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Physicians who stay versus physicians who go: results of a cross-sectional survey of Ontario rural physicians

Ian P. Sempowski, MD, CCFP (EM)
Marshall Godwin, MD, CCFP, FCFP
Rachelle Seguin, BA (Hons), MA

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Objective: To survey and describe the characteristics of physicians who had been practising in one rural Ontario location but left after less than 3 years ("short-term" physicians) and those physicians who practised more than 7 years in the same rural Ontario location ("long-term" physicians). The short-term group consisted of those who had moved to another rural location and a subgroup of physicians who had moved to a nonrural location.

Design: Cross-sectional survey.

Setting: Three categories of rural Ontario towns were studied. Category 1 towns had a population of less than 10 000 and were more than 80 km from a city of 100 000; Category 2 towns had a population of less than 10 000 and were 50 to 80 km from a city of 100 000; and Category 3 towns had populations of between 10 000 and 25 000 and were more than 50 km from a city of 100 000.

Participants: Sixty-two short-term physicians and 172 long-term physicians were identified through the College of Family Physicians of Canada database from 1990–2000 and surveyed by mail.

Main outcome measures: Demographics, medical education, work and community satisfaction, remuneration and access to funded continuing medical education (CME) programs.

Results: Responses from the long- and short-term physician groups are described. Logistic regression was performed in an attempt to identify statistically significant differences between the groups that were independent of other factors. The long-term physicians were more likely to be male, older, on a fee-for-service model, have a higher level of spousal contentedness, a higher presence of children at home, more training in anesthesia, and better access to funded CME

programs.

Conclusions: Spousal contentedness, child-related issues, availability of extra training, and funded CME programs may be areas for future research and interventions to improve long-term retention of rural physicians in Ontario.

Objectif : Recenser et décrire les caractéristiques des médecins qui ont pratiqué dans une localité rurale de l'Ontario mais l'ont quittée après moins de trois ans (médecins «à court terme») et de ceux qui ont pratiqué pendant plus de sept ans dans la même localité rurale de l'Ontario (médecins «à long terme»). Le groupe des médecins à court terme était constitué des médecins déménagés dans une autre localité rurale et d'un sous-groupe de médecins déménagés dans une localité non rurale.

Conception : Sondage transversal.

Contexte : On a étudié trois catégories de villes rurales de l'Ontario. Les villes de la catégorie 1 comptaient moins de 10 000 habitants et étaient situées à plus de 80 km d'une ville de 100 000 habitants; celles de la catégorie 2 comptaient 10 000 habitants et se trouvaient à une distance de 50 à 80 km d'une ville de 100 000 habitants; celles de la catégorie 3 comptaient de 10 000 à 25 000 habitants et se trouvaient à plus de 50 km d'une ville de 100 000 habitants.

Participants : On a repéré 62 médecins à court terme et 172 médecins à long terme dans la base de données de 1990–2000 du Collège des médecins de famille du Canada. On leur a envoyé un questionnaire postal.

Principales mesures de résultats : Caractéristiques démographiques, formation médicale, satisfaction à l'égard du travail et de la communauté, rémunération et accès à des programmes subventionnés d'éducation médicale continue (EMC).

Résultats : On décrit les réponses des groupes de médecins à long terme et à court terme. On a effectué une régression logistique pour tenter de cerner des différences significatives sur le plan statistique entre les groupes et indépendantes d'autres facteurs. Les médecins à long terme étaient plus susceptibles d'être de sexe masculin, plus âgés, rémunérés à l'acte, d'avoir un conjoint plus satisfait, de compter plus d'enfants à la maison, d'avoir une formation plus poussée en anesthésie et d'avoir un meilleur accès à des programmes subventionnés d'EMC.

Conclusions : La satisfaction du conjoint, les enjeux reliés aux enfants, la disponibilité de formation supplémentaire et les programmes subventionnés d'EMC pourraient faire l'objet de recherches et d'interventions afin d'améliorer le maintien à long terme des effectifs médicaux en milieu rural en Ontario.

