 (1.90-2.26)	2.27 (2.17-2.38)	3.60
Cholecystectomy	4.39 (4.13-4.66)	3.30 (3.17-3.42)	61.82**

Local Surgical Rates

- In Alberta urban centres lower:
 - appendectomy, carpal tunnel release, joint replacement, cholecystectomy (all $P < .01$)
 - herniorraphy ($P < .05$). For these procedures utilization rates were significantly lower in at least one of the urban centers (Edmonton and Calgary).
 - There were no stat sign. differences between the different rural (RA, RB, RC) areas or regional centers.
- In Ontario urban centres lower:
 - Carpal tunnel release and cholecystectomy rates ($P < .01$)
 - Appendectomy and herniorraphy ($P < .05$)
 - No stat. sign differences between the three types of rural (RA, RB, RC) areas or regional centres

Table 4: Utilization Rates by Service Level of Residence in Alberta¹							
Procedure	RA	RB	RC	REG	EDM	CGY	T2
Appendectomy	1.11 (0.90-1.37)	1.27 (1.10-1.46)	1.21 (1.02-1.43)	1.25 (1.10-1.42)	1.13 (1.04-1.23)	0.91 (0.83-1.00)	43.94**
Carpal Tunnel Release	1.42 (1.15-1.76)	1.43 (1.22-1.68)	1.34 (1.11-1.61)	1.11 (0.95-1.30)	0.83 (0.74-0.92)	0.70 (0.62-0.79)	161.34**
Closed Hip #	1.28 (0.91-1.81)	1.54 (1.20-1.98)	1.40 (1.06-1.85)	1.40 (1.10-1.77)	1.57 (1.35-1.82)	1.40 (1.21-1.63)	3.76
Rectal Cancer Surgery	0.41 (0.22-0.76)	0.40 (0.25-0.66)	0.40 (0.23-0.68)	0.39 (0.24-0.61)	0.44 (0.34-0.58)	0.47 (0.37-0.61)	1.69
Joint Replacement	3.25 (2.74-3.86)	3.32 (2.91-3.80)	3.43 (2.98-3.95)	3.35 (2.97-3.78)	2.65 (2.43-2.88)	2.99 (2.77-3.23)	32.48**
Thyroidectomy	0.36 (0.23-0.57)	0.35 (0.24-0.50)	0.35 (0.23-0.53)	0.40 (0.29-0.53)	0.30 (0.24-0.36)	0.38 (0.31-0.45)	6.71
Unilateral or Bilateral Inguinal Herniorraphy	2.07 (1.74-2.46)	1.91 (1.68-2.19)	1.96 (1.69-2.28)	2.12 (1.90-2.38)	1.86 (1.72-2.00)	1.78 (1.65-1.92)	14.24*

Table 5: Utilization Rates by Service Level of Residence in Ontario¹						
Procedure	RA	RB	RC	REG	London	T2
Appendectomy	1.35 (1.09-1.67)	1.11 (0.77-1.59)	1.13 (0.87-1.48)	1.02 (0.90-1.15)	1.02 (0.92-1.14)	10.06*
Carpal Tunnel Release	1.80 (1.46-2.22)	1.81 (1.32-2.48)	1.85 (1.47-2.32)	1.80 (1.63-1.99)	1.30 (1.17-1.44)	44.31**
Closed Hip #	1.72 (1.23-2.41)	1.68 (0.92-3.06)	2.24 (1.58-3.16)	1.82 (1.56-2.13)	1.64 (1.43-1.88)	5.28
Rectal Cancer Surgery	0.29 (0.13-0.65)	0.44 (0.17-1.17)	0.56 (0.29-1.07)	0.51 (0.38-0.68)	0.44 (0.33-0.58)	3.74
Joint Replacement	2.76 (2.23-3.40)	3.45 (2.56-4.66)	3.34 (2.70-4.14)	3.51 (3.21-3.83)	3.57 (3.31-3.85)	9.30
Thyroidectomy	0.24 (0.13-0.45)	0.22 (0.08-0.60)	0.23 (0.11-0.47)	0.31 (0.24-0.40)	0.28 (0.22-0.35)	2.35
Unilateral or Bilateral Inguinal Herniorraphy	2.15 (1.78-2.59)	1.80 (1.32-2.45)	1.97 (1.59-2.45)	2.14 (1.96-2.34)	2.39 (2.22-2.57)	12.55*
Cholecystectomy	4.50 (3.94-5.14)	5.55 (4.61-6.67)	4.05 (3.46-4.73)	3.48 (3.25-3.74)	3.20 (3.00-3.41)	82.68**

