
A Situational Analysis of Physician Recruitment and Retention in Rural and Northern Canada: Models, Programs and Evaluations



FINAL REPORT

Submitted to:

Ontario Ministry of Health and Long-Term Care

The Research Team:

Bruce Minore, Raymond Pong & Rachel Ariss

Centre for Rural and Northern Health Research

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Lakehead University, Thunder Bay, Ontario
Laurentian University, Sudbury, Ontario
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Executive Summary

Geographic maldistribution of physicians is a long-standing problem in Canada. In response, provinces and territories have each developed programs to recruit and retain physicians in their respective underserved rural and northern areas. At the request of the Ontario Ministry of Health and Long-Term Care, the Centre for Rural and Northern Health Research undertook a situational analysis of the targeted recruitment and retention strategies that are being used across the country. The objectives were to:

- explore the problem of geographic maldistribution of physicians;
- identify theoretical and historical approaches to defining the need for physician services; and
- describe current Canadian policies and programs pursued to improve recruitment and retention of physicians in rural and remote areas.

Methodology

The data reviewed for this report were varied, including both primary and secondary sources:

- academic literature from the Medline and Healthstar databases;
- published reports and evaluations from the thirteen provincial and territorial governments;
- information from physician associations' websites; and
- interviews with personnel from ministries and departments of health.

The authors began with an exploration of the background literature, followed by an in-depth examination of published information on provincial and territorial government programs. Information on government programs was confirmed and updated through telephone interviews with personnel from ministries and departments of health and specialized recruitment organizations.

Factors Influencing Rural Physician Recruitment and Retention

The review of literature revealed several factors influencing physician decision-making about entering rural practice. These included:

1. The nature of rural practice, both positive dimensions, such as varied caseloads and advanced procedural skills, and negative factors, like increased on-call time and professional isolation;
2. Medical training experience, including exposure to rural practice through clerkship and residency rotations;
3. Family practice specialization, including the acquisition of advanced practice skills required for rural practice; and
4. Rural background and other personal factors, involving family and community considerations.

The evidence suggested that retention also is a complex issue involving interrelated personal, community and professional factors. Overwork and difficulty finding relief coverage appear to be the primary reasons physicians leave rural practice, while community involvement, professional satisfaction and earnings encourage retention.

Designating Underserviced Areas

Analysis of the information available revealed that one of the key challenges in developing physician recruitment and retention strategies is the determination of what constitutes underserviced areas. Several approaches are used to count physicians or physician services and to determine the appropriate geographic units (census units, town population, or referral patterns), although the ideal distribution of physicians is a policy decision, based on what a society understands as desirable health care. Given these factors, provincial methods of determining and designating specific areas as underserviced vary widely:

- Several provinces use provincial physician resource plans to determine and designate underservice; others require each community to document low levels of service and apply for designation;
- Most provinces use a simple geographic definition of rural and provide general support programs based on this definition; facility-based criteria are also used to

determine eligibility for specialized rural physician incentives, such as emergency room sessional and on-call payments.

Programs to Encourage Rural Physician Recruitment and Retention

The review of current government programs designed to encourage rural physician recruitment and retention found that they typically combine a number of incentives, including:

- Regulatory or administrative measures, such as conditional licences for International Medical Graduates (IMGs), team provision of primary health care and billing number restrictions;
- Differential fee-for-service schedules, in the form of general augmentation for all physician services delivered in rural areas or specific augmentation for certain services, such as in-hospital visits, provided by general practitioners;
- Practice-related financial incentives, including grants, subsidies to assist with establishing practices, long service bonuses, travel allowances, and moving expenses, as well as on-call and emergency sessional payments;
- Alternate payment mechanisms, supporting salaried positions or guaranteed minimum income contracts, often in conjunction with team provision of primary care;
- Locum services, to reduce rural physicians' heavy workload and provide relief from excessive on-call responsibilities;
- Direct funding for medical education, to recruit medical students and residents to rural practice and to support rural physician re-entry speciality training, often with return-in-service commitments attached;
- Rural training initiatives, to encourage affinity for rural practice through optional or compulsory clerkship and residency rotations;
- Market-based initiatives, such as physician recruitment offices or recruitment fairs, which assist rural community representatives in informing physicians about local practice opportunities;
- Technological supports, to increase access to specialists and provide diagnostic assistance for rural physicians; and
- Specialized initiatives, including physician and spousal networking, to assist physician integration into rural communities.

Program Evaluations

Despite the long-term existence of some provincial recruitment and retention programs, few have been evaluated for their effectiveness:

- Those in Alberta are the exception, as the province has recently engaged in evaluations of four of the programs offered under its Rural Physician Action Plan, including the Enrichment Training Program, which was found to be effective in rural physician retention but less helpful for recruitment, and the Rural On-Call Remuneration Program, which was shown to have played an important role in both recruitment and retention.
- There are several evaluations of Canadian rural medical training programs, which suggest that between 51% and 90% of graduates from these programs locate in rural communities.

Recent Recommendations

There are two recent reports commissioned by the government of Ontario addressing physician resources, the McKendry Report (1999) and the Expert Panel on Health Human Resources (2001), both of which also address the problem of geographic maldistribution of physicians. Additionally, Barer and Stoddart (1999) focus directly on physician services for rural and remote communities across the country. The review of these reports showed that they have a number of recommendations in common, including some which have been relatively untried in Canada:

- Integrating nurse practitioners and other allied health care professionals into primary care settings, as a means of increasing access to primary care in areas of physician underservice;
- Enhancing the role of medical education in increasing exposure to and preparation for rural medical practice, though de-centralizing medical education to support training away from urban medical schools, or establishing rural or northern medical schools.

The reports also recommend modifications to existing health care planning and funding mechanisms as aids to rural physician recruitment and retention. The McKendry Report and the Expert Panel view a health care resources planning structure as an important means of alleviating underservice in rural and northern areas. Barer

and Stoddart maintain that the physician payment system across Canada requires basic restructuring in order to increase access by rural people.

This Report

The situational analysis offered in this report includes a topology of approaches used to solve problems of underservice. For reference purposes, the report also contains provincial profiles, summarizing the programs currently being delivered across the country, including evaluative information. Summaries of recent government reports, recommendations and position papers have been provided to illustrate the contemporary context in which new strategies for physician recruitment and retention are being developed.

I. Introduction

Geographic maldistribution of both primary care and specialist physicians is a long-standing problem, both in Canada and the United States, as well as several other countries.¹ The Ontario government recognized that rural and northern areas of the province were undersupplied with physicians in the 1960s, and has, since that time, pursued various policies to redress the imbalance.² In the ensuing years, several reports have been commissioned by the provinces, as well as other governments, to assess and make recommendations that address the problem. Meanwhile, all Canadian provinces have developed programs to recruit and retain physicians in underserved rural areas.

The goals of this paper are to describe current Canadian policies and programs pursued to address the problem of recruitment and retention of physicians in underserved rural and northern areas, and to illustrate their historical and contemporary context.

As Barer, Wood and Schneider comment:

"...the problems are rarely as clear-cut or one-sided as many accounts in the popular media (or even scientific journals) would suggest, and the solutions, if there are any, are likely to be complex, multi-factorial, interdependent and dynamic. There is a reason these problems have been with us for so long."³

Government reports have commented on the uncoordinated manner in which various program and policy solutions have operated,⁴ and consistently advise that solving the problem requires that all of its components be addressed in a coordinated manner.⁵ The goals of this paper are to describe current Canadian policies and programs pursued to improve recruitment and retention of physicians in underserved rural and northern areas, and to illustrate their historical and contemporary context.

This Report

The sources for the information in this report include academic literature, program information available on provincial government, physician associations and Society for Rural Physicians' websites. Telephone interviews with personnel from provincial ministries of health and other organizations were conducted to update and confirm information.

This Final Report is based on the format and content of the original outline submitted by CRaNHR to the Ministry of Health. It includes three areas for which research and writing were completed and submitted in the Interim Report:

- background literature on the problem of geographic maldistribution of physicians;
- theoretical and historical approaches to defining need for physician services and addressing geographic maldistribution; and
- explanations of how “underserviced areas” are determined or designated in the provincial jurisdictions.

This Final Report includes:

- a typology of approaches to solve the problem;
- a summary of types of programs available in each jurisdiction in table format;
- a detailed description of programs available in each jurisdiction, according to type of program;
- profiles of each province and the approaches and programs used to solve geographic maldistribution;
- evaluations of provincial programs, where they exist; and
- a summary of recent government reports and recommendations and position papers from interest groups.

II. Geographic Maldistribution of Physicians

There are a variety of factors which influence physician decision-making about whether to enter and to continue in rural practice. The nature of rural practice, professional issues and medical training experiences, as well as personal, family factors and community factors, are all significant role-players in physician recruitment and retention in rural areas. The interrelations between these factors contribute to the complexity of the problem and the need for a variety of solutions.

What is the Nature of Rural Practice?

- Rural practice involves more variety in caseload and more procedural work than urban practice
- Rural practice involves increased on-call work, heavy workload and difficulty finding time away from practice
- Rural practice involves professional isolation

There is no single definition of “rural” widely applied in the context of medical practice in Canada.⁶ For example, the Society of Rural Physicians of Canada relies on the drawing population of communities, distances from closest basic and advanced referral centres, the number of GPs and specialists within 25 km of the community and the presence of an acute care hospital within 25 km of the community as criteria for its General Practice Rurality Index,⁷ while the Canadian Medical Association Advisory Panel on the Provision of Medical Services in Underserved Regions simply classifies communities as rural if they have 10,000 or fewer residents.⁸

Health researchers apply different population and distance characteristics to classify a community or area as “rural”. Many rely on definitional divisions between rural and urban that are already used by another body, such as Statistics Canada. Each definition has useful and limited aspects.⁹ As Pitblado and Pong comment in their

study of geographic distribution of physicians in Canada: "How rural should be defined depends on the task at hand."¹⁰

The authors' task in the present Report is to describe and analyse policy approaches. Definitional issues, while they do affect description of the problem and will be briefly addressed, are somewhat less central. For this background literature section, the authors accepted papers with varying definitions of rural or based in small geographic areas that, according to their population descriptions, had rural characteristics.

The Society of Rural Physicians of Canada comments that:

Of course, the main problem with any of these (Post Office or Stats Can) proxy measures of rurality is their assumed and never validated connection to rural practice. We know that we practice a different sort of medicine than that which is practised in the cities. It has a lot to do with the fact that rural doctors have to take on additional roles that in the cities are performed by specialists. It would be nice to have a validated medical definition of rural based on those differences.¹¹

Certain practice characteristics distinguish rural medical work from urban medical work. Rural family practice generally includes more hospital work, more procedural work and a higher likelihood of solo practice than urban family practice - indeed, the number of rural family physicians who work alone in Canada is increasing.¹² According to Pitblado and Pong's study, the percentage of census subdivisions in which a GP worked alone increased in every province between 1986 and 1996: in Ontario, it increased from 7.8% to 10.4%. The most dramatic increase was in Alberta, from 1% of census subdivisions having solo doctors to 7.8% in 1996.¹³ Rural practice also offers a wider variety in caseload.¹⁴ Of concern to practitioners may be the reduced immediacy of specialist consultation and availability of technological diagnostic procedures compared to what they have experienced in urban-based medical training.¹⁵

Negative aspects of rural practice include a heavy workload, more time on-call, little time away from practice, few medical resources and professional isolation.

Rural practice has both negative and positive aspects. Reports done in Manitoba and Saskatchewan state that rural practice has been unattractive to physicians for the following reasons: professional isolation, lack of educational opportunities,

heavy workload, increased stress, insufficient or unavailable locum relief, few medical resources/technologies, limits on fee income, and the high cost of living and establishing a practice.¹⁶ These issues are not unique to Canada: heavy workload, stress, inadequate locum relief, limited continuing education and restricted opportunities for professional development are also found in Australian rural practice.¹⁷

Positive aspects of rural practice include variety in caseload, and good relationships with patients.

Recent Canadian and Australian studies suggest that practice issues create the most dissatisfaction among rural practitioners: in Canada, excessive on-call time, long distances to referral centres, few specialty services and too few GP/FPs,¹⁸ and in Australia, overwork, inadequate locum relief, limited specialized backup, hospital downsizing, limited continuing education and income.¹⁹ An American study reports that practising rural physicians are dissatisfied with access to urban amenities, lack of personal time away from work and excessive paperwork.²⁰

Positive aspects of practice for rural physicians include the variety of caseload, freedom and good relationships with patients,²¹ as well as feeling needed by patients.²² An American study found that practice characteristics rural physicians were most satisfied with were doctor-patient relationships, clinical autonomy, and providing care for lower income patients.²³ A recent Australian study found that while students on short rural rotations were invigorated by the challenges and variety of caseload in rural practice, they wanted to improve their clinical skills before taking on that responsibility.²⁴

Who Chooses Rural Practice?

- Physicians with a rural background are more likely to choose rural practice
- Physicians whose spouses can find employment and professional opportunities in a rural community are more likely to choose rural practice

Physicians' decisions on where to locate their practices are influenced by a number of factors. Personal background, professional education, professional practice,

personal/family factors, community and economic factors all influence physician decision-making.²⁵

Choosing rural practice evidently includes choosing rural living. Positive and negative perceptions of rural lifestyles affects communities' abilities to recruit physicians. Community factors that affect physician decision-making are the quality of the physical environment, the lifestyle of the community, the quality of educational opportunities for children and cultural and recreational opportunities.²⁶ Suggestions of the benefits of rural living include clean air, less crime, affordable housing, lower cost of living and much less time commuting. Negative aspects of rural communities include a lack of cultural events and resources and recreational opportunities.²⁷ One researcher categorizes all of these factors into the community's contribution to the physician (and family's) overall quality of life.²⁸

Several studies have found that spousal and family considerations dominate physician practice location decisions.²⁹ As more spouses of physicians also have their own professions or careers, employment opportunities for spouses have a significant impact on practice choice location.³⁰

Rural background is a significant predictor of choosing rural practice. As well, a physician's spouse has a strong influence on practice location choice.

In a recent Australian study, students who participated in a four-week rural rotation were pleased with the relaxed lifestyle, the friendly welcoming community and friendly medical staff.³¹ The drawback to their experience was that they grew concerned that living rurally would mean having a boring social life.³²

Rural background is one of the most significant and uncontested predictors of entering rural practice and choosing rural living.³³ The rural background of a spouse may also affect practice location decisions.³⁴ Rural medical training, especially in the residency stage, as discussed in the next section, has an influence on practice location as well.

Some American researchers are turning their attention to the fact that while more physicians are now women, women are under-represented in rural practice in America - few female physicians choose rural practice as an initial practice location.³⁵ The Society of

Female physicians are currently under-represented in rural areas - their specific desires for part-time practice and flexible schedules should be considered in order to attract more women to rural practice.

Rural Physicians of Canada states that while rural generalists were much more likely to be male in 1998, a study of physicians entering rural practice between 1994 and 1998 showed that they were as likely to be female as male.³⁶

For female physicians, employment opportunities for their spouse play a much more significant role in choosing a practice location than for male physicians.³⁷ One study found that part-time opportunities and opportunities for the physician's spouse attracted women to rural practice, while issues of professional isolation and potential lack of privacy discouraged them.³⁸ This study recommended that rural communities offer flexible schedules, spousal opportunities, access to professional support networks and collective recognition of the physician's need to establish role boundaries in order to recruit more women physicians to rural areas.

What is the Role of Medical Training in Choosing Rural Practice?

- Rural training, especially in residency, has a positive effect on rural practice location choice
- Family practitioners are more likely to choose rural practice

Medical school generally exposes students to many specialties and sub-specialties, and to working in the context of tertiary care hospitals in urban centres with specialists readily available. Therefore, the average medical student is generally not well prepared for the challenges of rural practice.³⁹

Choosing a speciality and choosing a practice location are interrelated; for example the more specialized a physician is, the less likely he or she is to practice rurally⁴⁰. An Australian study shows that medical residents in rural training situations see more patients with a wider variety of common and uncommon conditions than their urban counterparts. They also participate in more procedures.⁴¹ Their experiences reflect the varied and procedural nature of rural practice, and the hands-on and one-on-one teaching approaches that practising rural doctors employ.

Rural medical training programs for family physicians in Canada vary widely in their content and length of training provided.

Rural medical training programs for family practice residents in Canada vary widely in length of time exposed to rural practice and to how much teaching rural preceptors are expected to do. In 1995, optional rural electives ranged from one to

twelve month blocks. Two-thirds of the eighteen Canadian rural medical programs required one to two-month blocks of rural training - and two required longer blocks, between four and six months.⁴²

Canadian Evaluations on Effects of Rural Medical Training

There are a few Canadian evaluations of the effects of rural medical training programs on rural physician recruitment and retention:

- The Department of Family Medicine at the University of British Columbia offers the second year of residency in rural and regional areas.⁴³ Overall, 51% of residents who had participated in the rural residency subsequently located in rural areas, and 20.5% in regional areas. Of the program participants who chose rural practice, 26% remained in the practice they trained in,⁴⁴ thus pointing out the importance of connections between rural practitioners and medical schools in providing training opportunities for rural doctors and for recruitment. To graduates of a rural residency, spousal preference and rural training played somewhat larger roles in choosing a practice location than similarity to hometown and parents' background.⁴⁵
- Another study based in the Dalhousie University Department of Medicine concludes that the location of postgraduate training for both primary care and specialties seems to affect practice location choice. All first-year trainees in the Dalhousie postgraduate program, both in primary care and specialist areas, experience small community practice. Fifty-seven per cent of the primary care graduates who remained in Atlantic Canada chose rural practice, as did 50% of the specialists who remained in Atlantic Canada.⁴⁶
- The Northern Family Medicine Education Program (NorFaM) offered through Melville Hospital in Goose Bay, Labrador, offers family residents a 7-month rotation of rural practice. Approximately 90% of participants enter rural practice.⁴⁷
- The Northeastern Ontario Family Medicine Program in Sudbury, Ontario in a study that tracked graduates from 1993 to 1997, finding that 25% of them locate in Sudbury, 31% in other northern Ontario cities such as Sault-Ste. Marie and Thunder Bay, 14% in smaller northern communities such as Kirkland Lake and 25% in small cities in southern Ontario such as Orillia and 6% in small cities in other provinces such as Prince Albert and Kamloops.⁴⁸

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- A study of rural practitioners who had graduated from Queen’s University, however, found that only rural background was a significant predictor for choosing rural practice - neither rural exposure during undergraduate study or during residency seemed to affect rural practice choice. While this study does contradict much of the literature, and the authors acknowledge its limitations,⁴⁹ it suggests that rural medical programs, due to their wide variation, need to be examined in detail to determine what aspects most encourage rural practice choice and retention.

The Relationship Between Rural Medical Training and Rural Practice

There are more American than Canadian studies available on the relationship between rural medical training and rural practice location choice and retention. A recent and thorough review of American rural medical training programs concludes that

“there has been significant progress in development and evaluation of educational strategies to train and place generalist physicians in rural America. The obstacles are better understood but remain difficult.”⁵⁰

Rural medical training positively affects rural practice location - its effects can be increased with recruitment of rural students to medical school. Rurally-based residency programs seem to have the strongest retention effect. As programs vary, it is important to consider which programs produce the most rural doctors and strengthen these models.

This review also found that American medical schools which produced physicians who chose rural practice shared four characteristics: they were located in rural states, they were state-funded, they focussed on production of family physicians and had less research funding from the U.S. National Institutes of Health.⁵¹ The Family Practice residency programs most likely to graduate rural physicians are those with: higher number of required obstetrical and rural training months, a full or partial rural mission, rural state location, a program director with rural experience, a procedural emphasis, fewer minority or women residents, and fewer types of other major graduate

programs for rotations.⁵² The overall length of Family Practice clerkship time required in a medical program was predictive of choosing family practice as a specialty.⁵³

Specific American studies show that access to rural training experience in medical school is a significant predictor of rural practice. A Pennsylvania study of a Philadelphia medical school's Physician Shortage Area Program found that participants in this program, over a twenty-two year period, accounted for 21% of all rural practitioners while being only 1% of the state's medical graduates.⁵⁴ Retention of program participants has been high in rural areas overall (87% of those practising rurally 5-10 years ago still do so), and higher in underserved areas (94%).⁵⁵

American medical schools located in rural states and focussing on family practice produce the most rural doctors.

The authors conclude that a rural medicine education model focussing on family medicine combined with focussing on medical students who were raised rurally, can have a significant impact on shortage of rural physicians.⁵⁶ A Norwegian study supports this conclusion. The study focussed on the effect of locating a medical school in northern Norway. The authors found that medical postgraduates who grew up in northern Norway and were then educated in the northern medical school had a greater tendency to remain in the north than fellow graduates who were raised in the south.⁵⁷

Another American study concludes that the retention of those who are prepared to be small-town physicians is higher, and that (other than rural background) residency rotations in rural areas are the best way to prepare for this.⁵⁸ Extended medical school rotations, while preparing for rural practice, do not prepare for small-town living, and do not affect retention.⁵⁹ Rural medical training programs situated in rural hospitals are also likely to attract hospital-based physicians as well as lead to increased numbers of physicians settling in communities near the training facility.⁶⁰

What are the Factors Affecting Physician Retention in Rural Areas?

- Rural physician retention is a complex issue involving interrelationships between personal, community and professional factors
- Overwork and difficulty finding relief coverage are factors in physicians' decisions to leave rural practice

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- Satisfaction with the community overall and enjoyment of community involvement contribute to physician retention
 - Earnings, professional satisfaction and integration and compatibility with local health care professionals are also related to physician retention

Studying retention is difficult because there is a tendency to assume that the same factors which influence choice of practice location must influence retention.⁶¹ There are also difficulties in defining the concept of “retention” itself. What is retention? How long should a physician stay in a community before he/she is considered to be successfully retained? Some studies focus directly on retention, while others concentrate on physician satisfaction, assuming that if physicians are satisfied with working and living in their rural community, they are more likely to stay. While this is a reasonable assumption, focussing on physician satisfaction may miss the dynamic nature of interrelationships between all the areas that affect retention: community, professional and personal.⁶² For this report, the authors have concentrated on studies that directly address the issue of retention, and on those that consider the link between retention and satisfaction. Some studies focussing on satisfaction, however, have been included because they complement the retention studies.

Retention factors, moreover, are not always the same as recruitment factors:

“The decision to locate in a rural practice setting occurs largely from outside that setting. The decision to remain takes place from within the practice setting and arises from the stream of experience there.”⁶³

Thus, it is not surprising to find that practical items such as the role of the community and relief time seem to play larger roles in physician retention than they do in initial practice location decisions.⁶⁴ Community factors relate to quality of life in the community such as the quality of local school and housing. In a Kentucky study, another aspect of retention emerged - "sociocultural integration" - which included factors such as acceptance by the community, spousal happiness, recreational opportunities, family ties to the area and religious supports.⁶⁵ This study recommended further qualitative research on the integration of physicians and their families into rural communities.

General satisfaction with the community is also independently associated with retention.⁶⁶ Specifically, community involvement and the “opportunity for social interaction and development of friends” were found to be important aspects of rural physicians’ satisfaction in Saskatchewan: the latter being the most important factor.⁶⁷

An Australian study found that while the professional environment needs to be conducive to good rural practice, physicians needed good social and cultural facilities

and educational facilities for their children in order to have an acceptable quality of life.⁶⁸

Physician Workload and Relief

Studies focussing on retention emphasize professional issues related to workload, relief coverage and professional isolation. Relief coverage is important in retaining physicians: a study of rural primary care physicians in Kentucky shows that relief coverage is the most important factor in retention.⁶⁹ The Saskatchewan study showed that the opportunity for periodic rest was the second strongest determinant of physician satisfaction.⁷⁰ An American study shows that physicians were least satisfied with time away from their practices, although this did not relate directly to retention.⁷¹ Other studies found that retention was generally related to a reasonable workload.⁷²

A retrospective Australian study considered rural physicians' intentions regarding whether or not they would remain in rural practice in 1986 and what they had decided by 1996. The author classified physicians as "stayers" if they had intended to leave, but stayed, and classified as "leavers" those who had intended to stay, but actually left rural practice. "Stayers" had managed to solve the problems of overwork, inability to find locums, lack of specialist back-up, inadequate hospital facilities, inadequate income and had improved their job satisfaction level.⁷³ They were also enjoying their involvement with the community.⁷⁴ Leavers, on the other hand, left because they wanted to change their professional direction, because of burn-out and because downgrading hospital facilities had left them unable to use their procedural skills.⁷⁵ Leavers were also concerned about the quality of education available for their children and fewer reported being involved in the community.⁷⁶

In an Australian study, rural physicians who could solve the problems of overwork, inadequate locum coverage and lack of specialist backup remained in their rural communities. Those who could not solve these problems, who were burned out, and had less community involvement, left their rural practices.

Professional Educational and Peer Contact Opportunities

Physicians in rural areas are less satisfied than urban physicians with the extent of peer contact with other physicians, educational stimulation of their work, and their ability to remain current in their practice.⁷⁷ An Ontario study explained that northern

Ontario physicians were much more likely than their southern counterparts to believe that adequate access to CME assists rural recruitment and retention, and that financial assistance should be provided for rural and northern physicians to access CME.⁷⁸ Findings vary regarding the significance of earnings: one study states that satisfaction with earnings has some relation to retention;⁷⁹ while another states that income and workload were the most important issues for retention.

For rural physicians, compatibility with the local medical community and availability of a practice partner play a role in physician retention.⁸⁰ One American study of medical services in a poor, rural county found that physicians who experienced problems with the administration of hospitals and the National Health Service, lack of cooperation between care facilities, lack of coordinated peer support, and the perception that no one cared about medical services provision in the county all contributed to doctors' decisions to leave their rural practice.⁸¹

Attainment of professional goals and professional satisfaction are also significant.⁸² Studies suggest that physicians who participate in rural-based training programs as preceptors have increased retention rates. An American study found that the retention rate for those who had been preceptors was higher than those who had not, although the difference was not statistically significant. Those who did participate as preceptors reported that this activity fulfilled significant professional needs.⁸³

Rural physicians who have opportunities for CME and contact with professional colleagues show higher retention rates than physicians who do not have such supports.

What are the General Policy Approaches to Geographic Maldistribution of Physicians?

