Canadian Return-for-Service Bursary Programs for Medical Trainees

Programme de bourses d'obligation de service pour les stagiaires en médecine au Canada



SHELLEY-MAY NEUFELD, MSC
Graduate Student, Division of Community Health & Humanities
Memorial University
St. John's, NL

MARIA MATHEWS, PHD
Associate Professor, Division of Community Health & Humanities
Memorial University
St. John's, NL

Abstract

Return-for-service (RFS) bursaries for physicians have been in use in Canada for many years, yet little is known about the programs that are currently available or the features of the RFS bursary that are particularly important to potential participants. Using document analysis, we found that RFS programs were available in nearly all provinces and territories. A survey of medical trainees from Memorial University showed that the most important factors in their decision to accept an RFS bursary were the location they would be required to work, the monetary value of the bursary and the return time required to repay the service commitment. RFS bursaries fund trainees who plan to remain in the province rather than attract new trainees to the province. These bursaries may nonetheless serve to reinforce the decisions of physicians who are predisposed to work in an underserved community.

Résumé

Les bourses d'obligation de service (OS) pour les médecins existent depuis plusieurs années au Canada, cependant on connaît peu de choses sur les programmes actuellement en place ou sur les caractéristique des bourses d'OS, lesquelles sont particulièrement importantes pour les participants éventuels. Au moyen de l'analyse documentaire, nous avons découvert que les programmes d'OS sont présents dans presque toutes les provinces et les territoires. Un sondage de l'Université Memorial auprès des stagiaires en médecine montre que les facteurs les plus importants pour l'acceptation d'une bourse d'OS sont l'endroit du travail, le montant de la bourse et le temps requis pour rembourser l'engagement de service. Les bourses d'OS financent les stagiaires qui planifient rester dans la province plutôt que de tenter d'attirer de nouveaux stagiaires dans la province. Ces bourses peuvent néanmoins servir à renforcer les décisions des médecins qui sont prédisposés à travailler dans une communauté insuffisamment desservie.

RETURN-FOR-SERVICE (RFS) AGREEMENTS PROVIDE FUNDING TO MEDICAL TRAINees in exchange for their commitment to practise in a designated geographic area for a period of time after completion of their training (Bärnighausen and Bloom 2009). These agreements all seek to improve physician distribution by providing physicians (or physicians-in-training) with a financial incentive to practise in a designated area (Sempowski 2004). RFS agreements provide different types of monetary incentives, usually depending on the career stage of the recipient, and may target undergraduate or postgraduate students or working physicians (Jackson et al. 2003; Pathman et al. 2000, 2004). Each year of funding generally requires one year of returned service in an underserved area. Many RFS programs include "buy-out options" through which physicians may repay their bursary, with possible penalties, in lieu of fulfilling their service commitment (Copeman 1979; Jackson et al. 2003; Matsumoto et al. 2008; Navin and Nichols 1977).

In many provinces in Canada, RFS agreements form a part of physician retention and recruitment strategies (Barer et al. 1999). While some RFS programs have been in place since the 1960s, the most recent review of RFS programs in Canada was carried out more than a decade ago and includes programs that are no longer offered. Moreover, while popular among provinces, the effectiveness of RFS bursaries in attracting physicians to work in underserved areas is not clear. Barer and Stoddart (1999) argued that financial incentives, including RFS programs, reward physicians who planned to locate in underserved areas anyway. In a study of West Virginia's financial incentive programs for rural physicians, Jackson and colleagues (2003) found that rather than attracting new physicians to rural areas, the program made these locations more appealing to physicians already interested in working there.

In this paper, we provide a snapshot of the terms of RFS programs offered by provinces in Canada. In addition, we assess the attractiveness of RFS terms and the predictors for RFS acceptance among medical trainees. We hypothesized that rather than attract new, previously

uninterested physicians, RFS bursaries largely reward trainees who already plan to practise in underserved areas. This study addresses a critical gap in the physician recruitment literature and provides program planners with data to compare and improve physician recruitment initiatives.

Methods

We conducted a document analysis to create a cross-Canada comparison of RFS bursary programs available to medical students and residents. Only provincial/territorial government-funded bursary programs with return-for-service components were included in this study. We did not compare the incentives offered by hospitals, or by regional or private firms. To gather information about each program we consulted websites of government, student aid and provincial/territorial health ministries and interviewed program contacts by telephone. For each program, we gathered information on 16 attributes: program name, the awarding body, date of origin, funding levels, terms and eligibility requirements, payment and commitment (time and location), the number of awards available and accepted each year, commitment fulfillment rates, and program evaluation status. We used descriptive statistics to analyze these data, which were coded and entered into an SPSS database.