Model

- Test the possible association between travel times and utilization rates therefore only rural population.
- Only the Alberta population
- At the patient level, age and sex were included as independent variables. At the community level, travel time (TT) and Level of Surgical Service (RA, RB, RC) were included. $p < .01$ b/c of multiple associations.
- For carpal tunnel release the utilization rate was significantly associated with trip time.
 - Patients who travel one hour or less had a 13% higher surgery rate.
- No significant associations between travel time and utilization rates were found for the other 7 procedures.

A Few Thoughts

- More challenging the diagnosis the more variation – appy, cholecystectomy, carpal tunnel release
- Rural rates higher
 - Necessity? Bad Medicine? Better access?

Appendix 10 Research Funding

Finding Support for Research on Rural Surgical Services Dr. Morris Barer

Possible Sources.....

- National agencies
 - CIHR
 - CHSRF
 - CPSI
 - Health Canada
 - Health Council of Canada
- Provincial research funding agencies
 - Members of NAPHRO (MSFHR, AHFMR, Ont. MOHLTC, NSHRF, etc.)
 - Interest in funding research projects/programs varies considerably
 - Many have made 'infrastructure' (i.e. team and network-building, and personnel support, a priority)
- Other provincial Ministries of Health

CIHR Supports...

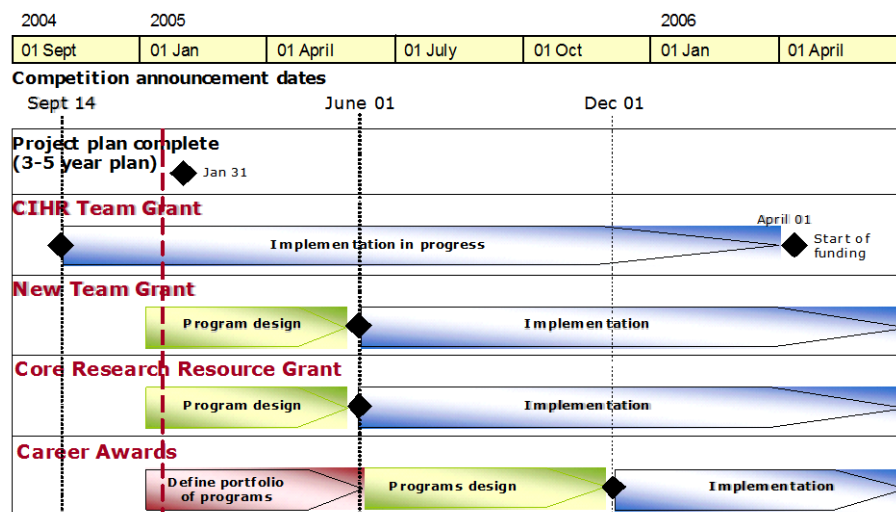
- Investigator-initiated research proposals
 - In any area of health research
- Strategic (Targeted) research initiatives
 - in priority areas chosen by Institutes and publicized through RFAs
- Through a regular annual cycle of competitions, which collectively provide all forms of support required for excellent health research

Which means, for rural surgical services, in practice...