In their recent study, Barer, Wood and Schneider state that there is no agreement on an appropriate distribution of physician services, that equal distribution may not be appropriate and that the definition of a physician shortage is elusive. They emphasize that these are all policy/social decisions, based on what a society sees as appropriate health care.⁸⁴ This echoes their statement cited earlier that the appropriate numbers of physicians supplying rural and urban Canada is not a technical decision that can be based on information alone, but a social policy decision.⁸⁵ Various approaches have been used, however, to measure physician distribution and determine need for

physician services. Each approach has its strengths and weaknesses.

Measuring Physician Distribution

Notwithstanding these difficulties, several methods are currently employed for measuring physician distribution. Physician-to-population ratios are the most common and simple approach to determining physician numbers in relatively large geographic areas. Guidelines for population-to-physician ratios, for each speciality as well as GPs, produced by the Federal-Provincial-Territorial Advisory Committee on Health Manpower (1984) and the National Speciality Physician Review (Royal College, 1988);⁸⁶ in 1995 nine of ten provinces used these ratios in their planning activities.⁸⁷ These ratios, however, can only be used as rough guidelines - they are generated on a provincial/territorial basis and they are particularly limited when the goal is addressing physician distribution in rural areas.⁸⁸

Canadian studies have used a number of ways of measuring need for physician services, including access modelling, population health basis models, and FTE target methods.

Anderson and Rosenberg use a location quotient which takes physician-to-population ratios and attempts to determine whether an area is over- or under-serviced when compared to all the geographic units which make up a whole. They structure this comparison in two steps: they compare the ratio in a specific geographic unit to the total number of physicians in all the units; this is compared to the population of the specific unit relative to the total population of all the units.⁸⁹ The resulting figure is either negative or positive. A negative number shows that a specific unit is underserved and a positive number shows that a specific unit is overserved, in relation to all other units.

Determining Need for Health Services

Various approaches are used to determine need for health services in Canada. Barer, Wood and Schneider state that policy decisions can be informed by regional variations in physician-to-population ratios; regional variations in service use; variations in need estimates based on age, sex, socioeconomic indicators; the prevalence of certain health care problems; the availability of other health care services (i.e.: nurse

practitioners and midwives); and the distances to primary and tertiary care hospitals; as well as other factors.⁹⁰

Some specific Canadian approaches to measuring need for physician services combine several of the elements Barer, Wood and Schneider discuss. The McKendry Report relies on access modelling as a measurement reflecting need for physician services. Access modelling requires the creation of time-based standards for access to core services in each medical speciality (including, for example, numbers of family practitioners receiving new patients) and then monitoring waiting times for referral. Experts must identify core services and then attach “reasonable” wait times for referral for each core service. If a region fails to meet the standard, then reasons for the failure would have to be identified: too few doctors? too few nurses? not enough operating rooms? failure of communication? structural problem?⁹¹ This approach has been used by the Cardiac Care Network, to triage patients in emergency departments in Ontario, and by radiation oncology in British Columbia.⁹²

There are several theoretical models to determine need for health services in Canada. Target physician-to-population ratios are commonly used, although they present certain problems. Approaches which include addressing the concept of distance are suggested by others.

Roos et al. have used a population health basis for determining need for physician service and underservice. They calculated the need for physician visits based on the demographics of a geographic area: sex, age, socioeconomic status and premature death rates and compared this to actual physician visits by patients according to the region of residence, rather than where the physician visit took place. They argue that when patient visits are converted to full time physician equivalents, the necessary number of physicians for each region can be determined.⁹³

The most recent methodology uses an FTE target method created by the Federal-Provincial Working Group of Medical Care Statistical Indicators. The Federal-Provincial methodology was based on fee payment data so some services paid for through methods other than fee-for-service (such as radiology and pathology) were missed.⁹⁴ New Brunswick modified the original method to reflect radiology and pathology as well as alternative payment arrangements.⁹⁵ Some non-clinical work, however, remains elusive of this measurement methodology, including community medicine, hospital administration and research.⁹⁶

Issues In Measuring Physician Distribution and Need for Services

Pong and Pitblado have reviewed several of these approaches in their recent study on the geographic distribution of physicians in Canada. While geographic indicators are used to measure physician services because data is available and easy to access, for example, from census and other Statistics Canada sources, the results are difficult to interpret, due to problems in defining rurality and in selecting the geographic areas used for each study. On the first issue, it is often difficult to interpret or compare the results of studies because of the problems of defining “rurality”, because there is “no universally accepted definition of rural.”⁹⁷ Pitblado and Pong maintain that “how rural is understood is crucial because the definition helps determine...groupings of varying degrees of rurality.”⁹⁸

Researchers studying physician distribution issues vary widely in the definition of “rural” they apply, or, worse, they do not define “rural” at all. Pong and Pitblado note that some studies rely on postal code definitions, others use census divisions or administrative districts as their basic unit of analysis. Using counties, municipalities or provinces as a basis for determining physician supply and need, however, does not necessarily reflect natural geographic patterns.⁹⁹

Analyses of area-aggregated data may show extreme variations in the distribution of services but do not accurately reflect physician distribution: “Geographical analyses of area-aggregated data often reveal great unevenness in various health measures...as clusters or show significant spatial differences.”¹⁰⁰ While decreased numbers of physicians can be documented using physician-population ratios, to infer physician shortages from uneven distribution is difficult, except in the most extreme cases.¹⁰¹ Measuring physician supply through Full Time Equivalents (FTE) is an improvement, although the concept needs to be refined and broadened to capture non-fee-for-service payments.¹⁰²

Pong and Pitblado also identify a need to explore the complex relationships between physician availability, utilization of medical services and health status.¹⁰³ At the very least, concepts of distance need to be addressed, perhaps using detailed digital road network maps, estimates of time spent travelling, or willingness to travel to see a GP or a specialist.¹⁰⁴ More accurate assessments are needed about the effects of telehealth on access to physician care¹⁰⁵ and details about specialty and discipline substitution in practice, where physicians practice outside their scope and where other health professionals (such as midwives) supply services traditionally provided by physicians.¹⁰⁶ All of this information would contribute to a more thorough knowledge of the effects of physician maldistribution on rural health care and broaden the bases for policy development.

III. Addressing the Problem: Policies and Programs

In North America, the most common approach to the rural shortage of physicians during the 1950s and 1960s was to see it as an aspect of a general undersupply of physicians. It was assumed that if the overall number of physicians increased the rural problem would more or less solve itself.¹⁰⁷ The policy approaches used, reflecting a belief in the “trickle-down effect”, generally concentrated in increasing physician supply. When improvements in physician supply proved to be unsuccessful, policy makers turned to incentive approaches. These ranged from developing overall physician resource plans to providing financial incentives and specific training for rural practice.

Historical Policy Approaches to Improving the Supply of Rural Physicians

The supply of physicians was increased during the late 1960s and throughout the 1970s by opening more medical schools and encouraging immigration of foreign-trained physicians, also known as international medical graduates, or IMGs, in both Canada and the United States.¹⁰⁸ Later, as self-sufficiency in physicians became a policy goal, fewer IMGs were permitted to immigrate. Between 1986 and 1996, however, the percentage of physicians practising in Canada who graduated from international universities decreased only slightly, from 26.9% to 23.4%.

Canada continued to suffer a shortage of rural and northern physicians, however. In Ontario, for example, while overall physician-to-population numbers improved during the 1970s when medical school places increased, rural and northern areas still remained underserved in comparison with urban areas of the province.¹⁰⁹ Similarly, in the United States, an overall increase in physicians did not make a direct impact on rural physician supply. While there has been some diffusion of physicians into rural America, it is generally agreed that this has been insufficient to meet the physician supply requirements.¹¹⁰

Addressing Geographic Maldistribution

In 1969, both Ontario and Manitoba created programs to address geographic maldistribution.¹¹¹ British Columbia began its Northern Isolation Allowance (NIA) program in 1978,¹¹² and Quebec introduced differential fees (more for rural and remote practices, and less for urban practices) in 1982.¹¹³ New Brunswick and Prince Edward Island created Physician Resource Committees to oversee physician resources for their respective provinces in the late 1980s.¹¹⁴ Alberta began with a rural incentive program in the mid 1980s, which has changed significantly since its introduction¹¹⁵. Saskatchewan, Nova Scotia and Newfoundland and Labrador were later, introducing programs to encourage rural physician recruitment and retention in the early to mid 1990s.¹¹⁶

In establishing and modifying these programs, provinces have had to determine which areas are underserved and what level of underservice makes communities eligible for specific programs. Provinces have also had to consider their overall support for rural practice. Provincial governments have taken a variety of approaches to this question, adopting both centralized and community-driven methods of designating communities as underserved, as well as not defining specific areas as underserved at all, but focussing on supporting rural practice in general.

Provincial Methods of Designating Areas as Underserved

As previously mentioned, there are a variety of methods used across Canada for designating geographical areas as underserved by physicians and/or for determining eligibility for specific recruitment and retention programs. Some of these methods rely on overall provincial physician resource plans or projections, while others rely largely on more sophisticated determinations of need for physician services. Some are community-driven, while others set out varying eligibility criteria for specific recruitment/retention programs. Some programs delivered at the provincial level; others are delivered through local or regional health authorities. Several provinces use combinations of these approaches - for example, using a geographic definition of rural to establish eligibility for re-entry training, while designating specific communities as underserved is employed as a method to access alternate payment opportunities for physicians.

The array of approaches, as well as the combinations of them used within some provinces, makes comparison by jurisdiction difficult. The authors, therefore, present the information about how provinces determine or designate areas as underserved according to the type of approach used. The explanation of the categorization of communities as underserved and the methods for determining their eligibility for specific programs is accompanied by specific details regarding provincial/territorial uses and applications of that method.

These approaches can be categorized, as follows, under two broad conceptual umbrellas. The first two approaches listed below reflect an overall administrative strategy usually aimed at the entire province - the next three approaches determine community eligibility for specific programs through geographic, practice and/or facility-based characteristics. The approaches are as follows:

- provincial physician resource plans;
- eligibility for programs based on designation of community as underserved
- eligibility for programs based on geographic definition of rural;
- eligibility for programs based on practice characteristics; and
- eligibility based on facility characteristics.

Provincial Physician Resource Plans

Development of a provincial physician resource plan is an overall approach which attempts to address current imbalances in rural/urban physician distribution as well as plan for the future. Provincial physician resource plans not only focus on geographic maldistribution, however, but also on the mix of specialist-generalist physicians and other physician human resource issues. They may also try to address issues in medical education. In its development of a current picture of physician resources and an overall map for the future, these plans have the potential to strongly affect the geographic maldistribution of physicians. Some provinces have had overall physician resource plans for more than ten years - other provinces are just beginning to make them.

- The provinces which have physician resource plans are: British Columbia, Alberta, New Brunswick, Prince Edward Island, Newfoundland, Saskatchewan and Quebec.

British Columbia and Alberta both require their Regional Health Authorities (RHAs) to develop comprehensive physician resource plans which are sensitive to local

needs and conditions. British Columbia's requirement is very new, beginning in October 2000; an RHA must develop a physician resources plan in order to be able to offer financial incentives, particularly retention bonuses, under the Physician Recruitment and Retention Program for Rural and Small Urban Communities. The plan includes: provision for a full range of health care services, from primary and specialty care to long term and home care; grouping physicians to ensure viable practices and coverage; recognition of the needs of medical staff to have periods away from work for education, health and vacation; identification of services to be provided within the region and those to be referred out; identification of which services should be available at all times; ensuring availability of resources to meet identified needs and coordinated enhancement of recruitment. The RHA plans must be approved by the BC Ministry of Health. This new program is progressively replacing the NIA points system through which physicians located in specific communities were designated eligible for fee differential payments.

Alberta's Physician Resource Planning Committee contributes to overall physician resource planning through its database and projection model which have the purpose of assisting RHAs in their physician resource planning. The RHAs are responsible for physician resource planning within their jurisdictions both for rural physician supply and the specialist-generalist mix in all regions, including the cities. Alberta also directs several programs to all rural practitioners, using geographic, practice- and facility-based characteristics to define eligibility, in order to encourage recruitment and retention. They do not identify areas as underserved.

Most provinces have, or are working toward, a provincial physician human resources plan. The benefits of such a plan are that it can provide an overview of where and how many physicians are working and project future need. It can be centralized or devolved to Regional Health Authorities.

New Brunswick has had a physician resource plan in place since the late 1980s, which has been modified since that time and is currently being changed again. The Physician Resource Management Plan was released in 1992 which established provincial full-time equivalent targets for physician service. This was based on FTE methodology developed by the Federal-Provincial Working Group on Medical Care Statistical Indicators (modified to take into account certain specialties and non fee-for-service payment arrangements). The target was a physician-to-population ratio of 1:575. This methodology is currently being re-evaluated. The province will likely continue to use some sort of FTE methodology but will blend it with other indicators such as the type of community and other resources available. An important part of

New Brunswick's physician resource plan is the purchase of seats at medical schools in other provinces as they do not have their own medical school. New Brunswick also uses a geographic determinant to make physicians eligible for location grants and some programs are based on practice and facility characteristics.

Prince Edward Island has a Physician Resource Plan which has been in place since the late 1980s. This plan shows where physician vacancies arise. There are some new programs aimed at recruiting rural physicians, based on a geographic determinant, as well as urban physicians and specialists. Prince Edward Island also purchases seats at medical schools in other provinces.

Newfoundland and Labrador has a regionally-based Physician Resource Plan which is developed and overseen by the provincial Medical Services Branch. Optimum numbers of physicians in each region are decided on in consultation both with local health boards and with the Newfoundland and Labrador Medical Association (NLMA). There are many remote areas in Newfoundland where there is a need for a physician but insufficient volume for a fee-for-service physician. The result is that approximately 51% of rural physicians are salaried; overall, approximately 34% of Newfoundland physicians are salaried.¹¹⁷ It is part of the Medical Services Branch and local Health Authorities responsibility to determine whether a rural physician should be salaried or if there is enough volume for fee-for-service work. Newfoundland also has a series of return-of-service bursary programs, and the Medical Services Branch provides a list of underserved areas (determined within its Physician Resource Plan) in which bursary recipients may fulfill their return-of-service contracts.

In Saskatchewan, a Health Workforce Planning Team works within the Ministry of Health. The Team is engaged in policy development to determine supply needs and manage the skill mix and distribution of the health workforce. It also provides direction and support to districts and other employers in health workforce planning.¹¹⁸ Further, Saskatchewan has recently established a Health Human Resources Council with a five-year mandate to improve the working environment in order to recruit and retain health professionals.¹¹⁹

Quebec has had Regional Resource Plans in operation since 1987 to determine how many GPs and specialists should be settled in specific areas. In 1999, the Quebec Auditor-General found that most regional boards had not met their physician targets. One of the problems identified in Quebec's method of physician human resource planning was that key players use different measures, such as individual, hours or full-time equivalent, to plan and track physician resources.¹²⁰ Quebec also attaches retention bonuses and other financial incentives to work in specific areas the provinces considers underserved.

Ontario recently received the report of its commissioned Expert Panel on Health Professional Human Resources.¹²¹ The Expert Panel developed (in consultation with other bodies) a new Ontario Physician Workforce database and a modelling approach to determine future physician need. The Report recommends, among other things, the establishment of a Health Human Resources Advisory Panel to monitor and anticipate health needs and develop a capacity for integrated health human resource planning, beginning by focussing on physician resource planning. Ontario designates communities as underserved which confers eligibility for its collection of financial incentives known as the Underserved Areas Program (UAP); it also uses some practice and facility-based characteristics for limited programs.

Manitoba will be working on a Physician Resources Plan in the summer of 2001. Nova Scotia is currently devising a Physician Resources Plan as well.

To summarize, most provinces have or are working towards overall physician human resource plans.

An overall plan can provide a view of where and how many physicians are practising as well as project future need. An overall plan is a broad approach which could include provision of specific recruitment/retention measures (as in BC), identifying areas of underservice (as in Newfoundland) and determining need (as in New Brunswick). It can be largely devolved to RHAs (as in Alberta and Quebec), or controlled by the province alone or in consultation with groups such as the provincial medical association and local health boards or RHAs (as in Newfoundland).

A physician resource plan can be part of an overall health professional human resources plan, as in Saskatchewan, and as recommended by both Ontario's McKendry Report¹²² and its Expert Panel on Health Professional Human Resources.¹²³ Provinces with physician resource plans do not necessarily have more success in addressing geographical maldistribution of physicians - the availability of a coordinated approach, however, may assist evaluation of what programs work in the context of an overall approach to planning to meet current and future needs for physician resources.

Eligibility for Programs Based on Designation of a Community as Underserved

Under this approach, communities must be designated as underserved to be eligible for a variety of physician recruitment and retention programs. The designation

as underserved is usually based on several criteria, including factors such as demographic information, distance to major medical centres and a history of difficulty recruiting physicians. It can be initiated by either the provincial Ministry of Health or by communities themselves.

- The provinces which use a version of this approach are: Manitoba, Ontario, Quebec, Nova Scotia, Newfoundland and the Yukon Territory.

Additionally, British Columbia combines community designation with a points system that results in a differential fee being paid to physicians. Saskatchewan makes limited use of designated communities: International Medical Graduates (IMGs) applying to settle in Saskatchewan must be approved by Saskatchewan Health and practice in areas designated by them. Those ineligible for full licensure can get a conditional, provisional or locum licence all of which have return-of-service commitments to work in specific communities or districts.

In Manitoba, communities can request that the Ministry of Health designate them as underserved, which permits them either to hire a physician on an alternative payment arrangement or recruit an IMG. The Ministry, in making its designation, considers physician turnover as well as how many physicians have been in the community, and whether the population base has changed. Medical students can fulfill return-of-service bursaries through practice in underserved areas once they graduate. Manitoba also uses urban/rural/remote designations for differential fees; and program eligibility based on practice and facility characteristics to encourage recruitment and retention. Manitoba currently does not have an overall physician resource plan.

Each province uses a different method for designating underserved communities or regions. Designations typically consider a number of factors, including population size, distance to major medical centres and the community's history of problems with physician supply.

In Ontario, a community can be designated as underserved based on the following information: the number of physicians and specialists in a community or region, the physician-to-population ratios for the area, availability of facilities and housing for a physician, demographic information for the area, previous recruitment efforts, support of local health care professionals, a letter from the local District Health Council supporting designation, and the areas' other health care needs and resources.¹²⁴ The process of formal designation is initiated by the community itself, and designation makes it eligible for the Underserved Area Program (UAP) which is a collection of incentives and programs. The list of underserved areas is updated quarterly. Ontario

also determines numbers of physicians needed in UAP communities, and relies on some geographic and facility-based criteria for program eligibility. While it does not currently have an overall physician resource plan, it does have a physician workforce database and it keeps lists of FP/GP, specialist and rehabilitation personnel vacancies, which are also updated quarterly.

In Quebec, isolated areas are designated by the province, and salaried and fee-for-service physicians are then eligible for a number of financial incentives, such as long service bonuses, paid vacation and CME time and a certain number of flights out per year. These are offered in addition to the differential fees already paid to fee-for-service physicians.

In Nova Scotia, the Department of Health can initiate a review of a community. Community groups, family practitioner groups or the Community Health Board also can ask the Department to review its situation. A community is designated as underserved if it meets the following criteria: there is a history of recruitment and retention difficulties; there has been a vacancy unfilled for at least six months; all local players and the Provincial Recruitment Coordinator have repeatedly advertised without success; the medical needs of the population are otherwise unmet; and the community has less than three FTE family practitioners. Existing physicians' practices and income levels are also reviewed. Special consideration is given to areas with solo practitioners and communities with more than three FTE (full time equivalent) family physicians may be considered on an individual basis. Designation as underserved makes the community eligible to offer a doctor an incentive package which includes guaranteed minimum billings. Physicians are eligible for other incentives based on facility characteristics. Nova Scotia does not have an overall physician resource plan.

Designation of specific communities as underserved is used by several provinces. The benefit of this approach is that it is able to pinpoint specific areas of underservice and respond to local conditions. The drawbacks are that it may be a heavily bureaucratic procedure and it does not provide an overall view of conditions of under- and over-service within a jurisdiction.

Newfoundland and Labrador designate communities as underserved as part of their overall physician resource plan. This is done in consultation with local health boards and the Newfoundland and Labrador Medical Association. Newfoundland also uses some facility-based criteria for other programs.

British Columbia is in the midst of changing its method of designating communities as underserved; currently, physicians may choose to be remunerated under the old or the new approach. Under the older approach, communities and/or physicians applied to the Ministry for designation. Since 1978, The NIA program has awarded points to communities based on factors such as number of physicians in the community, number of specialists in the community, distance to major medical centre, remoteness from major population centre (including whether access is by road or ferry) and the size of the community. Each point received by a rural/remote community is equivalent to a percentage bonus on all fee items billed. The more isolated communities receive approximately 30% differential fee. This points system is, perhaps, the most elaborate used to establish fee schedules.

British Columbia is now requiring Regional Health Authorities (RHAs) to develop physician resource plans of their own, which must be approved by the Ministry. The new Physician Recruitment and Retention Program for Rural and Small Urban Communities will then be available to assist RHAs to fulfill their physician resource requirements. Approximately 95 communities are listed under the program, with specific GP and Specialist retention rates applicable to each community. The new program encompasses more communities than the NIA did, and the calculation of retention bonuses is based on a similar criteria to the NIA's points allocation. British Columbia also lists communities wherein short term rural locum provisions are available.

To summarize, the designation of communities as underserved, thus making them eligible for specific recruitment and retention programs, has immense variations in application across jurisdictions.

In some jurisdictions, such as Ontario and British Columbia, communities have been expected to take the initiative in apply for designation themselves. Other provinces, such as Nova Scotia, initiate the designation process at the provincial government level. BC's points system tries to combine differential fees with community designation. Manitoba offers community designation in addition to a straight forward, narrow differential fee structure, as well as geographic eligibility for certain programs.

Each type of community designation process has its advantages and disadvantages. Where designation is started by communities, the process allows for local initiatives; however, it assumes a certain level of cohesion, economic health and population base -- which some communities may not have. A government-initiated

approach may be more suitable where distances are shorter and populations are smaller and provincial governments have more awareness of local conditions.

The positive aspect of all types of community designation is that, unlike more generalized programs, such as fee differentials, they are able to pinpoint pockets of physician underservice that fall within an area that is generally well-served. The negative aspect of community designation, however, is that it is a heavily bureaucratic and complex to administer. Community designation is also unable to provide a comprehensive picture of physician resource levels throughout a province, and adjust for these differences. It may also encourage unproductive competition between communities.

Eligibility for Programs Based on Geographic Definition of Rural

Under this approach, programs aimed at recruiting and retaining rural physicians are offered to all physicians practising in rural areas (sometimes with other eligibility criteria), rather than only in areas that are designated as underserved. It is an approach that recognizes the fundamental differences between urban and rural practice and, where broadly applied, aims to support rural practice in general, rather than specific problem spots. There are some differences between programs, however, because “rural” is defined differently in each province.

- Provinces and territories that use this approach are Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick and the Yukon.

Alberta defines “rural” as communities in any Regional Health Authority (RHA) outside Calgary and Edmonton. Its Rural Physician Action Plan (RPAP) is a collection of coordinated programs to assist in recruitment and retention of rural physicians. RPAP's "primary responsibility"¹²⁵ is to provide support to rural communities and physicians outside of Calgary, Edmonton and the regional centres of Grande Prairie, Fort McMurray, Red Deer, Medicine Hat and Lethbridge. RPAP recognizes, however, that these regional centres play a significant role in supporting rural physicians, and thus considers them their secondary responsibility. Each RPAP program has its own eligibility criteria: those related to enrichment skills or new skills training require a return-of-service agreement and confirmation that the new skills are needed in the RHA; matching RHA signing bonuses requires a return-of-service commitment. Alberta also uses eligibility for programs based on practice and facility characteristics, and each RHA has a physician resource plan.

Saskatchewan defines any community of less than 10,000 as “rural”, thus making available various programs. There is the Rural Practice Establishment Grant program which currently provides \$18,000 for physicians willing to practice in a rural community for at least 18 months. There are also return-of-service bursaries aimed at medical students and residents, which require family practitioners to practice in a community of less than 10,000. Other programs, including internet CME and communication, are available to rural doctors. Saskatchewan also uses community designation as underserved in a limited way, along with eligibility for programs based on facility and practice characteristics.

In Manitoba, any community outside of Brandon or metropolitan Winnipeg is defined as being “rural”. In these locations, the RHAs offer a number of financial incentives for physicians to establish practices. Manitoba recently announced funding for an Office of Rural and Northern Health, which is expected to coordinate provision of re-entry training for rural physicians, rural CME programs and the rural locum service currently run by the Manitoba Medical Association. Sessional emergency room payments are offered to physicians working in rural communities. Manitoba also uses community designation as underserved, and eligibility for programs based on facility and practice characteristics.

In Ontario, the definition of “rural” varies, depending on the program. Assistance for CME costs, for example, provided through the Ontario Medical Association is based on geographic criteria. Full cost coverage for CME is available for physicians working in towns of less than 10,000 which is located more than 80 km from a centre of larger than 50,000 people.

The province of New Brunswick, which is adjusting its methods for determining physician need within its overall physician resource plan is being revamped, currently defines “rural” as any community more than 45 km from an urban centre. Physicians establishing practice in these areas are eligible for practice location grants. The province has a physician resource plan as well as some programs based on practice and facility characteristics.

The Yukon Territory, like the Northwest Territories and Nunavut, uses a population-based definition of “rural” to guide its physician resource allocations. The Yukon does not attempt to have physicians residing in its rural and remote communities. In these locations, services are provided through advanced practice nurses in nursing stations and travelling physicians. If a community grows in size to 800 or more people, the territorial government will, in consultation with the community, consider placing a salaried physician there.

To summarize, several provinces choose straightforward definitions of “rural” and provide a collection of financial incentives and programs aimed at supporting rural practice.

This seems most suitable for provinces where the delineation between rural and urban is fairly clear, such as the prairie provinces which have one or two large cities, some regional centres and many small farming communities. It eliminates the time-consuming and bureaucratic work of community applications or government-initiated reviews to designate communities as underserved. In some ways, this is similar to a differential fee structure which encourages rural practice by making it more lucrative, but allows more creativity in offering programs that are not just based on financial remuneration. In its generality, however, this approach may miss pockets of serious underservice.