Introduction

The Canadian health care system has always been challenged by the country's unique geography, with its vast stretches of remote and beautiful wilderness. Nearly one-third of the population lives in rural areas.1–4 They are served by just 12.8% of family physicians and 3% of specialists.5

Since 1993 there has been a declining number of Canadian graduates entering family medicine.6 Only a small proportion of these graduates will establish themselves in a rural area.7 Furthermore, as one of the results of long hours and frequent on-call services, rural physicians are giving up crucial activities such as emergency department coverage, obstetrics, inpatient care and general practice anesthesia.8–10

Personal characteristics may predict choice of rural practice location. Physicians who grew up in a rural area are more likely to return to a rural setting.11–13 Older males are more likely to stay in rural practice long term.14 Spousal satisfaction with practice location and spouse's ability to find employment have not been well studied. Similarly, interests in the outdoors and the rural lifestyle have been difficult to study. A 1991 review suggested that a sense of being needed, the quality of relationships, professional freedom and the challenge of the work were commonly cited reasons for satisfaction with rural work.15

It is widely believed that many graduates shy away from rural practice because they feel poorly qualified to perform many of the extra components of a busy rural practice.16 Third-year residency positions currently allow only about 20% of residents to secure this type of additional training. The Alberta experience prior to 1997 showed that physicians who completed a third year were more likely to enter rural practice.17

The Ontario Medical Association (OMA) Continuing Medical Education (CME) Program for Rural and Isolated Physicians has been providing subsidies since 1993 to rural physicians to attend conferences, do clinical traineeships or purchase educational materials. A physician can qualify for a maximum of $5000 ("maximum" varies annually) of annual reimbursement if the community where their practice is located is on a list of eligible communities (see Category 1 in Methods). Those in our Category 2 qualified for up to $1000 in annual funding. It is unknown whether these programs contribute to long-term retention of rural physicians.

Access to locums is variable, and a number of programs assist in this regard. However, the demand still far outweighs supply in most Ontario rural regions.

In 1982, Stewart and Bass compared doctors who stayed to those who left the town of Cochrane,

Ont.18 The Canadian Medical Association surveyed larger numbers of doctors in 1991.5 Our study attempts to expand upon these studies by looking at a number of additional parameters in both physician groups.

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Methods

The study was designed as a cross-sectional survey of 2 physician groups: "short-term" physicians and "long-term" physicians. Short-term physicians were those who had been practising in one rural location but left that location after fewer than 3 years; this short-term group consisted of those who had moved to another rural location and a subgroup of physicians who had moved to a nonrural location. The underlying rationale for including in the short-term group those physicians who had moved to another rural location was that communities want long-term continuity with their physicians, and if a physician relocates anywhere else (rural or nonrural) it is considered a loss. Long-term physicians were those who practised more than 7 years in the same rural location. Physicians were identified through the 1990–2000 membership database of the College of Family Physicians of Canada (CFPC). Our survey, as described below, included questions that confirmed the group allocation of each respondent, allowing re-allocation of physicians to study groups. Our final study consisted of 172 long-term physicians and 62 short-term physicians. Physicians were surveyed using a modified Dillman method with 2 follow-up mailings to nonresponders after the initial mailing.

In defining a rural location, we chose 3 community groupings with different levels of rurality. Category 1 consisted of 65 Ontario towns with a population of less than 10 000 and a location more than 80 km from a city of more than 100 000. Category 2 represented 11 towns of less than 10 000 population that were between 50 to 80 km from a city of more than 100 000. Category 3 consisted of 15 larger towns having a population of 10 000 to 25 000 located 50 to 80 km from a city of more than 100 000.

A wide variety of factors were examined that may be associated with long-term retention of rural physicians. These included demographic and personal data, medical education, special skills or extra training, work environment and satisfaction, satisfaction with the community, method of remuneration, and access to locums, as well as access to, and funding for, CME. Content validity of the survey was based on factors identified in other studies as potential predictors of retention. The survey was reviewed by a number of rural and academic family physicians, and modifications were carried out in an attempt to keep the survey concise yet clear and understandable. The questions were answered on a 6-point Likert scale, and this data was then dichotomized into 2 groupings.

