

ORIGINAL ARTICLE
ARTICLE ORIGINAL

A comparison of Canadian medical students from rural and non-rural backgrounds

Jeff C. Kwong, MD, CCFP

Irfan A. Dhalla, MD

David L. Streiner, PhD

Ralph E. Baddour, MSc

Andrea E. Waddell, MD

Ian L. Johnson, MD, MSc, FRCPC

Jeff Kwong, Irfan Dhalla, and Andrea Waddell were medical students at the time of the study and are now residents in Community Medicine, Internal Medicine, and Psychiatry, respectively, all at the University of Toronto, Toronto, Ont.

Ralph Baddour is a PhD student in the Department of Medical Biophysics at the University of Toronto.

David Streiner is with the Department of Psychiatry, University of Toronto, and the Kunin–Lunenfeld Applied Research Unit, Baycrest Centre for Geriatric Care, Toronto.

Ian Johnson is with the Department of Public Health Sciences, Faculty of Medicine, University of Toronto.

Correspondence to: Dr. Ian Johnson, Rm. 4017, McMurrich Building, 12 Queen's Park Cres. W, University of Toronto, Toronto ON M5S 1A8

This article has been peer reviewed.

Context: Very little is known about medical students from rural areas currently enrolled in Canadian medical schools.
Purpose: We aimed to compare rural and non-rural students in terms of demographics, socioeconomic status, financial status and career choices.
Methods: As part of a larger Internet survey of all students at Canadian medical schools outside Quebec, conducted in January and February 2001, we conducted post-hoc analyses to compare students from rural and non-rural areas. Canada Post's classification system was used to determine rural status. To compare differences between rural and non-rural students, we used logistical regression models for categorical variables and factorial analysis of variance for continuous variables.
Results: We received responses from 2994 (68.5%) of 4368 medical students. Eleven percent of Canadian medical students come from rural backgrounds. Rural students tend to be older and originate from families of lower socioeconomic status. Students from rural areas report higher levels of debt, increased rates of paid part-time and summer employment, and greater stress from their finances. Nevertheless, rural students are not more likely to state that financial considerations will affect their choice of specialty or practice location.
Conclusions: Canadian medical students who come from rural backgrounds are different from their non-rural counterparts. Students from rural areas face numerous financial barriers in obtaining a medical education and report greater levels of financial stress. Medical schools should examine and address barriers to admission of rural students and they should consider directing more financial resources toward this financially vulnerable group.

Contexte : On en sait très peu au sujet des étudiants en médecine des régions rurales qui fréquentent actuellement les facultés de médecine du Canada.
Objectif : Nous voulions comparer les étudiants ruraux et non ruraux sur les plans des caractéristiques démographiques, de la situation socio-économique et financière et du choix de carrière.
Méthodes : Dans le contexte d'un sondage Internet de plus grande envergure réalisé en janvier et février 2001 auprès de tous les étudiants des facultés de médecine du Canada sauf au Québec, nous avons procédé à des analyses ultérieures pour comparer les étudiants des régions rurales et non rurales. Nous avons utilisé le système de classification de Postes Canada pour déterminer la ruralité. Afin de comparer les différences entre les étudiants ruraux et non ruraux, nous avons utilisé des modèles de régression logistique pour les variables de catégorie et l'analyse factorielle des écarts pour les variables continues.
Résultats : Nous avons reçu 2994 (68,5 %) réponses de 4368 étudiants en médecine. Onze pour cent des étudiants en médecine du Canada proviennent d'un milieu rural. Les étudiants ruraux ont tendance à être plus âgés et à provenir de familles défavorisées sur le plan socio-économique. Les étudiants des régions rurales ont des taux d'endettement plus élevés, occupent plus souvent des emplois à temps partiel et d'été rémunérés et sont plus stressés par leur situation financière. Les étudiants ruraux ne sont néanmoins pas plus susceptibles de déclarer que des facteurs financiers auront

© 2005 Society of Rural Physicians of Canada

une incidence sur la spécialité qu'ils choisiront et sur le lieu où ils décideront d'exercer.
Conclusions : Les étudiants en médecine du Canada qui proviennent de milieux ruraux sont différents de leurs homologues non ruraux. Les étudiants des régions rurales ont de nombreux obstacles financiers à surmonter pour faire des études en médecine et signalent un taux plus élevé de stress financier. Les facultés de médecine devraient se pencher sur les obstacles à l'admission des étudiants ruraux, s'y attaquer et envisager de consacrer davantage de ressources financières à ce groupe financièrement vulnérable.