The approach can be used in conjunction with others, as is done in Manitoba or it may be a cornerstone of rural physician support policies, as in Alberta. Many provinces combine geographic determinants of rurality along with practice or facility-based characteristics for specific programs.

Providing incentives and support programs on the basis of a geographic determinant of rurality allows rural practice to receive general support, avoiding bureaucratic methods of designating communities as underserved. But it may miss pockets of underservice which do not fit the definition of “rural” used in the jurisdiction.

Eligibility for Programs Based on Practice Characteristics

This approach considers the realities of rural practices and provides assistance to those working in communities with very few physicians, who may have little opportunity to leave for vacation, CME, or simply to have a weekend off call. This “reality” approach is often combined with straightforward geographic definitions of rural. It is used most often to provide short-term locum relief, directly addressing the workload and relief issues that affect rural physicians.

- Provinces which offer programs on this basis are British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and New Brunswick.

British Columbia guarantees physicians working in communities without a hospital and less than three physicians every other weekend off call.

Alberta offers a Rural Locum Program administered by the Alberta Medical Association on a practice characteristic basis. Rural physicians practising and residing in communities with five or fewer physicians are eligible for locum support for short-term periods (from five days to a maximum of four weeks), as well as weekend relief to ensure that “on-call” for participating physicians is no more than one weekend in four.

Programs based on practice characteristics are able to address the needs of solo practitioners and those working in small groups, particularly for relief issues. This approach is primarily used by the prairie provinces.

Saskatchewan also has a Rural Locum program run by its provincial medical association offering short-term and weekend locums for physicians in rural communities with less than four physicians. Their Rural Physician Enhancement Training grants are available for rural physicians practising in towns of less than 10,000 which can support 3 or more physicians in practice, with a return-of-service commitment.

In Manitoba, a short-term rural locum program is available for physicians practising in towns with three physicians or less.

Ontario has a Rural Locum service for small communities that is administered through the Ontario Medical Association. Restructured in 1998, the program offers two types of relief for rural physicians. Those practising under fee-for-service in communities with 7 physicians or less may apply for 21 days of locum coverage each calendar year. Those practising on a non fee-for-service basis, under community sponsored contracts, are eligible for enhanced locum coverage, up to 37 days per calendar year.

New Brunswick offers rural fee-for-service physicians working in communities with less than four physicians two weeks of paid vacation per year - however, physicians must supply (schedule and pay) their own locums.

The Northwest Territories pays physicians sessional fees for on-call work and emergency department shifts in Yellowknife. The fee paid increases, as do paid vacation weeks, if physicians agree to do certain numbers of shifts (i.e. an on-call roster of one-in-five is paid \$50 per shift, while an on-call roster of one-in-three is paid \$100 per shift plus two weeks paid vacation). This is based on the practice characteristics of specific physicians rather than community conditions.

To summarize, practice-based characteristics are used most often in determining eligibility requirements for rural locum programs.

New Brunswick's approach is unusual in its provision for vacation pay based on practice characteristics. Programs applied this way tend to be directed toward sole practitioners or those working in very small groups. Since it is not difficult to determine how many physicians work in a community, it seems possible that practice characteristics might be used as an eligibility requirement for a broader range of programs.

Eligibility for Programs Based on Facility Characteristics

Facility-based characteristics define eligibility for one of the most common programs found across Canadian jurisdictions: rural on-call and emergency department payments. Every province has some version of rural on-call and emergency department payments. Several provinces base their sessional ER payments on the size and volume of emergency department. On-call payments may be based on distances from emergency departments. Many provinces use emergency room contracts for hospitals in larger centres as well.

Facility-based characteristics are most often used by provinces to determine eligibility for sessional payments. These include payments for on-call and emergency-room coverage, provided by family practitioners and specialists.

- Provinces which rely on facility-based characteristics to determine eligibility for specific emergency room or on-call payments, and other programs, are: British Columbia, Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia and Newfoundland.

British Columbia's emergency room and on-call payment structure is complex, and combines practice and facility characteristics within NIA communities. Physicians have several payment options based on fee-for-service plus hourly premiums or a straight-forward hourly rate. These are categorized according to how many physicians practice in a community and whether the community has a hospital.

Eligibility for the rural on-call program in Alberta, paying an hourly on-call fee on top of fee-for-service, is facility-based. It is available at acute care hospitals without

contracted emergency room physicians, providing 24-hour emergency services and with less than 25,000 unscheduled visits per year.

Saskatchewan's rural emergency room payments are designed to provide comprehensive emergency care to rural communities. These cover two types of facilities: (a) larger hospitals in communities serving a large catchment area, with high volume emergency departments, breadth of services and with 3 or more physicians; (b) smaller acute care facilities which require 24 hour physician coverage, serve a smaller population and have low to medium volume emergency departments, a limited range of services and usually, less than 3 physicians.

Ontario offers on-call payments to family physicians providing emergency room service in rural hospitals. Two fee schedules are provided: one maintains 24-hour service at eligible rural hospitals, most of which receive less than 25,000 visits per year; the other supports emergency-room covering at facilities which handle up to 35,000 visits per year.

New Brunswick offers hourly on-call payments for general surgeons and anaesthetists in District General Hospitals. Nova Scotia's emergency room payments are based on facility characteristics such as the size and level of care offered at a specific hospital. GPs who provide on-call service more than 45 km from an emergency room earn an additional \$22,429.22 per year.

Differential fee structures for physicians providing services in rural hospitals are used in both Newfoundland and Quebec. These differential fee structures are linked to facilities location in remote/isolated areas. Consideration of issues specific to rural hospitals may open avenues for programs and incentives based on facility characteristics.

To summarize, eligibility criteria based on facility characteristics are most commonly used to determine emergency room and on-call sessional payments for physicians.

IV. Models: Types of Programs Used to Recruit and Retain Rural Physician

The provincial programs used to solve the problem of geographic maldistribution of physicians can be analysed within a framework of policy approaches. This typology relies on categories created by Barer, Wood and Schneider¹. The resulting breakdown is helpful because it permits information about which jurisdictions use what approaches to be presented in a compact table format. Thus, the extent to which certain models are used across the country can be seen at a glance. Summaries of program typologies, accompanied by jurisdiction/policy matrixes follow as stand alone profiles:

- regulatory/administrative;
- direct funding - practice related - differential fees;
- direct funding - practice related - financial;
- direct funding - practice related - alternate payments;
- direct funding - practice related - workload/relief issues;
- direct funding - education related;
- medical education/training - for medical students and residents;
- medical education for practising physicians - re-entry/CME;
- market-based initiatives;
- other initiatives, varying from technological innovation (telemedicine) to addressing family concerns (spousal employment, education for children).

¹ Barer, Wood and Schneider classified financial incentives such as location grants under the category as financial support for locum relief, as “direct funding - practice related”(1999: 12-14). We have separated them because location grants address the issue of insufficient compensation for a heavy workload, while financial support for locum relief provides respite from a heavy workload.

i) Regulatory/Administrative

These are regulatory or administrative measures developed to encourage physicians to locate in rural/underserved areas. They are codified in provincial or federal acts or regulations, implemented through governmental administrative guidelines or enacted by self-regulating bodies. They include such policies as: permitting IMGs to work on conditional licenses tied to practice location, team provision of primary health care in various practice settings and billing number restrictions.

The western provinces have commonly given IMGs conditional licenses to practice in underserved areas while they prepare for and write their licensure examinations and eventually become members of the College appropriate to their practice (i.e.: the Royal College of Family Physicians).

Team provision of primary care with other health care professionals under a Community Health Centre or other model, usually not fee-for-service arrangement, can be added as a program that could enhance health care availability (and possibly increasing overall physician availability) in rural/northern areas. Community Health Centres are often well-established and can be classified either as administrative/regulatory or direct funding - practice related. The authors classify it as administrative because it centres on a team approach and requires enabling legislation for extensions to some health care professionals' scopes of practice (ie: nurse practitioners and midwives) and some delegation of tasks normally performed by physicians.

A recent federal-provincial initiative may provide information which could be used to address rural health care issues, including rural physician recruitment and retention. Each project is funded by the federal government, through Health Canada's Health Transitions Fund for approximately three years and includes evaluation. Where the projects are established in rural areas, their eventual evaluations could provide provinces with reliable information about what role a broader primary care approach could play in rural physician recruitment and retention.

Some provinces have attempted to restrict billing numbers for new or out-of-province physicians, including B.C., New Brunswick and the Yukon Territory. British Columbia's policy, introduced in the mid-1990s, prevented new physicians from obtaining full reimbursement billing numbers, unless they worked in communities in the Northern and Isolated Allowance Program, until they had collected a certain number of points for years in practice. Proration for practising in urban centres went

as low as 50%. Two exceptions were made: for those in medical or residency training as of 1995, and for those acting as locums for ‘grandfathered’ physicians.

The policy was found to violate rights under B.C.’s Medicare Protection Act and the Canada Health Act, as well as mobility rights and equality rights under the Canadian Charter of Rights and Freedoms. The trial decision in Waldman v. British Columbia (Medical Services Branch) was upheld at the B.C. Court of Appeal in 1999¹²⁶. The Yukon withdrew its policy once the B.C. government lost its case. The New Brunswick policy was challenged in 1994, but has moved slowly through the courts¹²⁷. Given the extensive legal wrangling, it seems unlikely that provinces will attempt restrictions on billing numbers such as were planned in B.C.

i) Regulatory/Administrative

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
billing numbers													
medical licence tied to ROS													
IMGs with restrictions on practice location	•	•	•	•	•					•			
legislative expansion of nurse practitioner roles			•		•					•			
team provision of primary care with other health care professionals		•	•	•	•	•				•			
rural Primary Care Demonstration projects (excludes Health Transitions Fund)	•							•					

ii) Direct Funding - Practice Related - Differential Fees.

Differential fees are attached to fee-for-service work and are often used as a financial incentive for rural work or work in underserved areas, but may also be used as a disincentive for urban work or work in overserved areas. They have been used in Quebec as both encouragement for rural practice and discouragement for urban practice since 1982. Other than in Quebec, they are used much less commonly across Canadian jurisdictions than other practice-related financial incentives.

ii) Direct Funding - Practice Related - Differential Fees

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
differential fees increase for practice in underserved area	• *			•		•				•			
differential fees proration for practice in over served area					• '96 - '99	•							

* As part of Northern and Isolation Allowance now being phased out

iii) Direct Funding - Practice Related - Financial

These include most direct financial incentives for location decisions, offered in addition to standard fee-for-service arrangements. Barer, Wood and Schneider comment that this is the approach most commonly used by the provinces, especially for northern areas.¹²⁸ This is a straightforward approach which easily accompanies standard fee-for-service methods of physician payment. Financial rewards can be directly connected to goals. For recruiting physicians, practice set-up grants may be available; for retention, long-service bonuses may be necessary. The most common programs are grants for return-of-service, long service bonuses and emergency on-call payments; the least common are travel allowances and on-call payments for specialists.

iii) Direct Funding - Practice Related - Financial

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
subsidized practice set up/ interest-free/forgivable loans			• Ros	• Ros			• Ros			•			
grants/bonus for return of service	•	•	•		•		•	•	•		• **		• **
long-service bonus	•		•			•		•		•			•
travel allowances for rural practice			•										
on call payments for specialists	•	•					•						
on call payments for emergency coverage	•	•	•	•	•			•		•			•
moving expenses				•		•		•	•		• *		•

* Yukon, moving expenses (prorated for length of stay), must be repaid if contract is not fulfilled

** vacation time increases with length of service

iv) Direct Funding - Practice Related - Alternative Payments

Most provinces have alternative payment programs for physicians - salaried positions being quite common. In Ontario and Quebec, these are usually found in community health clinics where primary health care is provided by physicians and other health care professionals. Guaranteed minimum billings are used in Nova Scotia - this method is similar to a salary arrangement and is offered where patient volume is low. The method still relies on fee-for-service to meet the basic “salary”, but provide extra payment for extra work.

In Newfoundland and Labrador, salaried positions are offered to physicians in small, isolated communities where there is insufficient patient volume for a fee-for-

service physician. Thirty percent of all Newfoundland physicians are salaried - the highest percentage in any province. This also happens in parts of the Yukon and Northwest Territories. In the N.W.T., almost all doctors may soon be salaried, including those practising in Yellowknife, because Salaried positions are believed to have the strongest possibility of stabilizing the physician workforce. Salaries increase with the amount of on-call time and specialized services (obstetrics, anaesthesia) physicians are able to provide.

According to the CMA Physician Resource Questionnaire (1999) 8.5% of respondents were salaried, 23% received blended payments and 62.3% were fee-for-service physicians. The same survey asked about payment preference: 20.9% stated they would prefer to be salaried and 35.4% would prefer to receive blended payments, while only 33% preferred fee-for-service arrangements.¹²⁹

iv) Direct Funding - Practice Related - Alternate Payments

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
salaried/ alternate payment	•	•	•	•	•	•	•			•	•	•	•
subsidized/ guaranteed minimum income					•			•					
group practice minimum funding					•								

v) Direct Funding - Practice Related - Workload/Relief Issues

These are closely related to financial incentives offered in Table ii), but are aimed at reducing heavy workloads, by reducing on-call time and easing the difficulty of arranging vacation breaks, rather than increasing income for the work done. As can be seen from the following table, funding for workload/relief issues has not been as broadly and commonly provided as direct financial incentives for rural physician recruitment and retention. Most provinces provide some type of locum service - the

effectiveness of the program and availability of locum physicians varies according to how much time for locum relief is offered, as well as to the conditions of employment and remuneration for serving as locums. While salaried physicians generally have provisions for maternity leave in their contracts, it is rarer to offer maternity leave for fee-for-service physicians.

iv) Direct Funding - Practice Related - Workload/Relief Issues

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
program/ funding for locum relief	•	•	•	•	•	•		• K	•	• **	•		
maternity benefits for FFS physicians					•			•					
paid vacation time						• flt	• sol			• **	•		• **
nurses take first call											•		

K: in Nova Scotia, only for physicians in incentive package program

flt: in Quebec, a certain number of flights out of remote communities are provided per year

sol: in NB, fee-for-service physicians are provided with paid vacation time but they must supply their own locums

** for salaried physicians only in Newfoundland and the Northwest Territories

vi) Direct Funding - Education Related

These include financial incentives, such as free tuition or bursaries, offered to students for a return-of-service commitment to work in an underserved area, as well as funding to encourage students to take advantage of rural summer placements or rural electives. The first is a direct financial incentive while the second removes barriers to rural practice experience, giving students an opportunity to develop an affinity¹³⁰ for rural practice. Most provinces also provide re-entry funding for development of specialist skills or upgrading of skills for rural physicians - these are often, but not always tied to return-of-service commitments. Funding for tuition/re-entry training return-of-service is offered by five provinces, and funding for summer placements is offered by six provinces and one territory.

The effectiveness of bursaries for students in exchange for return-of-service varies. In Alberta, they were found ineffective and discontinued. In Newfoundland, they are limited to 4th year students and residents because it was observed that the earlier in their schooling the students received the bursaries, the less likely they were to fulfill the return-of-service commitment. Saskatchewan, which offers the highest dollar-value bursary, has found that return-of-service bursaries are effective. The Ontario program, introduced in July 2000, offers tuition reimbursement to undergraduates and family practice residents.

vi) Direct Funding - Education Related

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
undergrad/ post-grad. bursaries			• Ros	• Ros	• Ros	• Ros			• Ros	• Ros	• Ros		
specialist bursaries									• Ros	• Ros			
re-entry/spec. skills develop.	•	• Ros	• Ros	• Ros	• Ros		•		• Ros				
student placements/ residencies	•	•			•	•		•	•	•			•
support/ honoraria CME	•	• Ros	• Ros	• Ros	•	•		•	•	• **	•		•
community bursaries				•									

** For salaried physicians only

vii) Medical Education and Training for Medical Students and Residents

A wide spectrum of policies focus on the early years of the “physician life cycle”¹³¹ which include building on an existing affinity (recruiting rural high school students) and developing an affinity to rural practice through exposure to it. Where opportunities are offered for re-entry programs or special skills development for rural

physicians, the focus tends to be on latter stages of the physician life cycle. Most medical schools offer rural training and exposure for medical students and residents. Some schools make rural rotations compulsory, and some offer rural family practice as a specialty. An emerging trend seems to be the increasing of exposure to rural practice earlier in a medical student's education.

vii) Medical Education and Training - for Medical Students and Residents

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
rural training under/post graduates	•	•	•	•	•	•		•		•			
rural placements/ teaching units / residency	•	•	•	•	•	•	• *						
underg. rural recruitment/ aboriginal		•		•						•			
graduate recruitment/ residency													
student summer employment	•		•	•	•	•	•	•					
stipends 4th year students **	•	•	•	•			•	•	•	•			

* New Brunswick does not have a medical school but does have a family medicine residency program

** this information was provided by Donna Magnusson of Saskatchewan Health

Note: New Brunswick, Prince Edward Island, the Yukon, Nunavut and the Northwest Territories do not have medical schools. Several purchase seats, at Memorial University (NB, PEI), Dalhousie University (NB, PEI) and Université Sherbrooke (PEI). None of the Territories purchase medical seats.

viii) Medical Training for Physicians - Re-Entry/CME

These are opportunities for CME and re-entry access rather than direct funding for them. Most provinces offer re-entry access for rural physicians to develop specialty skills by returning to medical school - this allows rural doctors to change their

professional specialization. A few provinces are using new technology to provide CME programs. Use of such programs may contribute to a reduction in professional isolation for rural physicians working in more isolated or northern areas.

viii) Medical Education for Practising Physicians - Re-Entry/CME

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
CME through new technology		•	•		•			•					
reentry access to residency/ new specialty skills development	•	•	•	•	•		•	•	•				

ix) Market-Based Initiatives

This approach reflects a belief that physician maldistribution can be corrected through a trickle-down effect; as urban centres get crowded, rural opportunities look better. These initiatives rely on the idea that physicians will go where there are opportunities, and that communities should advertise their assets to physicians in order to encourage physicians to locate in a given community. These are not as widely used as direct financial incentives, but are often combined with them.

While there is room for creativity in what communities can offer physicians (one Newfoundland community included regular snow-clearing of the physician's residence in its recruitment package), it can result in competition among communities on a playing field that may be unfair in terms of the recreational opportunities, beauty of natural surroundings and the economic health of the community.

ix) Market-Based Initiatives

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
recruitment fairs/tours		•			•								
locally raised funds to support physician i.e.: housing, clinic, other in-kind services		•		•	•					•			
practice opportunities database/website	•	•	•										

x) Other Initiatives

Provinces can be very creative in their efforts to address the geographic maldistribution of physicians. For Barer, Wood and Schneider, the most interesting are enhanced use of communications technologies to provide access to professional support and specialist consultation.¹³² Alberta's RPAP recognized that rural communities are supporting doctors' families as well as doctors, and has created a spousal support network. Manitoba is focussing on retention of their recently-recruited cohort of IMGs to ensure that they can fit into a Canadian style of doctor-patient communication. Ontario has developed Physician Outreach Programs, Northern Health Travel Grant and Teletriage Services, to improve patient access to specialist care.

Many provinces now have a physician recruiter who ensures that physicians know what practice opportunities and incentives for rural practice exist, and works with communities to help them in their recruitment efforts. Ontario has community development officers in six different communities who fulfill a similar role in specific regions.

x) Other Initiatives

Policy Approaches	BC	AB	SK	MB	ON	PQ	NB	NS	PEI	NF	YK	NU	N WT
prov. phys. recruiter					• +		•	•	•	•			
spousal supp. network		•											
support for child's educ.		•											
teletriage service					•		•						
remote diagnostic technology	•	•	•		•	•	•	•		•	•		•
internet server for rural phys.		•	•					•					
IMG/mentor /language/ LMCC prep		•		•						•			
pilot projects retention		•											

+ In Ontario, there is no provincial physician recruiter, but six communities have recruitment officers.

V. Detailed Descriptions of Provincial Programs By Program Type

- This section describes in detail the programs available in each province according to program type. This way, variations between the provinces within a specific type of approach can be seen and compared.

Sources for this section are extensive, and include government documents, agreements with medical associations, government recruitment advertising, personal communication and information collected by interest groups. In order to make references clear, sources are identified provincially (where appropriate) and numerically. A list of resources from each province with assigned numbers appears at the end of the document, and references appear within this section according to that number (for example, "SK-3" means refer to Saskatchewan listings, document number "3"). In some places, where no more recent information was available, the authors have relied on Barer, Wood and Schneider and other academic sources - these citations are included as endnotes.

i) Regulatory/Administrative Approaches

These are regulatory or administrative measures to encourage physicians to locate in rural/underserved areas. They are codified in provincial acts or regulations and implemented through administrative guidelines or enacted by self-regulating bodies. They are usually province-wide and involve regulatory structures of health care professionals and licensing procedures. Some methods herein require legislative change. The authors have also included physician human resource planning in this section because of its province-wide, administrative nature.

Billing Numbers

Most provinces made some attempt to restrict billing numbers for physicians who wished to set up practice in "oversupplied" areas through the early 1980s to early

1990s. British Columbia's billing numbers policy was found unconstitutional in 1997. In some other provinces lawsuits were initiated (although not necessarily actively pursued), and most policies restricting billing numbers were ultimately abandoned.¹³³ It seems unlikely that this approach will be attempted again without major changes or agreements with provincial medical associations.

International Medical Graduates with Restrictions on Practice Location

- International Medical Graduates (IMGs) may be granted conditional medical licenses with restrictions on practice locations in the following provinces: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Newfoundland.

In British Columbia, Alberta, Saskatchewan, Manitoba and Newfoundland (B-14 and BC-15; AB-6; S -5¹³⁴, Manitoba¹³⁵) the procedures are all very similar. IMGs may apply to work in an underserved location. Once the job offer or sponsorship has been arranged, the provincial licensing body (the College of Physicians and Surgeons) assesses the IMG, and if he or she is qualified, he or she is granted a conditional or temporary license to work in a specific underserved community. While they are practising on their conditional licenses IMGs are expected to prepare for licensure exams and then for certification in their speciality (most often Family Medicine) through practice experience. Manitoba has a new three-day assessment program to identify IMGs who may be eligible for immediate registration and provides up to one year of individualized training to help IMGs meet licensing requirements (MB-9). In Newfoundland, IMGs who have been out of practice for more than two years, and therefore, would not be eligible for provisional licensure, may be academically assessed and provided with up to six months' of extra training in order to meet licensing requirements.¹³⁶

Ontario announced changes to its IMG licensure program in June, 2000. IMGs qualified in their own country and recently in active practice may apply for up to six months of academic assessment of their skills -- whether they are landed immigrants/Canadian citizens or not. Those living outside Canada must have been identified by hospitals and/or communities as fulfilling a specific need. Those who meet the relevant specialty requirements will be able to take certification exams immediately. Those who need some additional training can receive up to two years' of postgraduate study before writing their exams (ON-11 and ON-12).

Legislative Expansion of Nurse Practitioner Roles

- Several provinces, including Alberta, Ontario and Newfoundland, have changed their legislation so that some services, which used to be the exclusive domain of physicians, can be provided by nurse practitioners and midwives.

Ontario has reintroduced the nurse practitioner role and now has the capability to train 75 nurse practitioners per year.¹³⁷ Alberta has expanded nurses' roles in a limited way, allowing those practising in six northern communities to prescribe drugs (SRPC-5). Newfoundland has allotted funding to hire new nurse practitioners which have an expanded scope of practice (NF-6). Several provinces have licensed midwives as well, such as B.C., Alberta (a licensed, but not an insured, service), Manitoba, Ontario, Quebec and Newfoundland. These changes could make a significant difference in rural doctors' workloads.

Team Provision of Primary Care

- Team provision of primary care can be found in Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland.

Team provision of primary care is established in Ontario and Quebec, respectively through Community Health Centres (CHCs) and Centre Locaux des Services Communautaires (CLSCs) in rural and urban areas (PQ-4). Manitoba also has similar, urban-based clinics including one located in the small northern city of Thompson. In many cases, physicians working in primary care clinics are on alternative payment plans. Alberta, (AB-5) Saskatchewan, (SK-5) and Newfoundland (NF-7) have primary care clinics (some are pilots) located in rural areas. These centres employ physicians as well as other health professionals such as dietitians, nurse practitioners (primary care nurses in Saskatchewan), chiropractors and midwives. This means that physicians can serve patients, with nurse practitioners and others meeting specific client needs that are within their scopes of practice. This extends the physicians' ability to serve clients who need their specific expertise. The goal is to provide primary care and focus on preventive health care such as well-baby and well-adult check-ups.

Rural Primary Care Demonstration Projects

Rural Primary Care Demonstration Projects are being piloted in several provinces. Information about such projects is not easy to obtain: to the best of the authors' knowledge, such projects are or were functioning in British Columbia and Nova Scotia. They operate in the same manner as the clinics discussed above, and according to Canada Health's Health Transitions Fund, include population-based funding. Evaluation plans are required for all projects. Once evaluations of these projects become available, they may provide insight as to whether this model of care eases the problems of physician shortages in rural areas.

ii) Direct Funding - Practice Related - Differential Fees

Differential fee structures can be applied three ways: fees for services can be augmented by a certain percentage for physician working in areas of underservice or where it is difficult to recruit/retain physicians; also, they can be prorated for practice in areas which are considered "oversupplied", or both. Using differential fees usually involves the division of an entire jurisdiction into areas to which the fee differentials, and the standard fees, apply.

- Standard differential fees are used in Manitoba, Ontario and Quebec. B.C. and Newfoundland use more novel approaches to differential fees.