We then carried out an online survey of Memorial University medical trainees (students and residents) to collect information on trainees' bursary status, financial and sociodemographic characteristics, and perceptions of various RFS terms and conditions. The 26 questions in the survey were based on a review of the literature and our documentation of provincial RFS programs. The survey was pre-tested by a small sample of undergraduate and graduate students. E-mail invitations (and two reminders) were sent to 262 students and 239 residents with valid e-mail addresses.

Survey data were imported into an SPSS (version 16.0) database. To assess the representativeness of the sample, chi-square tests were used to compare the sex, year and home province of students and residents (this information was available for the sample frame from public sources). We used frequencies to describe the characteristics of the survey sample and the RFS terms considered most important by Memorial University trainees. We then used multiple logistic regression to identify the predictors of trainees who held, or planned to hold, an RFS bursary and those who did not. Chi-square tests were used to identify differences in the characteristics of trainees who held, or planned to hold, an RFS bursary and those who did not. Variables that were statistically significant in these comparisons were entered in a multiple logistic regression.

Memorial University's Human Investigation Committee (HIC reference #10.215) approved this study.

Results

RFS programs

Thirteen government-funded RFS programs were included in our study, one from every province and territory except Yukon, and two from Manitoba (Table 1). The Yukon does not require a service commitment for its medical trainee funding. The current versions of RFS

programs were established after the year 2000. Some provinces and programs have a definite number of awards that are awarded each year, while the number of bursaries awarded in other provinces varies each year based on budget.

TABLE 1. Comparison of current RFS programs and their terms, by province and territory

| | ź | PEI | SN | Z B | OC | NO | Σ | Σ R | SK | AB | BC | ¥ | NC |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Year of Current Program Origin | 2002 | 2000 | 2000 | 2000 | 2001 | 2000 | 2001 | 2001 | 2000 | 2002 | 2001 | 2000 | 2003 |
| Incentive Type | | | | | | | | | | | | | |
| Bursary | ✓ | | ✓ | ✓ | | | | | 1 | ~ | | ~ | ✓ |
| Grant | | ✓ | | | | | ✓ | ✓ | | | | | |
| Loan forgiveness | | | | | | | | | | | ✓ | | |
| Scholarship | | | | | ✓ | | | | | | | | |
| Tuition reimbursement | | | | | | ✓ | | | | | | | |
| Awarding Body | | • | | • | | | | | | | | | |
| Provincial department of health | ✓ | ✓ | ✓ | ✓ | ✓ | ~ | | | | | | ~ | ✓ |
| Provincial student aid department | | | | | | | ✓ | ✓ | | | ✓ | | |
| Independent body | | | | | | | | | ✓ | ✓ | | | |
| Tax Status | | • | | | | | | | | | | | |
| Tax exempt | ✓ | | | | | | | | | ✓ | ~ | | |
| Tax deductible | | | | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | |
| Taxable income | | ✓ | ✓ | | | ✓ | | | ✓ | | | | ✓ |
| Leave | | | | | | | | | | | | | |
| Maternity | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ~ | ~ | ✓ |
| Medical/compassionate | ✓ |
| Deferral Considered For | | | | | | | | | | | | | |
| Compassionate reasons | ~ | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | ~ | ~ | ~ | ✓ |
| Further training | ✓ | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Penalty | | | | | | | | | | | | | |
| None | | | | | | | | | | | ~ | | |
| Repay funding | | ✓ | | ✓ | | | | | | ✓ | | | |
| Repay/interest from default | | | | | | ~ | | 1 | | | | | |
| Repay/interest from receipt | ~ | | ✓ | | ~ | | ✓ | | ✓ | | | ✓ | ✓ |
| Fees | | | | | | ✓ | | | | | | | |

TABLE 1. Continued

| | 뒫 | PEI | NS | m Z | óc | NO | МВ | Σ E | SK | AB | BC | 눌 | N |
|----------------------|----|-----|----|-----------|----|----|----|--------|----|----|----|----|----|
| Fulfillment Rate (%) | ** | 89 | ** | 90 -95 | ** | ** | ** | ** | ** | ** | ** | ** | ** |
| Program Evaluated | √* | | | | | | ✓ | | | | | | |

