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Retention in a 10-year cohort of internationally trained family physicians licensed in Manitoba

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Introduction: International medical graduates (IMGs) seeking licensure in Canada have been recruited to practise in medically underserviced areas, but retention of these physicians remains a concern. This study explored retention of IMG family physicians in Manitoba and its predictors.

Methods: We used data from the University of Manitoba, provincial registries and Manitoba Health. Inclusion criteria were IMGs who completed University of Manitoba IMG training or assessment programs, and their return-of-service. Practice location, certification and licensure status were examined. We used logistic regression to consider the effects of a mentorship program, Manitoba residency at application, IMG program and years since program graduation on retention.

Results: A total of 197 IMGs met the inclusion criteria. Most IMGs (63.5%) remained in Manitoba, and 59.2% of this group practised outside of Winnipeg. Of those remaining in Manitoba, most (69.6%) held full provincial licensure and national certification. The regression model was significant (χ^2_4 = 13.94, p = 0.007), explaining 10% of the variance in retention. Two predictors were significant: years since program graduation and Manitoba residency at the time of application.

Conclusion: Long-term retention of IMG physicians remains a concern. Potential interventions likely to increase retention, such as Manitoba residency at application and a focus on mentorship programs, should be further explored.

Introduction : Des diplômés de facultés de médecine étrangères (DFME) désireux d'obtenir un permis d'exercice au Canada ont été recrutés pour exercer en régions sous-desservies, mais la fidélisation de ces médecins demeure préoccupante. Cette étude a examiné la fidélisation des médecins de famille DFME au Manitoba et les facteurs permettant de la prédire.

Méthodes : Nous avons utilisé des données de l'Université du Manitoba, des registres provinciaux et du ministère de la Santé du Manitoba. Pour être inclus dans l'étude, les DFME devaient avoir suivi une formation adaptée à leur situation à l'Université du Manitoba ou avoir participé à un programme d'évaluation à cette même université, et avoir conclu une entente de retour de service. Le lieu de pratique, la certification et le type de permis obtenu ont été relevés. Nous avons utilisé une régression logistique pour tenir compte de l'effet sur la fidélisation des éléments suivants : avoir participé à un programme de mentorat, habiter au Manitoba au moment de demander l'admission au programme, avoir participé à un programme destiné aux DFME et nombre d'années écoulées depuis l'obtention du diplôme associé à ce programme.

Résultats : En tout, 197 DFME répondaient aux critères d'inclusion. La plupart des DFME (63,5 %) sont restés au Manitoba et, de ce groupe, 59,2 % pratiquent à l'extérieur de Winnipeg. Parmi ceux qui sont restés au Manitoba, la plupart (69,6 %) détenaient un permis d'exercice sans restriction et une certification nationale. Le modèle de régression logistique a été significatif (χ^2_4 = 13,94, p = 0,007), ce qui explique la variation de 10 % du taux de fidélisation. Deux facteurs de prédiction ont été significatifs : le nombre d'années écoulées depuis l'obtention du diplôme du programme et le fait d'habiter au Manitoba au moment de postuler.

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Conclusion : La fidélisation à long terme des médecins DFME demeure préoccupante. Il faudrait explorer davantage des interventions axées sur les facteurs susceptibles d'améliorer la fidélisation, notamment le fait que les postulants habitent au Manitoba au moment de présenter leur demande et l'importance à accorder aux programmes de mentorat.

INTRODUCTION

International medical graduates (IMGs) have long been relied on in Canada, the United States and Australia to address physician shortages, and now make up a considerable portion of the physician workforce in these countries.[1–4] In the province of Manitoba, there have been longstanding challenges in the recruitment and retention of physicians in rural and remote areas. International medical graduates seeking licensure in Canada have been recruited to practise in these medically underserviced areas and now represent about 34% of the practising physicians in the province.[5]

Considerable resources have been invested by Canadian provinces in assessment and training programs to ensure that IMGs are appropriately prepared to practise medicine in their jurisdictions. In many provinces, after their training or assessment, IMGs are required to work in underserviced rural areas as part of a return-of-service agreement as they seek eligibility for full provincial licensure and certification by the College of Family Physicians of Canada (CFPC), the national specialty credentialling body for family physicians in Canada.

The training and process for licensing IMGs varies from province to province. In general, IMGs are eligible for provisional or conditional licences to practise on completion of some kind of additional training or assessment and as part of a return-of-service agreement.[4,6] In Manitoba, internationally educated general practitioners/family physicians are required to complete 1 of 2 programs overseen by the University of Manitoba on behalf of the provincial health department and the College of Physicians and Surgeons of Manitoba (CPSM), the provincial regulatory college. The candidates can choose to apply to a 3-month practice-ready assessment program (International Medical Graduate Assessment for Conditional Licensure [IMGACL]), or those who require (or desire) additional training can apply to a 1-year program that provides both training and assessment, similar to residency training in family medicine (Medical Licensure Program for International Medical Graduates [MLPIMG]).