Manitoba recognizes ongoing rural underservice through paying differential fees for practice in rural areas. Physicians are paid 2.5% on top of billings for work in Brandon, 5% for work in the rural south and 10% for work north of the 53rd parallel (MB-3). In Ontario, between 1996 and 1999, fees were prorated for new physicians setting up practice in oversupplied areas. New physicians received 70% of full fees the first year, 75% for the second year, and 80% for the third year of practice, after which they receive full fees. These rates are accompanied by income ceilings. Ontario's differential fees may have had some effect: an evaluation of the program indicated that only 30% of the new billing numbers assigned during the agreement were to physicians practising in oversupplied areas.¹³⁸

Quebec has been using differential fees - on an augmented and prorated basis - since 1982.¹³⁹ Areas are categorized by the Ministry of Health as "university", "intermediate", "remote" and "isolated", with the difference between remote and isolated based on difficulty of access. There is also some fee differential applied to encourage specific hospital work. Fees are reduced to 70% for new physicians practising near Montreal. This can be increased to 100% if a physician continues

practice there for up to 10 years, if a physician does designated community work (such as working one shift/week at the community health centre, working in an emergency department or a home for the aged, or working as a rural locum), if the practice is on the outskirts of a designated urban area, or if the physician has already worked rurally.¹⁴⁰ Physicians working rurally are paid 115%. Beginning in 2000, this increased to 125% after four years of practice and 130% after six years of practice for hospital and institutional work. For office work, payment increases to 120% after 4 years. In the most isolated areas fees are increased to 125% after the first year of work and increased to 130% in the fourth year. For specialists in the remote regions, fees are increased to 140% after three years.

Differential fees have had some success in Quebec, where recent data show that the numbers of GPs establishing practices in remote or isolated regions increased from 11.8% between 1978 and 1981 to 20.3% between 1982 and 1994, and to 23.3% between 1995 and 1997.¹⁴¹

British Columbia's Northern and Isolation Allowance (NIA) program, which is still in use although being phased out, assigns communities points towards an augmented fee differential (BC-2). This program, explained in the next section, Direct Funding - Practice Related - Financial, assigns specific communities points toward an augmented differential fee. The fee structure considers medical isolation, size of community, distance and mode of transportation to major centres, and cost-of-living factors.

Newfoundland offers a very focused 20% augmentation of fees for certain procedures conducted by GPs in rural hospitals. Procedures covered under augmentation include: admitting; hospital visits; call backs; daily rounds; diagnostic and therapeutic procedures; minor surgery; obstetrical and surgical dental fees for GP anaesthetists (NF-3).

iii) Direct Funding - Practice Related - Financial

- This approach is the most common across the provinces. There is significant variation, however, in the amounts and structures of financial incentives offered, which include grants and bonuses for return-of-service, subsidies for practice establishment, long-service bonuses, travel allowances, sessional payments, and moving expenses.

Grants and Bonuses for Return-of-Service

The most common program across the provinces is the use of grants and bonuses in exchange for return-of-service in underserved areas.

- Provinces and territories using these programs are British Columbia, Alberta, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, the Yukon and the Northwest Territories.

In British Columbia, this is part of their new Physician Recruitment and Retention Program for Rural and Small Urban Communities. New doctors recruited to an underserved areas as part of an overall RHA physician supply plan will receive a \$10,000 signing bonus tied to a return-of-service commitment for one year provided that they are not relocating from another underserved community. If the year is not completed, physicians must repay the bonus in full (BC-1). Alberta provides matching funds through its Rural Physician Action Plan for signing bonuses offered by a rural RHA up to \$10,000. This is available to new, Alberta-trained physicians who agree to a minimum of one year return-of-service and make this agreement in the year of their residency graduation. Practice must begin within one year (AB-1 “Recruitment Expenses Reimbursement Program”).

Under its Underserved Area Program (UAP), Ontario offers grants of \$15,000 paid over four years, for family physicians establishing practices in underserved northern communities and \$10,000 over four years for physicians moving to designated southern communities (ON-5). Ontario also has a program to reimburse doctors for expenses related to recruitment interviews, which includes travel and accommodation for a physician’s spouse as well (ON-9).

Family physicians who agree to locate rurally in New Brunswick receive a \$25,000 location grant in exchange for a 5 year return-of-service commitment. Specialists receive \$40,000. If they do not stay for 5 years, the grant is prorated and must be repaid (NB-1). Prince Edward Island offers a \$10,000 grant for two years of return-of-service which can be renewed for \$5,000 per year for up to five years of service. Physicians locating in a rural area receive an extra \$5,000, as do physicians replacing physicians over 65 years old (PEI-1). One Nova Scotia program, the “New Medical Graduates - Debt Assistance Plan” offers new Atlantic medical graduates, or Nova Scotia residents who attended medical school elsewhere in Canada, \$15,000 per year for the first three years of practice to establish practices in communities designated as underserved (NS-1).

Both Nova Scotia and the Northwest Territories offer a signing bonus linked to length of service commitments. In Nova Scotia signing bonuses are used in conjunction

with Incentive Contracts for family physicians locating in areas designated as underserved. Physicians agreeing to the contract receive \$10,000 per year for 5 years at the end of each completed year (NS-1). In the Northwest Territories, physicians accepting their new general contracts receive signing bonuses according to the length of their contracts: \$5,000 for a one year contract, \$12,000 for two years and \$20,000 for five years (NWT-2).

Subsidized Practice Set-Up/Interest-Free Loans

- Subsidies to assist with practice set-up are offered by Saskatchewan and Manitoba. Newfoundland offers interest-free loans.

Saskatchewan calls its program the Rural Practice Establishment Grant. It is available to general practitioners or family physicians who are not currently practising in Saskatchewan and have full registration under the Medical Practice Act on the day they begin practice in Saskatchewan. The grant is worth \$18,000 (paid in three installments) and grantees must agree to eighteen months of return-of-service in a community of less than 10,000 people which can support two or more physicians in practice. If the return-of-service commitment is not fulfilled, then the grant must be repaid (SK-1 and -2).

In Manitoba, financial incentives are offered through the RHAs. Interest-free loans of up to \$10,000 are available for practice set-up, and fee-for-service doctors are provided with two months free rent for clinic space. In addition, community foundations often provide forgivable loans for a return-of-service commitment of three to five years (MB-6). A new program offered by the Manitoba government provides up to \$15,000 for practice set-up in an underserved area of the province. This is available only to physicians who did not receive financial assistance in exchange for return-of-service as students (MB-7).

Local Newfoundland health boards may offer fee-for-service specialists interest-free start up advances; a one-month proration of their approximate annual earnings - repayment begins after 14 weeks of practice and specialists are allowed twenty weeks in which to repay it (NF-3).

Long-Service Bonuses

- Long service bonuses are offered in British Columbia, Saskatchewan, Ontario, Quebec, and Newfoundland.

In British Columbia, retention bonuses are targeted to the precise community of practice, and range from \$10,000 to \$60,000 annually. They are pro-rated if the physician works less than full-time. Saskatchewan made a commitment to fund long service retention bonuses to rural physicians in its agreement with the Saskatchewan Medical Association in March, 2001 (SK-6). No details are available yet.

Ontario announced its Northern Physicians Retention Initiative on July 11, 2001. NPRI is a three-year program for physicians who have spent four years practising in the north. From years four to seven of their practice, they received \$7,000 yearly. Physicians may become eligible for the bonus if they complete four years of practice during the life of program and will receive payment for the years they serve within the program's lifetime (ON-13).

Quebec provides long service bonuses for physicians residing and practising in rural and isolated regions. After ten months in practice, a physician begins to receive annual bonuses ranging from \$4,658 to \$9,018 (\$6,659 to \$15,898 if the physician has dependants), determined by the degree of isolation. These are pro-rated for physicians working less than full-time (PQ-2 -Sec. II, Art. 1.2). Newfoundland began a long service bonus program for its salaried physicians in April, 2000, with the first payments issued April, 2001, as part of its agreement with the Newfoundland and Labrador Medical Association. Bonuses range from \$2500 to \$9500 for the first year, depending on degree of remoteness, and increase each year for three years to a maximum of \$19,000 for the most remote practitioners. After that, the physician receives the third year amount annually (NF-3).

Travel Allowances for Rural Practices

- Travel allowances for rural practices are offered in Saskatchewan.

Saskatchewan's Rural Travel Program is meant to foster cooperation between rural physicians. Physicians are reimbursed for their travel expenses when covering practice or providing surgical assists, anaesthesia or a consultation for a physician in a neighbouring community (SK-1 "Rural Travel Program").

Sessional Payments for On-Call and Emergency Coverage for GPs

- Sessional payments for on-call and emergency coverage for rural family physicians is another program common across the provinces. Such payments are offered in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, New Brunswick, Newfoundland and the Northwest Territories.

Details of these programs vary according to province and location within a province, but there are two general models. The first is an hourly payment for on-call and emergency-room shifts, without any fee-for-service payment. This model is used in Newfoundland, Nova Scotia, Manitoba and Ontario. The second model is an hourly on-call and/or emergency-room sessional fee paid in addition to fee-for-service payments. This model is used in Alberta. British Columbia and Saskatchewan offer programs which combine the two models. Quebec uses its differential fee structure to reward rural hospital emergency work.

British Columbia combines the two models in its Emergency Medical Coverage Program (EMCP), which offers rural and northern physicians several options for payment (all the physicians sharing on-call responsibilities must agree to the same method of remuneration). The EMCP was available in communities eligible for the Northern and Isolation Allowance Program, and continues to be available to those communities using the new Physician Recruitment and Retention Program for Rural and Small Urban Communities. The payment options are based on the number of physicians practising in a community and whether or not the community has a hospital. In a community with ten or more physicians and a hospital, payment options range from fee-for-service with a small on-call premium (\$10/hr) to an hourly payment with no fee-for-service claims (\$60/hr). There is also a blended option wherein physicians receive \$35/hour as well as billing for fee-for-service. Physicians, however, will receive only half of the amount, with the remainder going to the EMCP program. There is also a guaranteed minimum billings option. Physicians in communities with three or fewer physicians and no hospital are guaranteed a minimum of one weekend in two off call. A solo physician receives \$30,000 for on-call and locum coverage. Where there are two or three physicians, \$60,000 is provided for on call and locum coverage. GP Specialists (ie: GP anaesthetists) also receive an on-call payment of \$5/hr when they are on-call in that capacity (BC-3: 3-4).

In Alberta, on-call fees are offered in addition to fee-for-service payments. In 1998, the additional payment was \$17/hour which increased to \$21/hour as of April 1, 2000. This is available where facilities provide 24-hour annual emergency coverage and receive less than 25,000 emergency visits per year. Emergency on-call funding will be made available where there is no hospital and where the on-call service is held out to the public as a 24-hour emergency service. The relevant RHA must recognize the service as part of its core service delivery plan (AB-3). The Alberta government and the Alberta Medical Association recently agreed to maintain funding of the rural on-call program (AB-4, Art. 6).

Saskatchewan uses a combination of the two models based on the size of and hospital resources in a rural community. The program was established in December

1997 and is aimed at acute care facilities that provide 24-hour emergency room access, but do not employ full-time emergency physicians. In larger communities, physicians receive \$10/hr weeknights and \$25/hr weekends for being on call in addition to fee-for-service. In smaller communities with limited acute care services, physicians receive a quarterly stipend of \$5000 for on-call services (SK-1).

In rural Manitoba contracts have been negotiated with physicians to serve in emergency rooms since 1997 (MB-1). Fee-for-service physicians providing coverage for hospital emergency rooms with less than 5,000 visits are paid \$500/day for 24-hour weekday coverage and \$750/day for weekend coverage; salaried physicians working in the same volume emergency rooms receive \$220/day on weekdays and \$330/day weekends. For hospitals with 5,000 to 10,000 emergency visits, the rates are \$600/weekday and \$900/weekend days. Physicians working in larger emergency rooms (such as Selkirk, Flin Flon) receive \$70/hr (SRPC-3).

Rural Ontario physicians are paid \$70/hr. to maintain 24-hour service at eligible rural hospitals, most of which receive less than 25,000 visits per year (ON-15, Art. 31). Several communities now operate under the ER AFA which is a volume-based scale paying physicians between \$100 and \$150/hour for communities up to 35,000 visits per year (SRPC-1). In Quebec, physicians providing emergency services in a rural hospital receive a differential fee of 125%, like other institutionally-based services, while office work receives a differential fee of 115% (SRPC-11).

Nova Scotia has a Rural Stabilization Fund for emergency rooms. Most rural hospitals have physicians on-call at a rate of \$55.99/hour for 12 hours maximum daily. Four facilities, in Windsor, Middleton, Glace Bay and North Sydney are funded at \$73.76/hour. General practitioners in small communities more than 45 km from a funded emergency room receive \$22,449.42/year to be on-call for patients (NS-1).

In May, 1999 Newfoundland began to pay all physicians at all emergency rooms \$88/hour (NF-1).

The Northwest Territories offers its salaried physicians in Yellowknife extra payments for on-call and emergency room shifts. For an on-call schedule of one in five, a physician is paid \$50/shift - for a schedule of one in three, a physician is paid \$100/shift plus two paid weeks off. Physicians are paid their daily rate plus \$550 for the first four emergency room shifts/month and daily rate plus \$880 for five or more emergency room shifts/month (NWT-2).

Sessional Payments for On-Call and Emergency Coverage - Specialists

- On-call and Emergency Sessional Payments for Rural Specialists are available in British Columbia and New Brunswick and are being designed and implemented in Alberta.

British Columbia's Emergency Medical Coverage Program (EMCP) pays GP Specialists (for example, a GP Anaesthetist) \$5/hour to be on-call in that capacity (BC-4). Emergency room sessional payments are limited to general surgeons and anaesthetists in New Brunswick (NB-1). In Alberta, the Alberta Medical Association and Alberta Health and Wellness recently agreed as part of their funding contract to design an on-call payment plan for specialists in both urban and rural areas (AB-4, Art. 16). Additionally, Ontario provides a Specialist Retention Initiative to rural and northern specialists - they are exempt from OHIP maximum billing thresholds (ON-5).

Moving Expenses

- Moving Expenses are offered in fewer provinces. Manitoba, Quebec, Nova Scotia, Prince Edward Island, the Yukon Territory and the Northwest Territories provide moving expenses for physicians locating in rural and remote areas.

In Manitoba, most rural RHAs cover moving expenses and provide airfare for IMGs (primarily South Africans). These are provided as part of a return-of-service agreement (MB-6).

Quebec's RHAs provide moving expenses for physicians locating in rural and remote areas. The physician must provide the RHA with two estimates. There are weight limits for each family member; a car and furniture may be transported to the practice location; and if the physician's car is used for the move, expenses are refunded (PQ-2-Sec. II, Art.3).

Moving expenses of up to \$5,000 are provided in Nova Scotia's Incentive Contracts for Underserved Areas program (NS-1). Prince Edward Island provides a moving expenses allowance which does not require receipts in return for one year of service. The amount is dependent on where the physician is coming from and is available to IMGs as well as Canadian physicians (PEI-1).

In the Yukon Territory, moving expenses are included with three-year return-of-service contract. If the physician does not complete the contract, then the expenses are pro-rated and must be repaid (YK-3). In the Northwest Territories initial moving

expenses are refunded from the physicians' point of hire by the Yellowknife Board. Additionally, ultimate removal expenses to Edmonton, Alberta, are covered by the Yellowknife Board depending on the amount of time a physician has practised in NWT: if less than three years, no assistance is provided; between 3 and 4.5 years, 50% of approved removal costs are covered; between 4.5 and 6 years, 75% of costs are covered; and more than 6 years, 100% of costs are covered (NWT-2).

iv) Direct Funding - Practice Related - Alternative Payments

Most provinces have some alternative funding arrangements with physicians, particularly in terms of salaries. While fee-for-service continues the dominant model, it is recognized that salaried positions are well-adapted to rural areas where there is need for a physician, but perhaps not enough patient volume to allow the physician to earn an income similar to that earned through fee-for-service payments in more densely populated areas. Some provinces are experimenting with pilot programs involving payment for physicians through a virtual roster or capitation scheme: this type of project is workable in either a rural or urban setting.

Salaried Positions

- Salaried positions are available in all provinces and territories except Prince Edward Island and Nova Scotia. Most salaried positions carry with them benefits which are unavailable or limited in traditional fee-for-service work.

In British Columbia, very few physicians are salaried. There are approximately 15 salaried positions available in very remote places, some of which are administered by First Nations health boards and some by the United Church of Canada (SRPC - 10). B.C. is slowly phasing out salaried positions in favour of sessional funding and service agreements. Sessional funding is meant for positions which require less than a full-time-equivalent physician (one session is 3.5 hours). Service agreements are made between B.C.'s Medical Services Plan and RHAs, who then negotiate contracts, such as direct employment or other arrangements with physicians (BC-5).

Alberta has very few salaried positions, which are mostly held by physicians who have administrative responsibilities. These include physicians working the Alberta Mental Hospital as well as some urban physicians (AB-5).

In Saskatchewan, physicians working for Northern Medical Services (a cooperative effort of Saskatchewan Health, the University of Saskatchewan Department

of Family Medicine and the First Nations and Inuit Health Branch of Health Canada) in Uranium City, Ile a la Crosse and La Ronge are salaried. Pay ranges from \$121,000 to \$140,000 plus benefits including subsidized housing (SRPC - 4). A similar program exists to serve northern Manitoba First Nations communities as well as Inuit communities in Nunavut. The Northern Medical Unit works out of the University of Manitoba, recruiting physicians to work in Churchill and Nunavut. The salary is approximately \$150,000 per year (SRPC - 3). Most physicians stay approximately two years, but some have been working eight or ten years (MB - 2).

Ontario has salaried physicians in its Community Health Centres, some of which are in rural and northern areas. Another program providing salaried physicians is the Community Sponsored Contract program, available in northern communities designated as underserved and requiring one to two physicians. Salaries range from \$174,000 to \$194,000. On-call services in communities without hospitals are remunerated at \$30,000 per year, and physicians working in communities with hospitals receive emergency and on-call sessional payments. Contracts are for one, two or three years. Physicians completing a two-year contract receive a \$10,000 bonus, those completing a three-year contract receive \$25,000. Thirty-seven days of replacement physicians are provided and maternity leave benefits at 50% of salary are available for 17 weeks (ON-6).

In Quebec, approximately 10% of physicians in 1990 worked in salaried positions in Centres Locaux de Services Communautaires (CLSCs). Physicians may choose to be remunerated by salary or by fee-for-service in CLSCs (PQ - 2). One study states that salaried physicians at CLSCs are more likely to be female, are younger, and more likely to be engaged in rural practice and public health work (PQ - 4).

In New Brunswick there are a few collaborative projects where general physicians are on salaried arrangements. Some psychiatrists are also on salary (NB - 3).

Of all the provinces, Newfoundland has the highest percentage of physicians on salary - thirty percent. Fifty percent of its rural physician are salaried.¹⁴² Salaries range from \$100,000 to \$120,000 for GPs (NF-3) and include benefits such as locum provision, paid vacation, sick leave and some CME. John Peddle, CEO of the Newfoundland Health Boards Association comments that the problem with the salaried arrangements is that they are the lowest salaries for physicians in Canada (NF - 5). The retention bonuses discussed in the previous section are only available to salaried physicians.

The Yukon Territory has some salaried positions in smaller communities such as Faro and Mayo. Salaried physicians receive \$160,000/year, 40 days paid vacation, 20 paid days of CME and locum support. They are on-call for emergencies at all times

except when away on vacation, and have regular on-call every second weekend. In Faro and Mayo, community nurses do regular on-call work (YK-3).

The Northwest Territories moved to offer salaried contract positions to all of its physicians to improve physician stability in Yellowknife in the summer of 2000. It had previously placed physicians working outside of Yellowknife on salaried contracts (NWT -3). The salaries range from \$130,000 to \$200,000 depending on skills (ie: GP Anaesthetists, GP Emergency, GP Surgeon, GP Psychiatrist and GP Pediatricians receive more), willingness to rotate to an outlying community, and willingness to provide obstetrics. Sessional payments for on-call and emergency room are in addition to salaries. Vacation, long term disability and dental insurance, and maternity leave benefits are included. CME benefits and removal assistance are also available depending on length of service (NWT - 2). The territory also took over the physicians' overhead costs. By the end of August 2000, seven of eighteen physicians had agreed to the contract (NWT - 3).

Subsidized/Guaranteed Minimum Income

- A subsidized/guaranteed minimum income similar to a salaried arrangement. This is based on a fee-for-service model, but addresses the problem of low or unpredictable patient volumes through guaranteeing a minimum income no matter what actual billings are. The only provinces to provide this option are Ontario and Nova Scotia.

Ontario's Northern Group Funding Plans (NGFP) provide a guaranteed minimum income per physician in a group practice setting. They are available in northern communities of less than 10,000 people, more than 80 km from a major centre and requiring three to seven physicians. Practices are globally funded so that each physician receives a guaranteed annual income of \$128,000 with \$60,000 annually for overhead costs. Physicians earn extra for minor surgeries, obstetrics and anaesthesia (\$5,000 per year each); as well as for surgical assists (\$2,500 per year) and billings for nights/weekends providing these services. In communities with hospitals, physicians receive emergency sessional fees and in communities without hospitals, they receive \$30,000 annually for on-call coverage. Locums are provided for 37 days of leave per year, maternity benefits for 17 weeks at 50% salary and a retention payment of \$10,000 after three years of continuous service (ON-6).²

² Alternative payment for academic physicians is available in Manitoba and Ontario, and planned for British Columbia. The idea is to recognize the value of physicians' research, teaching

Nova Scotia's guaranteed minimum income is under its Incentives for General Practitioners in Underserved Areas Program. GPs receive approximately \$155,000 in guaranteed billings in this five-year contract, and if they earn over this amount through emergency room sessional payments or regular fee-for-service work, they can keep it. Signing bonuses, moving expenses, CME and locum provisions are included with the contract (NS - 1). The goal of this program is that doctors can build their patient lists and then, after the five years, move to straight fee-for-service billings. In some areas of low population density, however, this is not expected (NS- 3).

Pilot Projects - Capitation/ Virtual Rostering/ Population-Based Funding

- Pilot projects with capitation/virtual rostering/population-based funding are underway in rural areas of several provinces including British Columbia, Alberta, Saskatchewan, Ontario and Nova Scotia.

If these pilot projects are thoroughly evaluated, including any effect they may have on rural recruitment and retention of physicians, they may provide models that could ease geographic maldistribution of physicians. Population-Based Funding is part of B.C.'s Primary Care Demonstration Projects co-funded with Health Canada's Health Transition Fund. Population-Based Funding uses demographic statistics about each patient (age, sex, etc) to determine an overall health-care cost for the practice. Patients are free to go to another health care provider (BC-7). Projects funded by the Health Transition Fund span three years and have budgets dedicated to evaluation (BC-8). Access to evaluation results could be helpful for addressing aspects of geographic maldistribution of physicians.

Alberta has alternate payment projects where physicians are funded per patient in rural and urban areas. The funding model is capitation based on a patient list, with a built-in negation aspect, so if rostered patients go elsewhere, their funding is deducted from the practice where they are rostered. There are two rural sites: one is two-and-a-half years old and will be renegotiated in the fall of 2001, and the two doctors in the practice are interested in renewing the contract. Another rural site has been in operation for approximately one year and has been successful in integrating

and clinical work and reduce their reliance on fee-for-service payments, to provide an overall income that is competitive with incomes in the U.S. The Ontario payment scheme contains benchmarks for research, teaching and clinical work (ON-3). Manitoba provides block funding to physicians involved in the same tasks (MB -1). British Columbia announced in January, 2001 that it would allocate funding for clinical faculty and managers involved in residency training (BC-6).

other regional services (ie: Public Health Nurse for well baby checks and immunization) at the site (AB-5).

Saskatchewan has experimented with rostering programs but found that tracking patients was too time-consuming, and physicians did not like them. Saskatchewan is now working with a “virtual rostering” program which is similar to a population-based method. It funds patients on a geographic basis as well: there are different rates for southern, mid and northern patients. This is a less time consuming model (SK-3).

Ontario instituted Primary Care Reform Pilot Projects in 1999 to improve access to physician care in underserved sites, by building on existing physician networks. Three of the thirteen initial sites developed are located communities serving large rural catchment areas areas (ON-15). With the exception of one project, which employs a modified fee-for-service payment scheme, the sites fund physician services on a capitation basis. Nova Scotia has at least two Primary Care Demonstration projects in rural sites which include alternate funding arrangements (NS-3 “Demonstration Project Sites”).

v) Direct Funding - Practice Related - Workload/Relief Issues

These approaches fund programs which:

- permit physicians who are remunerated through fee-for-service (or blended) payments to take vacations and attend CME programs; and
- reduce a heavy workload and provide for relief time.

They are under-used compared to direct financial incentives in Canada. Most salaried physicians have paid vacation and maternity leave provisions in their contracts, so issues of leave time are addressed when they agree to the contract. However, most rural doctors are still paid through fee-for-service arrangements, and so workload relief programs may strongly affect their ability to remain in rural practice. A CMA survey of doctors moving from rural to urban practices between 1986 - 1990, who self-identified as moving for professional reasons, asked what might have influenced them to stay in rural practice: 56% replied additional colleagues; 48% locum tenens; 41% opportunity for group practice; 36% specialist services; 35% alternative compensation and 29% CME.¹⁴³

Locum Tenens Programs

- Locum tenens are available in every province except New Brunswick, which is considering establishing one (NB-3). There is a locum program in the Yukon Territory but not in the NWT or Nunavut.

The most commonly used program to assist physicians with workload/relief issues across the provinces is a locum tenens program. Locum programs however, vary widely across the provinces: some are well-funded and integrated into a system of programs, others have difficulty attracting doctors to act as locums, and therefore, cannot respond to rural physicians' needs.

In British Columbia, the Northern and Rural Locum Program is available to a specified list of communities which changes frequently. Locums receive \$600/day for each day worked, including scheduled on-call days, all travel expenses and an honorarium of up to \$500 per return trip for travel time. Accommodation is arranged by the resident physician. Physicians working for the program are independent contractors - and the program is flexible in allowing days off. In order to work for the program a physician must be eligible to practice in B.C., a B.C. resident, a member of the Canadian Medical Protective Association or covered by other medical malpractice insurance, and certified or willing to train in ATLS (Advanced Trauma Life Support) or ACLS (Advanced Cardiac Life Support) (BC-10).

Alberta's rural locum program is run by the Alberta Medical Association and is available to rural physicians practising and residing in communities with fewer than five physicians. Coverage is available for weekends and periods from five days to four weeks (AB-1 "Rural Locum Program").