RFS = Return for service; * Refers to an Aboriginal-specific RFS program; * In progress; ** Unknown or unavailable information

The majority of RFS programs are given in the form of bursaries, although funding is also given as grants, loan forgiveness, scholarships and tuition reimbursement. All provinces deliver funds directly to the student except British Columbia, where the physician's provincial student loans are forgiven instead (Student Aid BC n.d.). While all programs included in this study are provincially funded, they are administered through different organizations including the department of health, student aid programs or another independent body. In most provinces, funding is tax-exempt or tax-deductible income. Interest charges are imposed if physicians opt to repay funding rather than fulfill the service commitment.

All programs allow for maternity, medical and compassionate leaves but require physicians to move the end date of their service to honour their commitment to the province. Deferral of service due to illness or compassionate reasons or further training may be considered in most programs.

All but three provinces (Nova Scotia, Prince Edward Island and British Columbia) offer funding to undergraduate medical students (Table 2). Eleven RFS programs provide postgraduate funding. The value of RFS funding varies by province, program, trainee year and specialty. The mean for a single year of undergraduate RFS funding is \$15,423 across Canada, with a median of \$15,000. Undergraduate RFS values range in worth from \$6,000 to \$25,000 per year. In 2011–12, the average annual tuition for Canadian students at medical schools in Canada was \$11,345, ranging from \$3,100 at Université de Montréal to \$23,000 at McMaster University (Sullivan 2011).

TABLE 2. Canadian RFS values and return requirements according to province and recipient type

| Province | Recipient Type | Funding Value per Year | Service Required (months) | Service Location Requirements |
|----------|----------------|------------------------|---------------------------|----------------------------------------|
| NL | UG4, FM, SP, P | \$25,000 | 12 | Area of need (entire province) |
| NL | TF | Salary/Tuition | 12 | Area of need (entire province) |
| PEI | FM | \$15,000 | 12 | Vacancy of greatest need |
| PEI | SP | \$20,000 | 12 | Vacancy of greatest need |
| NS | Р | \$15,000 | 12 + 6* | Area of need |
| NB | UG3-4 | \$6,000 | 12 | Rural Health Authority in need |
| NB | FM | \$12,500 | 18 | St. John, Moncton, Fredericton |
| | | \$25,000 | 18 | Outside St. John, Moncton, Fredericton |

Canadian Return-for-Service Bursary Programs for Medical Trainees

| Province | Recipient Type | Funding Value per Year | Service Required (months) | Service Location Requirements |
|------------------|------------------|---------------------------|---------------------------|-----------------------------------------------------------|
| NB | SP | \$20,000 | 18 | Rural Health Authority in need |
| QC | UG3-4 | \$15,000 | 12 | Area of need |
| QC | FM, SP | \$20,000 | 12 | Area of need |
| ON | UG4, FM, SP | \$10,000 | 12 | Underserved area or undersupplied specialty |
| MBª | UGI-4 | \$7,000 | 6 | Rural community |
| MB | UGI-4 | \$12,000 | 6 | Location directed by province |
| MB | UG3** | \$25,000 | 12 | Rural community |
| MB | UG4** | \$15,000 | 12 | Manitoba community |
| МВ | UG4 (RNI) | \$25,000 | 12 | Northern remote community – location directed by province |
| МВ | FM Res | \$20,000 | 12 | Within the province |
| МВ | FM Res (NRFMS) | \$50,000 | 24 | Northern remote community – location directed by province |
| MB | SP | \$20,000 | 12 | Manitoba community |
| SK | K UG2-4 \$15,000 | | 6 | Rural relief (locums) |
| | | | 8 | Rural community |
| | | | 12 | Regional centre |
| SK | FM, SP | \$25,000 | 6 | Rural relief (locums) |
| | | | 8 | Rural community |
| | | | 12 | Regional centre |
| AB | UGI-4 (U of A) | \$11,540 | 12 | FM: non-metro, non-regional community; SP: |
| AB | UG1-3 (U of C) | \$14,384 | 12 | non-metro community |
| BC | MD | 33.3% prov. student loans | 12 | Publicly funded facility in underserved area |
| NWT | UGI-4 | \$10,000 | 6 | Within the territory |
| NWT ⁵ | UGI-3 | \$13,333 | 6 | Within the territory |
| NWT | FM, SP | \$15,000 | 6 | Within the territory |
| NWT ⁵ | FM, SP | \$15,000 | 6 | Within the territory |
| NU | UGI-4 | \$25,000 | See FM or SP | Within the territory |
| NU | FM | \$25.000 | 3 years total | Within the territory |
| NU | SP | \$25,000 | 5 years total | Within the territory |

RFS = Return for service; ^a Refers to an Aboriginal-specific program; ⁵ Refers to five-year medical school programs.

