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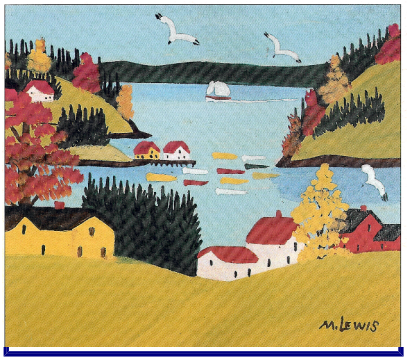

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In search of a definition of "rural"

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Rural is a perspective, dependent on person, place and contxAs such, the definition and meaning of "rural practice" will vary considerably, depending on whether the person is a rural patient trying to access care, a rural doctor or other rural health worker, a researcher or a government planner. Trying to define rural practice quantitatively is an ongoing problem, and numerous attempts have been made to do so.

In general terms, rural practice can be defined as practice in nonurban areas, where most medical care is provided by a small number of general practitioners/family doctors with limited or distant access to specialist resources and high technology health care facilities. In Canada, communities of up to 10 000 people are often classified as rural.[1,2] By this definition and according to 1991 census information, 31.6% of the Canadian population lives in rural areas.[3] In contrast, only 11.3% of doctors practise in these rural areas (18.6% of general and family practitioners and 3.8% of specialists).[4] Other countries have different geographic definitions of rural.[5-7]

The practice of medicine becomes more challenging as distances from urban areas and isolation increase, while local resources decrease. The Faculty of Rural Medicine, Royal Australian College of General Practitioners, defines "remote rural practice" as "practice in communities more than 80 km or one hour by road from a centre with no less than a continuous specialist service in anesthesia, obstetrics and surgery and a fully functional operating theatre."[8] The Rural Committee of the Canadian Association of Emergency Physicians defines "rural remote" as "rural communities about 80-400 km or about one to four hours transport in good weather from a major regional hospital" and "rural isolated" as "rural communities greater than about 400 km or about four hours transport in good weather from a major regional hospital."[9] An agreement between the Ontario Ministry of Health and the Ontario Medical Association identifies communities of

fewer than 10 000 people, greater than 80 km from a regional centre of more than 50 000 people as "specified" or "isolated" communities. Physicians in these communities qualify for additional funding for continuing medical education, assistance with locum tenens and, in some cases, direct salaried funding rather than fee-for-service.[10]

Definitions such as these, however, fail to include or measure the depth and variety of rural practice and the many factors important to recruitment and retention of rural physicians. There is a clear need to develop a more comprehensive index of rural practice.

Indices

The paper in this issue by Eugene Leduc ("Defining rurality: a General Practice Rurality Index for Canada," page 125) presents a preliminary model that measures 6 community variables in an effort to quantify rural practice. These variables are distance from the closest advanced referral centre, distance from the closest basic referral centre (or advanced referral centre if closer), drawing population, number of GPs, number of specialists and presence of an acute care hospital.

Other rural practice indices have been developed. The proposed British Columbia Northern and Isolation Allowance Program measures 5 medical isolation factors (number of GPs, number of specialists in the geographic area, distance from a regional referral hospital, exceptional circumstances and doctor:population ratio) and 2 living factors (remoteness from a major population centre and size of the community) (Dr. Geoffrey Appleton, Terrace, BC: personal communication, 1997).

The New Zealand Rural GP Network Rural Ranking Scale measures 7 variables: travelling time from the office to the base hospital, availability of ambulance services, on-call for motor vehicle accidents, travelling time to nearest GP colleague, travelling time to visit most distant patient, on-call duty and number of regular peripheral clinics. The Midland Health (New Zealand) Rural Practice Questionnaire includes 6 additional variables: number of GPs working within 10 to 30 minutes travel time, proportion of patients living more than 30 minutes away from the office, travelling time from the office to the nearest urban centre of more than 30 000 people, socioeconomic status of the practice population, population density of the area served by the practice and ratio of GPs to population (Dr. Martin London, Rural Health Professional Resource Team, Christchurch School of Medicine, Christchurch, New Zealand: personal communication, 1997).

Any index of rural practice should reflect where rural doctors live, what they do and what degree of professional isolation and support they have. When looking at any detailed index, it is useful to see how it examines the depth and variety of rural practice under the 3 headings of community and lifestyle factors, the nature of practice, and professional isolation and support. It is also important to see how these factors are weighted in any index.

Community and lifestyle factors (where rural doctors live)

In the smaller, more distant communities, educational facilities, spousal job opportunities, religious and cultural access, and the potential mate pool for unmarried physicians are all less available. Transportation for these activities is both time-consuming and expensive. Any index of rurality therefore must include both the size of the community and the distance from or ease of access to larger urban centres as key markers for these important social and family considerations.

The nature of rural practice

A practical definition of rural practice, used by the Faculty of Rural Medicine, Royal Australian College of General Practitioners, is "medical practice outside of urban areas where the location of practice obliges some general/family practitioners to have or acquire procedure or other skills not usually required in urban practice."[8]

Each rural setting has its own special challenges. In the smallest, most remote settings, help is a long time and distance away. This places immense strain on limited local resources and on the physician, particularly when serious emergencies occur. In larger rural communities, those equipped with a small active hospital, the rural general practitioner/family doctor's scope of practice, in addition to office-based family practice, house calls and nursing home visits, often includes extensive hospital-based medicine.[11] This usually includes emergency medicine shifts, direct care of in-hospital patients, obstetric deliveries and sometimes GP anesthesia. Acquiring and maintaining the necessary knowledge and skills is a daunting challenge.

The few existing rural specialists, predominately general surgeons, as well as internists, radiologists and a scattering of others, also generally need a broader scope of practice than their urban colleagues.[11] For example, the comprehensive rural general surgeon may perform not only common general surgery, but also plastic, orthopedic and gynecologic procedures and cesarean sections.[12-14]

Ideally, all physicians in the community maximize their complementary skills and interests as part of a group responsibility to meet the needs of the community. This approach may be important in encouraging female physicians to bring their talent and skills to rural practice while providing the kind of flexibility to allow different lifestyle choices.[15] Appropriate organization, funding, support and cooperation are necessary for this approach to work well.

The rural health care context is only beginning to be considered at academic and government levels. The population served by rural doctors has distinct characteristics and determinants of health.[8,16-18] Too often, preventive health care, patient education and counselling are given a low priority or are simply not done because of the time constraints of too few doctors providing care to too many patients. In underdeveloped settings, public health activities take on special importance for rural doctors.

Professional isolation and support

Although all rural areas suffer from professional isolation relative to urban practice, the smallest, most remote communities pose particular challenges in terms of both professional isolation and lack of resource support.[1] This factor must have particular weighting in any index of rurality. Even though the nature of practice may be similar in 2 very different geographic settings, the distance to referral sources may be dramatically different. The presence of a local hospital and its level of resources, including any specialists, and the distance to more advanced referral care and specialist support services are factors affecting professional isolation.

Advances in information technology have made it easier for all rural doctors to access information and continuing medical education, but they do not replace the need for programs to support rural physicians so that they can attend conferences and other educational forums, including intensive short-term traineeships.

The number of doctors available to share the workload and on-call duty is an important variable contributing directly to the sustainability of working conditions. Balancing on-call and case load can be problematic, especially for anesthesia, obstetrics and emergency work. Because rural specialists are often one-of-a-kind in any location, they frequently have the greatest burden of on-call.

In rural practice, professional boundaries are more difficult to maintain, as patients often include people known in other roles, such as neighbours, colleagues, hospital staff and personal friends.[19-21] These complex relationships form part of the richness and challenge of rural practice.

Conclusions

Coming up with a comprehensive definition of "rural" is not an easy task. General practice rurality indices, such as the one described by Dr. Leduc in this issue, can provide a quantitative measure of rural practice. They need to be assessed by how well they reflect where rural doctors practise (community and lifestyle factors), what these doctors do, what professional isolation and support they experience, and how these 3 main considerations are weighted.

Acknowledgements: I thank Prof. Roger Strasser, Dr. Ian Park and Dr. Leslie Rourke for their thoughtful input and the rural doctors who attended the "Definition of Rural Practice" interest group session, chaired by Dr. Eugene Leduc, at the Rural/Remote Area Medicine Conference in Banff on Apr. 3, 1997, for their lively discussion of this topic.

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President's message: "If this calf would only stand up ..."

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The Society of Rural Physicians of Canada (SRPC) is a bit like a newborn calf: apparently fragile, but with all that is necessary for a long and productive life, as long as it gets up on its feet. How close are we? The Banff meeting in April was successful and proved once again that rural docs can deliver, be it pertinent CME, policy or planning issues. The question of being recognized as a discipline is out in the open, albeit with some ambiguity (see page 141). We can live with that -- after all, we are Canadians. A committee structure is in place, and the SRPC Obstetrics Committee is already attacking the issues of guidelines conjointly with the Society of Obstetricians and Gynaecologists of Canada and the College of Family Physicians of Canada (see Letters section, page 118). Validation of the practice of obstetrics without cesarean section capabilities tops the list.

An ad in this issue (page 111) presents an SRPC pilot project combining locum services with practical, hands-on teaching by rural docs. Many other projects will be set up, and we intend to see that they are funded, so that your expenses will be paid if you participate. One crucial project to which each of us can contribute is building up our membership to give us the funding and human resources we need to achieve our goals.

The SRPC now has its own by-laws, which were adopted at the annual general meeting in Banff. Briefly, this is how the Society is constituted. The country is divided into 5 regions. Each region has a committee consisting of 4 to 6 rural doctors and a student/resident member. The chair and alternate chair of each regional committee, along with the executive, a student or resident, and a public representative, make up the Council. Council meets in person twice per year to instruct the executive.

The regional committees recruit new members and represent the interests of their local doctors. They will each have a budget for communications and expenses, as well as the administrative

back-up of the SRPC executive officer, John Clark, to minimize bureaucratic work.

The following standing committees have been proposed to date and will start up as the need, will and funding arise: students/residents, communications, aboriginal issues, specialties, obstetrics and perinatal care, GP anesthesia, emergency, allied health care, spousal/family support, physician resources and working conditions, continuing medical eduation (made up of the chairs of the regional committees), rural community economics, finance and annual meeting. Again, the SRPC intends to cover expenses and provide administrative support.

The purpose of the SRPC is to bring rural docs together, not to bog them down in administrative work. We want a lean, effective organization, and the workload on any committee is meant to be light and rewarding, without loss of income to the participants. So it is an exciting time to join the SRPC and help the calf get up on its feet. For, as they say in our area, "If this calf will only stand up, it will be nickety-nick from there on in."

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Message du président : «Si le veau peut se lever...»

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Président, Société de la médecine rurale du Canada

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La Société de la médecine rurale du Canada (SMRC) est un peu comme le jeune veau nouveau-né : fragile en apparence, mais doté de tout ce qu'il faut pour mener une vie longue et productive à condition de se lever. Où en sommes-nous? La réunion d'avril à Banff a été couronnée de succès et a démontré une fois de plus que les médecins ruraux peuvent livrer la marchandise, qu'il s'agisse d'EMC pertinente, de politique ou de planification. La question de la reconnaissance de la médecine rurale comme discipline est lancée, mais il reste un peu d'ambiguité (voir page 141). Nous pouvons l'accepter -- après tout, nous sommes Canadiens. Une structure de comités a été mise en place et le Comité de l'obstétrique de la SMRC s'attaque déjà aux problèmes des lignes directrices de concert avec la Société des obstétriciens et gynécologues du Canada et le Collège des médecins de famille du Canada (voir chronique correspondante, page 118). La validation de l'obstétrique sans capacités de césarienne vient en tête de liste.

Une annonce dans le présent numéro (page 111) présente un projet pilote de la SMRC qui combine des services de suppléance à l'enseignement pratique concret assuré par des médecins ruraux. Beaucoup d'autres projets seront lancés et nous avons l'intention de voir à ce qu'ils soient financés afin que vos dépenses soient payées si vous y participez. Un projet crucial auquel chacun d'entre nous peut contribuer consiste à augmenter le nombre de nos membres afin de nous doter du financement et de l'effectif dont nous avons besoin pour atteindre nos buts.