Frequencies and percentages were calculated for each factor in both groups of physicians. The 2 groups were then compared using the student's t-test for continuous variables and Chi-squared and odds ratios for dichotomized Likert scale data. Any significant predictors, as well as demographic factors, were then entered into a logistic regression to determine if there were any independent predictors. Study candidates with incomplete data on significant predictors were removed by the regression procedure, giving a total of 209 participants. An analysis was also performed comparing the long-term group to the short-term subgroup that moved to a nonrural area.

This study was reviewed and approved by the Queen's University Research Ethics Board.

Results

Of the 332 eligible study participants, 234 (70.5%) responded: 172 (73.5%) were long-term and 62 (26.5%) were short-term. Table 1. details the demographic characteristics. Table 2. outlines results of the survey factors in the long- and short-term groups. Table 3. shows the statistically significant differences and the results of a logistic regression to find independently significant results. Table 4. contains the results of an analysis of the short-term subgroup — the 27 physicians who moved to a nonrural area after practising less than 3 years in a rural location (44% of the entire short-term group).

Demographics

The demographic descriptions of the 2 groups are outlined in Table 1. Long-term physicians were statistically more likely to be male (77.9% v. 56.5%) and were an average of 11.5 years older than the short-term physicians. The majority of both study groups were located in Category 1 towns (the smallest and most rural). The groups showed no significant differences in their proportions in the 3 categories of towns. There was no statistical difference between the groups in regard to whether the physician had lived in a rural location as a child or not.

Medical education

The physicians in the long-term group were less likely to have had exposure to rural rotations in both medical school and residency. In contrast, this group had a higher proportion of physicians with extra training in anesthesia (30.8% v. 12%) and obstetrics (24.4% v. 9.0%). The former was an independent predictor, and there was a trend toward independent significance in the latter ($p = 0.07$). There was no significant difference with respect to advanced surgical skills, emergency medicine training or cesarean section ability.

Work satisfaction and funding model

Overall, 79.3% of our study population was funded by fee-for-service, and long-term physicians were significantly more likely to be paid by fee-for-service. This was shown to be independent of other factors following logistic regression. A higher percentage of the long-term group reported 7 or fewer on-call days per month (60.5% v. 37.1%). They were also more satisfied with support from specialists and with their own ability to get locums than was the short-term group. All 3 of these factors were not independent predictors following logistic regression.

Access to a funded CME program

The long-term group had a significantly higher proportion of physicians who had access to any level of funding ($1000 or $5000 maximum) from the OMA CME Program for Rural and Isolated Physicians when compared to the short-term group (74.9% v. 59.6%). This significance was independent of other predictors.

Community satisfaction

The long-term group was more likely to report that they did not feel socially isolated (80.2% v. 46.8%) and were more likely to have spouses who were content with the community (88.6% v. 48.8%). The latter was shown by logistic regression to be a significant independent result ($p < 0.002$), and the former was borderline ($p < 0.06$). Satisfaction with community resources, personal medical care and the education system were statistically different but were not independent of other predictors following logistic regression.

Subgroup analysis

Table 4. outlines a separate analysis of long-term physicians compared to the short-term subgroup (i.e., those who moved to a nonrural location). Significant results were very similar to the main analysis.

Discussion

Results from this cross-sectional survey have confirmed previous findings11,14,15 and identified new factors associated with long-term retention of rural Ontario family physicians. This may help in directing future research, interventions and resource allocation.

The finding that being male was independently associated with rural retention in our study verifies previous results.14 It may be because women are responsible for a larger proportion of child care in our society, and this conflicts with the longer working hours and on-call responsibilities inherent in rural practice. Long-term physicians were more likely to have children

living at home. Child care programs or incentives and easier opportunities for part-time practice may be areas for future intervention by government or individual communities.