UG = undergraduate, FM = family medicine resident, SP = specialist resident, P = psychiatry resident, MD = practising physician, RNI = Rural/Northern Initiative, NRFMS = Northern/Remote Family Medicine Residency Stream (NRFMS)

^{*} Physicians return 12 months of service for the first year of funding and 6 months' additional funding.

^{**} Will be phased out after 2011-2012 year.

The mean annual level of funding for a family medicine resident is \$22,045 (median, \$20,000) and ranges from \$10,000 to \$50,000. The mean and median values for one year of specialist RFS funding is \$20,000, ranging from \$10,000 (Gouvernement du Québec 2005) to \$25,000. RFS programs specific to psychiatry residents are available only in Newfoundland and Labrador and Nova Scotia. For residency training that is not offered in the province, Newfoundland and Labrador offers travelling fellowships to individuals who seek training in specialties that are considered by program administrators to be needed in Newfoundland and Labrador. These physicians receive their tuition and resident wages while completing residency outside the province in exchange for committing to practise one year of service in Newfoundland and Labrador for each year of funding.

Physicians may receive more than one bursary over the course of their education. The highest potential cumulative funding is \$151,000, available to family medicine trainees in Manitoba, if an individual receives the maximum four undergraduate grants and participates in both the Rural Northern Initiative (RNI) and the Northern Remote Family Medicine Residency Stream (NRFMS) (Manitoba Health 2011–2012). There is also the potential for another \$40,000 in postgraduate grants if a student participating in the NRFMS chooses to return to school for more training after returning his or her service (Manitoba Health 2011–2012). The lowest potential cumulative funding is available in Ontario, where trainees can receive a maximum of \$40,000 over four years.

The service commitment accompanying an RFS agreement varies among and within provinces. The majority of programs require physicians to work 12 months of service in exchange for one year of funding. However, particularly rural or remote areas, as well as relief programs, often require shorter duration of returned service. Most RFS programs require physicians to work in a rural community, or one that is classified as "in need" or "underserved"; however, several programs simply require physicians to remain in the granting province.

Most programs were unable to provide information about the proportion of their contracts that are fulfilled, as opposed to deferred, defaulted or repaid. While the majority of provinces reported that "a lot" or "the majority" of their students fulfill their service, Nova Scotia and Quebec were able to provide actual fulfillment rates (89% and 90%–95%, respectively). Only Manitoba has formally evaluated its RFS program. An evaluation is underway in Newfoundland and Labrador.

Survey of trainees

Two hundred and twenty-eight trainees from Memorial University completed the survey, for a response rate of 45.5%. The sample was representative of the trainee population in terms of sex and province of origin but slightly over-represented first-year students. Sample characteristics are presented in Table 3 (second column).

Over two-thirds of the trainees surveyed were aware of the RFS program, and 79 of these trainees (53.4%) said they held or planned to hold an RFS bursary (Table 4). These 79 trainees represent just over one-third (35.6%) of survey respondents.

Canadian Return-for-Service Bursary Programs for Medical Trainees

TABLE 3. Characteristics of the sample and of trainees (n=228) who hold/plan to accept an RFS (n=79) and those who do not hold/plan to apply for an RFS (n=69)