La SMRC a maintenant ses propres statuts, qui ont été adoptés au cours de l'assemblée générale annuelle à Banff. Voici brièvement comment la Société est constituée. Le pays est divisé en 5 régions dont chacune est dotée d'un comité constitué de 4 à 6 médecins ruraux et d'un membre étudiant/résident. Le président et le président suppléant de chaque comité régional, ainsi que le bureau, un étudiant ou un résident, et un représentant du public, constituent le Conseil. Le Conseil se réunit 2 fois par année pour donner des directives au bureau.

Les comités régionaux recrutent de nouveaux membres et défendent les intérêts de leurs médecins locaux. Chacun d'entre eux sera doté d'un budget de communications et de dépenses, et bénéficiera aussi de l'appui administratif du chef de la direction de la SMRC, John Clark, ce qui réduira au minimum le travail administratif.

On a proposé jusqu'à maintenant la création des comités permanents suivants, qui seront lancés au fur et à mesure des besoins et lorsque la volonté et les ressources existeront : étudiants/résidents, communications, questions autochtones, spécialités, obstétrique et soins périnataux, anesthésie générale, urgence, soins paramédicaux, appui conjugal/familial, effectifs médicaux et conditions de travail, éducation médicale continue (constitué des présidents des comités régionaux), économique communautaire rurale, finances et assemblée annuelle. Là encore, la SMRC a l'intention d'assumer les dépenses et de fournir l'appui administratif.

La raison d'être de la SMRC, c'est de réunir les médecins ruraux et non de les submerger de paperasse. Nous voulons une organisation maigre et efficace et la charge de travail de tout comité doit être légère et satisfaisante sans entraîner de perte de revenu pour les participants. Il s'agit donc d'une période intéressante pour adhérer à la SMRC et aider le jeune veau à se mettre sur pattes. En effet, comme on dit dans notre région, «si le veau peut se lever, tout ira bien par la suite.»

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NorFaM -- training residents for rural practice

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[résumé]

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This paper has been peer reviewed.

Abstract

Memorial University of Newfoundland has been training family physicians in Happy Vally - Goose Bay, Labrador, for more than 10 years and, in 1992, expanded and formalized the training into the Northern Family Medicine Education Program (NorFaM), a 28-week rotation program for residents interested in rural medicine. This paper describes the NorFaM program in detail, presents its strengths and weaknesses, and briefly analyses the geographic distribution of its graduates.

Résumé

L'Université Memorial de Terre-Neuve forme des médecins de famille à Happy Vally - Goose Bay, au Labrador, depuis plus de 10 ans et, en 1992, elle a étendu et structuré la formation pour

lancer le Programme de formation en médecine familiale du Nord (NorFaM), rotation de 28 semaines offerte aux résidents intéressés à la médecine rurale. Cette communication décrit en détail le programme NorFaM, en présente les forces et les faiblesses et analyse brièvement la distribution géographique des diplômés.

The shortage of physicians in rural areas is a long-standing problem worldwide.[1-4] Most physicians are trained in urban settings and, upon graduation, tend to set up practice in urban areas.[5] This maldistribution is evident in Canada. Only 11.3% of Canada's physicians practise in rural settings, despite the fact that 23.5% of the country's population lives in rural communities with a population of fewer than 10 000.[6] In the Atlantic provinces, 49.1% of the population lives in rural areas, but only 23.4% of full-time physicians are in rural practice.[6]

Inadequate training has been suggested as a significant contributing factor to the maldistribution of physicians.[7,8] Previous studies have identified clearly the strong connection between the setting in which physicians receive their training and their future practice locations.[9,10] Family practice residents who train in rural settings comment on the amount of hands-on time in rural hospitals in contrast to the "limited exposure available to family medicine residents at large teaching centres where they may rank at the bottom of the physician hierarchy."[11] In a recent study of rural physicians in British Columbia,12 family practice graduates who trained in a rural setting rated themselves better prepared for rural family practice than urban-trained rural physicians.[12] Such studies support the growing perception that urban training in a highly specialized, tertiary care setting does not prepare physicians adequately for rural practice.

The Northern Family Medicine Education Program (NorFaM) was developed in 1992 and 1993 through consultations with Labrador communities, represented by the Melville Hospital Board of Management and the aboriginal organizations of the Innu Nation and the Labrador Inuit Health Commission. Its mission is to train residents in family medicine to be competent rural or northern physicians and to encourage them to choose rural or northern practice.

The NorFaM program is based at Melville Hospital in Happy Valley - Goose Bay, Labrador, population 8000. The hospital has 37 beds and serves a catchment area of 15 000. Five of the 11 family physicians based at the hospital have clinical faculty positions with Memorial University of Newfoundland. There are 3 specialists on staff: a general surgeon, an obstetrician and an anesthesiologist.

General objectives of the NorFaM program

The primary objective is to ensure that all trainees incorporate into their daily practices the 4 principles of family medicine:[13]

- Family physicians are good clinicians.
- Family medicine is community based.
- Family physicians are a resource to a defined population.
- The doctor-patient relationship is central to the role of family physicians.

Four additional objectives are targeted specifically at the unique demands of rural and northern practice.

To acquire greater knowledge and skills in surgery, obstetrics, emergency medicine, intensive care and medical evacuation. With less access to specialist services than their urban counterparts, rural physicians must be competent to handle situations that an urban doctor would normally refer to a specialist.[14] Kamien and Buttfield[8] commented that undertrained graduates attempting rural practice "live in a constant state of apprehension, get easily scared, turn tail and leave." The NorFaM program is designed to provide residents with the knowledge and skills required to feel comfortable working with limited or no specialist support; this is accomplished by allowing them to work at Melville Hospital alongside rural doctors and to visit isolated outposts on a regular basis.

To develop an understanding of the sociocultural and economic characteristics of rural and northern communities and their relations to health. The social, cultural and economic dynamics of any community are unique, and they are well recognized as significant determinants of the health of the community.15 Labrador comprises a culturally, socially and economically diverse group of communities, including the isolated Inuit, Innu and Métis coastal communities with populations of fewer than 1000 people and the town of Happy Valley - Goose Bay, where NorFaM residents are based, at Melville Hospital. Each resident is assigned to a coastal Labrador community, which s/he visits for 1-week periods 4 or 5 times during the 28-week stay in Happy Valley - Goose Bay. During these visits to the coastal communities, each resident works with the nurse practitioner and reviews his or her work over the phone with a faculty member at the end of each day or on an urgent basis if necessary. While in the coastal communities, residents have the opportunity to visit their patients at home and to discuss health concerns with community leaders. Residents are encouraged to develop an understanding of the communities and the impact of sociocultural and economic factors on community and individual health.

To learn the practice of preventive and community medicine. With the publication of Lalonde's A New Perspective on the Health of Canadians[16] in 1974, much preventive medicine has focused on individual lifestyles. We have since come to understand that what have been perceived as individual choices are strongly influenced by family, community and society as a whole.[17] Smoking is an example of a behaviour that is very sharply graded by socioeconomic class and social conditioning. Family and community medicine are integral to the practice of preventive medicine at the individual level. Residents learn this principle through the care of their patients in clinics and in hospital.

To understand the role of allied health care professionals, in particular nurse practitioners and midwives, in communities with no resident physician. In remote northern Canadian communities, nurse practitioners, community health nurses and midwives provide much of the primary care. NorFaM residents have the opportunity to work side by side with other health care professionals and to gain an appreciation of the challenges and the benefits of this team work.

Program structure

During their first year, most Memorial University family medicine residents take 12 weeks of internal medicine, 8 weeks of obstetrics and gynecology, 8 weeks of pediatrics, 8 weeks of family medicine, 8 weeks of surgery, 4 weeks of geriatrics and palliative care, and 4 weeks of vacation. The first-year residents who have opted to enter the NorFaM program take 4 weeks of neonatology, 12 weeks of an elective, 4 weeks of vacation and the 28-week NorFaM program. Psychiatry is taught during the family medicine block and the NorFaM rotation.

Orientation

On arrival at Melville Hospital, all residents are given information about the goals and objectives of the NorFaM program and receive copies of evaluation forms and other relevant documents as part of the orientation process. They have 3 days of orientation, which includes a review of advanced cardiac life support and neonatal resuscitation, a brief introduction to aeromedical evacuation and a general hospital orientation.

Academic teaching

During the 28-week NorFaM program, 3 hours a day are set aside for formal teaching. The teaching includes tutorials and inpatient rounds in the morning and case discussions at the end of the day. In addition, "in-corridor" consultations occur as needed throughout the day. Each Wednesday, 1 hour is set aside for teleconference seminars with consultants and another hour for educational sessions by teleconference with the other residents and faculty in their teaching locations at St. John's and Whitbourne. Residents are also involved with the rest of the medical and other health care professional staff at the hospital during grand rounds, which are held for 1 hour each week. Multidisciplinary rounds are held twice weekly with the nurse team leader, the nurse counsellor, the social worker, the home care nurse, the cancer nurse, the dietician, the pharmacist, an Inuit liaison person and physicians. Journal clubs are held once a month at the home of a faculty member. These gatherings allow for socializing, learning about critical appraisal and gaining experience in organizing CME. Teaching is conducted primarily by the rural family physician faculty, with contributions from all the health care workers in the multidisciplinary team.

An academic project is a mandatory component of the program. The topic can be selected from a broad range of choices, and the project must demonstrate a significant level of academic rigour.

The project may take the form of clinical or nonclinical research, or it may be a literature review. Residents must present their projects before they complete the program.

Clinical experience

The residents are given graded responsibilities by faculty. They have a provisional licence and are permitted to write prescriptions for outpatients. Initially, all outpatient cases are reviewed with a faculty member daily. After mid-term, if their evaluations have been satisfactory, residents discuss cases with a faculty member only when they feel they need advice; however, each chart is still reviewed and signed by a faculty person. At the beginning of the rotation, each resident works with a faculty physician in the emergency department. The goal is to increase the residents' competence and comfort level while working in a hospital emergency setting, so that at the end of their rotation they will have demonstrated the clinical and organizational ability to survive in a busy emergency clinic. Each week, a faculty member has responsibility for inpatient rounds with the residents, reviewing all inpatient cases with them. This provides supervision for the residents and the opportunity for them to share their experiences with one another.

Each of the residents travels 4 or 5 times to one of the remote communities in coastal Labrador to experience community family medicine. Each week-long visit gives them the opportunity to see their patients in their family and community settings, which enhances the continuity of care. Residents work with the community health nurses, community health representatives and social workers. These visits provide a community-based experience, and they reinforce a multidisciplinary approach to health care. Back-up and supervision are provided by a faculty member by telephone.

Evaluation

A "bricks and bouquets" session is held for 1 hour each month to permit an informal exchange between the residents and the faculty. There is also a formal interim evaluation at mid-term. Both of these evaluation methods allow any adjustments that might need to be made to meet the educational needs of the residents. At the end of the rotation there is a summation or formal evaluation of each resident by the faculty, of each faculty member by the residents and of the program by each resident. The evaluation process encourages residents to continually evaluate and improve their performance.

Workshops

The NorFaM program is designed to accommodate 2 groups of 3 residents per year, with a 4-week overlap in the middle of the academic year. The overlap allows all of the residents to be present for the workshop component of the program. The workshops include training in cultural awareness (2 days), medical evacuation (2 days), management of trauma (2½ days), addictions counselling (3 days) and wilderness camping (3 days). The wilderness experience gives the

residents a taste of the joys and hardships of living in Labrador, while their visits to coastal communities, described earlier, afford them an appreciation of the living conditions of some aboriginal people who still live a traditional lifestyle. The camping experience also gives the residents an opportunity to practise the wilderness survival skills taught in the medical evacuation seminar. The workshops are adapted for rural and northern conditions. For example, the field management of trauma is important for rural and northern physicians, given that they may be the first to respond in an emergency. The "golden hour" in the management of trauma in an urban setting does not often apply, because of the distance and time involved in transporting the patient to the appropriate facility. The workshops are designed to promote a multidisciplinary approach. Nurses and other health care professionals are involved in the workshops and act out their roles during the practical sessions.