- “Open” (non-thematic) competitions
 - projects, teams, people, research ‘infrastructure’; various deadlines
- Thematic competitions
 - through IHSPR - various *LfD II*-related competitions; variable deadlines (June, Nov., Dec.)
 - Through rural and northern health MISI

New Open Competitions

Early Project Implementation



PHSI

- Supports teams of researchers and decision-makers to conduct applied health research useful to health system managers and/or policy makers in thematic areas identified as high priority in Listening for Direction II and in the areas of nursing leadership, organization and policy
- Provides operating grants paid out over 3 years to support projects
- Requires 1:1 matching funds (max. CIHR contribution/project=\$100K)
- CIHR standing competition
- KT embedded model
- Merit reviewed

Listening for Direction II Themes

1. Workforce planning, training and regulation
2. Management of healthcare workplace
3. Timely access to quality care for all
4. Managing for quality and safety
5. Understanding and responding to public expectations
6. Sustainable funding and ethical resource allocation
7. Governance and accountability
8. Managing and adapting to change
9. Linking care across place, time and settings
10. Linking public health to health services

More information.....

- www.cihr-irsc.gc.ca
- mbarer@ihspr.ubc.ca

Research, Exchange & Impact for System Support (REISS) – 2006 competition

- New programs competition – 4 themes
- 4 components – R, KT&E, capacity development, ‘products’
- \$500K maximum over 4 years; matching funds required
- Second competition will begin later this year
 - Deadline: December 2005
 - MRP: Feb 2006
 - Invitation for full scale applications: March 15 (due August 15)
 - Notification: November 2006
- One per theme area in 2005 allocation (not sure for next round)

Four eligible themes for REISS

- Managing for Quality and Safety
- Primary Healthcare
- Management of the Healthcare Workplace
- Nursing Leadership, Organization and Policy

Appendix 11 Feedback

Summary of Feedback on the Invitational Meeting on the Research Agenda for Rural Surgical Services

1. Format

- a) The venue was appropriate and well organized
 - 6 strongly agree
 - 12 agree
 - 1 strongly disagree
- b) The meeting provided opportunity for needed networking
 - 11 strongly agree
 - 9 agree

2. Process and Content

- c) April 8th presentations helped set the tone for the meeting
 - 8 strongly agree
 - 9 agree
 - 1 neutral
- d) April 9th presentations were helpful in facilitating a greater understanding of the surgical care issues facing the rural population
 - 6 strongly agree
 - 14 agree
- e) The discussions were helpful in identifying research questions/themes
 - 8 strongly agree
 - 12 agree
- f) The discussions were helpful in identifying how research can be supported
 - 5 strongly agree
 - 14 agree
- g) The discussions were helpful in identifying how research can be translated into policy
 - 1 strongly agree
 - 10 agree
 - 7 neutral
 - 1 disagree
- h) Overall it was important to hold this meeting and I feel confident of what next steps are needed
 - 4 strongly agree
 - 11 agree
 - 3 neutral
 - 1 disagree

What is the most important thing you learned?

- Fascinating look into the world of funding mega projects
- Intricacies of the research world

- More research needed into what is needed
- Visioning of the possible rural health research agenda
- Better understanding of key issues facing rural communities attempting to provide surgical coverage
- Common problems across jurisdictions

Suggestions

- Compile syllabus, focus on key points, select enthusiastic individual to move the agenda forward
- Investigate research funding opportunities
- Identify principle investigator(s)
- Follow up meeting task force
- Clarify which questions and who wishes to pursue them then check on strategic approach to funding
- Need to provide participant list and overheads. Link on RSP web site
- Formalizing research teams within groups
- Surgical research teams
- Air-conditioning!
- Ran out of time to discuss research translation
- No unified commitment to next steps or change
- Need to identify changes needed to carry this forward
- Risk of documenting the decline of rural medicine
- Perhaps enough common ground to improve services to rural Canadians
- Controversial issues glossed over
- Time will tell who will have the time and resources to run with this project
- Take priorities to more than this group
- Pursue funding to do RFPs