| Variable | Total n (%) | | to Hold RFS sary* | p-Value** |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|-----------|
| | | No n (%) | Yes n (%) | |
| Sex Male Female | 84 (36.8) 144 (63.2) | 31 (44.9) 38 (55.1) | 24 (30.4) 55 (69.6) | 0.068 |
| Age 23–35 26–29 >30 | 67 (29.4) 99 (43.4) 62 (27.2) | 17 (24.6) 29 (42.0) 23 (33.3) | 18 (22.8) 32 (40.5) 29 (36.7) | 0.194 |
| Home Country Canada Non-Canada | 221 (96.9) 7 (3.1) | 68 (98.6) I (1.4) | 76 (96.2) 3 (3.8) | 0.623 |
| Hometown Size Rural (≤10,000) Non-Rural (>10,000) | 76 (33.3) 152 (66.6) | 21 (30.4) 48 (69.6) | 28 (35.4) 51 (64.6) | 0.518 |
| Home Province Newfoundland & Labrador (NL) Non-NL | 151 (66.2) 77 (33.8) | 34 (49.3) 35 (50.7) | 68 (86.1) 11 (13.9) | <0.000 |
| Student/Resident Status Student Resident | 150 (65.8) 78 (34.2) | 40 (58.0) 29 (42.0) | 47 (59.5) 32 (40.5) | 0.851 |
| Marital Status Partnered Non-partnered | 78 (34.2) 150 (65.8) | 21 (30.4) 48 (69.6) | 39 (49.4) 40 (50.6) | 0.019 |
| Current Education Debt Ist quartile (\$0–29,999) 2nd quartile (\$30,000–64,999) 3rd quartile (\$65,000–124,999) 4th quartile (\$125,000–500,000) | 43 (23.4) 48 (26.1) 45 (24.4) 48 (26.1) | 13 (22.4) 20 (34.5) 12 (20.7) 13 (22.4) | 10 (15.9) 12 (19.0) 16 (25.4) 25 (39.7) | 0.087 |
| Current Total Debt Ist quartile (\$0–36,499) 2nd quartile (\$36,500–99,999) 3rd quartile (\$100,000–227,449) 4th quartile (\$227,500–550,000) | 43 (24.7) 41 (23.6) 47 (27.0) 43 (24.7) | 10 (17.9) 16 (28.6) 18 (32.1) 12 (21.4) | 11 (18.0) 11 (18.0) 18 (29.5) 21 (34.4) | 0.359 |
| Current Financial Concern None to Slight Moderate to Great | 70 (31.4) 153 (68.6) | 30 (43.5) 39 (56.5) | 17 (21.5) 62 (78.5) | 0.004 |
| Expected Financial Concern None to Slight Moderate to Great | 53 (23.8) 170 (76.2) | 26 (37.7) 43 (62.3) | 10 (12.7) 69 (87.3) | <0.000 |
| Planned Practice Province 5 yrs After Residency NL Non-NL/don't know | 106 (47.5) 117 (52.5) | 13 (18.8) 56 (81.2) | 63 (79.7) 16 (20.3) | <0.000 |
| Desired Practice Community Size Rural (<10,000) Urban (≥10,000) | 24 (10.8) 199 (89.2) | 8 (II.6) 6I (88.4) | 7 (8.9) 72 (91.1) | 0.583 |

TABLE 3. Continued

| Variable | Total n (%) | Hold/Plan to Hold RFS Bursary* | | p-Value** |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------|
| | | No n (%) | Yes n (%) | |
| Desired Practice Specialty Family Medicine Specialist/Undecided | 73 (32.6) 151 (67.4) | 17 (24.6) 52 (75.4) | 3 I (40.8) 45 (59.2) | 0.039 |
| Most Important Factor [†] Tax exemption Bursary dollar value Bursary return time Bursary return location Leave/vacation availability Penalty for non-fulfillment | 15 (7.2) 73 (34.9) 29 (13.9) 78 (37.3) 5 (2.4) 9 (4.3) | 4 (6.0) 15 (22.4) 5 (7.5) 38 (56.7) 2 (3.0) 3 (4.5) | 8 (10.7) 31 (41.3) 7 (9.3) 24 (32.0) 0 (0) 5 (6.7) | 0.315 0.016 0.689 0.003 0.221 0.722 |

RFS = Return for service; NL = New foundland and Labrador; * Among the 149 trainees who were aware of RFS program before survey; *** Comparing those who held/planned to hold RFS and those who did not; † Only respondents who said yes are presented; p-values based on χ^2 comparing those who reported item was "most important" and those who said it was "not most important"