Strengths and weaknesses of the program

It is too soon to determine the success of the program in meeting its mission of encouraging the trainees to work in rural and northern Canada, but the initial results are encouraging. Only 14 residents have completed the program thus far, but 11 of those graduates are practising, 10 (91%) of them in rural practices. Six of the 10 now in rural practice returned to work in Labrador, 3 for long-term practice and the other 3 for locum work. The 3 residents not yet in practice have undertaken further postgraduate training: a third year of emergency medicine for one, a third year of obstetrics and general surgery for another, and a residency program in community medicine for the third. One graduate is now in urban practice.

The strengths of the NorFaM program are exemplified by the positive evaluations of the program by the residents. In the final evaluation, completed by the residents at the end of the program, 12 (86%) of the 14 graduates have evaluated the program as excellent overall. All of the residents have felt that the NorFaM experience encouraged them to work in rural practice.

The NorFaM program was developed with the suport of the communities and continues to receive that support. It is based in the communities, in that the residents follow their patients to those communities for at least part of the rotation. The residents are also involved in some public health during their work with the community health nurses and community health representatives. They practise health promotion at the individual, family and community levels.

The main weakness of NorFaM is the need for further training. The residents need more experience in surgical procedures and complicated deliveries, they need opportunities to perform regional anesthetic blocks, and they need formal teaching and experience in community development. It is our opinion that the NorFaM program can be enhanced by extending the duration of the residency, with blocks of time set aside for the acquisition of additional skills.

Future directions

Health care is only one of the determinants of health; others, such as education, level of income, social status, social support, employment, the physical environment, childhood development and lifestyle, are keys to achieving better health for the community.[18] Community development has the potential to improve the overall health within communities. Therefore, we recommend that community-development strategies be taught in NorFaM. Residents will thus be able to participate in community development within the communities for which they provide medical services. For example, residents could advise community leaders about the high prevalence of diabetes mellitus and the relation of this disease to changes in lifestyle. They could help community groups seeking funding for culturally appropriate exercise programs and recreational facilities, and they could promote the modification of school curricula to include adequate content on diabetes, diet and exercise.

Residents are more likely to learn the appropriate skills in surgery, obstetrics and gynecology, and anesthesia in a rural setting while working with the relevant specialists and community family physicians. This training is best delivered in an integrated fashion with mentorship from the specialists and community family physicians.

The program could be improved and could become more cost-effective if there were further horizontal integration of the teaching modules. For example, ambulance attendants, pilots, nurses and physicians could work together to deliver the medical evacuation workshop to combined classes of trainees in all of these professions. In other sections where there is common interest and where team- work is necessary, workshops could be delivered conjointly. During case simulations, each of the health care professionals could practise his or her individual and team member roles.

Conclusions

The NorFaM program is a unique program for rural and northern family medicine in Canada. It provides trainees with an intense learning experience in a setting that approximates their future practice environment. As of the date of writing, about 90% of the graduates who are in practice are working in rural areas. Our experience suggests that a 3-year rural and northern family medicine program is needed to allow adequate time to acquire the range and depth of knowledge and skills to function competently and confidently as a rural or northern family physician. The additional year would provide more time for training in community development, and additional surgical, obstetrics and gynecology, and anesthesia skills. Recognition of the additional year of training by the College of Family Physicians of Canada and through increased financial remuneration from the physician funding agencies would enhance the status and profile of rural medicine. Ultimately, this could provide better training and help to address the difficulty of attracting physicians to rural and northern Canada.

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Defining rurality: a General Practice Rurality Index for Canada

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Contents

Abstract

An instrument for measuring the rurality of Canadian general practice is needed to provide a standard of comparison that can be used by researchers, educators, administrators and rural physicians. After reviewing the relevant literature and identifying possible variables, the author proposes a General Practice Rurality Index (GPRI) for Canada. Six of the variables identified

were chosen to be part of the GPRI: remoteness from a basic referral centre, remoteness from an advanced referral centre, drawing population, number of general practitioners, number of specialists and presence of an acute care hospital. Each variable was weighted, and their values were summed on a 100-point scale. The Canadian GPRI is a preliminary model, and further study is needed to determine its validity and reliability.

Résumé

On a besoin d'un moyen de mesurer la ruralité de la pratique générale au Canada afin d'établir une norme de comparaison que pourront utiliser les chercheurs, les éducateurs, les administrateurs et les médecins ruraux. Après avoir effectué une recension des écrits pertinents et repéré des variables possibles, l'auteur propose un indice de la ruralité de la pratique générale (IRPG) pour le Canada. Six des variables définies ont été choisies comme éléments constituants de l'IRPG : éloignement d'un centre de consultation de base, éloignement d'un centre de consultation avancée, population desservie, nombre d'omnipraticiens, nombre de spécialistes et présence d'un hôpital de soins actifs. On a pondéré chaque variable et fait le total sur une échelle de 100 points. L'IRPG canadien est un modèle préliminaire et il faut l'étudier davantage pour en déterminer la validité et la fiabilité.

widely accepted and validated definition of "rural" in the context of medical practice has not yet been developed in Canada. Such a definition is urgently needed. It has been said that "a lack of a definition inhibits the ability to forge cohesive political coalitions, impedes a description of the distinctive health care needs of rural populations, and obstructs the search for solutions to the problems of rural dwellers."[1]

Rural dwellers include rural physicians who are practising in a significantly different environment with distinctly different practice patterns from their urban colleagues.[2,3] They have a need to be recognized for this distinctiveness,[4,5] they have unique educational objectives, and they may need special support to maintain a sustainable practice and lifestyle in rural areas.

An evidence-based definition of rural medicine would facilitate research leading to improvement in the education and recruitment of rural physicians, the decision-making of government and the health care of rural citizens. This paper proposes such a definition in the form of a General Practice Rurality Index (GPRI).

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Review of the scientific literature

Other indices of rurality

Two independent searches of the MEDLINE database were undertaken, one going back to 1992

and the other to 1982, to look for definitions or indices of "rural." There was little material on this subject.

Sociologists in the United States have developed a number of methods for measuring rurality, one of which is the Connectedness Index outlined by Cleland and Mushlitz.[6] This index used 10 variables, including proximity to a metropolitan area, population growth rate, level of education, type of employment, family income, level of retirement and number of locally published newspapers. A complex mathematical formula was used to weigh the variables.

Rousseau, in a review of various definitions of rurality in the United Kingdom,[7] concluded that the term "rural" encompasses a wide range of communities: affluent, deprived, agricultural, industrial, stable, mobile and others. She summarized that "it is difficult to choose any one feature which captures the essence of rurality."

The Montana State University Rurality Index showed that only 2 variables were needed to produce results comparable to those of other, more detailed rural health care indices.[1] These 2 variables were distance to nearest emergency care and population. Distance was given twice the weight of population, which was given a negative value.

Practice profiles

Physicians' perceptions as to whether or not they were engaged in rural practice were surveyed by Hartlaub and Gordon[8] in the United States. They found that most physicians living and working in a "non-urban population centre of less than 25,000" felt that they were in a rural practice.

Hays and associates,[3] working in Queensland, Australia, developed a "sampling framework" for rural and remote doctors and surveyed 311 of these doctors to compare their training and practice profiles with those of 142 city doctors. They found that doctors who were more than 80 km or 1 hour's travel time from the nearest, most frequently accessed hospital and support services were significantly more likely to practise a wide range of clinical and procedural skills and use a wide range of procedural clinical equipment and were more likely to have restricted access to health and community services. They also found differences in the practices of "remote" doctors, those more than 300 km or 3 hours' travel time from support services. Local area population was a better predictor of these differences than individual town population.

A more statistically rigorous study was that by Britt and colleagues,[2] who surveyed 231 full-time Australian general practitioners. The practices were randomized and stratified in advance according to location in metropolitan or large (population greater than 15 000), medium (population 5000 to 15 000) or small (population less than 5000) country towns. The doctors recorded the details of all patient encounters in two 1-week periods separated by an interval of 6 months. Country general practitioners were more likely to be older, male and in solo practice. Access to medical specialists and other support services decreased in proportion to population. Country general practitioners were more likely to do hospital and procedural work, especially

emergency surgery, anesthesia and obstetrics. Counselling and preventive medicine such as Papanicolaou smears were less common in smaller towns, but treatment of musculoskeletal complaints was more common. Doctors in the smallest, most remote towns wrote fewer prescriptions, requested fewer tests and made fewer referrals. Further research in this area is currently underway (Dr. R. Strasser, director, Monash University Centre for Rural Health, and professor of rural medicine, Moe, Australia: personal communication, 1997).

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List of possible variables

There would appear to be numerous differences between rural and urban medical practices that could potentially be measured. Some of these are described here in 6 broad categories.

Health care facilities, staff and equipment

The type of hospital and associated facilities can vary significantly. It might be important to know if the community has a pathology laboratory, a medical imaging centre, an intensive care unit, a psychiatric ward or a functional operating room and the appropriately trained staff to provide services in these facilities.

Number of physicians

The numbers of community general practitioners and specialists are reduced in rural areas and would be indicators of on-call frequency and consultative support.

Remoteness and availability of transportation

The distance from higher level medical services and educational, social, political and cultural centres is obviously a very important factor. Access to air, road and water transport is closely related to this factor.

Paramedical support

The presence and level of training of nonphysician health care professionals in the community constitute an important variable.[3] A nursing triage system can reduce the disruption caused by phone calls and the frequency of emergency call-outs for rural physicians. Midwives can share the obstetric workload, community nurses can relieve some house call duties, mental health counsellors can reduce the demands of counselling patients, and public health nurses can provide routine immunization and patient education programs. Physiotherapists, dietitians, occupational therapists and others have important roles in patient care but may not be available in small towns. The capabilities of the ambulance service are also critical in determining whether the rural physician must accompany patients during transfers.

Social factors

Social factors are varied and are not adequately addressed by the research. Many family and

social opportunities are not available in rural and remote centres. Housing is likely to be less plentiful and less marketable than in urban centres. There will probably be fewer school and course choices for students. Postgraduate educational facilities may be absent or very limited. Continuing medical education opportunities for physicians are likely to be infrequent. There may be fewer employment options for a doctor's spouse, as well as fewer child care options. The local retail and service industry may be limited and relatively expensive. Amateur arts and culture groups may be present, but access to professional performances and teaching will likely be restricted. Amateur sports may be present to some extent, but again, access to quality facilities, professional coaching and major league teams may be relatively poor. Most Christian churches are established in larger rural Canadian towns but often not in the smallest communities. Rarely will one find a synagogue or other non-Christian place of worship.

Population

Population appears to be inversely related to the availability of many of the services mentioned above. Rural populations are more scattered, may have lower average incomes and may have significant subpopulations with specific health care needs.

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Variables used in the GPRI and how they are scored

The inclusion of all of these variables could generate a very accurate and highly sensitive rurality index but at the expense of being unwieldy and impractical. The GPRI is therefore based on the premise that the degree of restriction in access to most facilities and services and the particular practice profile of rural physicians can be predicted by the following 6 weighted variables: remoteness from a basic referral centre, remoteness from an advanced referral centre, population, number of general practitioners, number of specialists and presence of an acute care hospital (Table 1). The assignment of points to each of the 6 variables takes into consideration their relative importance. A 100-point scale has been chosen because it allows flexibility to finely adjust the relative weights as a result of future research. It is also intuitively easier to compare communities on a percentage scale: the higher the score, the more rural the community.

Remoteness from closest advanced referral centre (25+ points)

A measure of remoteness first necessitates a standard definition of the urban community with which the rural community is being compared. Only then can distances be measured. An advanced referral centre is defined in Table 2.