Interestingly, data presented in this study do not support earlier literature that showed that a physician's having grown up in a rural area was associated with retention.11 This finding may reflect changing patterns due to wider information dissemination and awareness of rural medicine and lifestyles.

The 3 categories of communities with differing degrees of rurality did not predict rural retention. This finding warrants further study because this study did not specifically examine the smallest or most remote of towns, which may be the most vulnerable communities with respect to long-term retention.

In this study, exposure to rural rotations in medical school and residency was paradoxically associated with the short-term group, and this likely reflects a bias created by the age difference and different era of medical education for our study groups. No conclusions about the effect of rural exposure in medical school and residency can be drawn from this study. In contrast, there was an independent association with physicians having had extra training in anesthesia and a trend toward their also having had extra obstetrical training in the long-term physician group. Additional third-year training positions may be needed.

Fee-for-service method of remuneration in this study was an independent predictor of rural retention. However, many of the alternate funding plans were originally not available for the older cohort of long-term rural doctors. No conclusions can be made about the effect of different funding models because of this potential bias.

Although the long-term doctors reported a higher satisfaction with access to specialists and locums, and better on-call frequency, these factors were not independently significant. While it may be necessary to place a limit for on-call frequency, this would reduce emergency services if additional physicians are not available. Those areas with a larger on-call/emergency department burden may benefit from extra incentives such as those that have been implemented in Ontario since 1999.

Access to funded CME, specifically through the OMA CME Program for Rural and Isolated Physicians, did show an independent association with long-term rural retention. This finding may provide some early evidence that resources spent in this way may be useful and that additional funding may be justified.

The independent association with increased spousal contentedness and a trend toward significance for less sense of social isolation are very important, and communities may need to address this by looking at ways to integrate doctors and their spouses into rural life. Organized local groups may need to be formed that can integrate doctors and their spouses into social,

cultural, political and other areas of the community.

Results of the subanalysis of doctors who relocated specifically to a nonrural area were similar to the primary analysis, and this may mean that doctors leave because they are dissatisfied with a specific work environment or community situation and not necessarily with rural practice in general. It also validates the decision to include all doctors who relocated to any location in our primary analysis.

The main limitation of this study is the fact that the 2 study groups differed with respect to many factors including sex, age and the era of their medical education.

Only members (noncertified and certified) of the CFPC were surveyed. Results of the College's 2001 National Family Physician Workforce Survey, undertaken as part of the CFPC's Janus Project, show that Ontario physicians who self-report as a rural or remote physician in Ontario in 2001 had a 43% non-CCFP membership status.19 This large group was not surveyed due to our methodology. It is unclear what differences this cohort may have with respect to survey questions and how it may affect the results.

Some significant results in this study may be linked to other significant factors, and thus we have only chosen to draw conclusions from those that were significant following logistic regression. It may also be true that some of the differences between long- and short-term rural doctors relate to inherent pre-existing differences rather than effects of training, rural practice or rural life itself.

Conclusions

Our cross-sectional survey suggests that examining spousal contentedness, child-related issues and social isolation may be areas to explore in attempting to retain physicians long-term in one rural location. Rural physicians who are able to obtain extra training such as anesthesia may be more likely to stay in order to use their extra skills. Additional opportunities for training in 3rd-year positions may be needed. Finally, the finding that access to the funded program for CME developed by the OMA was associated with long-term retention demonstrates that additional funding may be needed to expand or introduce similar programs in other areas.

Ian P. Sempowski, MD, CCFP (EM) Assistant Professor; Marshall Godwin, MD, CCFP, FCFP, Associate Professor and Research Director; Rachelle Seguin, BA (Hons), MA, Research Associate, Department of Family Medicine, Queen's University, Kingston, Ont.

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Correspondence to: Dr. Ian P. Sempowski, Family Medicine Centre, 220 Bagot St., PO Bag 8888, Kingston ON K7L 5E9; sempowski@post.queensu.ca

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