Background

Because Canada is a large country with a geographically dispersed population, rural health is an important issue. The provision of health care services, and especially the recruitment and retention of physicians, is an ongoing challenge in many areas of the country.[1–3] The physician shortage is particularly acute in rural areas.[4,5] For example, although according to the 2001 Census of Canada[6] 20.3% of the population live in rural communities, only 10.2% of physicians in the Canadian Medical Association Masterfile Database[7] practise in a rural location.

While many factors contribute to a physician's decision to practise in a rural area,[2,8] studies from Canada, Australia and the United States have shown that originating from a rural community is most important.[9–21] In some studies, exposure to rural medicine during training has also been shown to be positively associated with the decision to practise in a rural community.[9,13,15,21–25]

In response to the shortage of rural doctors, some medical schools have expanded their medical training facilities to include new rural sites.[26] Ontario is planning to admit a first cohort of students to a new, rural medical school in the fall of 2005.[27–30] The chief aim of these programs is to train more physicians who will choose to practise in rural communities. Such programs have had some success in other countries that face similar problems in rural health, such as the US.[10,13,22,23,31,32] and Australia.[33] These programs preferentially select those from rural backgrounds and feature increased emphasis on rural medicine by providing training opportunities in rural communities.

Very little is known about medical students from rural areas currently enrolled in Canadian medical schools. A recent survey of Canadian medical students found fewer students from rural areas than expected at Canadian medical schools.[34] Building on this previous work and using previously collected data from the National Medical Student Survey, we performed more detailed post-hoc analyses to compare rural and non-rural students in terms of demographics, socioeconomic status, financial status and career choices. We hope our findings will help to inform policy-makers concerned with the provision of rural health care and to serve as a benchmark for measuring the effectiveness of these policy initiatives.

Methods

Survey design

A questionnaire was developed to examine, among other topics, medical student demographics, socioeconomic status, financial status and related attitudes. Questions relevant to the data presented in this paper are described below. Other aspects of this questionnaire have been described elsewhere.[34,35]

Assignation of rural status

We asked students for the first 3 characters of the postal code of their main residence during their final year of high school. Canada Post's classification system was used to identify students from rural areas: a zero as the second character (i.e., first number) in the postal code indicates a rural area. All other respondents were classified as "non-rural."

Socioeconomic status

Parental income and education were used as indicators of socioeconomic status. We also asked students if they had a physician parent.

Financial status, career choices and related attitudes

Using open-ended questions, we asked students to report their financial debt at entry to medical school and anticipated debt at graduation. To elicit accurate predictions of anticipated debt, we asked stu-

dents to report their current level of debt as well as a breakdown of their debts by source (e.g., government loans, bank loans, credit cards). We asked students to consider their future career options by choosing from 1 of the following: 1) university-affiliated (basic science); 2) university-affiliated (clinical); 3) non-academic clinical; 4) governmental agency; and 5) other. We also asked students if they engaged in part-time employment during the academic year, if they'd had paid summer employment in the past summer, and about their participation in "return-of-service" programs (where a student receives funding to attend medical school in exchange for a commitment to several years of rural or military practice).

Using 5-point Likert-like scales we inquired about the importance of financial considerations on the students' choice of specialty and practice location, as well as the level of stress students were experiencing as a result of their financial situation.

Survey procedure

Approval of the study was obtained from the Ethics Review Office at the University of Toronto. The email addresses of all students enrolled in Canadian medical schools were then collected. Each student was sent an email message containing a personal identification code and an invitation to complete the questionnaire at a specific Internet Web site. The survey was conducted over a 7-week period in January and February of 2001, and draw prizes were offered to encourage participation.

Foreign students as well as respondents who did not provide postal code information were excluded from this analysis. In addition, students from the 4 Quebec medical schools were excluded after data collection but prior to analysis because we could not be confident that their data were representative. Our email address databases for the Quebec schools were incomplete and were found to include pre-medical students. Also, the response rates at the Quebec schools were poor, ranging from 38% to 53%.