In their proposed sampling framework, Hays and associates[3] used 80 km or 1 hour's surface travel time from support services as the minimum distance to qualify as rural. Thompson and McNair[9] used 50 km or 30 minutes' travel time because "multiple trauma patients should be taken directly to the nearest hospital for stabilization, unless a higher level of care is available within 30 minutes by ground." Communities were considered "remote" if they were outside the

200-km limit of a helicopter air ambulance service[9] or were at a minimum distance of 300 km or 3 hours' travel time by road.3 This distance would also be reaching the limit of a comfortable 1-day return trip by road for elective services.

It would be logical to use actual travel time to the referral centre, but this cannot be easily or objectively measured. An alternative is to use road distances, but not readily apparent on maps are significant hazards such as road surface, terrain, weather and wildlife, which can greatly increase rural travel time. Some rural communities may have a road link only in winter. To accommodate some of these situations, the GPRI assumes that unpaved roads would be travelled at half the speed of travel on highways, and distances on such roads should therefore be multiplied by 2 (Table 2).

For communities in which the usual method of travel is by air, this distance can be measured "as the crow flies." Obviously air travel is faster than travel by road, but other factors such as mustering time for the crew, travel time for the plane from its home base, and time for the patient to travel to the airport, be moved on and off the plane, and transferred from destination airport to receiving hospital can make this mode of transport quite slow. Consequently, air distances are not adjusted downward in this index but are considered equivalent to road distances.

Where ferries or water taxis are the usual transportation, distances are covered more slowly and may involve inflexible schedules and delays in loading and unloading the vessel, which could result in speeds approximately one-quarter of the speed of road travel. For these reasons, water distance is multiplied by 4 in the GPRI.

Rather than use of a threshold approach to rating distance in the GPRI, a simple mathematical formula is proposed (Table 1). Such a formula gives a smooth, direct, linear relation between distance and score and would be fairer for communities just below a threshold value.

Remoteness from the closest basic referral centre (25+ points)
It is assumed that a basic referral centre will have a hospital with surgical services available 24 hours per day, as well as medical imaging capability, such as CT, nuclear medicine and Doppler ultrasonography. The presence of certain key specialists in the basic referral centre may indicate such a basic level of service (Table 2).

The basic referral centre is included in the GPRI to reflect the importance of such centres in the medical care of patients from communities that are very remote from the closest advanced referral centre. For this reason, remoteness from a basic referral centre is given twice as much value as distance from an advanced referral centre (Table 1). Distance of more than 500 km from a basic centre and more than 1500 km from an advanced centre would make remoteness more than 50% of the score. This heavy weighting is thought to be justified for the few communities that will fit this criterion.

Remoteness is considered the most important variable in determining rurality, so there is no limit on points in this category.

Drawing population (up to 20 points)
There is no agreement as to what population size qualifies as rural. General practitioners usually provide primary care for people outside the statistical town boundaries. For this reason, the concept of a drawing population or local health area should be used, rather than just the population of the town (Table 2).

The GPRI assumes that there is a direct relation between population and the level of services in the community. Threshold levels used in research have ranged between 5000 and 30 000.[2,3,9] A formula that allows 1 point for every 2000 population below 40 000 achieves a reasonable distribution of scores (Table 1).

Population is given a weight of 20% in the GPRI. The availability of many services is directly related to population, but too much weight on this variable would diminish the more important role of remoteness. Some small communities may be within a short commuting distance of large cities, so should be relatively lower on the rurality scale than bigger, more remote places.

Number of general practitioners (up to 20 points)
The number of doctors working in a given community determines the workload and call-sharing potential, as well as the general feeling of isolation. Surveys have shown that isolation and sharing call with only 1 other physician were significant factors in the consideration of physicians planning to leave rural practice.[5,10] This variable may be independent of remoteness and population.

The GPRI assumes that the highest comfortable call frequency is 1 in 4. To allow for 1 person to be away, this level necessitates at least 5 full-time physicians to be working in the community. Therefore, points are awarded in inverse proportion to the number of general practitioners, with a maximum for the solo rural doctor and the minimum for communities with more than 5 physicians.

For practical purposes, the GPRI assumes that all community general practitioners are doing primary care and are sharing in after-hours call (Table 2). If this is not the case, it is assumed to be a mutually agreeable arrangement among the practitioners in the community.

The number of general practitioners is given a weight of 20% in the GPRI to reflect the importance of this factor relative to the other variables (Table 1). There must be 8 or fewer doctors to score more than 2 points, and a solo doctor scores 20 points.

Number of specialists (up to 10 points)
The number of specialists is directly related to population size;2,11 therefore, one can assume that

the more specialists working in the community, the less rural it is. As for general practitioners, the GPRI uses an inverse relation between rurality and the number of specialists (Table 1). The type of specialist is clearly relevant, but the GPRI assumes that where there is a specialist earning a living, there must be a demand for that service. This in turn would reduce some general practice responsibilities.

This variable is given a weighting of only 10% because it is assumed to be less important to rural general practitioners than the number of general practitioners, the size of the community and the degree of remoteness.

Presence of an acute care hospital (up to 10 points)
Britt and colleagues,[2] in a survey of 3 states in Australia, found that 90% of general practitioners in the smallest towns reported a hospital within 25 km. General practitioners are more likely to practise near a hospital, and those in rural areas are more likely to treat their patients in a hospital. Facilities such as "diagnostic and treatment centres," nursing stations and Red Cross outposts do not generally have inpatient beds so should not be considered hospitals.

The presence of a hospital in a rural community is assumed to indicate that general practitioners are significantly involved in hospital work, possibly including surgery, obstetrics and anesthesia. Physicians who work in rural hospitals are likely to manage more difficult patient problems for longer periods of time than those who do not have access to a hospital. In these hospitals, general practitioners must often participate on medical advisory and other administrative committees.

Therefore, the presence of a hospital on the GPRI scale is a rural credit, albeit a small one (Table 1). Too much weight on this variable would diminish the weight given to physicians practising in remote outpatient facilities.

Where specialists are present, the GPRI assumes that they consult on and treat hospital patients, thereby reducing the hospital responsibilities of the general practitioners. Therefore, this credit is reduced by the number of specialists.

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Discussion

In applying the GPRI, a suggested threshold for "rural" is 10 points. This threshold would exclude all advanced referral centres and some basic referral centres that are within 500 km of the indexed community. Some large (population greater than 40 000), remote basic referral centres could score more than 10 points, and further research of physician practice profiles may establish that these communities should be considered rural.

The score on the GPRI that is considered a threshold for rurality will depend on who is using the

scale and for what purpose. The Society of Rural Physicians of Canada may decide to use a low threshold to be as inclusive as possible in its membership. Governments may decide on a higher threshold for the disbursement of limited funds. Researchers should agree on a common threshold for comparative purposes.

A number of variables were not included in the GPRI that could prove important and should undergo further study.

Population to doctor ratio: This ratio is easy to calculate from the data already gathered and may be an indirect measure of workload. Dissatisfaction with clinical workload[12] and relatively lower financial reimbursement for these heavier workloads10 have both been shown to be major considerations of rural physicians planning to leave their practices. It is not certain if these considerations are also applicable to urban physicians.

Population density: Rural areas are less densely populated than urban areas. The impact of this lower density on general practitioners may be greater travel distances for house calls or responsibility for satellite clinics at significant distances from the home community.

Population demographics: For example, average family income may be lower in rural areas. There may be a difference in the average age of rural and urban populations. Consideration should perhaps be given to special-needs populations such as native Canadians.

Telecommunications: New technology such as fax machines and live satellite video in rural areas has improved the quality of the traditional "telephone consultation." The use of these devices in Canada may reduce the sense of rural isolation and the need for patient transfers.

The GPRI unfortunately does not address the needs of rural specialists. A universal index for all physicians would be more complicated to construct because variables such as population size and numbers of doctors depend on the nature of each specialty. However, it is hoped that this GPRI will serve as a model for the future development of a specialist rurality index.

The main hypothesis of this paper, that the degree of restriction of access to most facilities and services is proportional to the size and remoteness of the community, remains to be fully tested. Further research using this index will perhaps lead to the addition of new variables or the elimination of some of those already in use. The weight of the variables will likely be refined. Further studies may also validate or refute some of the approximations regarding the measurements of distance and population. That these few variables will produce an accurate measure of what rural physicians actually do needs to be proven in the Canadian contxUnfortunately, there is no "gold standard" for comparison.

The next logical step would be a comprehensive and statistically sound survey of Canadian physicians' practice patterns, their access to medical and other services, and the impact of location

on their lifestyle. The GPRI should be used to generate random samples of rural and urban physicians to be surveyed. Differences in practice and lifestyle could then be correlated with the GPRI. Such a study might be expected to validate the scale or lead to further improvements.

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Conclusions

This paper has outlined a preliminary model for a Canadian General Practice Rurality Index (GPRI). Further study is needed to determine its validity and reliability. It provides a framework for further research in rural medical practice and rural health care. Hopefully, it will become a widely accepted instrument for measuring the rurality of general practice in Canada.

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Focus on British Columbia: the university perspective

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From our involvement in rural practice, and now in the educational preparation of family practice residents for non-urban locations, it has become evident to us that rural medicine is rapidly gaining the respect and recognition it has always deserved. As a result of pressure from groups such as the Society of Rural Physicians of Canada (SRPC), many family practice academic training programs have now initiated rural training tracks,[1] and many provincial medical associations are incorporating societies of rural medicine into their organizations and are combining their efforts to develop a rural curriculum. The University of British Columbia (UBC) is no exception.

Department of Family Practice, UBC: mission statement

The mission statement of the Department of Family Practice at UBC is "the education of physicians who are effective providers of patient-centred care in the context of family and community. The Department will provide leadership in the stimulation and facilitation of academic and community-based research and education which addresses the needs of communities."

With this in mind, the department has developed a community-based program that streams residents into specific areas of need including inner city, urban, regional (Prince George and Chilliwack) and rural community-based locations of training.

Rural training program, Department of Family Practice, UBC

The rural training program was initiated in 1981 by the late Dr. Mark Longhurst. It is a community-based training program, which focuses on training residents to meet the needs of rural medicine. It has now graduated 91 physicians capable of practising competently in rural Canada.[2-4] A study of graduates between 1981 and 1992 demonstrated that 50% were practising in isolated rural locations and an additional 20% in non-metropolitan areas of BC. Ninety percent of these graduates felt well prepared to practise in rural locations.[5]

Recruitment and retention meetings

In 1989 and 1991, the Department of Family Practice at UBC hosted meetings to discuss rural recruitment and retention issues. Out of these meetings arose some of the following projects that are now in place and whose effectiveness currently is being assessed.[6] The national recruitment and retention consensus meeting held at the SRPC conference in Banff in April of last year[7] verified the needs and educational strategies identified at the UBC meetings as they related to future rural physician manpower needs.

Curriculum change and flexibility

One of the problems faced by new graduates practising in rural areas is that they sometimes feel unprepared for rural practice. Our study done on outcome and preparedness of rural graduates from the UBC family practice program looked at areas of underpreparedness.5 An example of underpreparedness identified in the study was in the area of orthopedic skills. We asked an expert group of rural physicians if general orthopedic skills were important to their skill needs and we received an affirmative response. This led to a review of how these skills were taught, who taught them and whether the content of the experience was appropriate. It appeared that the training was not appropriate and, as a result, a curriculum change was made to correct this deficit. The process of relating needs to training is ongoing, requiring flexibility in curriculum development and modification.

Enhanced skills program

In 1994, the Department of Family Medicine established an enhanced skills program for rural doctors, directed by Dr. Peter Newbery. This program is aimed at meeting specific medical special-skills needs as identified by rural communities. Practising physicians from those communities who are willing to meet these needs are offered the opportunity to train in a user-friendly and flexible curriculum. Candidates are offered the paid opportunity, for up to a year, to train in such areas as psychiatry, anesthesia, surgery, obstetrics and emergency medicine. Other areas can be considered. The aim is that this training would be carried out in a flexible environment, well evaluated, and tailored to the development of skills usable in the individual's home community. We are working to have the training take place, where possible, in a location

that will allow individuals to maintain a realistic connection with their home setting and practice. A pilot program is also in place allowing paid periods of 2 months for rural physicians to upgrade their special skills.