The most comprehensive locum and rural relief program is provided by Saskatchewan. Weekend relief is provided through a program which pays physicians \$1,175 plus fee-for-service to cover call for a rural physician. Family Medicine Residents can provide weekend relief where the host physician remains in the community - the Resident receives 100% of emergency coverage and 90% of billings. The Saskatchewan Medical Association is funded to hire physicians to provide relief for rural physicians working in a community that has three or fewer physician for periods of four to fourteen days. Funding is directed towards making the contract attractive to the locum physician. The locum physician receives a base salary of \$10,000, reimbursement for Canadian Medical Protective Association membership and College of Physicians and Surgeons registration pro-rated for the length of the contract, mileage reimbursement, nine days off per month, accommodation if required, one week of paid

CME after one year of service, three weeks paid holiday increasing to four weeks after five years of service. ATLS training is available if the locum desires (SK-1 "Rural Relief Services"). Additionally, medical students who have received bursaries in exchange for return-of-service in underserved areas may fulfill the return-of-service contract at an accelerated pace by working in the SMA's locum program, providing six months of locum service in exchange for one year of bursary assistance (SK-2).

Manitoba's rural locum program is limited to communities with three or fewer doctors, for periods of between five and twenty-eight days, for a total of eight weeks to any one facility. The program has one full-time locum physician and other itinerant physicians. Accommodation is expected to be provided by the resident rural physician being replaced; if this is not available, accommodation costs will be charged to that physician. Locums receive \$500/day (MB - 3) in addition to a travel time honorarium of \$55/hour for each whole or part hour up to \$200 south of the 53rd parallel and up to \$400/day for travel north of the 53rd parallel. This honorarium is charged back to the resident rural physician. From April to December, 2000 approximately 55% of requests were filled, and 39% of the total days requested were covered (MB-4).

Ontario's Locum Program for Rural Physicians is administered by the OMA. It is available to rural and northern physicians and must be approved by the Program before the replacement starts in order for the locum physician to be funded. Locum physicians receive \$500 per day to replace fee-for-service physicians to a maximum of 21 days (ON - 8). The locum physician also can receive a 50% share of the gross fee-for-service income generated from the physician being replaced (SRPC - 1). Locums replacing non-fee-for-service doctors receive \$750/day flat rate to a maximum of 37 days. Travel time to rural locations are not considered days of service, but travel expenses incurred are reimbursed as well as car rental for the replacement period and single occupancy for up to \$120/night.

Quebec's locum program is available for general and special hospitals and CLSCs where the establishment is confronting a shortage of physicians. The assignment must be for at least seven days, including travel time unless approved by a committee made up of physician and Régie de l'assurance malades representatives. Locums can choose to be paid either fully fee-for-service or \$500/day plus 35% of fee-for-service payments. For services provided while on-call, the physician is remunerated at 100% of the fee-for-service schedule. The Régie also pays travel expenses. For each period of 15 consecutive days of locum service, the locum physician receives travel expenses for a return trip to his or her home (PQ-5).

Nova Scotia's short-term locum program is only available to its physicians working in the Incentives for General Practitioners in Underserved Areas program,

and is available for four weeks/year. Sometimes there is difficulty finding physicians to act as locums. These short term locums are arranged by the physicians themselves, and a common arrangement is for the locum to take a percentage of fees (60%) for the period as well as the weekend on-call payments (NS-4). Long-Term locums (six or twelve-month periods, three months occasionally) are paid on a fee-for-service basis; they also receive mileage to the site, and a per diem of \$100/day. Overhead is paid directly to the requesting facility or physicians (NS-1).

The locum program in Prince Edward Island requires attracting physicians from outside the province, thus, the Locum Support Program pays their licensing and medical society dues. Locums are paid on a fee-for-service basis. If locums are working in rural areas, they receive \$100/day for on-call duty at a hospital. If locums are working in the city and not on-call, they receive \$100/day after two weeks' of work. Both are up to a maximum of \$2000/month or \$7500/year and are meant to defray travel and accommodation expenses (PEI-1).

Newfoundland provides a locum program for its salaried physicians (up to 50% of rural physicians) (NF-5).

Maternity Benefits for Fee-for-Service Physicians

- Although physicians working on salaried arrangements often receive maternity/paternity benefits as employees, allowing benefits for fee-for-service physicians is rare: they are available only Ontario and Nova Scotia.

Ontario's maternity benefits program for fee-for-service physicians was announced in July, 2000. Under this program, female doctors are eligible to receive 50% of their average weekly earnings for seventeen consecutive weeks, up to \$880/week for maternity leave (ON-4). In Nova Scotia, maternity benefits are provided through the Medical Society of Nova Scotia to physicians who have been full dues paying members of the Society for two years, or for two years as a resident plus one year as a full member. Female physicians are eligible for 50% of earned income up to \$880/week for seventeen weeks. Male physicians may receive fourteen weeks of paternity leave, but receive benefits only from week seven to week fourteen of 50% of average earned income up to \$1000/week (NS-5).

Scheduled and Paid Vacations

- Vacation provisions are available in Ontario, Quebec, New Brunswick, Newfoundland and the Yukon and Northwest Territories

Scheduled vacation time (often with locum coverage arranged) is part of employment contract/salary packages for rural and northern work in Ontario and Quebec. In Quebec, depending on the isolation of the community, four flights out per year are made available to the physician and/or his/her dependents (PQ-2, Sec. II, Art. 2). Paid and Scheduled Vacations are part of the salaried contracts in the Yukon and NWT (YK-3 and NWT-2).

Newfoundland's salaried physicians receive paid vacation and locums are available to cover this time. In New Brunswick, two weeks paid vacation is available to fee-for-service physicians at 3.8% of yearly earnings after three years' service and 5.7% of yearly earnings after five years' service, but they must supply their own locums (SRPC-NB).

Nurses Take First Call

Under this program, nurses take first call in the smaller towns in the Yukon Territory. This means that nurses and a solo physician share call schedules. The solo physician spends less time responding overall, but remains on-call for emergency back-up for the nurses (YK-3).

vi) Direct Funding - Education Related

- This section summarizes the provision of direct financial support to encourage rural practice for medical students and residents. Included here, as well, is CME for practising rural physicians.

Under/Post Graduate Bursaries for Return-of-Service

- These bursaries in exchange for return-of-service in underserved areas are available in Saskatchewan, Manitoba, Ontario, Quebec, Prince Edward Island, Newfoundland and Yukon Territory.

Saskatchewan has bursaries available for both under (second, third and fourth years) and postgraduate medical students. Bursaries are for \$18,000/ year for up to three years. The return-of-service commitment is one year per year of bursary funding. The return-of-service may be worked off in an underserved community or in the rural locum service. Six months work in the rural locum service is equivalent to one year of

practice in an underserved area for purposes of the return-of-service commitment. If the commitment is not honoured, the bursary must be repaid (SK-1 and SK-2).

The government of Manitoba announced new bursaries for return-of-service in May, 2001. Bursaries of \$15,000 are available to third year undergraduates in exchange for one year return-of-service in an underserved area (outside of Winnipeg and Brandon). Family medicine residents entering their final year may be eligible for a \$20,000 bursary and must return service for one year anywhere in Manitoba (including Winnipeg and Brandon). In total, family medicine students may receive up to \$50,000 in grants in exchange for three years return-of-service. These bursaries are for graduates from the University of Manitoba completing their residency in Manitoba or in another province (MB-7). Further, Manitoba is encouraging the development of community-based bursaries that would support a medical student from that community (MB-5).

Ontario introduced a “free tuition” program in July, 2000. Fourth-year undergraduate students, postgraduate students and physicians who completed their training in the year 2000 are eligible for the grant. Fourth-year students may apply for reimbursement of three or four years of tuition (up to \$40,000) in exchange for three or four years of service in an underserved area of Ontario. In addition, a location incentive grant for the amount of the difference between yearly tuition and a \$10,000 yearly cap is available once the return-of-service obligation has begun (ON-2).

In Quebec, 180 bursaries of \$10,000 each are available annually to medical undergraduates (third and fourth year) and postgraduates in exchange for return-of-service in an underserved area. Each year of bursary assistance requires one year of return-of-service up to four years. This bursary is available to Quebec residents with a good knowledge of French. Bursary recipients receive a list of underserved areas from the Ministry of Health prior to obtaining their medical license. Recipients have two months to list three choices from that list, in order of preference, and the Ministry later assigns them to a location. If students do not honour their commitments, then they have to repay the bursary with interest (PQ-6).

In Newfoundland, the “Resident and Medical Student Practice Initiative Program” provides a bursary of \$20,000 to \$25,000 per year for 4th year undergraduate and postgraduate students planning to enter family practice. Each year of funding requires a year of return-of-service in an underserved area. The program used to be open to first and second year students as well, but the default rate was approximately 40%, partly because some students later chose a different specialty than family practice. Bursary recipients currently sign a contract stating that they agree to go where the Ministry directs them - most often, however, they can go to any rural area they choose,

because most of rural Newfoundland is underserved. The Department of Health is changing the contract wording to better reflect actual practice. There are not always enough applicants for the number of bursaries available (NF-4).

Prince Edward Island introduced a “Medical Trainee Sponsorship” program in June, 2000. Bursaries of \$15,000 per year are available to Island residents attending medical school in their second, third and fourth years. The minimum is two years of return-of-service for two years’ bursary, after that, it is a year for year exchange to a total of five years. Postgraduate bursaries of \$20,000 are available with the same return-of-service requirements. PEI also offers a student loan repayment fund. Students are given \$1500 for student loan repayment in exchange for one month of locum service following their training; the maximum assistance per year is \$3000 and may not exceed a multi year total of \$6,000 (PEI-1).

Specialist Training Bursaries in Exchange for Return-of-Service

- Alberta, Saskatchewan, Manitoba, New Brunswick, Prince Edward Island, Newfoundland and Quebec also offer Bursaries for Specialist Training in exchange for return-of-service.

Some bursary programs specifically require rural or underserved area return-of-service. Others simply require specialists to stay in the province. Alberta’s Additional Skills Training program is not a specialty program per se. Up to 24 positions have been offered to second year residents for six month to one year of additional training in anaesthesia, surgery, obstetrics, emergency medicine, palliative care and pediatrics. Six positions are available in emergency medicine and palliative care with no requirement for return-of-service, while up to eighteen positions are available for residents who have return-of-service agreements with rural RHAs (AB-1). Preceptors are paid an honorarium of \$1,000 per month.¹⁴⁴

Saskatchewan provides two annual grants of \$40,000 to second-year family medicine residents who wish to take up to one year of specialty training in obstetrics, anaesthesia, general surgery, psychiatry, emergency medicine or geriatrics. The resident is expected to provide six months’ return-of-service in a rural area for one year of training.

Manitoba’s bursary was announced in May, 2001 - \$20,000 is provided to University of Manitoba graduates or Manitoba graduates completing a residency in another province, in exchange for one year of return-of-service anywhere in Manitoba. Specialty students may apply for up to \$70,000 worth of grants in exchange for four years return-of-service (MB-7).

Quebec also provides bursaries for specialist training at \$10,000 per year in exchange for one year return-of-service in an underserved area. A bursary of \$15,000 is available to a specialist-in-training in the year of receiving his/her certificate, if s/he did not receive any bursaries prior to that, in exchange for one year return-of-service in an underserved area (PQ-6).

New Brunswick's "Supernumerary Residency Training Program" sponsors specialty residents in exchange for return-of-service agreements. For the first two years of sponsorship, year for year return-of-service in areas of need in New Brunswick (this could include urban areas) is required; for the following years, six months return for one year of training is required (NB-7).

Specialty bursaries are new in Prince Edward Island; the bursaries are worth \$25,000 per year for the same return-of-service stipulations within the province as the under and postgraduate trainee sponsorships described above. It is difficult for planners to predict, however, where and when a vacancy in a specialty will arise because of the limited number of specialists the province needs (PEI-1).

In Newfoundland, the Specialist Bursaries usually have more applicants than there are positions. They are worth \$17,500 each year in exchange for a year of return-of-service. Specialists usually work in the tertiary hospital in St. John's, but they serve the entire province (NF-4). Newfoundland also offers a "Travelling Fellowship" for residents to study specialties not available at Memorial University, for example, neurosurgery. The province pays the resident's salary during training, and the return-of-service commitment is one year for each year of funding provided (NF-4).

Travel and Accommodation Costs for Rural Placements and Residencies

- British Columbia, Alberta, Manitoba, Ontario, Quebec, Nova Scotia, New Brunswick, Newfoundland and the Northwest Territories encourage medical students to gain rural experience by providing travel costs and/or housing allowances for rural summer placements and/or residencies.

British Columbia has a new Rural Summer Placements Program aimed at medical students finishing their second year. Students are placed with rural family physicians for four to six weeks and receive \$200/week (BC-11 and SRPC-REAP-1). Alberta provides rural rotations for medical students through both University of Alberta and University of Calgary. They provide a housing allowance and travel costs for students and honoraria for rural preceptors (AB-1).

Manitoba offers a Northern Summer Student Program for undergraduates through the University of Manitoba's Northern Medical Unit to familiarise students with Aboriginal and Inuit health issues and health care settings. Accommodation and travel to the (remote and northern) sites from Winnipeg are provided (SRPC-REAP-3). Additionally, a program to promote rural work experience for 1st and 2nd year students provides a stipend plus reimbursement for travel and accommodation costs up to \$5,000¹⁴⁵.

Ontario funds medical students' and residents' travel and accommodation costs for rural and northern clinical placements, through programs in specific rural and northern areas. The Ontario Medical Association also provides two \$500 bursaries for medical students taking electives in underserved areas (SRPC-REAP-4).

Quebec provides travel, lodging and meals in a clerkship program in rural areas - recently funding has been limited. Similar funding is available for four-week rural rotations from some of the universities. Funding is also available for a resident to accompany a specialist on rounds in remote areas of Quebec (SRPC-REAP-5).

Nova Scotia provides up to \$300 for students between second and third year to participate in four-week "Summer Rural Studentships". Dalhousie University requires students in 3rd and 4th year to participate in one month of training outside of Halifax (this is not always rural) and provides up to \$400 reimbursement of travel costs (SRPC-REAP-7).

New Brunswick has a summer employment program for students following their first and second years. Recently, pay was increased in order to assist students with tuition and living costs. Accommodation is usually provided free at the regional hospital or with the physician the students are working with (SRPC-REAP-7 and NB-2).

In Newfoundland, Memorial University students participate in Rural Family medicine rotations in 3rd and 4th years. Some funding is supplied for travel expenses and accommodation is provided at most hospitals (SRPC-REAP-8). The Northwest Territories has a bursary available to partially cover travel costs for clinical clerks (third and fourth year students) interested in working there. Clerks must arrange their own rotation with a local physician, and once it is arranged and approved, they may apply for the travel bursary (SRPC-REAP-9).

Funding for Re-Entry and Specialty Skills Development

- Several provinces provide funding or loans for re-entry and specialty skills development for rural physicians including British Columbia, Alberta,

Saskatchewan, Manitoba, Ontario, Prince Edward Island and Newfoundland. In this section, the authors discuss both details of funding and of the actual programs.

British Columbia recently expanded its re-entry and additional skills training program for rural family physicians. Although no funding figures were currently available, the program supports a number of training options. One-year residency positions are available to rural physicians who intend to return to rural practice, to second year residents and community physicians with an interest in a specific skill who intend to practice in a specific rural community which needs that skill, and second year residents and physicians with an interest in a specific skill and no established links to a community, but with an intention to practice rurally. The program is very flexible - shorter training programs can be undertaken to develop specific skills and training can be provided in blocks with breaks in between. All applications must be accompanied by a letter from the community (i.e. the RHA, or the Chief of Staff of the local hospital) stating that there is a need and that the physician's new skills will be utilized once they are acquired (BC-12).

Alberta funds two re-entry and specialty skills development programs for practising physicians through its Rural Physician Action Plan (RPAP). The Enrichment Training Program provides training opportunities from two up to fifty-two weeks. Physician trainees are given an honorarium of \$76,000 annually, pro-rated for the length of training, and preceptors are eligible for an honorarium of \$1,000/month. Physicians must include a letter from the Regional Health Authority stating that there is a need for this additional expertise and that the Authority will provide the resources necessary to utilize the new skills. Physicians must commit to return to rural practice (AB-1). Royal College Re-entry programs are available through both the Universities of Calgary and Alberta. Candidates are selected in four iterations: the first is open to physicians currently practising in rural Alberta. The next three are open to all Alberta physicians in exchange for return-of-service in a rural area, in selecting candidates, extra points are awarded to those in rural practice and who have had no recent clinical training. A rural physician accepted for a program is paid at the rate negotiated by the provincial residents' association (AB-1).

Saskatchewan funds rural physician training through two programs. The Rural Practice Enhancement Training Program provides two annual grants of \$80,000 for rural physicians who wish to train in obstetrics, anaesthesia, general surgery, psychiatry, emergency medicine or geriatrics in exchange for a one for one return-of-service agreement. Physicians from communities of 10,000 or fewer people, which can support three or more practising physicians and have a need for the new skills are eligible (SK-1).

The second program is the Rural Extended Leave program which supports physicians, in rural practice for at least one year, who wish to upgrade their skills in anaesthesia, obstetrics or surgery. The program reimburses physicians for lost income and educational costs for up to six weeks; a return-of-service commitment of one month for each week of paid leave is required (SK-1). All full-time physicians in Saskatchewan are given up to \$1,100 annually to pursue CME.

Additionally, the Saskatchewan Medical Association gives two grants of \$50,000 annually to physicians who wish to enter a specialty residency position. To be eligible, physicians must have worked in rural Saskatchewan for two years. The return-of-service commitment is for five years, but the total may include years served in rural Saskatchewan prior to re-training. Two re-entry positions with the same eligibility requirements are to be funded by Saskatchewan Health, in exchange for one year of return-of-service per year of training. Preference is given to those choosing a speciality that is in high need (SK-2).

Manitoba provides some funding for rural physicians to receive extra training in areas such as anaesthesia, emergency medicine, gerontology or psychiatry through the Department of Continuing Education at the Faculty of Medicine at the University of Manitoba. They are expected to return service for this training. There are also grants of \$3,200/month for rural physicians to engage in one-to-six month self-directed educational programs. They must return to practice in a rural community - if they do not, the grant must be repaid with interest.¹⁴⁶

In Ontario, twenty practising family physicians may pursue one year of residency for advanced training in emergency medicine, anaesthesia or care of the elderly. Training may also be provided in mental health, women's health, palliative care, special urban and rural needs, research, surgery and obstetrics, if the physician can document a need for these skills in specific rural/northern communities. Specialty training for Royal College certificates is available for 20 physicians in general surgery, obstetrics and gynaecology, general internal medicine, psychiatry, anaesthesia, orthopaedic surgery or diagnostic radiology. All must provide one year of return-of-service in an underserved area for each year of training (ON-1).

Prince Edward Island offers funding for family physicians who have been practising on the island for at least two years to pursue specialty training in an area of need, in exchange for return-of-service contracts (PEI-1).

Financial Support for Rural Physicians for CME Courses

- In addition, several provinces offer financial support specifically for rural physicians to pursue Continuing Medical Education (CME) courses, including British Columbia, Manitoba, Ontario, Quebec, Nova Scotia, and the Yukon and Northwest Territories

CME courses are usually very short (one or more days or evenings) which do not require the same intensive time commitment as the specialty skills development training discussed above, but may be difficult for rural physicians to access due to the time and expense of travel.

In British Columbia, physicians working under the new Physician Recruitment and Retention Program for Rural and Small Urban Communities receive \$2400 toward CME after three years of service and \$4400 after five years of service. Years may be served in different eligible communities (BC-4).

In Manitoba, RHAs offer CME benefits as part of their general physician recruitment packages: northern RHAs tend to offer the greatest CME benefits (MB-6).

The Ontario Medical Association offers funding for CME for physicians living and practising in communities of less than 10,000 people, located more than 80 km from a centre of over 50,000 people. Limited funding is available for physicians who live and practice in communities of less than 10,000, located between 50 and 80 kms from a major centre (ON-7).

After their first year of work, Quebec offers 20 days annually for CME to physicians working in isolated areas. They are paid \$353/day along with an allowance of up to \$148/day for meals and lodging. CME days may be carried over into the next years to a total of 80 days (PQ-2, Sec. II, Art. 5).

Nova Scotia includes CME expenses up to \$1,000/year for physicians on its Incentives for Underserved Areas Contract (NS-1). Saskatchewan, Alberta and PEI provide specific funding for all provincial physicians to access CME.

Some CME benefits are supplied to salaried physicians in rural Newfoundland (NF-5), and in the Yukon (YK-3) and Northwest Territories. In N.W.T., leave time and expenses covered for CME increase with length of service: physicians with between one and two years of service receive 4 days leave and expenses up to \$3000; physicians with between two and five years of service receive 8 days leave and expenses to \$5000; physicians with more than five years of service receive 10 days leave and expenses to \$10,000. GP Specialists are eligible for an additional 5 days of CME leave (NWT-2).

vii) Medical Education and Training - for Medical Students and Residents

Rurally-Based Training Opportunities for Undergraduates and Postgraduates

- Medical schools in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia and Newfoundland offer rural medical training opportunities to medical students and residents

Most medical schools in Canada provide some rurally-based training for under and postgraduates. At some universities, a rural rotation is compulsory, at others, rural experiences are elective. Bursaries and funding for such opportunities are discussed above, under the heading Direct Funding - Education Related.

The University of British Columbia announced changes to its medical program in January, 2001. Medical education will be more decentralized, with much of students' and residents' clinical experiences taking place in hospitals outside B.C.'s lower mainland. In particular, there will be a joint program with the University of Northern British Columbia where fifteen to twenty medical students annually will spend about half of their schooling at the institution, focusing on rural and northern medical training (BC-16). Currently, all students are required to do a four-week rural rotation in the summer following second year, and some opt for six to eight weeks (BC-13). Some specialty residencies have compulsory rural rotations: general surgery, urology, obstetrics/gynaecology, adult medicine, respiratory medicine, rheumatology and psychiatry.

Alberta has two medical schools. At the University of Alberta, undergraduates must do a four-week Family Medicine rotation in one of twenty-five communities in rural Alberta. Further, there are electives available in rural family medicine. At the University of Calgary, rural communities are available for training sites for clerks (third and fourth year) and residents (SRP-REAP-2). The RPAP's Business Plan for 1999 - 2002 states that their goal is to provide rural training opportunities to every medical student (AB-2).

In Saskatchewan, medical students must do a one week rural rotation at the end of their second year. Most family medicine residents spend twelve weeks in a rural area, and a limited number (6 in 1999-2000) work as residents in rural communities for forty weeks through the Rural Family Medicine Program. Sites for rural practice

include: Prince Albert, Humboldt, Ile a la Crosse, Kindersley, La Ronge, Meadow Lake, and Melfort.

Manitoba offers the Northern Summer Student program through the University of Manitoba as discussed above. All fourth year students are required to complete a seven week family practice rotation and most students choose rural sites. An eight week rural rotation is compulsory for family medicine residents, and can be completed in Dauphin, Hamiota, Steinbach or through the Northern Medical Unit (MB-8).

Ontario offers three provincial programs, open to all medical students in the province, as well as programs at each medical school. The provincial programs are the Northeastern Ontario Electives Program (NEP), the Northwestern Ontario Medical program (NOMP) and the Rural Ontario Medical program (ROMP). NEP is located in Sudbury and one of its collaborators is the University of Ottawa: it provides rural and remote learning opportunities for medical undergraduates and residents. NOMP is located in Thunder Bay, and works with McMaster University, providing electives of four to six weeks in communities ranging from 2,000 to 15,000 people in size. Research electives that last from 8 to 12 weeks are also available. ROMP is based at Collingwood General and Marine Hospital and is funded for family medicine residents. ROMP hosts an intensive rural medical training week for ten students in association with one of the medical schools each year (SRPC-REAP-4).

Among the Ontario medical schools, there are several options for rural training experiences. Rural electives are available at the University of Western Ontario beginning in the first year. Queen's University is building a regional network for residency and undergraduate rotations in regional centres, such as Peterborough, and small towns such as Smiths Falls. McMaster University offers first year medical students the opportunity to spend one half-day/week in a rural community. In 3rd year, rural family medicine rotations are available. The University of Toronto offers a rural residency program as well as rural opportunities for third and fourth year students. The University of Ottawa also has rural electives (SRPC-REAP-4).

Quebec's medical schools have both compulsory and elective rural training opportunities. All of them have organized links with regional hospitals which host 3rd or 4th year students for a four-week rotation in family medicine. Residents in family medicine are required to complete two months of training at a non-university site; most of these sites are rural. Residents in general surgery, internal medicine, obstetrics and gynaecology, pediatrics, anaesthesia and psychiatry must also participate in a mandatory three-month rotation at a non-university site. McGill University provides opportunities for rural electives in first and second year - about one-third of students participate in these. Neither Université de Montréal nor Université de Sherbrooke have

formal rural placement programs. Université de Montréal has four-week family medicine and elective blocks that could be used for rural training, although the associated rural sites give priority to residents. Université de Sherbrooke provides an opportunity for 5 summer placements between second and third year in New Brunswick. At Université Laval, however, a four-week rotation in family medicine in rural areas or regional rural centres is mandatory for all students. A few rural training sites are available for another four to twelve week elective block in 3rd or 4th years (SRPC-REAP-5).

There is no medical school in New Brunswick, however, the province purchases seats at Dalhousie University, Memorial University and francophone seats at Université de Sherbrooke. New Brunswick offers a summer studentship program for students between first and second years. There is a teaching unit at Moncton Hospital for family medicine residents (NB-2; SRPC-REAP-6).

Nova Scotia's Dalhousie University has a mandatory two month family medicine rotation - two weeks of this must be spent outside of Halifax, often in a rural area. Preceptors are available in Nova Scotia, New Brunswick and PEI (NS-4).

Prince Edward Island does not have a medical school but purchases seats at Dalhousie University, Memorial University and one francophone seat in Quebec. PEI provides a summer studentship in rural areas for medical students. It also offers rotation opportunities for residents from the Moncton Hospital program (SRPC-REAP-10).

Memorial University in Newfoundland offers several rural-focused experiences for medical students. It hosts a one-week Rural Forum every fall. There is a mandatory two-week rural medicine shadowing program for first year students. In third year there is a core Rural Family Medicine rotation, and a Rural Family Selective in fourth year in general specialty, family medicine, or community medicine.¹⁴⁷

Rural Placement/Teaching Units with a Rural Practice Residency/ Specialty

- British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Newfoundland all have rural placement or teaching units with a rural practice residency located in medical schools.

