Strengthening the Medical Workforce in Rural Canada: The Role of Rural/Northern Medical Education

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Centre for Rural and Northern Health Research
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Objectives

- To document and assess the current state of knowledge regarding the role of rural/northern medical education
- To examine the relevance of such knowledge and how it could be used to support rural/northern health policies and rural/northern medical education initiatives
- To use the knowledge generated as a basis for preparing a multi-year, multi-site, interdisciplinary, and possibly international program of research on rural/northern medical education.

Five Components

1. Systematic search, review, critical appraisal, and synthesis of the literature on rural/northern medical education issues
2. Nature of rural medical practice through secondary analysis of the 2001 National Family Physician Survey where 54.5% (13,000) doctors responded
3. Current status of rural/northern medical education
4. Best practice identification
5. Synthesis of findings and next steps

Review of Literature 1990-2003

- **Pre-medicine**
- **Financial Issues**
- **Admissions**
- **Undergraduate Medical Education**
- **Postgraduate Medical Education**
- **Continuing Medical Education (CME) and Professional Development (PD)**

Premedicine

- Rural students more likely to practice in rural areas
  - medicine not attracting enough rural students
- Small student numbers and resource issues affect programming for advanced courses
- Descriptive studies of initiatives to encourage rural students to pursue a career in medicine
- BioPrep (U of Alabama), High School Rural Scholars program (Kentucky), WWAMI's Minority Medical Education Program & Medical Scholars Program suggest that the rural pipeline need to start before medical school
- Need for a more systematic comparative study to evaluate effectiveness

Financial Incentives

- US National Health Service Corps (NHSC) program
  - Return-for-service financial aid programs
  - Effective in recruiting to rural and underserved areas
  - Do not remain once their commitment is completed
  - Short-term 'fix'
  - The longer the practice obligation, the greater the chance of physician retention
- Good for recruitment but longer term retention is unclear from these studies

Admissions

- Rural students are under-represented when compared to rural population demographics
- Dhalla et al. (2002)
  - 22.4% of Canadian population are rural and 10.8% of medical students in Canada were from rural areas
  - more likely to be of higher socioeconomic status

Admissions

- Rural students are more likely to return to rural practice – consistent finding
- Rolfe et al (1995)
  - Students from University of Newcastle in Australia, who lived in rural areas were 2.49 times more likely to be working in rural areas compared with those who had lived in urban areas
- Rabinowitz (1988)
  - US medical students
  - Rural background and interest in family medicine 23.7% entered rural family medicine program
  - 14.5% of students from schools who with preference for students with rural background chose family medicine and versus 12.4% from the other medical schools
- Increasing medical school intake from rural is a sound policy, but by itself will not be sufficient to solve the problem. Medical students who grew up in rural areas are more likely to end up in urban practice

Undergraduate MD

- Rural practice exposure during UGME associated with increased likelihood of rural practice
- Early & sustained exposure to rural communities and to rural physician role models
- Integrated rural-oriented curriculum
  - knowledge, skills and attitudes required for rural practice
  - instruction and experiences related to the realities of rural living
- Greater curricular emphasis on community health competencies, including community-oriented primary care (COPC)

Postgraduate medical education

- Rural medicine are evolving into a distinct discipline:
  - greater responsibility
  - a wider variety of medical skills
  - procedural skills not usually required in urban practice such as anesthesia, obstetrics, emergency care, surgery, critical care, endoscopy
- Learning in the rural family practice setting is a necessity

Postgraduate medical education

- Rural training tracks or streams during family medicine residency training
- Training at regional hospitals in various specialty areas related to rural practice
  - experience in small-hospital medicine, including obstetrics, emergency care, anesthesia and surgery
- Greater exposure to rural practice training = higher level of knowledge and skill in a variety of procedural skill areas

Postgraduate Medical Education

- 3rd year of rural medicine training
  - acquire advanced procedural skills training
- World Organization of Family Doctors (WONCA) policy on rural training
- Working Group on Postgraduate Education for Rural Family Practice in Canada
  - CFPC & SRPC
  - competency-based advanced rural family medicine skills training programs
    - accessed as a third year for residents
    - re-entry positions for physicians in rural practice

Professional Development

- Access to CME/PD and sense of professional isolation are important retention issues
- Greater scope of practice related to rural medicine = greater need for access for PD
- Special PD funding initiatives
- Use of information and communication technologies for distance education
- Telehealth initiatives that provide opportunities for consultation with peers can address professional isolation issues
- Lack of studies demonstrating empirical relationship between access and retention

Nature of Rural Medical Practice in Canada

Analysis of the 2001 National Family Physician Survey

Age & Sex

- 67.1% (n=806) in remote (weak or no metropolitan influence zone by Statistics Canada) areas were male versus 61.2% (n=7969) in Canada ($p<0.001$)
- Proportionally more younger physicians in remote areas
  - 19.9% (n=238) of docs <35 years in remote versus 12.6% (n=1627) in Canada ($p<0.001$)
  - 3.1% (n=37) of docs >64 years in remote versus 5.7% (n=731) in Canada ($p<0.001$)

Tunkey's Honestly Significant Difference and Dunnett's C

International Medical Graduates in Remote Areas

- 22.9% (n=271) of physicians practiced in remote areas were IMGs versus 18.5% (n=2382) in Canada; $p<0.001$.