Data analysis

Questionnaire responses were automatically compiled into a computer database. Duplicate responses and those with an invalid identification number were removed. The data were imported into a statistical analysis program (SAS version 8) and frequency distributions were examined to find evidence of irregularities in the data. Irregular data points were manually recoded where possible (e.g., $50K would be recoded as $50 000) and nonsensical values were discarded. Descriptive statistics were used to summarize responses to all questions.

We were interested in comparing the characteristics of rural and non-rural medical students, and present unadjusted data in the text and accompanying tables. However, because the proportion of students with rural backgrounds varies significantly among medical schools, we adjusted for the individual medical school when assessing statistical significance. Specifically, we used logistical regression models for categorical variables and factorial analysis of variance for continuous variables, with both school and rural status as predictor variables.

Sensitivity analysis

To investigate the robustness of these results, a sensitivity analysis was performed. This type of analysis involves assessing the extent to which results are affected by changes in inputs, methods or assumptions. To further assess whether confounding by school had an important effect, we re-analysed the data for the set of schools where more than 10% of the students were classified as rural (Table 1). We compared rural and non-rural students both with and without adjustment for school.

Results

In September 2000, there were 4421 medical stu-

Table 1. No. and percentages of rural students at the 12 medical schools included in the study, during January and February 2001

Medical school	Total no. of students	No. of rural students (and % of total)
Memorial University of Newfoundland	125	37 (29.6)
University of Saskatchewan	127	33 (26.0)
Dalhousie University	238	52 (21.8)
University of Calgary	158	21 (13.3)
University of Manitoba	145	16 (11.0)
McMaster University	198	21 (10.6)
University of Alberta	277	24 (8.7)
University of Ottawa	269	23 (8.6)
University of Western Ontario	260	22 (8.5)
Queen's University	212	14 (6.6)
University of British Columbia	289	18 (6.2)
University of Toronto	466	23 (4.9)
Total	2764	304 (11.0)

dents enrolled at the 12 medical schools included in our study.[36] We collected 4383 unique email addresses, of which 4368 were valid. We received 2994 responses, giving a response rate of 68.5%. After excluding foreign students and respondents who did not provide postal code information, 2764 responses remained for further analyses (62.5%).

Three hundred and four (11.0%) of the 2764 respondents lived in a rural area during high school. The proportion of rural students ranged from 4.9% at the University of Toronto to 29.6% at Memorial University of Newfoundland (Table 1). In a previous paper,[34] we reported that 10.8% of 1st-year students came from rural areas; this study included students from all years.

Demographics

The mean (± SD) age of entry of students from rural areas was 24.3 (± 3.0) years, compared with 23.5 (± 2.5) years for non-rural students — a difference of 0.8 years. More rural students were 25 or older at the start of medical school (38% v. 26%; $p < 0.0001$). There was no significant difference between the proportion of females among rural and non-rural respondents.

Table 2. Parental income and education of rural and non-rural students

Variable	No. (and %) of rural students*	No. (and %) of non-rural students*
Parental income <$40 000	79/298 (26.5)	353/2394 (14.7)
Father without university degree	165/304 (54.3)	677/2434 (27.8)
Mother without university degree	163/304 (53.6)	968/2445 (39.6)

*The denominators varied because some respondents did not provide answers to certain questions.

Table 3. Debt status, employment and financial stress of rural and non-rural students

Variable	No. (and %) of rural students*	No. (and %) of non-rural students*
Debt		
Entered medical school with debt	166/304 (54.6)	881/2443 (36.1)
Expecting debt at graduation	282/302 (93.4)	2096/2428 (86.3)
Employment		
Part-time	63/302 (20.9)	344/2453 (14.0)
Summer	106/304 (34.9)	664/2460 (27.0)
Financial stress		
Reported "fair" to "extreme" level	187/303 (61.7)	1358/2451 (55.4)

*The denominators varied because some respondents did not provide answers to certain questions.

Socioeconomic status

Rural respondents reported both lower household incomes ($p < 0.0001$) and lower levels of parental education ($p < 0.0001$ for both maternal and paternal education) than non-rural respondents (Table 2). Rural students were also less likely to have a physician parent than their non-rural counterparts (5.6% v. 15.2%; $p < 0.0001$)

Financial status, career choices, and related attitudes

Compared with non-rural students, more rural students entered medical school with financial debt ($p < 0.0001$) and anticipated graduating with debt ($p = 0.0044$) (Table 3). As well, among those with debt, rural students reported more debt both at entry to medical school and upon graduation (Table 4). Rural students were more likely to report having had paid summer employment in the past year (34.9% v. 27.0%; $p = 0.01$), part-time employment during the academic year (20.9% v. 14.0%; $p = 0.005$), and to have enrolled in "return of service" agreements (4.9% v. 1.0%; $p = 0.0002$). Rural students were less likely than non-rural students to report an intention of working in a university setting (40.6% v. 56.8%; $p < 0.0001$).