The Internet

The UBC Department of Family Practice has financially supported Internet access for rural doctors and residents who are involved in the UBC training program. Although this has been a slow process to implement, we now offer UBC-based email addresses and World Wide Web access to all participating rural physicians. We have also encouraged them to link into the email discussion groups of both the SRPC (jwootton@fox.nstn.ca) and the Canadian Rural Medicine Network (www.cfpc.ca/carmen/index.htm) of the College of Family Physicians of Canada. Recently, the university has offered 5 hours a month of free Internet access to all our community-based faculty. One problem remaining is to reduce the cost of long-distance access to the UBC server. We expect to have this problem resolved in the near future. In our opinion, networking through this technology is vital to the future of establishing a strong voice for rural medicine in Canada.

CME teleconferences

The Department of Family Practice, along with the Division of Continuing Medical Education, Faculty of Medicine, UBC, are committed to delivering relevant, cost-effective and appropriate CME to rural doctors and their allied health care colleagues. On alternate Tuesdays throughout the fall and spring of each year, 20 sessions are offered to isolated communities throughout the province. Each presentation is 1 hour long, case-based (for the most part) and, according to our evaluation system, appreciated by the participants. This 2-way audio program allows communication among presenters and participants. Each session involves 170 to 200 rural doctors located in 27 rural communities within BC.

Community-based research

Clearly, we should not be attempting to meet the perceived needs of rural medicine but rather evidence-based community needs. The Department of Family Practice at UBC is pursuing this type of research. Stage I granting has been awarded to the department by the BC Health Research Foundation to begin a project, based on university-community cooperation, to access the medical special-skills needs of rural communities in BC.

Another innovative project directed by the department relates to teaching procedural skills to rural doctors using distance education technology.

British Columbia Medical Association (BCMA)

In British Columbia, it is anticipated that the BCMA will accept the formation of a rural section. Presently, the rural interest group has the status of a standing committee and, on talking with the chair of this group, Dr. Geoff Appleton of Terrace, BC, it is expected that they will move toward section status in the near future. Members of this committee include Dr. Granger Avery (GP, Port McNeill), president-elect of the BCMA, Dr. Geoffrey Battersby (GP, Revelstoke), Dr. Al Lomax (general surgeon, Dawson Creek) and Dr. George Watson (GP, Prince Rupert).

Northern and Rural Task Force

In addition to the efforts of rural physicians and the Department of Family Practice to deal with the problems of rural health care delivery , the BC Ministry of Health has taken some early helpful steps toward addressing some physician resource issues. Acting on the recommendations of its multidisciplinary Northern and Rural Task Force, the ministry has established two offices.

The first is the Physician Recruitment Office, which to date has had requests from some 40 communities to fill upward of 50 vacancies (including vacancies in general practice, family practice, surgery, GP anesthesia, psychiatry and ophthalmology, to name a few). To date, 21 of the vacancies have been filled (for information contact the Physician Recruitment Office at 604 736-5909 or visit their Web site at www.heabc.bc.ca).

The second is the British Columbia Locum Office, at present operated by the Ministry of Health and available to assist in finding locum support for communities with 3 physicians or fewer. This program is flexible and financially rewarding, and it is hoped it will be of interest to a wide range of physicians, including those who have had experience as newly graduated family practice residents trained in rural and regional programs (for information call 250 952-3200).

The future

UBC's Department of Family Practice, like many family practice academic training programs1 has initiated rural training tracks. The BCMA is forming a section of rural medicine. Rural physicians in BC are linked across geographic barriers by the Internet. The BC government is assisting recruitment for rural communities needing rural physicians. All of these initiatives must be assessed with outcome measurements. If they are not working, they should be revised. Continued leadership from the SRPC, and now the College of Family Physicians of Canada and other national organizations, is essential to ensure that rural communities in BC continue to have access to good medical care.

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Country cardiograms case 5

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Can J Rural Med vol 3 (3):135

"Country cardiograms" is a regular feature of the Canadian Journal of Rural Medicine. In each issue we will present an electrocardiogram and discuss the case in a rural contxSubmit cases to Dr. Jim Thompson, Canadian Journal of Rural Medicine, Bag 5, Sundre AB T0M 1X0; jthompso@telusplanet.net

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Case presentation

A 75-year-old woman with a history of breast cancer presented to a rural emergency department with a 1-week history of progressive dry cough, dyspnea, weakness and nausea. She was found to have tachycardia and hypoxemia. An electrocardiogram (ECG) obtained at the time of presentation is shown below. An ECG obtained 4 months earlier had shown only left anterior fascicular block Fig. 1.

How would you manage this case in your rural setting? See answer and discussion on page 147.

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Country cardiograms case 5: Pulmonary embolism

Can J Rural Med vol 2 (2):147

This paper has been peer reviewed.

Findings

The electrocardiogram (ECG) presented on p. 135 shows old left anterior fascicular block, new sinus tachycardia and new nonspecific ST segment and T wave changes in V2 and V3.

Although the ST-T changes were nonspecific, the rural physician would be correct to suspect a new problem involving the heart. The differential diagnosis for these ECG findings is wide and would include ischemic heart disease, cardiomyopathy for reasons other than ischemia, metabolic disturbances, medication effects and pulmonary embolism. A ventilation-perfusion scan in this patient confirmed pulmonary embolism.

Figure 1 compares the right precordial T waves during the pulmonary embolism in October with tracings on the patient's ECGs obtained 4 months before the event (in June) and 2 months after (in December). In the June and December ECGs, the ST segments are isoelectric relative to the TP interval and PR segments, and the ST segment smoothly enters the symmetric T wave. In contrast to those normal images, the ECG obtained during the episode of pulmonary embolism exhibits upsloping ST elevation in lead V3 and a biphasic appearance of the T wave in leads V2 and V3.

Discussion

Pulmonary embolism remains a dangerous, frustrating entity for patients and clinicians in all settings, urban or rural. Assuming that the Canadian population is 10% that of the United States, there are roughly 65 000 cases of pulmonary embolism each year in Canada, resulting in 20 000 deaths.[1,2] It has been estimated that 70% of cases are not detected before death.[2] The signs, symptoms and common laboratory findings of pulmonary embolism overlap with those of many other entities and are rarely characteristic of this condition alone.

The nonspecific pattern of sinus tachycardia combined with nonspecific ST-T wave changes in the right precordial leads is relatively common in pulmonary embolism. It was observed in 13 of 49 patients in one study[3] and was considered "characteristic" in a review by Manganelli and associates.[4] However, a wide variety of other ECG findings can occur in pulmonary embolism, including normal ones.[2]

Nonspecific ST-T changes are common on ECGs taken in rural settings. They were present on 1 in 5 consecutive ECGs in one rural Canadian study.[5] Although the term "nonspecific" means that a particular diagnosis cannot be assigned with any certainty, the physician should always be more suspicious that cardiovascular disease affecting the heart is present when nonspecific ST-T changes are found. In a case such as this one, the clinical history of dyspnea and cough in a patient with breast cancer should raise the suspicion of pulmonary embolism.

The patient was transferred to an urban hospital as an out-patient for confirmation of the diagnosis by lung scanning, then readmitted to the rural hospital and treated with heparin. She recovered without complications.

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The occasional arterial line: Part 2

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Can J Rural Med vol 2 (2):136

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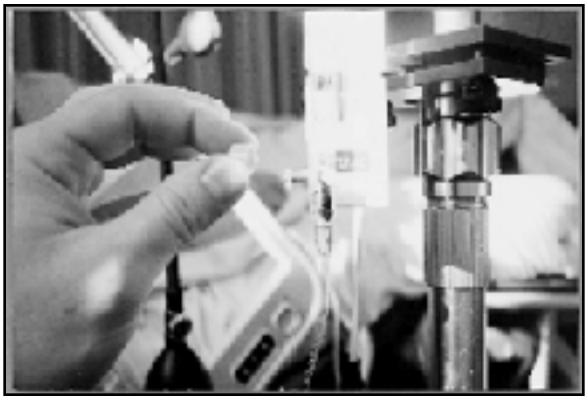
This paper has been peer reviewed.

The most recent in this series of Practitioner articles, "The occasional arterial line" (1997;2[2]:77-79), showed readers that arterial lines are simple and effective in certain cases encountered in rural medicine. The present article will show how to calibrate the set-up and how to draw blood from the line.

Remember that the heparinized saline flows from the pressure bag (inflated to about 300 mm Hg) through the transducer to the catheter inserted in the patient's artery. The transducer has a valve that automatically delivers 2 to 3 mL/h through the catheter. A manual flush valve allows a rapid flush of fluid whenever desired. Make sure that there is no air in the system.

There is a 3-way stopcock close to the transducer and another on the line close to the patient and the catheter. The stopcock close to the transducer is used primarily for calibration or "zeroing." On both stopcocks, the "off" position is the direction toward which the handle points; everything else remains open. When the handle is positioned at 45°, it is "off to everything." In the illustrations for this article, the handle has been painted black.

Zeroing



Make sure that the transducer is positioned at the level of the patient's midaxillary line. Turn the stopcock "off to the patient" (Fig. 1), remove the cap on the port, push the zeroing button on the monitor, and wait until the monitor indicates "zeroing completed." Doing this allows the monitor to "see" only the pressure in the line plus atmospheric pressure, without the patient's pressure; the monitor will automatically deduct this value from the total pressure to give an accurate reading of the patient's pressure. Manually flush a little fluid to fill the port and turn the handle "off to the port." Replace the vented cap, provided with the set-up, with a separate solid cap so that no air or fluid can leak out or in. Replace the cap on the distal stopcock. A good tracing should appear on the monitor screen.

Drawing blood from the line

Fig. 2
From the stopcock closest to the patient, remove the cap (which should already be a solid, nonvented one, as described in the section on zeroing), place it in an opened 2 * 2 cm gauze package, and screw a 5-mL syringe into the port. Turn the handle "off to the bag" (Fig. 2).

Fig. 3
Blood will flow backward up the tubing from the arterial catheter. Sometimes you will have to apply slight suction by means of the syringe. Remove enough of the blood-fluid mixture (3 or 4 mL) to ensure that only pure arterial blood is in the line (Fig. 3). Turn the handle to the 45° position ("off to everything"). Unscrew the syringe and discard it.

Fig. 4
Screw on either a heparinized syringe (for blood gases), a nonheparinized syringe (for regular blood work) or a venipuncture adapter, which is commonly used to accept standard tubes in the usual blood-taking procedure, and turn the handle back to "off to the bag" (Fig. 4).

Fig. 5
Withdraw the blood needed, turn the handle back to 45° ("off to everything"), and remove the syringe or adapter (Fig. 5).

Fig. 6
Turn the handle "off to the hub."

Manually flush the line in short bursts (less then 1 second each), to prevent distal arterial blanching, until all the blood is gone from the tubing (Fig. 6).

Fig. 7
Turn the handle "off to the patient" and flush the hub area to remove blood and air. Sponge it with a 2 * 2 cm gauze pad held over the hub opening (Fig. 7).

Fig. 8
Replace the cap (solid, nonvented), and turn the handle "off to the hub" (Fig. 8).

Keep the catheter in place for as short a time as possible, preferably less than 3 days.

Fig. 9
And "Bob's your uncle" -- no pain for the patient and a set-up that allows you to collect a plentiful supply of blood for all the tests you may wish to request (Fig. 9). Our nurses learn this technique from each other, and once they know the procedure they are certified by one of the physicians. They are proud to do it, and they appreciate the convenience it affords both themselves and the patient.

Correction

The illustration labelled "step 5" in the first article about inserting arterial lines (1997;2[2]:77-79) was linked to the incorrect txThe photo actually illustrates the connection of the cable from the pressure cassette of the monitor to the wires from the transducer.