The provision of such units by a medical school is a recognition that rural practice has unique demands, and thus, provide specifically rural medical training. Some treat it as a specialty. While most medical schools, as discussed above, have rural

medical training opportunities within their curriculum, fewer have units dedicated to rural practice.

The University of British Columbia in British Columbia has a rural training program within the Department of Family Medicine. Residents spend their first year in urban and regional hospitals and their second year in regional and rural locations. The program has been in operation since 1982.¹⁴⁸ One of its sites is the Prince George Regional Hospital which includes at least one two-month rotation to a small town in B.C. (BC-17).

Alberta's medical schools at University of Calgary and University of Alberta, along with RPAP, provide rural family medicine training for twenty trainees annually through the Alberta Rural Family Medicine Network. This program was announced in August 2000 and the first trainees will begin in July, 2001 (AB-9). The University of Alberta provides a Rural Family Medicine Program for residents wherein sixteen to thirty weeks of the second year of residency are spent in rural areas. The following sites are available: Bonnyville, High Level, Hinton, Lac La Biche, Peace River, Slave Lake, Three Hills, Westlock and Whitecourt (AB-8). University of Calgary provides twenty-one sites for rural family medicine training, at least two of which are shared with University of Alberta (AB-1).

Saskatchewan's University of Saskatchewan Family Medicine Department began a pilot project in 1997 to place residents in rural communities for forty weeks. There is now a Division of Rural Family Medicine, which offers rural residency rotations in family medicine and in selected specialties, and some undergraduate rotations, in several rural and northern sites: Prince Albert, Humboldt, Ile a la Crosse, Kindersley, La Ronge, Meadow Lake, and Melfort. Accommodations are provided at all sites. Residency rotations are offered in one month, four month and nine month blocks, depending on the location - most have preferences for certain time lengths but are flexible (SK-4).

The University of Manitoba offers a rural training program for family medicine residents in Dauphin, Manitoba. This program, in which six residents spend their second year working out of Dauphin (population: 11,000), has been running since 1991. This includes a rural medicine rotation to the town of Ste. Rose du Lac (population: 1000), which provides a house for residents accommodation during their rotation (MB-10).

Ontario offers rural family medicine residency opportunities through the Northern Ontario Medical Program (NOMP) (McMaster University), the Northern Ontario Family Medicine Program (NOFM) (University of Ottawa) and the Southwestern Ontario Rural Medicine Program (SWORM) (Collingwood Hospital).

These programs offer two-year family practice residencies, with rotations through a variety of practice settings in Northwestern, Northeastern and Southwestern Ontario.

The University of Toronto also has a rural residency program, wherein family medicine residents spend their first year at a downtown Toronto hospital, and their second year working with family medicine preceptors in Orillia, Port Perry and Orangeville. Although these sites are within reasonable commuting distance (in Metro Toronto terms), residents are required to live in the town where they are working (ON-10). Further, the provincial government announced in late spring, 2001, that a rural medical school would be established at Laurentian University (Sudbury) and Lakehead University (Thunder Bay).

Quebec does not appear to have a specific rural family medicine program, but requires all family medicine residents to participate in two months of training at a non-university site fulfilling specific regional training goals. The province also requires students in specialty residency programs in general surgery, internal medicine, obstetrics and gynaecology, pediatrics, anaesthesia and psychiatry to spend three months of their training in non-university proximate areas (SRPC-REAP-5).

While New Brunswick does not have a medical school, it runs the Northumberland Family Practice Teaching Unit at Moncton Hospital jointly with Dalhousie University. There are positions for twelve residents and rotations to Prince Edward Island are included. This program began in May, 2000 (NB-2).

Newfoundland's Melville Hospital in Goose Bay, Labrador, supports the Northern Family Medicine Education Program, a seven-month rural family practice residency rotation. The program includes hospital and clinical work, education on sociocultural and economic issues which may arise in rural practice, and regular visits to remote coastal communities through the rotation. The program's goal is to produce physicians who are comfortable working with limited specialist support.¹⁴⁹

Some medical schools have recruitment policies to encourage new rural students, including those from aboriginal communities. The University of Alberta holds two seats in its medical school for qualified aboriginal students. The University of Manitoba has a pre-med studies program supporting aboriginal students. Students participating in this program, receive financial assistance while completing a B.Sc. (MB-2).

viii) Medical Training for Physicians - CME Provision Through New Communications Technology

- Some provinces ensure that rural physicians have continuous access to educational opportunities by providing CME through new communications technology, including Alberta, Saskatchewan, Ontario, Nova Scotia and Newfoundland.

Both the University of Calgary and the University of Alberta provide regional conferencing and teleconferencing for CME for rural Alberta physicians (AB-1). The RPAP also supports a “virtual library” of medicine through the University of Calgary (AB-3).

The Saskatchewan Medical Association is making CME available through its Internet development project. Further, Saskatchewan Health’s Northern Telehealth Network provides remote health practitioners with access to continuing education, and the Satellite Initiative (North-East Saskatchewan) provides Nipawin health providers with continuing education. Saskatchewan Health also provides a website “how-to” manual to help health districts use the internet (SK-1).

The Ontario Medical Association offers Computer Skill Building Seminars to teach rural physicians about using computers and accessing electronic medical resources. It also offers a Visiting Speakers program so that rural physicians can organize CME events in their own communities. Funding to bring speakers to rural areas is provided in addition to a physician’s own yearly entitlement (ON-7).

Nova Scotia is providing links between regional hospitals and rural areas in order to provide for CME (NS-2). Newfoundland has been using telecommunications technology for CME for some time.¹⁵⁰

ix) Market-Based Initiatives

Some provinces add market-based initiatives to their recruitment and retention programs. These tend to benefit communities which are more attractive, accessible and economically sound. They are able to increase physician awareness of practice opportunities.

Recruitment Fairs

Recruitment fairs allow communities to present themselves to medical students and residents. Ontario and Alberta sponsor these (ON-9 and AB-1).

Locally-Raised Funds to Support Physicians

- Several provinces include locally-raised funds to support a physician in practice including Alberta, Manitoba, and Newfoundland.

Alberta allows communities to provide whatever benefit they want to a doctor, as long as its taxable. Subsidized housing or clinic space is popular (AB-7). Manitoba communities help physicians to locate housing, and RHAs provide standard furnishings for physician's clinics and offices (MB-6). In Newfoundland communities build or operate clinics so that doctors do not have to pay overhead, or provide free secretarial (billing) services through the local hospital (NF-5).

Practice Opportunities Websites

- Several provinces support websites which provide assistance in matching physicians to practice opportunities available in rural communities.

In British Columbia and Saskatchewan, these websites are run by private companies, which link physicians with employers or practice opportunities (BC-14 and 15; SK-6). Practice opportunities can also be found on websites maintained by the provincial and territorial Ministries of Health and by provincial medical associations.

x) Other Initiatives

- These are a variety of initiatives that do not fit any of the categories above and are aimed at recruitment and retention; some are aimed at the physician's family.

Provincial Physician Recruiter

A popular approach which is similar to a market-based initiative is to hire a provincial physician recruiter or coordinator. This is an effort to facilitate contact

between physicians and communities who require physicians. It involves some planning and knowledge of what programs are available to physicians willing to locate in underserved areas. Physician Recruiters are employed in New Brunswick (NB-2), Nova Scotia (NS-5), Prince Edward Island (PEI-2) and Newfoundland (NF-5). Rather than a provincial recruiter, Ontario employs regional physician recruitment officers, which facilitate recruitment in six underserved areas across the province (ON-9).

Promoting Medical Practice in Rural High Schools

Some provinces try to encourage medical practice in rural high schools. Newfoundland's Memorial University hosts "MedQuest" which funds rural high school students to go to Memorial for a one-week orientation to medicine and other health professions. Manitoba encourages rural physicians to make presentations at high schools and the university of Manitoba is investigating its admissions policies to ensure that it is not discriminating against rural applicants (MB-5).

Funding for Remote Diagnostic Technology

- Funding is available for new remote diagnostic technology in British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland, the Northwest Territories and the Yukon.

Most provinces and territories have experimented with communications technology to deliver specialty and other health services to rural and remote communities. Watanabe et. al. provide a recent and useful summary of provincial and territorial health communications technology programs, which the authors have supplemented where more recent material is available. British Columbia was piloting a "teleradiology" program in 1999.¹⁵¹ Alberta's northern Keeweenaw Lakes Regional Health Authority connects residents and health workers in remote communities with physicians in Slave Lake, Wabasca and High Prairie, as well as specialists in Edmonton, through a satellite-based system. Ultrasound scans and radiographs are sent to and read by radiologists in Calgary. As well, the province began the Alberta Telepsychiatry Project in 1996. One of the provincial mental health facilities offers consultation services to five remote communities, and served 500 patients between 1996 and 1999.¹⁵²

Saskatchewan Health supports the Northern Telehealth Network (Remote Consultation, Diagnostic and Training Initiatives) which connects rural and remote residents with specialists and other health providers in urban areas. This network provided 88 patients with access to care through 34 clinics as of December, 1999. It

began with trauma, obstetrics (including ultrasound), diagnostic imaging for orthopaedics, child psychiatry and dermatology.¹⁵³ It also supports the Satellite Initiative (North-East) which connects residents in Cumberland House with specialists in Nipawin, through two-way video conferencing, and connects Nipawin Hospital to the University of Alberta as well as some Alberta communities. (SK-1 "Technology Projects"). This last project is especially interesting because it reflects cooperation in providing rural access to health care across provincial boundaries. While there are established health care links between each territory and specific provinces, it seems that there are few cross-provincial efforts.

Ontario is funding the Northern Ontario Remote Telecommunication Health (NORTH) Network to develop two-way video technology in order to improve telemedicine and decrease specialist travel.¹⁵⁴ The NORTH Network responds to requests by northern communities; consultations in orthopaedics, dermatology, neurosurgery, pediatrics and speech pathology have been provided.¹⁵⁵ Ontario's Hospital for Sick Children in Toronto offers pediatric consultation through video conferencing. It began in Thunder Bay and is now available in other communities. In 1999, Sunnybrook Health Science Centre in Toronto was developing a telemammography program with several partners in which digital mammograms would be transferred from one location to another.¹⁵⁶

Quebec began a Neonatal Tele-Echocardiology Project in 1996 which transferred digital images of children's hearts between centres in Rimouski and Université Laval to eleven remote communities largely in eastern Quebec. This was to expand in 1999.¹⁵⁷

Nova Scotia was apparently the first province to implement a province-wide computerized telehealth network. All forty-three provincial hospitals were to be connected by mid-1999 for teleradiology, telepsychiatry and emergency medicine.¹⁵⁸

Radiographs can be sent from anywhere in New Brunswick to Saint John Regional Province through the Wellness Network, which provides instant access and real-time communications for physicians through PCs in addition to the teleradiology program. There is also a program to provide communication and support for renal dialysis patients receiving dialysis at a nursing home or community centre, by connecting these locations with a nephrology unit.

Newfoundland uses telecommunications technology extensively for the provision of care. It supports one of the oldest telehealth projects in Canada, the Telehealth and Educational Technology Resources Agency. TETRA uses store-and-forward technology to provide consultation between the Hibernia Offshore Oil platform and St. John's, and between Black Tickle, Labrador and the Melville Hospital

in Goose Bay, Labrador, using input from medical devices such as an otoscope (used for examining an eardrum).¹⁵⁹

The Northwest Territories was developing teleconsultation services between Yellowknife and Fort Smith in dermatology, geriatric and child psychiatry as well as CME. In 1998, the Yukon, undertook to improve the existing telecommunications infrastructure to support clinical diagnosis.¹⁶⁰

Internet Server for Rural Physicians

- Internet Servers for rural physicians are available in Alberta, Saskatchewan and Nova Scotia.

Some provinces provide an Internet server for rural physicians, for communication among rural physicians and for access to medical information. Alberta's RPAP funds RuralNet, a base for a province-wide communication and information system, developed with input from rural physicians (AB-1 "RuralNet"). Saskatchewan supports the Saskatchewan Medical Association Information Enhancement Project. This website will allow SMA members to integrate with Internet resources at Saskatchewan Health and the various health districts, to provide secure discussion groups for physicians, include program information, and possibly links to CME. Further, the Southwest Rural Physician Support Initiative links physicians' offices, clinics and health care facilities in five southwestern communities providing a resource for physician peer and on-call support and continuous emergency coverage for patients (SK-1).

The Nova Scotia Medical Society supports a province-wide network for physicians. The purpose of the network is to provide health events and information, E-mail and links to medical research and diagnostic references. It supports web-based discussion groups and conferences moderated by specialists (NS-7). Manitoba does not have an internet server, but provides an orientation booklet for new rural physicians, many of which are IMGs. The booklet contains information about who to call for specific patient services (i.e.: wheelchair purchase) and licensing bodies and rules across Canada. This booklet is simple but has been very popular (MB-5).

IMG Retention Programs

- IMG retention programs are available in Manitoba and Newfoundland and are being considered in Alberta

IMG retention programs have been launched in Manitoba and Newfoundland. Additionally, Alberta is studying the situation of IMGs in rural Alberta and will consider initiatives that may be of special relevance to them as their new “Retention of Rural Physicians” Plan develops (AB-10, see Appendix B). Manitoba announced an IMG retention program in June, 2001. The program includes an optional stage which helps improve their language skills in an applied and culturally-sensitive way: it will use simulated patients and help IMGs understand why certain expressions may be offensive to Canadians and discuss cross-cultural communications with aboriginal peoples (MB-5). They will also receive information on legal and ethical issues which may arise in a Canadian medical practice. Where IMGs require further training, an individualized plan will be provided by the medical school. The program will cost IMGs approximately \$10,000 to \$13,000 overall (MB-9).

Newfoundland, in addition to its assessment and training program for IMGs discussed above, has an outreach program to support IMGs as they begin practice in the province. The Newfoundland and Labrador Medical Association began sponsoring an IMG preceptor program which matches incoming physicians with other physicians of similar backgrounds in July, 2000. Its goal is to reduce the problems and negative first impressions generated by unfamiliarity with the Canadian system (NF-8).

Twenty-Four Hour Teletriage/Advice Line

- Ontario and New Brunswick each fund a twenty-four hour teletriage/advice line staffed by nurses.

Direct Health began as a pilot teletriage program in northern Ontario (ON-14). A 1-800 telephone number is now available to consult a nurse in many parts of the province. New Brunswick Tele-Care began in 1997. It provides 24-hour access to nurses who use computerized guidelines to assess symptoms and advise people whether they can care for themselves, should see a doctor or go to emergency.¹⁶¹

Spousal Support Program and Retention/Innovation Program

Alberta sponsors two initiatives unique in Canada through its Rural Physician Action Plan. The first is a spousal support initiative. The initiative began with a spousal network to organize one educational opportunity per year, to encourage spousal get-togethers at conferences, to provide orientation to newcomers and an e-mail discussion group, newsletter and telephone network (AB-1). There are plans to

expand the network toward encouraging local participation and by providing assistance to help spouses find meaningful employment (AB-10:13 and 15).

Another Alberta initiative is the Retention/Innovation Grants Program. This program provides grants to individual physicians or groups of physicians to develop innovative programs for the benefit of rural physicians or project ideas for physician retention at the local level. The project has supported a telemedicine program in a northern RHA and piloted a sabbatical leave program (AB-1).

Rural and Remote Health Research Centres

- Most provinces provide funding to support rural health research centres with mandates to assess rural health recruitment and retention issues.

These centres include: Centre for Health Services and Policy Research (University of British Columbia), B.C. Rural and Remote Health Institute (University of Northern British Columbia), Centre for Agricultural Medicine (University of Saskatchewan), Northern Health Research Unit (University of Manitoba), Centre for Rural and Northern Health Research (Lakehead and Laurentian Universities), Atlantic Health Promotion Research Centre (Dalhousie University), the Centre for Rural Health Studies and Newfoundland Centre for Applied Health Research (Memorial University).

VI. Program Evaluations

- The objective of this chapter is to summarize all the available evaluations of provincial programs to address geographic maldistribution of physicians.

Placing these summaries within one chapter provides a quick determination of what has been measured and what has not, and of those program which have been measured, what has been most successful. This will assist in both the design of new programs and streamlining of present programs. Thus, there is some repetition of information presented earlier.

Overall, however, few evaluations of programs designed to encourage or support rural medical practice were available to the authors. For ease of reference, the evaluations are organized as follows: as Alberta is currently in the process of reviewing several of its programs, these evaluations are grouped together; evaluations of rural training programs available in Canadian medical schools are next, and finally we discuss situations where programs have changed in response to recognized problems.

Alberta's RPAP Evaluations

- Alberta's Rural Physician Action Plan is currently reviewing several of its programs.

A joint evaluation of its Additional Skills Training Program and its Enrichment Training Program were completed in August, 2000.¹⁶² In May, 2001, an evaluation of CME programs for physicians was also completed, as was the evaluation of the Rural On-Call Remuneration Program.

Briefly, the Enrichment Program is a training program for practicing rural physicians, who may take training from two weeks up to one year to fulfill a specific training goal. The Additional Skills Training Program (AST) is open to Residents considering rural practice. The goal of the AST is to provide trainees with skills necessary for rural practice, such as anaesthesia, general surgery, obstetrics, emergency medicine and care of the elderly, beyond what they would have been expected to obtain during an average two-year residency.

The Enrichment Training Program

The evaluation of the Enrichment Program included interviews with some of the physicians who have participated in the program, interviews with other stakeholders, such as the Faculties of Medicine at the Universities of Calgary and Alberta, non-university preceptors, as well as consideration of program statistics. Between 1995 and 2000, an average of eleven physicians received Enrichment Training annually.¹⁶³ Almost all of the physicians interviewed stated that the Enrichment program helps retain rural physicians, but only half believed it helped with recruitment.¹⁶⁴ A majority of the physicians interviewed were satisfied with the application process, although several of these were also unclear about whom they should contact and felt that communication was non-existent during the application process.¹⁶⁵

Physicians trained for an average of three months: some broke up their training into one month blocks.¹⁶⁶ They had mixed views on the ideal length of training. While just under one-half of those interviewed stated that they preferred short training blocks, just over one-half explained that the length of training was dependent on what skills the physician wanted to learn.¹⁶⁷

There are, however, several drawbacks to obtaining such new skills. Most physicians took their training in hospitals in Calgary or Edmonton and had to live away from home during training.¹⁶⁸ Almost all of the physicians interviewed were "satisfied" with the quality of the training they received, largely because the preceptor was a willing teacher and because the trainee physicians did a lot of the actual work.¹⁶⁹

Stakeholders commented that it is difficult to find preceptors for the Enrichment Program, and suggested that an honorarium for preceptors, like that provided in the Additional Skills Training program might be helpful.¹⁷⁰ Although an honorarium of \$76,000 annually (pro-rated) is provided to physicians who take training, which covers their expenses, physicians lose an average of \$30,000 in income in order to take advantage of the Enrichment Program.¹⁷¹

Overall, however, the Enrichment Program was believed to have benefits for rural residents; more than one-half of the physicians interviewed stated that they are referring fewer patients to other communities since receiving their training.¹⁷² While most physicians could begin using their training immediately on returning to practice, some had to wait several months due to lack of necessary nursing support or specific equipment.¹⁷³ This led evaluators to comment that while the RHAs readily approve physicians' training requests to access new or upgraded skills, they do not seem to help them apply this knowledge to meet community health needs.¹⁷⁴

The evaluators made several suggestions to help RPAP improve the Enrichment Program. These include: providing an honorarium for physician preceptors,¹⁷⁵ developing standards of training for rural physicians to ensure consistency in attaining new skills,¹⁷⁶ working with RHAs to confirm that they are using and promoting the Enrichment Program as a way to address community and physicians resource needs,¹⁷⁷ and providing options to rural physicians who wish to receive training for coverage of their practices, particularly if the training requires more than three months of absence from practice.¹⁷⁸

The Additional Skills Training Program

The Additional Skills Training Program (AST) was evaluated through interviews with several physicians who had participated in the program, along with stakeholders such as faculty of medicine staff at both universities, representatives of the RHAs and RPAP and the College of Physicians and Surgeons, as well as preceptors for the program.¹⁷⁹

Physicians who had participated in the AST program were satisfied with the application process, although they suggested that a shorter waiting time would help residents make plans.¹⁸⁰ A large majority of participants were satisfied with the quality of instruction they received.¹⁸¹

Most participant physicians stated that the AST program helps to both recruit and retain rural physicians.¹⁸² Approximately two-thirds of participants interviewed were practising in rural communities, even though most of them did not have a return-of-service agreement with a rural RHA (the return-of-service requirement was not in place when most of them received their training).¹⁸³ There was general agreement among stakeholders that the return-of-service agreement is a factor which may prevent residents from participating in the program, although other factors, such as debt-load, RHA recruitment packages and family considerations have larger “hindering” effects.¹⁸⁴

The evaluators had several suggestions for the RPAP regarding the Additional Skills training program. Most significant, perhaps, is the need for more congruence between the objective of the program - to provide extra training to assist residents with the unique requirements of rural practice, and the actual training offered. Of the six specific areas in which Additional Skills Training is offered, most participants receive training in emergency medicine, and almost one-quarter receiving training in care of the elderly/palliative care. Most participants, however, who trained in these specific areas now work in urban communities.¹⁸⁵ As with the Enrichment Training program,

the evaluators suggested that the rural RHAs should be both promoting and deploying the program to meet local physician resource requirements.¹⁸⁶

CME for Rural Physicians

Another recent evaluative effort of Alberta's RPAP is the detailed "Evaluation of the RPAP CME for Rural Physicians."¹⁸⁷ Most rural physicians in Alberta rely on reading journals, attending regional conferences and going to university-seminars for CME. More than half of rural physicians 'rarely' or 'never' participate in audio teleconferences, videoconferencing or use University of Calgary's virtual library.¹⁸⁸ Rural physicians attend CME offerings because the topic is relevant, or because the location is convenient.¹⁸⁹ Two factors which are significant in the decision whether a physician makes to attend a CME offering are the time away from practice and the travel time to the course.¹⁹⁰

Almost 80% of interviewed physicians believed that CME availability has some impact on rural physician retention - 40% saw it as having 'substantial' impact. CME instructors also saw it as having an impact on retention. Neither physicians nor instructors, however, saw CME provision as impacting recruitment.¹⁹¹ Regional conferences are one of the most effective and popular ways for rural physicians to access CME, and two-thirds of physicians indicated that both universities should increase their offerings of these.¹⁹² Three-quarters of physicians interviewed stated that physicians in their RHA would be interested in using videoconferencing/telehealth technology to access CME.¹⁹³

The evaluators noted, however that while increased accessibility, lower cost and less time away from practice and family encourage growth of telehealth CME,¹⁹⁴ there are drawbacks to this technology as well. One of the barriers to use is the fragmentation of the telecommunications infrastructure in Alberta, where sites receive signals at a slower rate than they are transmitted. Delays result in both receiving questions from the participants and in the participants receiving the presentation. Additionally, there are problems with technical support for telehealth: individuals who are employed by RHAs as technical support often have other job responsibilities which prevent them from full-time attendance at telehealth presentations.¹⁹⁵

The evaluators made several recommendations to improve CME for rural physicians: presenters should have reputations in their fields; the universities should increase their cadre of physicians willing to deliver CME, perhaps by providing an honorarium; RPAP should try to minimize financial costs for physicians attending CME; the universities should focus on CME activities which provide insight about

patient care issues confronting rural physicians; and they should consider increasing regional conferences and delivering CME in locations accessible to rural physicians.¹⁹⁶

Additionally, the evaluators recommended that a Task Group including representatives from RPAP, the College of Physicians and Surgeons, both Universities, RHAs, the AMA and the pharmaceutical industry be established to discuss how the CME needs of rural physicians could be met. One aspect of the Task Group's work could be to identify topics of interest to rural physicians such as: appropriate usage of antibiotics and anti-hypertensives as well as management strategies for chronic diseases such as asthma and diabetes.¹⁹⁷

Rural On-Call Remuneration Program

Alberta's Rural On-Call Remuneration Program, established in September, 1998, was evaluated during the late winter and spring of 2001.¹⁹⁸ The goals of this program are to recognize and compensate rural physicians for on-call services and provide rural and remote Alberta residents with continuous emergency on-call coverage.¹⁹⁹ The evaluation had four objectives: to evaluate the extent to which the program is meeting its own goals as well as the overall goal of improving rural physician recruitment and retention; to assess participation in and satisfaction with the program; to recommend improvements and assess whether the program should be transferred from Alberta Health and Wellness to the RHAs. Evaluation methods included a survey of rural physicians and rural facilities, as well as in-depth interviews with 16 rural physicians, 15 RHA medical directors and 12 other key informants.²⁰⁰

Overall, program statistics revealed that approximately 2/3 of rural physicians participate in the program, and that the absolute number of participants has risen since the program's inception.²⁰¹ Physicians responding to the survey were more likely to participate in the program than those who did not respond (88% of respondents were program participants).²⁰² A majority of rural physicians believed that the On-Call Remuneration Program was effective in assisting recruitment of new physicians (61.8%) and effective in aiding retention (70.6%).²⁰³

The survey documents some changes which have occurred in rural physicians' on-call responsibilities since the program's implementation. The percentage of rural physicians on-call more often than one night in four, has dropped slightly from 20.2% to 18.1%.²⁰⁴ Only one-half of physicians providing on-call services more frequently than one night in four wish to remain on that schedule.²⁰⁵ One-third of rural physicians surveyed, however, said that the on-call remuneration program facilitated better on-call

scheduling - 20% said it improved relations between physicians and the local hospital, the RHA and with other local physicians.²⁰⁶

Three-quarters of rural physicians are satisfied with the design of the program and with its administration.²⁰⁷ All of the key informants interviewed, however, expressed a wish for a simplified administrative process for the program.²⁰⁸ Rural physicians were not, however, as satisfied with the actual compensation received under the on-call remuneration program; only 35% were satisfied with the level of hourly payments.²⁰⁹ Rural physicians suggested changes to program design which might improve program participation including increasing compensation, including GP Specialists for coverage in that capacity, extending program to include weekday on-call and changing facility eligibility criteria.²¹⁰ Physicians made several suggestions to improve program administration as well, ranging from submitting on-call hours with all fee-for-service billings to simplifying time sheets.²¹¹

The original agreement to establish the program included a plan to devolve its administration to the RHAs after a few years, and this evaluation included assessment of this plan. As the evaluators commented,

“It is fair to say that no one is actively looking to take over this program...While the regions indicate that they can handle it from an administrative perspective if they had to, most are not eager to do so.”²¹²

This was due mainly to concerns that program monies might not increase as costs do, the expense of administration and that funds may become part of general revenue for the RHA. Rural physicians were also critical of the proposed transfer: 41% expected that their relations with the RHA would worsen if the program were transferred and 48% expected that relations would remain the same.²¹³ Several rural physicians expressed concern that inequities between regions would arise if local authorities were given the ability to redistribute funds or set facility eligibility. Rural physicians were also concerned that RHA control over rural on-call payments may result in a perception of rural doctors as employees rather than independent professionals.²¹⁴

Although evaluators recommended against this transfer, the transfer was accomplished on April 1, 2001, under the condition that it remains a provincial program and RPAP is still responsible for determining facility eligibility. Under the transfer, the RHAs receive block funding per facility and are responsible for: obtaining information from physicians for payment processing; determining, in consultation with physicians, preferred payment frequency and other specifics; determining whether the region will collect data centrally or administer the program at each facility.²¹⁵

The evaluators recommended that Alberta Health and Wellness maintain control over general policy direction, program design and parameters, and design a monitoring mechanism in order to ensure equity and integrity in program delivery.²¹⁶ Annual monitoring of approved facilities should be undertaken by RPAP which would include coverage, staffing and the number of “unscheduled” emergency room visits.²¹⁷

Evaluators also suggested that a review mechanism for the hourly rate of compensation be established.²¹⁸ Another recommendation was to include remuneration of on-call responsibilities for GPs with special skills, such as anesthesia³. Physicians commented regarding the exclusion of these GPs in several areas of the survey, suggesting that the program could be improved by their inclusion. Evaluators suggested that this could be accomplished through either lump sum annual payments or augmentation of the fee-for-service code.²¹⁹

Finally, evaluators noted that regional medical directors had some concerns with physicians’ skill levels in providing emergency services - experience and frequent exercise of skills is necessary. Although RHAs and medical directors have the authority and responsibility to recommend standards, evaluators stated that RPAP could help address this concern by promoting the availability of training and encouraging physicians to upgrade skills relative to emergency on-call responsibilities.²²⁰

Evaluations of Medical School-Based Rural Training Programs for Residents

- Evaluations of rural medical training programs in medical schools focus on practice location choices and how prepared graduates of rural residency programs feel for rural practice. These categories are not unlinked: feeling prepared may affect retention.