Rural students were more likely to report fair to extreme levels of financial stress (61.7% v. 55.4%; $p = 0.03$). Despite the increased levels of financial stress experienced by those from rural areas, the proportion of students who felt that financial considerations would be a major influence (i.e., 4 or 5 on our 5-point scale, with 5 representing "the most

Table 4. Indebtedness of students with debt at entry to medical school and at graduation, by quartile

Variable	Quartile; debt ($)		
	25th percentile	50th percentile	75th percentile
Debt at entry to medical school			
Rural students	10 000	16 750	30 000
Non-rural students	6 000	13 000	23 000
Debt expected upon graduation			
Rural students	48 000	70 000	100 000
Non-rural students	40 000	60 000	85 000

important factor") on their choice of specialty or practice location was actually slightly higher (but not significantly so) for students from urban areas: 18.8% v. 14.5% for specialty choice (p = 0.12) and 24.6% v. 22.7% for practice location (p = 0.35).

Sensitivity analysis

Most of the differences between rural and non-rural students that were statistically significant in the main analysis remained so in the sensitivity analysis. The exceptions were the comparisons for paid summer employment, part-time employment during the school year, and financial stress. In all 3 cases the magnitude of the difference between rural and non-rural students was slightly smaller (but in the same direction) as in the main analysis.

Discussion

We found that the 11% of Canadian medical students who come from rural backgrounds are different than their non-rural counterparts. However, our data did not confirm the popular belief that rural students are more likely to be male. Rural students tend to be older and originate from families of lower socioeconomic status. Students from rural areas report higher levels of debt, increased rates of paid part-time and summer employment, and greater stress from their finances. Nevertheless, they are not more likely to state that their finances will affect their choice of specialty or practice location. Finally, rural students are less likely to plan an academic career.

The finding that rural medical students are underrepresented compared to the Canadian population has been reported previously,[34] and suggests that increased efforts to recruit students from rural areas may be needed. We are unaware of any previous reports on the financial status of rural students. Our findings indicate that students from rural areas face numerous financial barriers in obtaining a medical education. Their families have lower incomes. Many enter medical school with higher levels of debt than their non-rural counterparts, probably a result of having to live away from home to attain their pre-medical undergraduate education. These living costs persist during medical school. Despite being more likely to work during medical school, both during the summer and part-time during the academic year, they graduate from medical school with higher debt than non-rural students. Unsurprisingly, students from rural areas report higher levels of financial stress than their non-rural classmates. These findings suggest that rural students may not be getting sufficient levels of financial support. Policy-makers might consider directing more financial resources toward this group.

Although rural students face greater financial hardship during medical training, they are less likely to report that financial considerations would influence their choice of practice location. We speculate that many rural students may be planning to practise in a rural community and those intentions may have more of an influence on their plan than their financial situation. If this speculation is correct, post-graduation financial incentives may have less impact on alleviating the rural physician shortage than would increasing the enrolment of students originating from rural areas. One US study that supports this notion found that while debt was associated with participation in programs involving post-graduation service commitments, there was no association between higher levels of debt and choosing to practise in a rural area.[37]

When asked to choose their future practice type, fewer students from rural areas indicated plans to pursue an academic career. This may be related to the fact that academic health centres are generally centred in urban areas. Possibly, creation of the new rural medical school in Ontario and expansion of existing medical schools to rural sites may make rural practice more attractive for those interested in academic medicine.

Limitations

Our study has several limitations. We used the second character (i.e., first number) of the student's postal code during high school to identify those from rural areas, which essentially included those who lived in areas where people picked up their mail at the post office or corner boxes. Alternative definitions of "rural" have been reviewed by du Plessis and colleagues;[38] they suggested the "rural and small town" definition, comprising those who live outside the commuting zone of urban centres of 10 000 or more, as being the most appropriate for research purposes. However, this definition would have been impossible to use in our study because we collected only the first 3 characters of the postal code to facilitate the preservation of confidentiality. All 6 characters of the postal code would have been required to identify "rural" students using the "rural and small town" definition. Based on the 1996 census, however, both definitions yielded similar num-

bers for the rural population and there was 78% overlap between the 2 definitions.