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Rural pearls

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Can J Rural Med vol 2 (2):139

Breaking the news of unexpected death

> "I have a rendezvous with Death, at some disputed barricade."
> --Alan Seeger, killed in action, World War I, 1917

We all have a rendezvous, somewhere, sometime, with death. Knowing this makes it no easier to inform the next-of-kin, often our own patients and friends, that a loved one has died. It is one of our more distressful tasks as physicians. It is a reminder of our ultimate failure as physicians and also a reminder that someday our own families will be informed of our deaths.

This task is especially difficult when the death is sudden or unexpected. As rural physicians, we, the authors, have learned (sometimes the hard way) that there are good ways and bad ways to communicate this news. Over the years, we have developed a procedure for informing family members that a loved one has died suddenly.

Contacting the next-of-kin

Unless the death was clearly expected, people should not be given the news over the telephone. It is best if someone telephones the next-of-kin and says to them, depending on the circumstances: "We'd like you to come in now" or "Your wife has had a car accident. We'd like you to come down now to the hospital."

This call is best made by a nurse, not the physician: if the family member asks at this time if the patient is dead, the nurse can simply state that s/he was asked by the physician to call with that

message; s/he need not divulge anything more. If the next-of-kin live too far away to come to the hospital, our usual practice is to ask the local police to phone the family's local police and ask that an officer go to the home to break the news. The physician involved supplies his or her name and telephone number to the police, so that the next-of-kin can make contact if they so wish. We have always found other police forces very helpful and cooperative in such cases.

Meeting the family upon arrival

The physician or a delegate should wait for the family members at the entrance to the patient's room, or at the ward or hospital entrance, to avoid having the next-of-kin walk in unexpectedly on the deceased. If the medical and nursing staff are going to be occupied with other patients, as may occur during disasters, call in a social worker or the administrator on call, so that someone can be devoted to the needs of the family of the deceased. When the family arrives, take them to a private setting, usually an office. Ask the family members to sit down and, if possible, sit down yourself, to introduce an element of calm.

Breaking the news

Give the family members a chance to reach the correct conclusion by themselves. State that you have some very sad news and explain why the person who has died was brought to the hospital. At this time, many family members ask immediately, "Is s/he dead?" Confirm this conclusion clearly: state that the person is dead or has died. If the family does not ask within a few seconds, clearly state that the person is dead.

In view of the frequency of denial on the part of the next-of-kin when faced with the sudden death of a loved one, we feel that the physician should use the words "died" or "dead" and not euphemisms such as "passed away" or "couldn't be brought back to life."

Reactions to news of sudden death

The reaction is usually (and appropriately) grief, often denial and disbelief. However, be prepared for anything. There may be anger directed at another family member or at the medical staff. There may be threats and even violence. Be prepared to leave the room quickly.

Ask the family if they wish to have a few minutes alone, and then leave them in the room to grieve in private if they so desire.

Avoid statements such as "I wish we could have done more" or "We did everything possible." Such statements may suggest to the family that you feel you did not handle the medical aspects of the case well enough or that you have something to hide. A better way to express your sympathy or to end the visit is to suggest that the family contact you later, by saying "Please let me know if you need anything in the next few days." If the family has any questions about the medical care

that the deceased received, it is best to discuss these questions openly a week or so later, when everyone, both family and physician, is calmer.

Viewing the deceased

Ask the family if they would like to see the person who has died. Most families wish to do so and find it a therapeutic experience. It is a last visit to the family member they knew, it confirms death as a normal and open part of life and, we feel, it counteracts denial. A clergyman may be called to be present at that time, if the family wishes. Dignified and proper handling of their deaths is the final act that we perform for our patients.

> "The Democracy of Death, It comes equally to us all and makes us all equal when it comes."
> --John Donne (1572-1631)

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Is rural medicine a discipline?

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Can J Rural Med vol 2 (2):141

- "The SRPC feels no true and lasting progress will be made until rural medicine is considered a discipline." Dr. Keith MacLellan
- "No one has a definitive answer yet and it must be discussed further." Dr Nick Busing
- "Rural doctors carry a high level of clinical responsibility and provide a broad range of services in an isolated area.... Doctors who practise in rural areas know their practice is different." Dr. Judith Kazimirski
- "Rural practice requires skills not usually needed in urban practice." Dr. Roger Strasser
- "One of our concerns is that discipline has another side to it ... it has an exclusionary characteristic -- if you are not part of the inner circle you are somehow excluded.... I prefer to think of rural medicine as a matter of perspective, point-of-view and focus." Dr. Hugh Scott
- "Rural physicians want it as a discipline to gain professional, public and political attention and support."Dr. Roger Strasser
- "There is a lot of similarity between rural medicine and [the discipline of] emergency medicine ... there is compelling evidence that rural medicine is a discipline. Both have been around a long time, both are defined by overall practice, both are specialities of breadth and cover a full range of human illness and injury." Dr. Garth Dickinson
- "If everytime one is annoyed with the national college one goes off and forms another national college that isn't very helpful." Dr. Hugh Scott

- "There are no clear conclusions today but there is opportunity and willingness to build on this.... A longer gestation period is needed.... We are not ready to rupture the membranes and let this baby be born." Dr. Judith Kazimirski

Is rural medicine a discipline?

The face of family medicine in our urban areas has changed as more and more specialists have cropped up, resulting in family physicians referring patients for problems they were once trained to handle themselves. But rural Canada has few specialists and, with transport an issue, rural GPs must do many procedures their urban colleagues cannot, such as insert chest tubes or arterial lines, to name but a few.

Does this make rural medicine a discipline? The Society of Rural Physicians of Canada (SRPC) thinks so and invited Dr. Judith Kazimirski, president of the Canadian Medical Association, to moderate a discussion of this question at its annual policy convention in Banff this past April. The panel of speakers convened for this discussion consisted of Dr. Roger Strasser, director of the Monash University Centre for Rural Health, Moe, Australia; Dr. Nick Busing, president of the College of Family Physicans of Canada; Dr. Hugh Scott, executive director of the Royal College of Physicians and Surgeons of Canada; and Dr. Garth Dickinson, president of the Canadian Association of Emergency Physicians.

That the question is being asked at all reveals the depth of the frustration felt by rural doctors to get the attention, funding and resources they need to provide quality care, without burnout, to a quarter of Canada's population scattered over more than three-quarters of its land base. Those who hold the power to make the decisions -- the governments, the medical associations, the universities -- are all urban based, and rural doctors routinely feel left out of the equation.

Dr. Keith MacLellan, SRPC president, opened the discussion by saying that the current urban-based policy of centralizing medical services into the cities, which threatens rural medicine, "is OK for Belgium but it's a little different for northern Newfoundland." Centralizing medical services away from rural areas in a country the size of Canada assumes there is a fail-safe, all-weather mode of transport. There isn't and "rural hospitals can't be scaled back like a rheostat," he says. "Lose a rural surgeon and you lose obstetrics and then women can't deliver [in their communities]. Lose one doctor and you could lose 24-hour ER coverage."

Rural Canada is too big to become a satellite community of urban Canada. The answer lies not in centralization and mythical M.A.S.H.-like transport teams patrolling rural Canada but in training and recruiting and funding the personnel to do the job without burnout, so that rural residents don't have to seek health care far from home. This can't be accomplished until rural medicine is recognized as a discipline, says MacLellan.

Dr. Roger Strasser, one of the world's few professors of rural medicine, says rural medicine enjoys far more recognition in Australia than it does in Canada. Strasser sees 4 criteria for rural medicine becoming a discipline: the formation of an academic body (Australia has 2), an intellectually rigorous training program, its own literature describing a unique field, and recognition by outsiders and other associations. "If rural medicine doesn't qualify [as a discipline] it is well on the way in Australia," and the reason, he says, that rural doctors want it recognized is threefold: status, recognition of what we do and resources.

Dr. Nick Busing is not unsympathetic to the problems of rural medicine, but he says "Urban, suburban and rural are just different versions of family medicine.... Maybe different skills are used but the overall focus is the same." He also says, "There is nothing intrinsically rational in the way medical specialities are defined.... What defines a specialty is its focus rather than a unique knowledge or skill." He adds that whereas rural doctors may have a set of skills that are applied differently, the insertion of chest tubes, for example, is not a discipline or different. He suggests altering features of medical training so that rural doctors get what they need, but "We don't want to undo core family medicine [training]. We need to add to the core to meet the needs of rural physicians. We need to train more in context." He feels this can't be done in 2 years and that a third year of training would be needed. "My view is that we must modify the curriculum with additional skills training" and address other issues besides training to help rural medicine, for example, locum support, access to specialists, continuing medical education and so on.

According to Dr. Hugh Scott, the Royal College has recognized 53 specialities, and there are those who think this is too many. In addition, he said there are another 64 mentioned often enough that they could be argued to be disciplines, for example, orthopods limited to hand surgery or small digits, or doctors limited to HIV. "It is obvious that whatever they are certified as, they may become narrower in focus or broader as they continue on their career path." He feels that the question is premature and that "We should watch and evolve and with that evolution comes responsibility for all of us to exchange and find ways to develop the new skills we need depending upon circumstances." He says the college is open to re-entry positions and additional skills training as part of the solution.

Dr. Kazimirski suggested that the SRPC has a role to play here. "This group here today must lead as unilateral ad hoc government solutions are not acceptable," she says.

But according to Dr. Keith MacLellan the fledgling SRPC is a voluntary organization with no outside funding other than memberships and that the rural conference, this panel discussion and the rural critical care workshops were planned on the fly between patient visits. "We would like an integrated inclusive approach" to the problems threatening rural medicine, he says, but at the moment there is not enough funding to do what everyone is suggesting. He says Australia has 35 million dollars injected annually into rural medicine, but the money has created a lot of "fiefdoms protecting their turf.... We would like to avoid that type of split." He says that when more money is available for rural medicine, "I hope we have a structure in place to accommodate and work in

an integrative way with the college."

Not surprisingly the discussion ended in a draw with Dickinson, Strasser and MacLellan agreeing that rural medicine is a discipline and Busing, Scott and Kazimirski reserving judgment. All agreed, however, that rural medicine needs help -- more resources, more funding and better training -- if rural residents and rural doctors are to be well served in an era in which more and more Canadians are leaving cities to live the country life.

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National Rural Critical Care Course: rural docs teaching rural docs

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Can J Rural Med vol 2 (2):143

The Society of Rural Physicians of Canada (SRPC) offered its second and greatly expanded national Rural Critical Care (RCC) Course at the annual rural medicine conference in Banff in April 1997. It covered 8 hands-on topics including insertion of chest tubes, paracentesis and peritoneal lavage, pediatric crises, transport, electrocardiography, radiology, central and arterial lines, ventilators and rapid sequence induction.

The SRPC's goal is to make the RCC course a truly national course for rural physicians designed and taught by rural physicians who have been there and know the problems faced by rural docs in the field, problems that all too often are not recognized or understood by urban specialists.

Rural doctors with a special interest and expertise in their topic know what it's like when the fog rolls in or the roads close in a snowstorm, and they have learned to cope with problems and improvise in emergencies that their urban coutnerparts would never face. Urban specialists cannot know the depth of the need to learn these techniques and the enormous stress placed on a rural doctor forced to make choices that specialists are often not aware must be made; specialists often do not understand that transport isn't an option or that rural doctors are capable of safely practising techniques their urban counterparts cannot do.

Using rural doctors as teachers -- rural doctors who have used the techinques in field conditions and who understand the rural medical life with all its subtleties and nuances and all its larger-than-life emergencies -- makes for a truly hands-on experience in the RCC course. Participants at this year's course often found themselves swapping information and tips, and there were vigorous discussions and lots of give and take between the rural doctors giving the course and the rural docs taking it.