TABLE 4. RFS survey sample knowledge, preference and perception of RFS program

| Variable | Total* n (%) |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Previously Aware of NL RFS Program No Yes | 73 (32.9) 149 (67.1) |
| Bursary Status (of those aware of program) Does not hold/Plan to apply for NL RFS Currently holds/Intends to apply | 69 (46.6) 79 (53.4) |
| Preferred RFS Fund Delivery To student as cheque To student as direct deposit/Line of credit To school as tuition To student loan agency Other | 167 (79.9) 4 (1.9) 9 (4.3) 27 (12.9) 2 (0.9) |
| Preferred RFS Recipients Residents only Residents/Fourth-year undergraduates Residents/All undergraduates Other | 42 (20.1) 69 (33.0) 93 (44.5) 5 (2.4) |
| Minimum \$ Required to Consider RFS ≤ \$25,000 > \$25,000 | 131 (72.3) 50 (27.6) |
| Maximum Time for I-Year Funding to Consider RFS ≤ 12 Months > 12 Months | 138 (73.4) 50 (26.6) |
| Preferred Penalty for Not Completing Service Repay Repay/Fine Repay/Interest from default Repay/Interest from receipt Other | 79 (37.8) 42 (20.1) 49 (23.4) 35 (16.7) 4 (1.9) |

RFS= Return for service; NL = Newfoundland and Labrador; * May not total 228 because of missing data

With regard to the features of an RFS bursary, the majority of respondents would consider participation in an RFS for \$25,000 or less, and felt that the maximum return period they would consider per year of funding was 12 months or less. The community where trainees must repay their service was ranked the most important consideration in their decision to accept a bursary or not by the largest proportion of respondents (37.9%), followed by the bursary's monetary value (34.9%) and the amount of return time required (Table 3).

Compared to those who do not hold or plan to apply for an RFS bursary (non-holders), a larger proportion of individuals who do plan to hold, or already hold, an RFS bursary (holders) were from Newfoundland and Labrador, non-partnered, planned to fund school with their RFS, and expected to have moderate to great concerns about their finances (Table 3). A larger proportion of holders (than non-holders) wanted to practise family medicine and planned to remain in Newfoundland and Labrador after their residency, both immediately and after five years. A larger proportion of holders considered the monetary value of the RFS of highest importance in the decision to accept a bursary or not. However, a greater proportion of non-holders than holders considered location of RFS service commitment the most important factor.

Trainees with great financial concerns were 4.8 (95% CI: 1.6–13.9) times more likely to hold (or plan to hold) an RFS bursary than trainees with little financial concern (Table 5). Those who planned to remain in Newfoundland and Labrador were 27.7 (95% CI: 10.1–75.9) times more likely to hold (or plan to hold) an RFS bursary than those who planned to leave the province. Alternatively, trainees who felt the location of return was the most important factor in the decision to accept an RFS bursary were 4.0 (95% CI: 10.0–1.5) times less likely to accept an RFS bursary.

TABLE 5. Logistic regression analysis predicting whether respondents would accept an RFS bursary (n=148)

| Variable | Odds Ratio | Confidence Interval | | p-Value |
|------------------------------------------------------------------|------------|---------------------|-------|---------|
| | | Lower | Upper | |
| Current Financial Concern None to Slight | _ | _ | _ | |
| Moderate to Great | 4.77 | 1.64 | 13.90 | 0.004 |
| Planned Practice Province (After 5 Years) Non-NL | _ | _ | _ | |
| NL NL | 27.65 | 10.07 | 75.88 | <0.000 |
| Location of Return Most Important Factor in Accepting RFS or Not | | | | |
| No Yes | 0.26 | 0.10 | 0.68 | 0.006 |

RFS = Return for service; NL = Newfoundland and Labrador

Sixty-three of the 79 trainees who held or planned to hold an RFS planned to remain in Newfoundland and Labrador five years after their residency (i.e., after their RFS service period). Roughly 20% (16/79) of trainees did not plan to work in the province in the long term.

These findings suggest that up to 20% of RFS holders are physicians who, without an RFS, would not practise in Newfoundland and Labrador.

Discussion

Solving physician distribution problems with financial means is not a new concept; both historically and currently, policy approaches to geographic distribution problems have been dominated by financial incentives. RFS bursary programs have existed in Canada in some form since 1969 (Barer et al. 1999).

In our review, we found that all but one province/territory offer a currently government-funded RFS program compared to the six identified over a decade ago (Barer et al. 1999). Although each province/territory manages bursary programs independently, current programs are similar in form and function, with slight variation between bursary amounts and service commitments. RFS programming has seen a movement away from loan forgiveness incentives; at the time of Barer and colleagues' report (1999), Manitoba and Alberta were both using loan forgiveness. This approach has since been abandoned in favour of more direct subsidy. British Columbia is the only province currently using loan forgiveness as its RFS incentive.