It was unfortunate that we were unable to include the data for students from Quebec; our results should be considered valid only for non-Quebec medical students. As well, we relied on self-report for data on socioeconomic and financial status, and could not verify responses independently. Finally, we asked participants general questions about the effect of financial considerations on practice location and preferred career types; there were no specific questions about plans to work in a rural area.

Our analysis should be interpreted with caution. The proportion of rural students varied dramatically by medical school. Such variation likely reflects the population from which these medical schools draw students as well as differences in admissions criteria. Yet we were interested in general comparisons between rural and non-rural students, not between students enrolled at Memorial University of Newfoundland and the University of Toronto. To minimize the effect of the individual school in comparing rural and non-rural students, we included a term for each school in our analyses. Hence the independent effects of each school were minimized in the statistical testing.

Conclusion

In summary, we found that rural medical students differ from their non-rural colleagues in terms of socioeconomic background, financial status, and plans for future practice. We hope that results from this study will provide valuable information to aid decision-makers in implementing policies to increase the number of physicians practising in rural communities in the future.

Competing interests: None declared.

Funding: This research was financially supported by the following organizations: Canadian Federation of Medical Students; Dean's Office, Faculty of Medicine, University of Toronto; Canadian Medical Association; University of Toronto Medical Alumni Association; University of Toronto Students' Administrative Council; University of Toronto Medical Society; Calgary Medical Students' Association; Dalhousie Medical Students Society; Medical Students' Society — Memorial University of Newfoundland; Hippocratic Council, University of Western Ontario; Manitoba Medical Students' Association; McMaster Medical Student Council; Aesculapian Society, Queen's University; Aesculapian Society, University of Ottawa; Student Federation of the University of Ottawa; University of Calgary Students' Union; Medical Undergraduate Society, University of British Columbia; University of Saskatchewan Student Medical Society; Ontario Medical Association; Alberta Medical Association; Professional Association of Residents of Alberta; College of Physicians and Surgeons of New Brunswick; Professional Association of Internes and Residents of Ontario; College of Family Physicians of Canada; Professional Association of Residents of British Columbia; Newfoundland and Labrador Medical Association; Saskatchewan Medical Association; and Professional Association of Residents in the Maritime Provinces.