According to course coordinator and SRPC President Keith MacLellan, the RCC course has been developed from scratch because no course existed that specifically addressed the special needs of

rural physicians. MacLellan notes in the RCC course manual1 that many hospitals now require doctors to show proof of certification in a wide array of "LS" courses, which places an impossible burden on rural doctors who usually practise in small groups. Rural doctors can't all take ATLS, ACLS or all the other LS courses because they can't take the time or the expense to get away. A multidisciplinary RCC course to cover issues relevant to rural doctors could solve this maintenance of competence problem. The goal of the course is to give rural doctors a practical base for further learning, depending upon the needs of their communities.[1] Judging by the enthusiasm of this year's participants, the SRPC's national Rural Critical Care Course is a successful first step and has all the potential of evolving into a permanent, national-level CME course (see also the announcement about a related issue, combined CME/locum service, on page 111).

Reference

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Maud Lewis (1903-1970)

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Can J Rural Med vol 2 (2):144

The little ad tacked up in the store was advertising for a woman to "live-in or keep house" for a 44-year-old bachelor.[1] The ad neglected to say that the house he wanted kept was a 3.75 by 4.0 metre shack of handhewn beams, boards and spruce shingles a stone's throw from a rural road, with no running water or electricity, no foundation, an outhouse its only amenity and the sole bedroom a miniature triangular loft accessed by "stairs" in one corner of the shack. Nor did the ad mention how a single woman could keep her reputation intact by living in such small quarters with a bachelor.

It was 1937 and Maud Dowley's parents had just died, the parents who had looked after and protected her for all of her 34 years. Maud's grade 5 education, diminutive frame and birth defects that had left her shoulders sharply sloped and her chin resting perpetually on her chest, made it next to impossible for her to support herself. Her brother took in his dependent sister for a short spell before unceremoniously sending her to live in Digby, NS, with an aunt. Maud Lewis wanted more from life than that.

According to her biographer, Lance Woolaver,[1] she walked 6 miles from Digby to Marshalltown to answer Everett Lewis's ad, but he sent her away without an answer. She returned several days later with an ultimatum: if she was to be a live-in housekeeper she would do it as his wife or not at all. They married in 1938, but Everett was not to enjoy Maud's housekeeping services for long. Severe rheumatoid arthritis had twisted her hands into grotesque caricatures of themselves and she was soon unable to cook and clean. Her childhood hobby of painting folk art re-emerged and she began to create from memory joyous, colourful scenes of everyday rural Nova Scotian life on anything Everett could scrounge, from old plywood, to seashells, the house itself and even the wood stove. Supporting one deformed hand with the other she churned out hundreds of paintings. By day she worked at the small front window on a collapsible metal TV table, and by night Everett brought her an oil lamp to see by, made her meals and cleaned the house. By day he sold fish and Maud's folk art -- she was too shy to sell it

herself -- and later they sold her art from their house.

As Maud's fame grew, so too did their finances, but Everett kept the money to himself and never spent a cent to improve their little shack. Legend has it that he buried the money in their yard. According to Woolaver, Maud seems not to have minded their life of poverty, happy in her own small world despite her painful deformities and recurring illness. "I'm contented here," she once said. "I ain't much for travelling anyway. As long as I've got a bit of brush in front of me, I'm all right." [1] She died in 1970, having never ventured farther than an hour from her birthplace, near Yarmouth. Everett outlived her by 9 years, only to die violently at the hands of a robber trying to find the legendary money. Maud Lewis's folk art is currently on a cross-country tour organized by the Art Gallery of Nova Scotia.

Reference

1. Woolaver L. The illuminated life of Maud Lewis [photos by Brooks B]. Halifax: Nimbus Publishing and Art Gallery of Nova Scotia; 1995.

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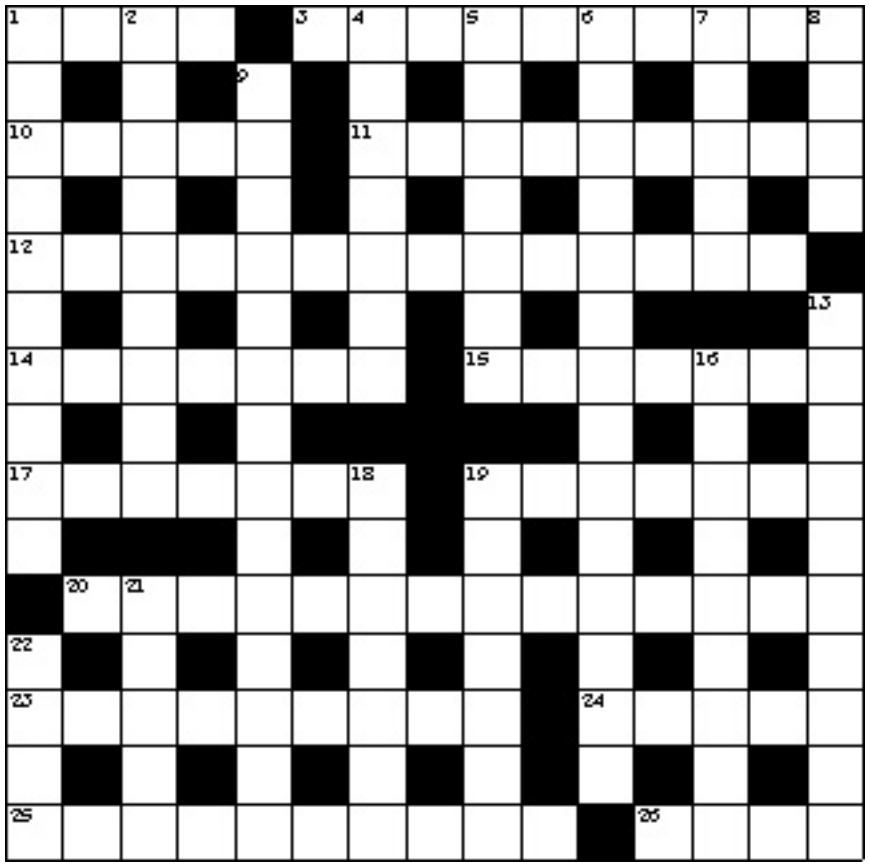
Cryptic Crossword

Lee Teperman
Charteris, Que.

Can J Rural Med vol 2 (2):145



Across	Down
1.Special service group at hospital, at least, has a belt to tighten (4)	1.Underground group that gives crazy club a stitch of clothing (10)

3. Badly handled as a matter led astray (10)	2. Cancer is a fabrication of ancient nomads (9)
10. Possibly inflamed area of back -- like a massage? (5)	4. Sensitivity shown by smaller gynecologists (7)
11. Diner's dozen? (9)	5. What children are to Saturday morning TV and what parents hear, so to speak? (5,2)
12. Improper conduct in trade that isn't challenged (14)	6. Test result that rendered God more archaic (14)
14. The disheartened woman in residence (7)	7. Junk food or bone ready to be picked (5)
15. Neonatal unit run retroactively by small service club (7)	8. Charter of French education (4)
17. Keeping complete records uses memory (7)	9. Art is entertaining; home movie interminably excruciating (4-10)
19. White man's possession by means of rumour (7)	13. Yen doctor has to be embraced by nun can cause a chemical reaction (10)
20. Slipped cog or a clinical study related to crabs (14)	16. Old jelly-maker, good and pregnant (9)
23. Question, universal answer and viewpoint a female audibly challenged (5-4)	18. Southern region of the U.S. or North with subtle changes (3,4)
24. A lassie gone awry (5)	19. Headstrong headwind bearing no good? (7)
25. May I be described by partner as acting like god? (10)	21. Gore ready to fight or give fright (5)
26. Urges on crackers? (4)	22. African Queen upon Amazonian sources of water (4)

Answers to the cryptic crossword appear on page 119

For instructions on how to tackle a cryptic crossword, please see the first issue of CJRM (1996;1:34-35) or correspond with Lee Teperman, RR 5, Shawville QC J0X 2Y0; bullhits@infonet.ca

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Letters / Correspondance

Can J Rural Med vol 2 (2):118

Victoria -- policy statement on rural obstetrics

Rural physicians, nurses, midwives and administrators met in Victoria from May 7 to 10 at a conference dedicated to rural obstetrics and hosted by the BC Reproductive Care Program. Three hundred delegates from across Canada were joined by representatives of the Society of Obstetricians and Gynaecologists of Canada (SOGC) and the Canadian Medical Protective Association (CMPA).

There was widespread recognition that without resources, special skills programs and guidelines appropriate for rural maternity care, many communities have lost, or are about to lose, services in rural obstetrics.

Speaker after speaker presented the case that:

- although hospitals may withdraw maternity services, they cannot withdraw maternity care, as women will always present to these hospitals with emergent maternity problems;
- there is a reduction in good perinatal outcomes in "high-outflow" communities;
- all of the available evidence, although descriptive and without great numeric power, supports the case that rural maternity care is associated with good outcomes;
- although full anesthetic and surgical services are desirable, good outcomes associated with rural maternity care can be sustained without local access to cesarean sections.

The delegates agreed to pursue, urgently and jointly with the Society of Rural Physicians of Canada (SRPC), the College of Family Physicians of Canada and the SOGC, the creation of a policy statement, supported by the CMPA, which would confirm that maternity care in rural communities, with and without local cesarean section capability, is appropriate and associated with good outcomes. The same process will then be used to revisit SOGC guidelines to adopt or adapt them for rural Canada. It was heartwarming to see the enthusiastic support and commitment from both the SOGC and the CMPA.

Stuart Iglesias, MD
Chair, SRPC Obstetrics Committee

Rural organizations: exploring the new media

I have become involved in the Society of Rural Physicians of Canada (SRPC) "experiment" in formulating rural maternity guidelines on the Internet. Why the Internet? Because the physicians involved live, by definition, some distance from urban centres, the business of gathering centrally to do committee work drains a lot of the energy from the work itself. Given that many in the group had met already through RuralMed or another email discussion group, the transition to doing serious work on the Net seemed natural.

Our experience was that the flow of information was rapid and almost overpowering. Within 1 month we had organized our thoughts into no fewer than 5 formal drafts, with input from dozens of people from 3 countries and 2 continents. Each draft became a tangle of many discussion threads from numerous authors, a process that I felt actually helped in forming consensus, since everyone had some ownership of the final product. The contributors included 2 authors of original research papers that we were quoting in our policy. Such rapid advancement would have been impossible for a group of people that large in a conventional boardroom committee structure.

However, in your own virtual conversations, be aware that remarks are often made "off the cuff." You have no hint of your correspondent's state of mind as you fire off your comment, unless and until s/he responds, and there is no body language or short verbal cues to help define a participant's mood. Contributions that are viewed as inappropriate by other participants may be met by strongly expressed reproof, which is called "flaming" on the Net, and it has happened within this group at least once. The telephone quickly solved any temporary impasses that were caused.

Overall, the experiment has been a terrific success to date. We have yet to work out the formal wrinkles of voting and decision-making, but this will probably be done by a motivated subset of the contributors using a virtual set of "Robert's rules" or a more traditional conference call.

Peter Hutten-Czapski, BSc, MD, CCFP
Haileybury, Ont.

Community relationships

The Society of Rural Physicians of Canada and your Journal have done an excellent job of highlighting some of the special problems faced by rural physicians. There is one issue that does

not seem to have received much attention. It relates to the fact that rural doctors and patients live in the same community and are likely to come across each other outside the office. Rural physicians are quite likely to meet their patients, for example, in a queue at the grocery check-out -- patients who may have been refused a sick note or told they are alcoholics or prescription drug addicts. That can be bad enough, but it is worse to meet patients who think you have not treated them correctly, and worse still when they may be right.

David Howe, MD
Parrsboro, NS

Are you a rural doc?

Part 1: Score 10 points for every "yes" answer.

Are you recruiting?
Are you sleep deprived?
Do you forget the names of your spouse and children?

Part 2: Score 0 points for every (a) answer, 1 point for every (b) answer and 2 points for every (c) answer.