Procedural Skill Sets

- Rural physicians perform more procedures than their urban counterparts
  - Casting/splinting, lumbar puncture, skin biopsy, MSK injection/aspiration, diagnostic needle aspiration/biopsy, suturing, other minor surgery, pap smear, IUD insertion, other procedures, D&C, other endoscopy, other biopsy, ECG interpretation, pulmonary function testing, audiometry ($p<0.001$ for each)

Comprehensiveness of Practice

- Physicians in remote areas are more likely to provide inpatient hospital care, emergency medicine, home for aged/nursing home visits, palliative care, occupational/industrial medicine, chronic disease management, mental heath care, anesthesia, surgical assisting, addiction medicine, sport medicine, major surgery in hospital, walk in clinics during regular hours, coordination of patients; use of other health services, preventive medicine ($p<0.001$ for each).
- Urban physicians are more likely to provide after hours clinic ($p<0.001$).

Research activities

- Mean number of hours per week
- Remote 0.3 h vs urban 1.1h vs overall 0.8h (p=0.012)

Best Practice Identification

- Key informant interviews
  - Canada: University of British Columbia (U.Vic, UNBC); University of Ottawa (NOMEC); McMaster University (NOMP); Northern Ontario Medical School; Memorial University.
  - US: University of New Mexico; University of Washington (WWAMI).
  - Australia: James Cook University; Monash University; Flinders University.
  - New Zealand.

List of Interviewees

- Joanna Bates UBC
- Peter Walker UO
- Miriam McDonald NOMEC
- Alan Neville McMast.
- Jim Kraemer NOMP
- Carl Robbins MUN
- Bill Bavington MUN
- Vera Griffin MUN
- Roger Strasser NOMS
- Arthur Kaufman UNM
- Stewart Mennin UNM
- Deanna Richter UNM
- Sandra McCollum UNM
- Nancy Sinclair UNM
- Diana Heider UNM
- Saverio Sava UNM
- Vanessa Feliciano UNM
- Alan Gill WWAMI
- Gary Hart WWAM
- Dan Hunt WWAMI
- David Acosta
- Laura Mae Baldwin WWAMI
- Peter House WWAMI
- Roger Rosenblatt WWAMI
- Tom Norris WWAMI
- Richard Hays JCU
- Alan Sive JCU
- Tarun Sen Gupta JCU
- Louise Taylor JCU
- Craig Veitch JCU
- John Humphrey Monash
- Paul Worley Flinders
- Iain Hague IRH
- Grant O'Brien IRH
- Ruth Rhodes IRH
- Joyce Hendricks IRH
- Robin Steed IRH
- Steve Willis IRH
- Ron Janes IRH
- Martin London U. ChCH
- Pat Farry Dunedin

What we learnt

- Exposure to rural clinical practice during undergraduate program and/or during postgraduate specialty residency increase the likelihood of subsequent rural practice
- Shaping the curriculum to reflect the challenges of rural practice can improve skills needed in rural areas
- Students from rural backgrounds more likely to practice in rural areas
- Increasing involvement of students from rural backgrounds can take place at two points: early recruitment and med school admission

What we learnt

- *Rural students less likely than urban students to apply to university and/or to medical school*
- *Educational choices are made early, hence recruitment efforts must be directed at high school students*
- *Early recruitment needs to be supported by **targeted funding***
- *Examples from WWAMI, NOMEC/NOMS*

What we learnt re admissions

- *Widely believed that traditional admissions procedures do not give sufficient recognition to the strengths that rural students offer*
- *Universities reluctant to entertain non-academic admission criteria –some human rights issues*
- *Most medical schools admit students from their home state/province.*
- *Need for clear public criteria*
- *Importance of composition of admissions committees*
- *Examples of UNM, UBC, JCU, NOMS*

What we learnt

- Provide rural exposure during specialty rotation
- Some maintain that postgraduate rural exposure more important than undergraduate exposure
- Students in rural settings need more support than traditional students
- Importance of rural student clubs
- Rural schools transform the nature of medical faculty – need widespread network of committed preceptors
- Menu of support that can be offered to rural preceptors – much more of a preoccupation in some areas than in others

Other factors affecting rural practice

Medical schools play an important role in recruiting and preparing students for rural practice, but they are not the only factor:

- Economic/demographic viability of rural/remote regions – rural depopulation
- Sustainability of primary care (esp. in the **US**)
- Changing trends in specialization and the decline of family medicine

Funding Issues

- Medical education is expensive – *rural medical education is more expensive*
- Universities seek national and international prestige – *resist the role of meeting workforce needs*
- Governments want to meet rural practice needs at acceptable level of cost
- Physicians are key agents of education – *their involvement must be assured*
- Rural communities have a large stake in rural medical education – *how to involve them*

Credibility of Rural Medical Education

- Strong sense from respondents that they were involved in a constant battle for their credibility
- The unspoken but pervasive assumption in the broader medical education community that rural medical education involves a dilution of quality academic and clinical standards
- Australian experience – esp. *Flinders*, *JCU*
- The importance of supportive research UNM, WWAMI
- The importance of networking

Leadership

- Impressed by the vision and passion for rural health among interviewees – the role of commitment
- Students are not attracted by the money
- The importance of leadership – the ever-present threat of backsliding
- The importance of voluntary groupings and activities, rural student clubs, SRPC, rural mentors

Research and Publication

- Accountability to government and other bodies
- The significance of an academic profile
- The value of external credibility for ratings and recruitment
- Long-term impact of rural medical education on health outcomes
- Economic impact studies

Linkage between medical education and health delivery

- Traditional link between medical schools and teaching hospitals – the development of AHSC's
- The role of rural medical schools in offering clinical services
- The importance of preceptor support and development as faculty
- The role of telehealth

Politics

- Provincial and federal jurisdictions
- The importance of a well articulated national rural health strategy and funding to match (lessons from **Australia** and **New Zealand**)
- Is primary care in general underfunded compared with acute care?
- Linkage between health care and general economic and social well-being.
- Whatever happened to **Romanow**?

So what's next?

Thank You