References

1. Barer ML, Stoddart GL. Toward integrated medical resource policies for Canada: 8. Geographic distribution of physicians. *CMAJ* 1992;147:617-23.
2. Rourke JT. Politics of rural health care: recruitment and retention of physicians. *CMAJ* 1993;148:1281-4.
3. Rourke JTB. Postgraduate medical education for rural family practice in Canada. *J Rural Health* 2000;16:280-7.
4. Rourke J, Newbery P, Topps D. Training an adequate number of rural family physicians. *Can Fam Physician* 2000;46:1245-8, 1252-5.
5. Pitblado JR, Pong RW. *Geographic distribution of physicians in Canada*. Ottawa: Health Canada; 1999.
6. *2001 Census of Canada: population and dwelling counts*. Ottawa: Statistics Canada. Cat no 93F0050XCB01009.
7. Canadian Medical Association Physician Masterfile. Ottawa: The Association; 2002.
8. Canadian Medical Association. *Report of the Advisory Panel on the Provision of Medical Services in Underserviced Regions*. Ottawa: The Association; 1992.
9. Carter RG. The relation between personal characteristics of physicians and practice location in Manitoba. *CMAJ* 1987;136:366-8.
10. Adkins RJ, Anderson GR, Cullen TJ, Myers WW, Newman FS, Schwarz MR. Geographic and specialty distribution of WAMI Program participants and nonparticipants. *J Med Educ* 1987;62:810-7.
11. Easterbrook M, Godwin M, Wilson R, Hodgetts G, Brown G, Pong R, et al. Rural background and clinical rural rotations during medical training: effect on practice location. *CMAJ* 1999;160:1159-63.
12. Boulger JG. Family medicine education and rural health: a response to present and future needs. *J Rural Health* 1991;7:105-15.
13. Brazeau NK, Potts MJ, Hickner JM. The Upper Peninsula Program: a successful model for increasing primary care physicians in rural areas. *Fam Med* 1990;22:350-5.
14. Kassebaum DG, Szenas PL. Rural sources of medical students, and graduates' choice of rural practice. *Acad Med* 1993;68:232-6.
15. Rabinowitz HK, Diamond JJ, Markham FW, Paynter NP. Critical factors for designing programs to increase the supply and retention of rural primary care physicians. *JAMA* 2001;286:1041-8.
16. Rabinowitz HK, Diamond JJ, Hojat M, Hazelwood CE. Demographic, educational and economic factors related to recruitment and retention of physicians in rural Pennsylvania. *J Rural Health* 1999;15:212-8.
17. Wilkinson D, Beilby JJ, Thompson DJ, Laven GA, Chamberlain NL, Laurence COM. Associations between rural background and where South Australian general practitioners work. *Med J Austral* 2000;173: 137-40.
18. Peach HG, Bath NE. Comparison of rural and non-rural students undertaking a voluntary rural placement in the early years of a medical course. *Med Ed* 2000;34:231-3.
19. Rolfe IE, O'Connell DL, Pearson SA, Dickinson JA. Finding solutions to the rural doctor shortage: the roles of selection versus undergraduate medical education at Newcastle. *Austral N Z J Med* 1995;25: 512-7.
20. Willoughby TL, Arnold L, Calkins V. Personal characteristics and achievements of medical students from urban and nonurban areas. *J Med Ed* 1981;56:717-26.
21. Woloschuk W, Tarrant M. Does a rural educational experience influence students' likelihood of rural practice? Impact of student background and gender. *Med Ed* 2002;36:241-7.
22. Rabinowitz HK. Recruitment, retention, and follow-up of graduates of a program to increase the number of family physicians in rural and underserved areas. *N Engl J Med* 1993;328:934-9.

23. Rabinowitz HK, Diamond JJ, Markham FW, Hazelwood CE. A program to increase the number of family physicians in rural and underserved areas: impact after 22 years. *JAMA* 1999;281:255-60.
24. Jones AR, Oster RA, Pederson LL, Davis MK, Blumenthal DS. Influence of a rural primary care clerkship on medical students' intentions to practice in a rural community. *J Rural Health* 2000;16:155-61.
25. Gray JD, Steeves LC, Blackburn JW. The Dalhousie University experience of training residents in many small communities. *Acad Med* 1994;69:847-51.
26. Kent H. BC med school to become country's largest. *CMAJ* 2002; 166:1320.
27. Rourke JTB. Building the new Northern Ontario Rural Medical School. *Austral J Rural Health* 2002;10:112-6.
28. Sullivan P. Opening of new medical school may be postponed 1 year. *CMAJ* 2003;168(10):1307.
29. Sullivan P, O'Reilly M. Ontario's desperate need for rural MDs reason for new medical school. *CMAJ* 2001;164:1883.
30. Sullivan P, O'Reilly M. Canada's first rural medical school: Is it needed? Will it open? *CMAJ* 2002;166:488.
31. Rosenblatt RA, Whitcomb ME, Cullen TJ, Lishner DM, Hart LG. Which medical schools produce rural physicians? *JAMA* 1992;268: 1559-65.
32. Ackermann RJ, Comeau RW. Mercer University School of Medicine: a successful approach to primary care medical education. *Fam Med* 1996;28:395-402.
33. Crump J. Australia's first rural medical school prepares to graduate first MDs. *CMAJ* 2002;166:490.
34. Dhalla IA, Kwong JC, Streiner DL, Baddour RE, Waddell AE, Johnson IL. Characteristics of first-year students in Canadian medical schools. *CMAJ* 2002;166:1029-35.
35. Kwong JC, Dhalla IA, Streiner DL, Baddour RE, Waddell AE, Johnson IL. Effects of rising tuition fees on medical school class composition and financial outlook. *CMAJ* 2002;166:1023-8.
36. *Canadian medical education statistics*. Ottawa: Association of Canadian Medical Colleges; 2001.
37. Pathman DE, Konrad TR, King TS, Spaulding C, Taylor DH. Medical training debt and service commitments: the rural consequences. *J Rural Health* 2000;16:264-72.
38. du Plessis V, Beshiri R, Bollman R, Clemenson H. Definitions of rural. *Rural Small Town Can Analysis Bull* 2001;3:1-16.