The Department of Family Medicine at the University of British Columbia offers the second year of residency in rural and regional areas.²²¹ Overall, 51% of residents who had participated in the rural residency located in rural areas, and 20.5% in regional areas. Of the program participants who chose rural practice, 26% remained in the practice they trained in.²²² For graduates of the rural residency, spousal preference and rural training played somewhat larger roles in choosing a practice location than

³ Evaluators acknowledge that this issue may be addressed in the new Specialist On-Call Program, (see Detailed Description of Programs, above) but if it is not, they advise RPAP to address it.

similarity to hometown and parents' background.²²³ This evaluation also asked how prepared graduates of the rural training program felt, and compared this with rural physicians who had not participated in the program.

The overall conclusion was that physicians who had participated in the program felt better prepared in four of eight medical areas: family medicine, behavioural sciences, community medicine and practice management.²²⁴ Physicians who had not attended the rural residency program felt better prepared in medical subspecialties (such as haematology, nephrology and cardiology), and there was little or no difference in pediatrics, surgical preparation and obstetrics/gynaecology (although those who had not taken the rural residency program felt better prepared for uncomplicated deliveries).²²⁵

Another study based at the Dalhousie University Department of Medicine concludes that the location of postgraduate training in both primary care and specialties seems to affect practice location choice. All first-year trainees in the Dalhousie postgraduate program, both in primary care and specialist areas, experience rural training in small communities. Fifty-seven per cent of the primary care graduates who remained in Atlantic Canada chose rural practice, as did 50% of the specialists who remained in Atlantic Canada.²²⁶

The Northern Family Medicine Education Program (NorFaM) offered through Melville Hospital in Goose Bay, Labrador, provides family residents a 7-month rotation of rural practice. Approximately 90% of participants later enter rural practice.²²⁷ Cross-cultural experiences and instruction are part of the program, as are regular visits to remote coastal communities. Community support, especially from the local hospital board, is credited with much of the program's success.

A study of the practice locations of the graduates of the Northeastern Ontario Family Medicine Program shows that as of 1999, 7% of the graduates practised in small towns in northern Ontario such as Kirkland Lake; 57% in mid-size cities such as Sudbury and North Bay; and 3% in small towns in southern Ontario. Thus, 67% of all graduates practised in either northern Ontario or rural communities in other regions. In contrast, only 7% of the comparison group (an urban-based family medicine program in Ontario) practised in northern Ontario or rural communities/small towns in other regions and provinces.²²⁸

Other Evaluative Comments

- Changes to provincial programs have also occurred in response to problems identified at the provincial and regional levels.

These problems have been identified through evaluations of specific programs, including those designed to assist in physician recruitment and retention. Additionally, some province-wide programs (differential fees) can be connected to statistics kept on physician location, which suggest some amelioration of geographic maldistribution. Most of these comments/statistics were brief and are summarized here as indicators of areas where further evaluation could be useful.

1) *Rostering*

Saskatchewan attempted to use a rostering system whereby patients were registered with a physician and the physician paid according to the numbers of patients on their lists, as well as partial fee-for-service. There were several problems with this method. It required a significant amount of time management: tracking clients, billing, adjusting payments, as well as clients signing on and off. Doctors did not like the method: they had overestimated patient loyalty, expecting approximately 3-5% negation, while in actuality it was about 16%. The province is now working with a virtual rostering system, wherein a capitation method sensitive to overall characteristics of the patient list, such as gender, geographic location and age is used. This method requires much less management than the previous rostering system, because fee-for-service payment is not part of its structure although clients still move (SK-3).

2) *Community Involvement*

Two evaluations have assessed the effectiveness of Ontario's health human resources policies designed to recruit physicians and other health care providers to rural and remote communities. The first evaluation, conducted in 1992, assessed the overall effectiveness of a number of programs designed for Northern Ontario, including the Northern Bursary Program, the Underserved Area Bursary Program, the Underserved Area Program Incentive Grants, the Underserved Area Program Recruitment Tour and the Medical/Dental Centres Program. Results suggested that there was a need to develop a policy framework to support strategic Northern health human resources planning, including health research and evaluation capabilities, education and training opportunities, and special funding approaches.²²⁹ A subsequent evaluation of the Underserved Area Program noted that the most successful

recruitment approaches include the involvement of local physicians and the local community. Other factors affecting recruitment included the provision of physical support, such as office space by the community in addition to financial incentives; and the availability of employment opportunities for the physician's spouse.²³⁰

3) Differential Fees

Both Ontario and Quebec have some statistical indicators of physician's choice of practice location prior to and during differential fee policies. Ontario has had a prorated differential fee in place from 1996-99, where doctors locating in overserved urban centres received only 70% of billings in their first year of practice, rising slowly until they reached 100% (see entry above under "Direct Incentives - Practice Related-Differential Fees"). During the time the differential fee policy was in effect, Ministry figures indicate that only 30% of new physicians established practice in oversupplied areas.²³¹

Quebec's differential fee structure, in place since 1982, seems to have increased the numbers of physicians locating in remote or isolated regions over time. From 1978 to 1981, 11.8% of new general practitioners established practices in remote or isolated regions. Between 1982 and 1994, 20.3% of new GPs set up practice in such locations, and between 1995 and 1997, it was 23.3%. The percentages of specialists locating in remote and isolated regions over the same time periods are 4.6% (1977- 1981), 10.9% and 15.7%, respectively.²³²

4) Medical Student Bursaries for Return-of-Service

Newfoundland used to offer its Resident and Medical Student Practice Incentive Program bursary for return-of-service in a rural area to medical students in all year levels. However, program managers found that the default rate was approximately 40%. Currently, the program is limited to 3rd and 4th year medical students and residents. Although a full class has not gone through, and there are no statistics available, the program personnel' "gut feeling" is that recipients are tending to fulfill their return-of-service obligations (NF-4).

To summarize, few evaluations of rural physician recruitment and retention programs are available. There are more evaluations of the effects of rural medical training on physician practice location choice and preparedness for rural practice.

VII. Recent Recommendations

The objective of this chapter is to provide a concise review of recent recommendations offered by experts in the area, including physician organizations, towards addressing the problem of geographic maldistribution of physicians. The chapter emphasizes recommendations that are common among the reports herein. Suggestions specific to rural recruitment and retention program initiatives as well as those which are relatively untried in Canada are included.

Among recent reports commissioned for the purpose of assessing physician resource issues, three are relevant to the current Ontario situation:

- Barer and Stoddart's 1999 report, *Improving Access to Needed Medical Services in Rural and Remote Canadian Communities: Recruitment and Retention Revisited*, prepared for the Federal/Provincial/Territorial Advisory Committee on Health Human Services focuses directly on geographic maldistribution of physicians from a national perspective.
- the McKendry Report, *Physicians for Ontario: Too many? Too Few? For 2000 and Beyond* (1999) and
- the Expert Panel on Health Professional Human Resources, *Shaping Ontario's Physician Workforce* (2001).

These two reports were commissioned by the Ontario government about determining and planning for an appropriate physician workforce. Both reports have particular recommendations to address the geographic maldistribution of physicians.

Several physician organizations have published papers recommending specific approaches to rural physician recruitment and retention. These include the Canadian Medical Association's 2001 presentation to the federal Senate Committee, entitled *Rural and Remote Health in Canada*, and The Society of Rural Physicians of Canada and its Ontario Regional Committee's, *From Education to Sustainability: A Blueprint for Addressing Physician Recruitment and Retention in Rural and Remote Ontario*, 1998. Recommendations from these reports and papers are summarized below.

Barer and Stoddart, 1999

Barer and Stoddart make recommendations for improving the distribution of physician services across the country. Their three suggestions for fundamental change to the Canadian health care system are:

- a fundamental restructuring of how funding for medical care is allotted and purchased
- far greater reliance on non-physician personnel with extra training for primary care
- new and expanded roles for Academic Health Centres

The first recommendation addresses the need for significant change in the way medical care is funded. Barer and Stoddart see the fee-for-service payment system as a hindrance to addressing the health care needs of Canadians.²³³ Their fundamental argument is that funding for health care needs to follow the people - then the funding will flow to those who take responsibility for caring for specific segments of the population.²³⁴ Different versions of population-based funding are used in Britain, the United States and New Zealand.

While Barer and Stoddart do not advocate a specific form for population-based funding, they explain that the system would have to address issues such as risk-selection, risk-shifting and the under provision of care, which occur in some such systems of funding.²³⁵ Such a basic change in funding structure would have to be coordinated and agreed upon across the provinces; otherwise, excessive physician migration across jurisdictions might occur.²³⁶ Restructuring of physician payment for primary care services is an approach relatively untried in Canada.

Their second recommendation strongly supports increased use of non-physician personnel such as nurse practitioners. This requires both extra capacity to educate these personnel, regulatory modifications to govern prescribing and ordering tests, and administrative funding making it possible to employ them.²³⁷ Barer and Stoddart maintain that the potential of nurse practitioners to ease reliance on physicians for primary care, as well as patient acceptance of nurse practitioners, has been known for decades. They recognize, however, that the introduction and establishment of nurse practitioners as primary care providers requires both political will and stakeholder cooperation.²³⁸ Use of nurse practitioners, until very recently, has been limited in Canada.

They recommend an expanded role for Academic Health Centres (AHCs). AHCs are given the responsibility for health service delivery to people in outlying regions. Barer and Stoddart believe this will give AHCs an incentive to adjust academic programs and admissions criteria in order to ensure that they have physicians capable of and willing to work in rural areas. AHCs can take a role in the training of nurse practitioners. They also would have the capacity and infrastructure to support telemedicine and provide locum relief to rural physicians.²³⁹ These efforts would require cooperation across jurisdictions.

- Barer and Stoddart comment further that exploration of new rural medical education initiatives is worthwhile and has not yet been fully tried in Canada.

Changes in medical education to promote and provide appropriate training for rural practice, as well as recruitment of future physicians from rural areas and aboriginal groups, are “potentially fruitful” avenues and have not been fully explored in Canada.²⁴⁰ Although Barer and Stoddart note that financial incentives for rural practice do some good, these types of incentives cannot be expected to solve the problem of geographic maldistribution of physicians because they do not strongly affect the choice of physicians to practice rurally.²⁴¹

The McKendry Report, 1999

The McKendry Report's major recommendations for addressing physician distribution problems are:

- to dedicate a northern medical school to focus on training doctors for rural practice²⁴²
- to develop a health workforce planning structure,²⁴³ and
- to integrate nurse practitioners and other health care providers into primary care settings.²⁴⁴

The McKendry Report's recommendation concerning a medical school to dedicated to rural training includes emphasizing a positive attitude towards rural practice, providing the skills necessary for self-sufficient rural practice, situating the rural medical training school in a northern area as well as active efforts to recruit rural high school students to medical school.²⁴⁵ This latter effort reflects long-term American evidence associating training exposure and location of training to practice type and location decisions, and an even stronger association between physicians' rural origins

and long-term rural practice, as discussed above in chapter II. Recruiting from rural high schools and aboriginal groups is a relatively untried approach in Canada.

Developing a health workforce planning structure for the entire province is another recommendation. The intent is to deal with geographical distribution, physician mix and overall supply in an integrated, forward-looking way. Development of a health workforce planning structure includes establishing a reliable measure of current health care needs. Another required element is a method of estimating future health care needs which takes into account a variety of demographic, economic and health care provision factors.²⁴⁶

Finally, the McKendry Report anticipates that the integration of nurse practitioners with physician practices and the provision of different payment models for physicians working in multi-disciplinary team-based practices would provide high quality, more accessible primary care in northern rural and remote communities. The McKendry Report also makes some recommendations regarding Ontario's Underserviced Area Program geared towards streamlining and integrating the elements of the program. These include making the application process more efficient for communities.²⁴⁷ Retention measures such as bonuses for long term service and leaves based on length of service, are also included. The long service bonuses and leaves would be at higher rates for work in underserviced northern communities than in underserviced southern communities. Other recommendations are paid maternity leave for all female physicians to 75% of their average income, and an information technology grant of \$3,000 every three years for rural physicians.²⁴⁸

The Expert Panel on Health Human Resources, 2001

The 2001 Report of Ontario's Expert Panel on Health Human Resources is both a set of recommendations and a response to the McKendry Report. Much of the Panel's work analysed and refined approaches found in the McKendry Report, including use of "Access Modelling"⁴ to determine need for physician services.²⁴⁹ A significant contribution of this Report is the development of the Ontario Physician Workforce Database, in cooperation with the Institute for Clinical Evaluative Services - ICES, and the Ontario Physician Human Resource Data Centre - OPHRDC²⁵⁰. This is a more reliable database than those previously available, which permits accurate counting of the physician workforce, allowing improved planning.

⁴ For an explanation of Access Modelling, see pages 16-17 above.

The Expert Panel's recommendations are detailed and reiterate elements of McKendry's and Barer and Stoddart's reports. The Expert Panel advises the Ontario government to:

- establish a Health Human Resources Advisory Panel;
- decentralize medical education; and
- make more effective use of new physician graduates, nurse practitioners, midwives and IMGs to increase accessibility of the health care system.

The Health Human Resources Advisory Panel is understood as responsible for monitoring and anticipating Ontario's health needs.²⁵¹ Using the new Ontario Physician Workforce Database, it would make recommendations on the supply, mix and distribution of health care professionals. The panel recommends decentralizing medical education by developing Clinical Education Campuses in Thunder Bay, Sudbury and Windsor.⁵ The Directors of the Clinical Education Campuses would become part of the Council of Ontario Faculties of Medicine so that they would be jointly responsible for developing an integrated rural and northern medical education model. Part of the decentralization approach includes encouraging admissions to medical schools of students from rural and northern areas.²⁵²

The report also recommends making more efficient use of physician and non-physician health care human resources. This includes funding the Professional Association of Internes and Residents of Ontario (PAIRO) Resident Placement Program, and evaluating its ability to match new physicians to underserved communities as well as its influence on physician mix and distribution. Other recommendations are to remove barriers to midwifery practice in hospitals which prevent midwives from functioning fully within their scope of practice. Removing barriers to collaborative practice between physicians and nurse practitioners is also addressed.²⁵³ Additional recommendations include:

- managing the physician mix in Ontario through new postgraduate positions in general specialties (e.g.: general surgery, internal medicine)
- ensuring quality in physician education through, in part, ongoing evaluation of care standards for practising physicians as well as to guide medical education²⁵⁴
- expanding telehealth

⁵ British Columbia has recently adopted a similar approach, see Chapter V, above.

-
- managing demand by educating the public about appropriate use of health care resources, and²⁵⁵
 - an incentive package for rural and northern physicians which relies on a rurality index

Regarding the issue of rurality and rural incentives, the Panel recommends that the Health Human Resources Advisory Panel develop a “Rurality Index” which includes attention to actual referral patterns, specialist resources and FTE physician staffing levels. The Rurality Index would be designed to distinguish between northern and southern communities, as the north is at a disadvantage vis-a-vis the south in terms of physician recruitment and retention. It would also reflect different degrees of remoteness from large centres. As the “rurality index” rises, eligibility for incentives increases. The Panel recommends that implementation of incentive programs be tied to the Rurality Index. High rurality would include all of the items below; medium rurality would include items 4 to 12; and low rurality would include items 10 to 12.²⁵⁶

1. Turn-key practices including overhead, infrastructure and staffing costs
2. Increased incentive grants, provided in a lump sum, rather than annually
3. Adjusted funding levels for alternate payment plans to reflect the critical mass of physicians required for reasonable on-call schedules and permit coverage for vacation and CME attendance
4. Compensation for specialists who provide telephone consultations
5. Expanding CME funding (including locum coverage) to more physicians
6. Funding and locum support for maternity/parental leave, sabbatical and short-term leaves
7. Financial premiums for long service, dependant on the need for the service provided by the physician in a given community
8. Enhanced funding for locum coverage, as well as expanding the locum pool
9. Support for communications technology and medical informatics
10. Funding for nurse practitioners to work collaboratively with physicians
11. Expanded eligibility for APPs for both family physicians and specialists, indexed to rurality
12. Expanding on-call and emergency room funding to apply to more specialties and ensuring compensation levels reflect rurality and required call schedule

Implementation of Recent Recommendations

- All three reports emphasize the integration of their recommendations and warn against an approach that is overly piecemeal implementing some aspects of recommendations without provision for further changes.

The Expert Panel provides a checklist of recommendations that have been implemented from the McKendry Report. These include:

- funding the development of the Ontario Physician Workforce database as well as initiated work towards a model for monitoring and anticipating physician supply needs.²⁵⁷
- increasing undergraduate medical school enrollment, allocating positions to schools that prioritize rural training position.
- increasing residency positions in family medicine in Thunder Bay and Sudbury, as well as family medicine third year residency positions in obstetrics, emergency medicine, anaesthesiology, care of the elderly and psychiatry.²⁵⁸
- increasing re-entry positions for family practitioners who wish to specialize.²⁵⁹
- increasing use of non-physician personnel by creating positions for 106 nurse practitioners, 76 of which are in underserviced areas.²⁶⁰
- working towards primary care reform, with a goal of having 80% of Ontario family physicians in primary care networks (which will include working with nurse practitioners, providing continuous on-call coverage for patients and receiving payment through rostering of patients). However, there has been some difficulty implementing pilot primary care networks.²⁶¹
- working towards a comprehensive retention program in consultation with rural communities.
- hiring three additional community development officers for underserviced areas, as the McKendry Report suggested.²⁶²
- introducing paid maternity leave for female doctors.²⁶³
- investing in infrastructure for telemedicine and expanding the tele-triage telephone line, increasing access to southern Ontario.²⁶⁴
- announcing a new northern medical school set to begin admitting students in 2004.²⁶⁵

The report notes that providing medical education in a rural setting has had success in other international jurisdictions.²⁶⁶ A Norwegian northern medical school, established in 1972, has demonstrated effects on physician recruitment and retention in the North: 82% of northerners who attended the northern medical school stay in the north, while 38% of southerners who attended the northern medical school also stay in the north.²⁶⁷ The Expert Panel also notes that any changes Ontario makes in health care, particularly to providing new residency positions, will affect other provinces. This is one area in which provincial governments have historically cooperated so residency positions are guaranteed for all medical school graduates.²⁶⁸

Position Papers by Interest Groups

Several physician groups have published position papers on recruitment and retention of rural physicians. Highlights from these papers follow:

The Canadian Medical Association

The Canadian Medical Association believes that comprehensive and flexible rural physician recruitment and retention initiatives are potentially important. Such initiatives must include community and physician input and should never be coercive in nature (i.e.: no mandatory service for new graduates). They did state that strong positive incentive programs are often successful.²⁶⁹ While recognizing that the provincial governments are responsible for health care, the CMA sees a significant leadership role for the federal government in the following areas:

- **Delivery of health care.** As the federal government delivers health care through the Indian and Northern Health Services Directorate, it may have valuable experience to share with other jurisdictions, for example, how physicians and out-post nurses can best work together.
- **Evaluation.** The CMA would like the new federal Office of Rural Health to be expanded so that it could conduct ongoing evaluations and assessment of rural health and the rural health workforce.
- **Immigration.** The federal government could develop an immigration policy which is open to qualified IMGs.
- **Planning.** The CMA believes that short, medium and long term planning approaches are necessary to address rural and remote health issues.

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- Funding. The federal government could play an important role by funding access to rural and remote training and experience for physicians and other health care professionals. The CMA would like to see the issue of training addressed on a country-wide scale.

The Society of Rural Physicians of Canada

The Society of Rural Physicians of Canada (SRPC), along with its Ontario Regional Committee, published a “blueprint” for rural physician recruitment and retention in 1998²⁷⁰. Their recommendations are specific and thorough, and address all aspects of rural practice. Highlights and summaries of their recommendations follow:

- rural recruitment programs should begin at the high school level with exposure of students to the requirements for medical school and to rural medical practice through presentations or physician shadowing.
- medical education must include a rural focus in order to address the primary areas of need in Ontario: this includes admitting people with an interest in rural practice; including rural clinicians on interviewing committees; integrating rural training into undergraduate experiences; structuring rural medicine as a unique discipline to which all students should be exposed, for example, through a compulsory rural clerkship to increase self-reliance in a low-tech environment; increasing funding for medical students to access rural training experiences.
- rural incentive programs must be integrated with attention paid to their effectiveness and compatibility; alternative payment plans must be flexible and given wider applicability; long service in rural areas should be rewarded with longer leave times, incentive bonuses and a sabbatical program; notably, a well-functioning, well-funded locum program is integral to providing rural physicians with relief.
- efforts must be made by communities to integrate the physicians’ family - a rural medical family network may be helpful for spouses and children.
- rural return-of-service agreements should be voluntary, and flexible as to community choice of physician and physician choice of community.
- there should be increased training opportunities for rural general specialists.
- rural hospitals must be supported so that they can continue to provide obstetrical and anaesthetic services.

-
- rural practice issues should be addressed by providing: a specialist referral network with appropriate remuneration for specialists providing consultation to rural doctors; development of local centres of excellence to attract specialists and family practitioners; development of telemedicine should be encouraged, but only if adequate infrastructure and training in its use is available, and not at the expense of adequate training in vital skills like EKG interpretation and radiology.
 - dialogue between rural doctors and nurse practitioners and rural midwives must be opened. Additionally, national guidelines for nurse practitioner education and scope of practice should be developed and funding supplied to encourage doctor-nurse practitioner collaboration.

The SRPC concludes its position paper by stating that “Anything making rural areas better places to live, be they excellent schools, police and fire services, or cultural and social outlets, improves the chances of retaining rural physicians and other health care professionals.”²⁷¹

To summarize, physician organizations make recommendations similar to those in the government reports discussed above, especially in the areas of rural medical education, use of nurse practitioners and funding to ease the heavy workload of rural practice.

The CMA advises a national approach to planning and training, while the SRPC wants comprehensiveness in any recruitment and retention packages, along with an emphasis on the unique requirements of rural practice in medical schools. Although there are certainly differences in approach and in interests, there is some congruence in what are seen as workable solutions to the ongoing problem of geographic maldistribution of physicians. As other provincial jurisdictions are grappling with the same issues, there may be opportunity for Ontario to display leadership in addressing recruitment and retention of rural physicians on the national scene.

VIII. Provincial Program Profiles

Summaries of the methods of designating a community as underserved and brief summaries of programs available in each province and territory are provided on the following pages, as stand-alone profiles.

British Columbia

Regulatory Measures Include:

- *IMGs with restrictions on practice location (underserved area only)*
- *rural Primary Care Demonstration Projects*

Alternate Payments Include:

- *salaried, sessional and service agreements*
- *alternate funding for academic physicians*

Financial Incentives Include:

- *signing bonuses*
- *long service bonuses between \$10,000 and \$60,000 annually tied to specific communities*
- *on-call payments for GP emergency coverage*
- *on-call payments for specialist emergency coverage*
- *differential fees for rural practice (phasing out)*

Workload Relief Programs Include:

- *funding for rural locum relief: locums paid \$600/day, plus up to \$500 per return trip honoraria, flexible schedules*

Education Funding Includes:

- *some funding for re-entry and specialist*

British Columbia is currently changing how it designates communities as **underserved**. A program which awarded points for fee differentials based on remoteness, number of physicians in the community and other factors, is being replaced by a physician recruitment and retention payment plan, with specific guidelines and payment amounts set by the Ministry of Health. Concurrently, RHAs are developing local physician resource plans which must be reviewed by the Ministry.