1. What percentage of emergency patients do you have no idea how to handle?
(a) <10%
(b) 10% to 20%
(c) >20%

2. Do you recognize your child in the school play?
(a) yes
(b) no
(c) have never seen the school play
3. You moved to your present practice location because:
(a) you like back-up and immediate access to specialists
(b) you like the lifestyle offered
(c) you would like the lifestyle, if only you had the time to do so

Scoring (for rural doc status)
0-4: not a rural doc
5-7: semi-rural or possibly a rural doc
8-10: rural physician

Carl Wisemer, MD (RD)

Cathy Scrimshaw, MD (RD)

Please send us your comments and opinions. Letters to the editor should be addressed to:

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Literature / Littérature

Can J Rural Med vol 2 (2):146

This month's search of SDILINE (MEDLINE's subsection covering the most recent full month of citations) revealed several items of interest. Together, they are further evidence of the growing interest in the level of care that can be provided in rural settings. The first article, and the one that takes this concept the furthest, describes a pilot project in South Africa. The second article provides further descriptive evidence of the safety of vaginal births after cesarean section (VBAC) in rural settings.

The Cardiothoracic Outreach Programme -- a pilot project.
Klein M, Ramoroko SP, Jacobs AG, Bomela MD, Mokhobo KP, Mohlala ML. S Afr Med J 1996;86(12):1533-5.

The "cardiothoracic outreach" of the title refers to the transport of a complete cardiothoracic team into 2 small rural hospitals with "no conventional ICU facilities" and staff who had no "experience of high technology or complex theater work."

Thirty-five major procedures were performed, including 20 cardiopulmonary bypasses. There was 1 intraoperative death, 2 major intraoperative episodes of morbidity (a cerebrovascular accident and an episode of temporary heart block) and 1 late complication (a cerebrovascular accident due to embolism).

Major benefits flowed to the community hospitals involved and to their patients: the elimination of the need for remote referral, an increase in community confidence in the hospital and lower transport costs. The project, which demonstrated the safety and cost-effectiveness of cardiothoracic surgery "under primitive conditions," was judged a "resounding success" by the authors.

Although a similar project is unlikely in the North American context, the demonstration that technology is mobile and can safely be brought closer to rural residents should be encouraging to Canadian rural hospitals that are considering expanding the services they provide locally.

Induction of labour for trial of vaginal birth after caesarean section in a remote district hospital. Kumar S, Maouris P. Aust N Z J Obstet Gynaecol 1996;36(4):417-20.

Although the numbers in this study of VBAC were small (33 women who had previously undergone cesarean section and who agreed to a trial of labour), the success rate was 88%. Only 4 (12%) of the 33 women had to undergo repeat cesarean section.

In this series, labour was induced in 29 of the 33 women, and it is of interest that the issue of induction of labour is currently under discussion by the obstetrics committees of the Society of Rural Physicians of Canada, the Society of Obstetricians and Gynaecologists of Canada and the College of Family Physicians of Canada. The aim of these discussions is to create guidelines for, among other things, the practice of obstetrics in the absence of local cesarean section availability (see also the Letters section, page 118). Future plans include tackling the issue of appropriate settings for VBAC, for induction and for VBAC with induction.

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Country cardiograms case 5: Pulmonary embolism

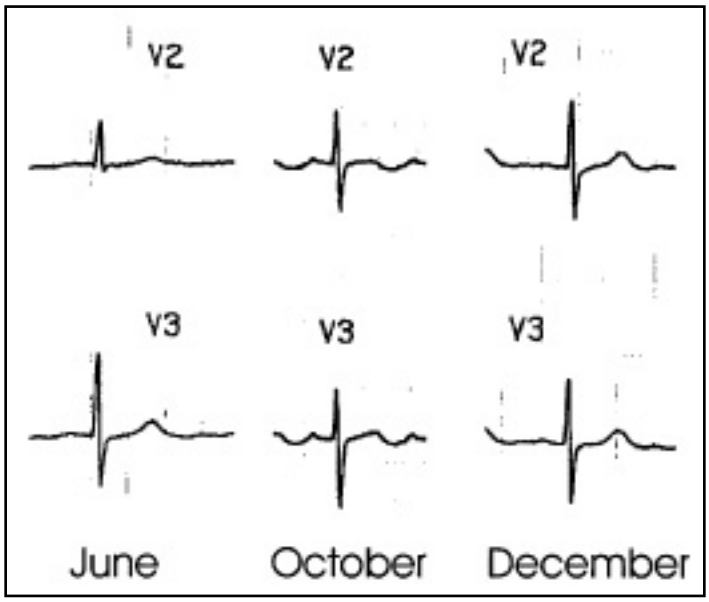

Fig. 1. Nonspecific ST segment and T wave abnormalities during pulmonary embolism in October, compared with normal appearance beforehand (in June) and afterward (in December).Can J Rural Med 1997; 2 (3)

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 2

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 3

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 4

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 5

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 6

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 7

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The occasional arterial line: Part 2

<-- Catheter (wrist) Bag -->

Fig. 8

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The occasional arterial line: Part 2

Fig. 9

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Cryptic crossword solution

Lee Teperman
Charteris, Que.

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Across	Down
1. Sash	1. Subculture
3. Maltreated	2. Saracenic
10. Bursa	4. Allergy
11. Lunchtime	5. Tuned in
12. Uncontradicted	6. Echocardiogram
14. Tenancy	7. Tripe
15. Nursery	8. Deed
17. Recalls	9. Pain-inflicting
19. Whisper	13. Hydrolysis
20. Carcinological	16. Expecting
23. Quasi-deaf	18. Sun belt
24. Amiss	19. Willful

25. Almightily	21. Alarm
26. Eggs	22. Aqua

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Rural Critical Care combined with a rural locum service

The SRPC will be offering a combined CME and locum service. Here's how it works:

CME -- Rural doctors will give 1 or 2 of the following field-tested, hands-on workshops (approx. 2 hours) to a maximum of 10 doctors/nurses per session in your community. Several sessions can be given for any 1 trip. All hand-outs, manuals, and equipment (except respirators) will be provided by the SRPC. Outside funding will cover travel expenses and any honorarium. You provide accommodations.

Workshops: chest tubes, paracentesis, peritoneal lavage; pediatric crises (seizures, trauma, airway obstruction); central lines, pacemakers, arterial lines; rapid sequence induction and when intubation fails; ventilators (using ventilators in place); radiology (radiology locum available); ECG (cardiology consults available); transport issues.

Locum -- At the same time, these rural doctor-teachers are prepared to do short-term locums in your office, clinic or emergency room, weekends and nights included. Licensing fees will be covered by the SRPC.

Cost: $50.00/SRPC member, $100.00/non-SRPC member

We plan to do 3 or 4 pilot runs in the fall and expand as needed. For more information contact:
Keith MacLellan, MD
PO Box 609
Shawville QC
J0X 2Y0
tel and fax 819 647-2845.

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Defining rurality: a General Practice Rurality Index for Canada

Table 1. A proposed General Practice Rurality Index (GPRI)
Sum the points for each of the following that apply (maximum 100 points). Refer to Table 2 for definitions.
Remoteness from closest advanced referral centre Distance (in kilometres) ÷ 50
Remoteness from closest basic referral centre (or advanced referral centre if closer) Distance (in kilometres) ÷ 25
Drawing population 20 - (drawing population ÷ 2000) If negative, score = 0
Number of general practitioners 20 ÷ no. of FTE* GPs with main place of business within 25 km of the centre of the community
Number of specialists If no specialists with main place of business within 25 km of the centre of the community, score = 10 Otherwise, score = 6 ÷ no. of specialists
Presence of an acute care hospital If no acute care hospital with inpatient beds within 25 km of the centre of the community, score = 0 Otherwise, score = 10 - (no. of specialists) If negative, score = 0
*FTE = full-time equivalent.

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Defining rurality: a General Practice Rurality Index for Canada

Table 2. Definitions of terms used in GPRI

Advanced referral centre Closest major metropolitan area with registered subspecialists in cardiothoracic surgery, neurosurgery, pediatric surgery, radiation oncology and hematology
Basic referral centre Closest community with registered specialists in general internal medicine, general surgery, ophthalmology, orthopedic surgery and radiology
Community Any city, town or village with a centre identified on an official government road map; does not include areas, districts, counties or regions without an identifiable community centre
Distances Shortest route in kilometres by paved road from the centre of one community to the centre of another; if no paved road, use the shorter of the unpaved road multiplied by 2 or, in the case of boat or airplane travel, the water distance multiplied by 4 or the air distance as the crow flies
Drawing population The community population plus the area population that regularly uses the community GPs for primary care; if a community has at least one GP, the whole population of that community is assumed to see the local GP(s) for its primary care, so that population should not be included in the drawing population of any other community
General practitioner Any licensed physician working full time who is not registered as a specialist by the provincial licensing authority

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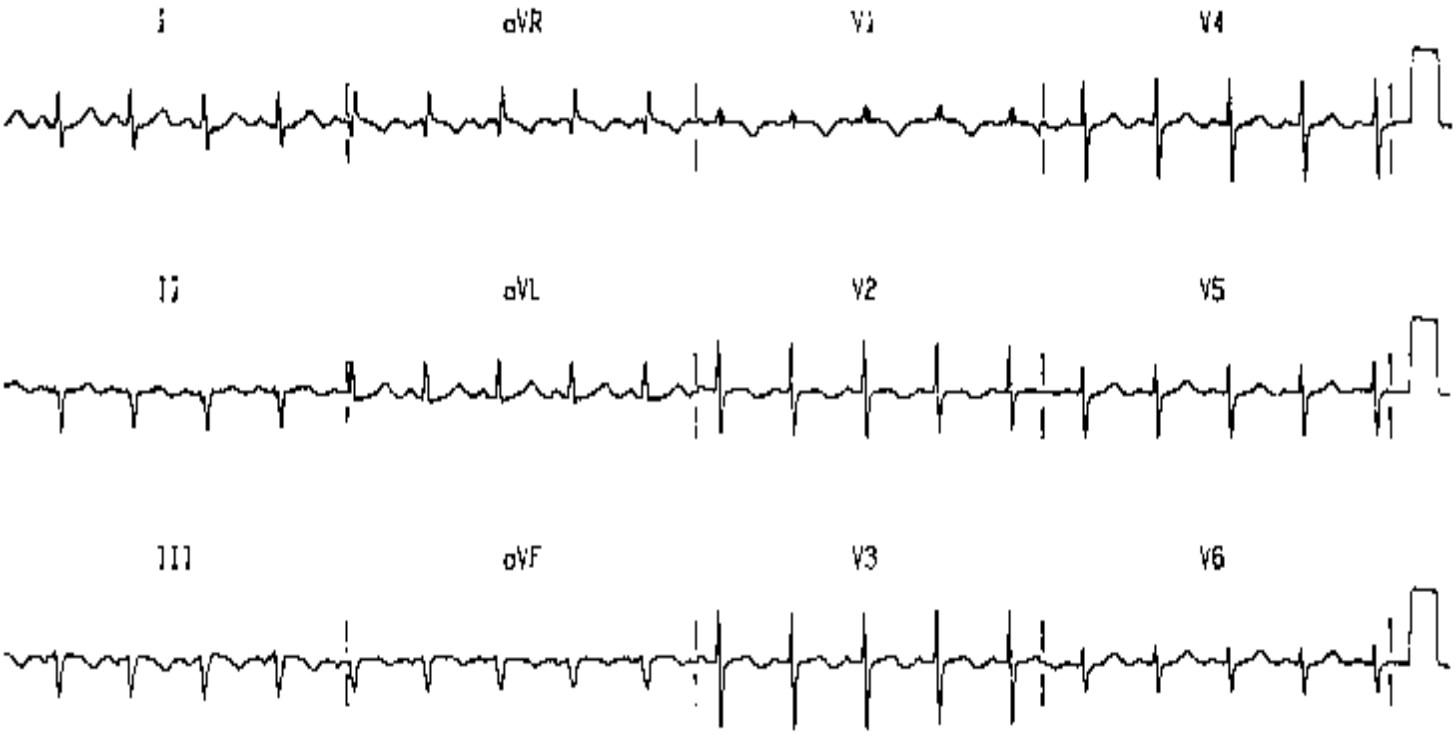
Country cardiograms case 5



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