Renseignements généraux

Membres de la Société de la médecine rurale du Canada (SMRC) : Abonnement inclus dans la cotisation.

Non-membres (tarifs 2005) : *Particuliers et établissements :* Canada, 62 $ (30 $ l'exemplaire); États-Unis et ailleurs, 68 USD (30 USD l'exemplaire). *Étudiants et autres :* veuillez communiquer avec le Centre des services aux membres de l'AMC (voir paragraphe suivant). Les tarifs comprennent les frais d'envoi de surface. Envoi par avion disponible moyennant des frais supplémentaires de 23 USD par année à destination des États-Unis et de 43 USD par année pour les autres destinations. Les abonnés canadiens sont priés d'ajouter 7 % de TPS ou 15 % de TVH (N.-É., N.-B., T.-N.-L.), selon le cas.

Tous les abonnements sont payables d'avance. Il faut établir les paiements à l'ordre de l'Association médicale canadienne (AMC), dans la devise indiquée. Les cartes MasterCard, VISA et American Express sont acceptées. Commandes et demandes de renseignements : *JCMR*, Centre des services aux membres de l'AMC, 1867, prom. Alta Vista, Ottawa (Ont.) K1G 3Y6; 888 855-2555, poste 2307 (Canada et É.-U.) ou 613 731-8610, poste 2307; télécopieur : 613 236-8864; cmamsc@cma.ca.

Numéros manquants : Il faut présenter sa demande de remplacement de numéros manquants dans les trois mois de la date de publication (les numéros seront acheminés moyennant leur disponibilité).

Changements d'adresse : Il faut prévenir un mois d'avance le Centre des services aux membres de l'AMC (voir ci-dessus) dans le cas des adresses canadiennes, ou International Media Services de New York, 100, Walnut St., nº 3, PO Box 1518, Champlain NY 12919-1518 (É.-U. et ailleurs).

Tirés à part : On peut obtenir en quantité des tirés à part des articles du *JCMR* (50 exemplaires au moins). Pour obtenir plus de renseignements, prière de communiquer avec la coordonnatrice des tirés à part, Janis Murrey (800 663-7336 ou 613 731-8610, poste 2110; télécopieur : 613 565-7704; janis.murrey@cma.ca).

Droits d'auteur et autorisations : Le droit d'auteur de tout le matériel appartient à la SMRC ou à ses concédants, sauf indication contraire. Il est permis de reproduire ou d'utiliser autrement le matériel trouvé dans ce journal à condition de respecter la Loi canadienne sur le droit d'auteur et d'accorder le crédit à l'auteur original. Pour photocopier un document ou le reproduire autrement, veuillez communiquer avec la Canadian Copyright Licensing Agency (Access Copyright), au 800 893-5777; www.accesscopyright.ca. Pour toute autre utilisation, y compris la réédition, la redistribution, le stockage dans un système de consultation ou la transmission sous quelque forme ou par quelque moyen que ce soit, veuillez communiquer avec la coordonnatrice des autorisations, Publications AMC, 1867, prom. Alta Vista, Ottawa (Ont.) K1G 3Y6; télécopieur : 613 565-7704; permissions@cma.ca.

Disponibilité : Le *JCMR* est disponible par l'entremise d'Ovid Technologies, EbscoHost EJS, ProQuest Information and Learning Company, CAB Abstracts, Global Health et *Uhlrich's International Periodicals Directory*. Tous les articles publiés dans le *JCMR* sont disponibles gratuitement au moment de leur parution à www.amc.ca/cjrm.

RuralMed : Pour trouver de l'information sur RuralMed (le serveur de listes de la SMRC), veuillez consulter la table des matières du Journal. Des renseignements sont aussi disponibles en ligne.

Publicité : ***Petites annonces :*** Communiquez avec Bev Kirkpatrick ou Deborah Rodd, *JCMR*, 1867, prom. Alta Vista, Ottawa (Ont.) K1G 3Y6; 800 663-7336 ou 613 733-8610, poste 2127 ou 2314; télécopieur : 613 565-7488, advertising @cma.ca. La section des annonces du *JCMR* contient de l'information sur les tarifs. ***Annonces publicitaires :*** Communiquez avec Nancy Pope (voir renseignements ci-dessus); poste 2111.