The majority of survey respondents (79.9%) preferred that funds continue to be delivered directly to the trainee. A large proportion of respondents (44.5%) felt the program should be available to residents and all undergraduate medical students, as is the case in most programs. Almost one-third of respondents (37%) suggested that, ideally, there should be no penalties for RFS holders who do not fulfill their service commitment. Most programs charge interest from the time the bursary is awarded. However, changing the penalty for non-fulfillment is unlikely to change RFS utilization rates, because only 3.7% of respondents surveyed rated penalties as the most important factor when deciding whether to take an RFS bursary or not.

Despite the popularity of RFS programs among provinces/territories and among trainees surveyed (half of those aware of the program planned to participate), fulfillment rates of trainees have not been well documented, and few programs have been evaluated. Among the Memorial University trainees we surveyed, the most important factors in deciding whether to accept an RFS bursary were the required service location and monetary value of the bursary, and the return time required to repay the service commitment. A comparison of success rates among programs across the provinces and territories would provide important insights; however, the lack of program recruitment and retention data prevents us from comparing program features to outcomes. Future comparisons should consider the effects on commitment fulfillment and physician retention of different award amounts, years of eligibility, penalties and service terms on bursary uptake. Understanding how and why the return-for-service programs are working will enable program managers to maximize program effectiveness.

Similar to US studies (Jackson et al. 2003; Pathman et al. 2000), we found that trainees who had concerns about their finances were more likely to opt for an RFS bursary. In Jackson and colleagues' study of US physicians, RFS-obligated physicians had a significantly greater concern about their finances in the first years following residency than non-obligated physi-

cians; 93% of survey respondents stated that their need for financial assistance had a moderate or major influence on their decision to apply for an RFS program (Jackson et al. 2003).

Our findings support the hypothesis that the RFS bursary largely rewards physicians who had already planned to stay in the province; 80% of trainees who opt for a bursary already planned to work in the province after their service commitment. Twenty per cent of RFS holders (equivalent to roughly 18 of 88 RFS bursaries awarded in Newfoundland and Labrador each year) are "novel physicians," that is, physicians who would not otherwise be working in the province. While we could not identify any equivalent statistics in Canadian literature, our result is similar to an American study of three Colorado loan repayment programs. In that study, 66% of trainees receiving RFS funding already planned to work in a rural area (Renner et al. 2010). Our study did not examine whether RFS holders were more likely to stay in the province over the long term than physicians who did not hold RFS bursaries. While the RFS bursary may attract a relatively small proportion of "novel physicians," the incentive provided by the bursary may nonetheless reinforce the decisions of physicians pre-disposed to remain in the province.

Strengths and limitations

This study is the first to chronicle the RFS bursaries available in Canada since Barer and colleagues' (1999) analysis, and provides a context for greater discussion of Canadian physician recruitment. We were able to include data from all provinces and territories in our document analysis.

Our survey had a good response rate relative to other similar surveys (Couper et al. 2001; Sheehan 2001), and our sample of both students and residents was largely representative of the source populations. There is still potential for bias in our survey response, however. It is possible that individuals who were motivated to respond were already interested or invested in the program, a factor that would exaggerate the measured interest in the program. Our survey of trainees was limited to one university in Atlantic Canada. Its focus on training rural physicians primarily for Atlantic Canada may limit the generalizability of the survey findings. Other universities in larger urban centres with a different mix of trainees may face different issues relative to RFS programs.

Conclusion

We found that RFS programs were a popular method in recruitment programs in Canada, and were identified in nearly all provinces and territories. For trainees from Newfoundland and Labrador, the most important factors in the decision to accept an RFS bursary were the location they would be required to work, the monetary value of the bursary and the return time required to repay the service commitment. In Newfoundland and Labrador, RFS bursaries fund trainees who plan to remain in the province rather than attract new trainees to the province. RFS bursaries may nonetheless serve to reinforce the decisions of physicians predisposed to work in an underserved community.

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Correspondence may be directed to: Maria Mathews, Division of Community Health & Humanities, Memorial University of Newfoundland, St. John's NL A1B 3V6; tel.: 709-777-7845; e-mail: mmathews@mun.ca.

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