- *skills development*
- *financial support for CME for rural physicians: \$2400 after 3 years service and \$4400 after 5 years' service*
- *summer student placements in rural areas receive \$200/week*

Education for Medical Students and Residents Includes

- *some specialties have compulsory rural rotations: general surgery, urology, obstetrics/gynaecology, adult: respiratory medicine, rheumatology and psychiatry*
- *four-week rural rotation in the summer following second year and*
- *rural summer employment program*
- *rural residency program run by UBC Family Medicine Department out of Vancouver and out of Prince George*
- *stipends for fourth year students*
- *new decentralized residency training in hospitals across the province*

Market Initiatives Include:

- *practice opportunities website run by private contractor*

Other Initiatives Include:

- *new remote diagnostic technology funding*

Alberta

Regulatory Measures Include:

- *IMGs with restrictions on practice location (underserved areas only)*
- *rural team provision of primary care with various health care professionals*

Financial Incentives Include:

- *signing bonus for return-in-service*
- *on-call payments for emergency coverage*
- *on-call payments for specialists*

Workload Relief Programs Include:

- *locum relief available to physicians practising in communities with less than five physicians*

Education Funding Includes:

- *funding for special skills development (two to fifty-two weeks)*
- *funding for re-entry positions*
- *funding for third year of residency to obtain specialty skills relevant to rural practice*
- *funding for CME and provision of CME via new technologies*

Education for Medical Students and Residents Includes:

- *at University of Alberta, undergraduates do a compulsory four week family Medicine*

Alberta does not designate communities as "under-served". Rather, specific programs with specific eligibility criteria are aimed at supporting the unique needs and practice environments of rural physicians across the province. Decisions regarding the necessity of offering recruitment packages and their amounts are made by the rural RHAs.

- *rotation in one of twenty-five rural communities*
- *at University of Calgary, rural rotations are available to undergraduates*
- *University of Alberta has a Rural Family Medicine Program which provides sixteen to thirty weeks rural experience in second year residency*
- *The Alberta Rural Family Medicine Network is a new joint project between the two universities to provide more rural training to medical students*
- *University of Alberta reserves two seats for aboriginal applicants*
- *housing allowance, travel costs and honoraria for preceptors are provided for undergraduate rural summer placements*
- *\$3800 stipend for 4th year students*

Market Initiatives Include:

- *community contributions to physician recruitment i.e.: housing*
- *recruitment fairs*
- *private website for practice opportunities*

Other Initiatives Include:

- *internet server for rural physicians*
- *funding for remote diagnostic technologies*
- *spousal support initiative*
- *pilot project grants to physicians for innovation and local retention initiatives*

Saskatchewan

Regulatory Measures Include:

- *IMGs with restrictions on practice location (underserved areas only)*
- *legislative expansion of nurse practitioner roles*
- *team provision of primary care with various health professionals*

Alternate Payments Include:

- *salaried positions*
- *"virtual rostering" with funding based in population health method*

Financial Incentives Include:

- *\$18,000 grant for practice set-up in rural town in exchange for 18 months return-in-service*
- *new commitment to fund long-service bonuses*
- *reimbursement of rural physicians' travel expenses when providing call or other assistance to physician in neighbouring community*
- *on-call payments for emergency coverage*

Workload Relief Programs Include:

- *locum coverage for physicians working in towns with fewer than 4 physicians in practice for 4-14 days*
- *locums receive base salary plus fee-for-service, accommodation, mileage reimbursement, 3 weeks' paid vacation*

Saskatchewan does not define areas as a **underserved**. It relies on community population - usually under 10,000 - and practice characteristics (number of physicians) to determine eligibility for specific rural physician support programs.

- *Weekend Relief where physicians receive \$1,175 plus fee-for-service to cover weekend call for rural physician*
- *family medicine resident covers weekend call for fee-for-service while host physician remains in community*

Education Funding Includes:

- *medical student and resident bursaries of \$18,000 per year in exchange for one year return-in-service in rural area*
- *return-in-service may be fulfilled by 6 months' work in locum program*
- *bursaries of \$40,000/year to 2nd-year family medicine residents for extra training in specialties for 6 months of return-in-service per year of bursary*
- *bursaries of \$80,000 for practising rural physicians to develop specialized skills for one year return-in-service for each year of*

funding

- *reimbursement of expenses and lost income for rural physicians to upgrade skills in obstetrics, surgery or anaesthesia for up to 6 weeks; one month return-in-service for each week of training required*

Education for Medical Students and Residents Includes:

- *rural summer employment program*
- *2nd year students must do one week rural rotation*
- *forty week rural rotations available for family medicine residents; most do twelve week rural rotation*
- *\$6300 stipend for 4th year students*

Other Initiatives Include:

- *funding for remote diagnostic technology*
- *internet server for rural physicians - communication, reference and CME*

Manitoba

Regulatory Measures Include:

- *IMGs with restrictions on practice locations (underserved areas only)*
- *team provision of primary care with various health care professionals*

Alternate Payments Include:

- *salaried positions*
- *alternate funding for academic physicians*
- *differential fees - increase for practice in rural and northern areas*

Financial Incentives Include:

- *interest free loans of up to \$10,000 for practice set-up*
- *communities provide forgivable loans in exchange for 3 to 5 years return-in-service*
- *\$15,000 in exchange for one year return-in-service for practice set-up in underserved area if physician received no grants as student*
- *on-call payments for emergency coverage*
- *moving expenses as part of return-in-service arrangements with rural RHAs*

Workload Relief Programs Include:

- *up to eight weeks of locum relief in blocks of 5 to 28 days for physicians in towns with less than four physicians*
- *locums receive \$500/day plus travel time honorarium of \$55/hour*

Manitoba communities request a designation as underserved from the Ministry of Health, which considers physician turnover and changes in the population base before designating a community. Some programs are available for rural communities whether or not they are designated as underserved.

Education Funding Includes:

- *\$15,000 to third-year undergraduates for one year return-of-service in rural underserved area*
- *\$20,000 for final year family medicine residents for one year return-of-service*
- *\$20,000 for specialty residents in final year who are Manitoba graduates or are completing residency in another province*
- *community-based bursaries to support medical students*
- *accommodation and travel costs for summer students to work in remote northern communities*
- *\$3,200/month for rural physicians to engage in 1-6 month self-directed educational programs for return-in-service*
- *funding for extra training for rural GPs in*

anaesthesia and other specialized skills

Education for Medical Students and Residents

- *all fourth year students required to complete a seven week family practice rotation, most choose rural areas*
- *8 week rural rotation mandatory for family medicine residents*
- *rural stream for family medicine residents - 2nd year in rural area*
- *\$3000 stipend for 4th year students*

Market Initiatives Include:

- *local funds to support physician*

Other Initiatives Include:

- *IMG retention program: language, cultural training; clinical assessment and individualized medical training*

Ontario

Regulatory Measures Include:

- *IMGs with restrictions on practice location (underserved areas only)*
- *legislative expansion of nurse practitioner roles*
- *team provision of primary care by various health professionals*

Alternate Payments Include:

- *salaried positions*
- *alternate payment for academic physicians*
- *group practice minimum funding in selected northern towns which require 3-7 physicians in practice*

Financial Incentives Include:

- *\$15,000 for physicians locating in underserved southern towns*
- *\$10,000 for physicians locating in underserved northern towns*
- *on-call payments for emergency coverage*

Workload Relief Programs Include:

- *locum coverage for UAP physicians*
- *maternity benefits of 50% of average income up to \$880/week for fee-for-service physicians*

Education Funding Includes:

- *financial support for rural physicians for*

Ontario uses both program-specific geographically-based or facility-based eligibility criteria, as well as an overall formal community-initiated process of becoming designated as **underserved** which confers community eligibility to use a number of financial incentives for attracting and retaining physicians. There is also a committee-based determination of physician need in assigning physician complement numbers to Northern communities, which includes both MOH and OMA members.

- *CME dependent on “rurality”*
- *free tuition: 4th year students apply for reimbursement of 3-4 years’ tuition up to \$40,000 for return-of-service*
- *grant for difference between tuition reimbursed and \$40,000 cap once return-in-service has begun*
- *travel & housing costs for students on rural summer placements*
- *one-year advanced and re-entry residency training for GPs for one year return-in-service*

Rural Education for Medical Students

and Residents Includes:

- *provincial programs offering rural training to under-graduates and residents in Thunder Bay (via McMaster University), Sudbury (via University of Ottawa) and Collingwood Hospital*
- *all medical schools have rural electives - some start in first year*
- *University of Toronto rural family medicine program - 2nd year residents work in smaller towns outside Toronto*

Market Initiatives Include:

- *recruitment fair*
- *locally raised funds to support physician*

Other Initiatives Include:

- *six local community development officers for physician recruitment*
- *24-hour telephone advice by nurses*
- *funding for pediatric video-clinics between Hospital for Sick Children and Northwestern Ontario*
- *NORTH teleconsultations in topics requested by northern physicians*
- *telemammography project*

Quebec

Regulatory Measures Include:

- *team provision of primary health care by various professionals*

Alternate Payments Include:

- *salaried positions, with paid vacations and four flights out of remote areas per year*
- *differential fees - increase for practice in remote area beginning at 115% and more for hospital procedures and specialists*
- *differential fees - proration for practice in university area at 70% for office work, more is paid for hospital work*

Financial Incentives Include:

- *increase in augmented differential fee with long service in rural areas for both GPs and specialists*
- *moving expenses*
- *isolation bonuses dependent on degree of isolation and increased if physician has dependents*

Workload Relief Programs Include:

- *locum program is available for hospitals and CLSCs with physician shortages for minimum of 7 days*
- *locums can be paid either fee-for-service or \$500/day plus 35% FFS, and receive travel expenses*
- *maternity leave for salaried physicians*

Quebec categorizes areas of the province according to university, intermediate, remote and isolated, provides a list of communities in each category and pays differential fees on fee-for-service arrangements: less for university areas and more for rural and remote areas. Other incentives are available according to this categorization.

Education Funding Includes:

- *financial support for CME, including travel and per diem expenses for physicians working in underserved areas*
- *travel, housing and meal costs for 3rd and 4th year medical students in rural clerkships; some funding for students in 4 week rural rotations*
- *funding for residents to accompany specialists on rounds in remote areas*
- *\$10,000 bursaries for 3rd & 4th year students and residents for one year return-in-service up to four years*
- *\$10,000 bursaries for specialist training for one year return-in-service - if a student has received no other bursaries, a final year bursary of \$15,000 for one year return-in-*

service is available

Rural Education for Medical Students and Residents Includes:

- *2 month mandatory rotation at non-university (usually rural) site for family medicine residents*
- *3 month mandatory rotation at non-university site for residents in general surgery, obstetrics, pediatrics, anaesthesia and psychiatry*
- *all medical schools have links with regional hospitals for 4-week rotations for 3rd & 4th year students*
- *Université Laval has mandatory 4 week rural rotation for 3rd & 4th year students*

New Brunswick

Alternative Payments Include:

- *salaried positions, particularly for specialists*

Financial Incentives Include:

- *GPs receive a \$25,000 grant to locate in rural areas of the province for five years return-in-service*
- *Specialists receive a \$40,000 grant to locate in rural areas of the province for five years return-in-service*
- *emergency room sessional payments for general surgeons and anaesthetists*
- *on-call payments are to be negotiated*

Workload Relief Programs Include:

- *paid vacation time for fee-for-service physicians at 3.8% of average earnings after 3 years' service, and 5.7% after 5 years' service*
- *the province is establishing a good-will rural locum pool*

Education Funding Includes:

- *accommodation for students on rural summer placements*
- *bursaries for specialist residencies for return-in-service: year for year for first two years' of training, for the following years,*

New Brunswick uses an FTE-based methodology to determine appropriate physician supply and need for both urban and rural areas, which is currently being revamped. Rurality is defined geographically by distance from the major centres.

six months return-in-service for one year of training

- *studentships for students on rural summer placements between 1st and 2nd years*

Rural Education for Medical Students and Residents Includes:

- *New Brunswick does not have a medical school, but purchases seats in Newfoundland, Nova Scotia and Quebec*
- *Family Practice Teaching Unit (with Dalhousie University) at the Moncton Hospital for family medicine residents, including exposure to rural practice*
- *stipends for 4th year medical students*
- *residency training available for IMGs*

Other Initiatives Include:

- *provincial physician recruiter*
- *24 hour telephone advice from nurses*
- *telehealth projects to link nephrology centre in tertiary-care hospital to patients receiving renal dialysis in rural hospitals, nursing homes or community health centres*
- *VITAL - Virtual Interactive Telehealth Assistance Links connects physicians in remote areas to cardiac expertise in St. John's; additionally, hospital-based post-cardiac surgery care is extended to patients' homes through real-time audio/visual links*

Nova Scotia

Regulatory Measures Include:

- *rural Primary Care Demonstration Projects*

Alternate Payments Include:

- *guaranteed minimum income*
- *some salaried arrangements*

Financial Incentives Include:

- *on-call payments for emergency coverage - physicians located further than 45 km from a hospital receive an annual lump sum*
- *the following financial incentives are within underserved area/ minimum billing contract*
- *signing bonus paid annually over five years*
- *moving expenses*
- *4 weeks of locum coverage for CME and vacation*

Nova Scotia designates areas as underserved, according to community-based and practice criteria and then provides incentive packages to physicians willing to locate in these areas.

Workload Relief Programs Include:

- *maternity benefits for fee-for-service physicians after two years of membership in Medical Society, 50% of average earnings up to \$880/week*
- *funding for locums for physicians on underserved area contract - physicians organize locums themselves, arrangement is commonly 60% of fees and 100% of on-call payments*

Education Funding Includes:

- *\$300/week for students between 2nd and 3rd year to participate in 4-week rural summer studentships*
- *CME expenses up to \$1,000/yr for physicians on underserved area contracts*

Rural Education for Medical Students and Residents Includes:

- *rural summer employment program*
- *mandatory undergraduate two month family medicine rotation, 2 weeks must be spent outside Halifax, usually in rural area*
- *residents have opportunity to participate in Family Practice Teaching Unit in Moncton, NB*
- *stipends for 4th year medical students*

Other Initiatives Include:

- *provincial physician recruiter*
- *internet server for rural physicians: communication, CME and reference*
- *all provincial hospitals connected for teleradiology, teledermatology, telepsychiatry and emergency medicine*

Prince Edward Island

Financial Incentives Include:

- \$10,000 for two years return-in-service, which is renewable for \$5,000 per year for up to five years
- \$5,000 additional to the above if a physician is locating in a rural area
- a moving expense allowance not requiring receipts is provided; the amount is dependent on where a physician is coming from and is available to IMGs as well as Canadian physicians

Workload Relief Programs Include:

- locums for short-term vacations and longer term vacancies
- as locums are required from outside the province, the Locum Support Program pays their licensing and Medical Society dues
- locums are paid fee-for-service
- if working rurally, locums receive \$100/day for on-call duty at hospital to a maximum of \$2,000/month or \$7,500/year
- if working in city and not on-call, locums receive \$100/day after two weeks' work and the same maximums apply as above

Education Funding Includes:

Prince Edward Island has a Physician Resource Planning Committee that determines where and what type of physicians are needed.

- financial support for practising physicians for CME
- rural summer studentships via Dalhousie University with accommodation and travel costs
- for physicians who have practised a minimum of two years and wish to specialize in areas of need training is provided for return-in-service
- \$15,000 annual bursaries for medical students in 2nd to 4th years, the first two years of bursary require two years return-in-service per year (ie: 4 years' return-in-service for two years' bursary), following years are one-for-one exchange to a total of five years
- \$20,000 annual bursaries for residents (yr 1,2,3) with the same return-in-service requirements as above

- \$25,000 annual bursaries for specialty

residencies (yr 4,5,6) with the same return-in-service requirements as above

- Student Loan Repayment Assistance, where physicians receive a forgivable loan of \$1500 for one month of locum work following training, maximum assistance is \$3,000 per year to \$6,000 total
- accommodation and travel costs to support residents from Moncton Family Practice Teaching Unit on PEI rotations
- stipends for 4th year students

Rural Education for Medical Students and Residents Includes:

- purchase of medical school seats for Island students: 6 at Dalhousie University, 2 at Memorial University, and 1 francophone seat in Quebec
- five rural sites for summer studentships
- positions for up to twelve family medicine residents from the Family Practice teaching Unit in Moncton, NB to do rotations in PEI

Other Initiatives Include:

- provincial physician recruiter

Newfoundland and Labrador

Regulatory Measures Include:

- *IMGs with restrictions on practice location (underserviced areas only)*
- *team provision of primary care with various health care professionals*
- *legislative expansion of nurse practitioner roles*

Alternate Payments Include:

- *differential fees of 20% augmentation for fee-for-service physicians performing specific procedures/call-backs/admission in rural hospitals*
- *salaried positions - approximately 50% of rural doctors are salaried*

Financial Incentives Include:

- *on-call payments for emergency room coverage*
- *long service bonuses for salaried rural physicians, increasing over the first 3 years, then stabilizing, amount increases with remoteness*
- *salaried positions include vacations*
- *interest-free loan for FFS physicians equivalent to 1-month proration of annual earnings for practice set-up*

Workload Relief Programs Include:

Newfoundland and Labrador has an overall physician resource plan, developed by the Ministry of Health in consultation with local health boards which determines areas of **underservice**. Local health boards may make requests to be assigned additional physicians or salaried physicians under the plan.

- *locum coverage for salaried, local boards may assist FFS physicians*

Education Funding Includes:

- *CME support for salaried physicians*
- *\$20,000 to \$25,000 bursary for 4th year students and family practice residents, each year of funding requires one year ROS in underserviced area*
- *\$17,500 specialist bursary for one year ROS in province*
- *travelling fellowship for specialty residencies outside province recipients receive salary during residency for year-for-year RIS*
- *funding for travel & accommodation provided for rural rotations during 3rd and 4th years*

Rural Education for Medical Students

and Residents Includes:

- *one-week Rural Health forum each fall*
- *mandatory 2-week rural physician shadowing for 1st-year students; 3rd year mandatory Rural Family Medicine rotation*
- *4th year Rural Selective in general specialty, family or community medicine*
- *Northern Family Medicine program in Goose Bay, a 7-month rural family practice residency, includes regular visits to remote coastal communities*
- *rural high school students go to Memorial*

Market Initiatives Include:

- *local funds to support physician*
- *rural hospitals may offer billings, secretarial services, office space*

Other Initiatives Include:

- *new provincial physician recruiter*
- *IMG retention program: mentoring with Canadian physician & assessment and training program*
- *oldest telehealth network in Canada, 200 sites in 150 communities, store & forward software, high resolution images*

Northwest Territories & Nunavut

Note: researchers could not obtain information about Nunavut programs - some that had been in place prior to April 1, 1999 continue

Alternate Payments Include:

- *salaried positions available in rural areas,*
 - *now physicians in **Yellowknife** also offered base salaries of \$130,000 to \$200,000 dependent on physicians' skills and experience*
 - *contract includes on-call payments for emergency coverage increasing with amount of call and services (ie: anaesthesia and travelling to small communities) physician is willing/able to provide*
 - *long service bonuses and vacation increasing with years' served and specialty services*
 - *signing bonus increases with length of contract signed*
 - *moving expenses, and depending on length of time physician stays, ultimate removal expenses*
-
- *University of Manitoba's Northern Medical*

All of the Northwest Territories and Nunavut are rural and remote, and many areas of both territories have difficulty recruiting and retaining physicians. They have very sparse populations which means that permanent physician services may not be required. Thus, no categories such as under- or over-serviced are used. Nonetheless recruitment and retention programs exist in Yellowknife and in some smaller areas

Unit is responsible for recruiting permanent physicians and locums for Nunavut communities on salaried positions

- *some long term locums provide short term coverage*

Education Funding and Northern Medical Education:

- *partial funding of travel costs is available from the NWT government to support 3rd or 4th year medical students pursuing a clerkship rotation*
- *University of Manitoba's Northern Medical Unit provides accommodation and travel costs for undergraduate summer placements in Northern Manitoba and Nunavut*

Other Initiatives Include:

- *teleconsultation between Yellowknife and Fort Smith, including dermatology, geriatric and child psychiatry, and continuing education*

Yukon Territory

Alternate Payments Include:

- *salaried positions are available in smaller communities*
- *salaried positions start at approximately \$160,000 include paid vacation increasing with length of service, CME leave and benefits, locum coverage, moving expenses (pro-rated if contract not fulfilled), some fee-for-service options, usual contract length is 3 years*

Financial Incentives Include:

- *CME provided by Yukon Medical Association (YMA) for fee-for-service physicians*

Workload Relief Programs Include:

- *locum program for fee-for-service physicians through YMA*
- *\$50/yr for active Yukon locums (2 weeks to three months/year) to maintain licensure reimbursed with submission for payment*
- *salaried solo physicians in small communities share first call with nurse practitioners, but must remain on back-up call emergency call for nurses*

The **Yukon Territory** considers whether or not to provide a salaried physician for a community when it reaches a population of approximately 800-100, in consultation with that community. Whitehorse, despite its remote location is well-served with physicians

Education Funding Includes:

- *new bursary for medical students details not yet available but expected to be \$5,000 to \$10,000/year*
- *CME leave and benefits through YMA*

Other Initiatives Include:

- *Yukon Telehealth improving telecommunications infrastructure since 1998*
- *plan to implement telehealth services to three remote communities*

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Key Informants Interviewed

Anne Ardiel	Ministry of Health, British Columbia; March 7, 2001, via email
Mike Baker	Human Resource Management, Community Programs, Dept. of Health, Newfoundland; April 11, 2001
Kevin Beresford	CEO, Interlake Regional Health Authority, Manitoba, (204) 467-4742; April 30, 2001 via email
Lynn Kelly de Groot	Physician Recruitment and Retention Officer, New Brunswick; April 19, 2001
Dr. Blair Flemming	Medical Services Branch, Dept. of Health, Newfoundland (709) 758-1501; April 25, 2001

Ian Foster	Manitoba Medical Association; April 25, 2001
Barbara Hague	Ministry of Health, Manitoba; May 15, 2001
Roger Jamieson	Manitoba Medical Association; May 22, 2001
David Kay	RPAP Program Manager, Alberta; April 3, 2001
Donna Magnusson	Director, Alternate Payments, Saskatchewan; January 3, 2001 and April 10, 2001
Juanita McIntyre	Physician Recruiter for Prince Edward Island; May 3, 2001
John Peddle	CEO, Newfoundland and Labrador Health Boards Association (709) 364-7701; April 25, 2001
Frank Peters	Physician Recruiter, Department of Health, Nova Scotia; May 28, 2001
Lorraine Ressler	Alternative Payments Program, Alberta Health, pers. comm.; July 5, 2001
Wes Slavik	Ministry of Health, Alberta, (780) 425-0216; March 27, 2001
Kelly Squire	Insured Health Services, Yukon Territory (867) 667-5622; April 17, 2001
Brian Taylor	Health Human Resource Manager, Dept. of Health, Nova Scotia (902) 424-1797; April 12, 2001
Michelle Vandebroek	Northern Medical Unit, University of Manitoba; March 28, 2001
Sharon Wickins	Northern Isolation Allowance Program, British Columbia; February 20, 2001

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4. Barer, Wood and Schneider 1999:12
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7. Pong and Pitblado, 2001: 107.
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12. Baldwin, et. al., 1995: 66-67; Spenny et. al., 2000: 184; Williams, 1997: 15; Humphreys et. al., 1998: 941 - these authors refer to the likelihood of working alone for rural physicians. The increase in numbers of rural Canadian physicians working alone is found in Pong and Pitblado, 1999: 3-31.
13. See Table 3-12 in Pong and Pitblado, 1999:3-32.
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17. Humphreys and Rolley, 1998: 943
18. Buske, 2000: 553
19. Kamien, 1998: 320

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20. Pathman, 1996: 375
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 22. Scannon, 1994: 96; Lahaie, 1991:726-7.
 23. Pathman, 1996: 375
 24. McAllister, 1998: 200.
 25. Easterbrook, 1999:2; Kazanjian, 1996: 32
 26. Pong and Bureau, 1994: 10; Lepnurm, 1989: 15.
 27. Lahaie, 1991: 726 & 728; Pong, 1995.
 28. Kazanjian, 1996: 30.
 29. Kazanjian, 1996: 29; Lahaie, 1991:732; Crandall, 1990: 34-5.
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 31. McAllister, 1998: 196-97
 32. McAllister, 1998: 198.
 33. Easterbrook, 1996: 6; Rabinowitz, 1999a: 259; Kazanjian, 1996: 29 & 32; Crandall et. al., 1990:32; Cooper 1972: 940
 34. Stratton 1991: 101; Cooper, 1972: 939
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 37. Ogle, 1986: 358; Geyman, 2000: 62.
 38. Spenny, 2000:
 39. Barer and Stoddart, 1991:
 40. Barer, Wood and Schneider, 1999:5.
 41. Kamien, 1996: 157-158.
 42. Rourke, 1995: 995.
 43. Whiteside, 1996: 1114.

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44. Whiteside, 1996: 1119.
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 51. Geyman, 2000: 65.
 52. Geyman, 2000: 69. It is important to note that American studies show that the physician most likely to choose rural practice is male and white. Although some research has been done on barriers to women entering rural practice, there may be barriers to minority doctors entering rural practice of which researchers are unaware. In Canada, there is little information on minority doctors in rural practice, although many face a primary barrier to medical education due to poverty.
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 72. Rabinowitz, 1999b, Alexander, 1998
 73. Kamien, 1998: 320.
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 76. Kamien, 1996: 320 and 319.
 77. Ramsbottom-Lucier, 1995: 189.
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 83. Rabinowitz, 1999b: 217.
 84. Barer and Stoddart, 1999:5.
 85. Barer and Stoddart, 1991: 1.
 86. Pong and Pitblado, 1999: 3-20.
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90. Barer, Wood and Schneider, 1999: 5.
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 93. Roos et al., 1997 (web version) 5 and 6.
 94. Pong and Pitblado, 1999: 2-16.
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 97. Pitblado and Pong, 1999: 5-2.
 98. Pitblado and Pong, 1999: 5-2.
 99. Pong and Pitblado, 2001:104.
 100. Pitblado and Pong, 1999: 5-5.
 101. Pitblado and Pong, 1999: 4-2 and 4-3.
 102. Pong and Pitblado, 1999: 4-8.
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 106. Pong and Pitblado, 1999: 4-6.
 107. Crandall, 1990: 20; Lomas, Barer & Stoddart, 1985: 5.
 108. Anderson & Rosenberg, 1990: 36; Crandall, 1990: 20
 109. Anderson & Rosenberg, 1990: 40-41.
 110. Crandall, 1990: 20.
 111. Barer, Wood and Schneider, 1999: 66 and 71.
 112. Barer, Wood and Schneider, 1999: 44.
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115. Barer, Wood and Schneider, 1999: 54.
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