Applicants must meet very similar eligibility criteria to apply to either program, with the IMGACL having a stricter requirement regarding the length of time that has elapsed since applicants last practised. Since 2008, a 1-month orientation has prefaced both of these programs, and a 1-year mentorship program has followed their completion. The orientation covers topics such as the Canadian health care system, ethics, patient-centred care, collaborative care and interprofessional practice. The postplacement mentorship program matches IMGs with a mentor in their rural regional health authority (RHA); the mentors help candidates integrate into their new practice and further develop their skills. Graduates of these programs are bound by return-of-service agreements, often in underserved areas, with a sponsoring RHA, all of which are outside of Winnipeg, the provincial capital and the only large urban centre in the province. The 1-year residency-style program is unique in Canada. Although a number of provinces offer assessment programs through their faculties of medicine and/or accept IMG applicants through the Canadian Resident Matching Service for traditional residency programs, no other province has a hybrid program such as the MLPIMG.

Graduation from one of these programs feeds directly into attainment of a conditional licence through the CPSM that allows graduates to practise only in Manitoba. Within 5 years, IMGs with this licence are expected to pass the Medical Council of Canada Qualifying Examination Part II and the CFPC certification examination, which are both necessary to receive a full licence to practise in the province. Full licensure in Manitoba is desirable because it also facilitates professional mobility within Canada. Extensions of this 5-year period are often permitted, and physicians unable to pass these examinations after this extension period may still acquire a full licence to practise through an alternative pathway, the Manitoba Practice Assessment Program.[7]

International medical graduates are not generally tracked once they have received their full credentials, though retention was examined for a 2010 report.[8] That report revealed that, as of the end of 2009, retention rates of program graduates in Manitoba varied from 88% to 92%.[8] However, many of these

graduates were likely still completing their return-of-service agreements, and it is unclear how many remained in the underserved rural areas that recruited them. It is also unclear how many graduates had received their CCFP designation, which would contribute to their mobility within the country.

There has recently been concern that rates of IMG retention are insufficient to warrant the province's continued investment in the MLPIMG and IMGACL programs. As of 2009, the average cost per successful MLPIMG candidate was about $75 000 and $54 000 per successful IMGACL candidate, excluding overhead and administrative costs.[8] In particular, the requirement of Manitoba residency before entry into either program was removed in 2010, leading to concern that IMGs residing outside of Manitoba would use the Manitoba program to enter practice, only to then move to other provinces in Canada.

Similar concerns have been expressed in other provinces. In particular, researchers from Newfoundland and Labrador examined the issue of retention over a 10-year period from 1995 to 2004.[2] The study revealed that after 3 years of starting practice in Newfoundland and Labrador, as few as 25%–45% of IMGs remained in the province, and about 1 in 5 after 5 years.

In the current study, we sought to identify the retention rates of IMGs in Manitoba following completion of the IMG training program and return-of-service contracts, and to consider the impact of the mentorship program and other predictor variables on retention. It is worthwhile to re-examine the issue of retention now, 10 years after the end of the study from Newfoundland and Labrador. Since that time, there has been more work on identifying the determinants of retention of physicians.[9] There has also been a push toward increasing the retention of IMGs through a variety of means: increasing length of return-of-service agreements, accepting more candidates into the programs, implementing orientation programs and skills training programs that better prepare IMGs for rural Canadian practice, and implementing mentorship programs that help IMGs integrate into their new practices and communities.[9–12] The issue of continuity of care for rural patients and the economics of continuous IMG training and assessment are also important concerns that support the relevance of this research.

METHODS

For this study and future program evaluation, we developed a database that amalgamates data from the IMG programs at the University of Manitoba, the registries of the CPSM and the regulatory colleges of other provinces, and information from the Health Workforce Secretariat of Manitoba Health. This database includes IMG demographic characteristics, program type (completion of the 3-month or 1-year IMG program), participation in the mentorship program, previous training and/or practice (including the school where training was completed and length of practice), country of origin, Manitoba residency status at the time of application, sponsoring RHA, licensure status (conditional or full), CFPC certification status, and current practice location by RHA or location outside the province (if known, as determined from other provincial registries). The information from the Health Workforce Secretariat was important in determining whether a licensed IMG physician was actually in practice in Manitoba, because some physicians who may in fact be largely practising out of province may maintain registration with the CPSM. For this study, variables that may play a role in retention were chosen based on the hypothesis that retention would be affected by program type (3-mo assessment in the IMGACL or 1-year residency in the MLPIMG), time since program completion, participation in the mentorship program (established to assist integration into practice), and Manitoba residency before program entry.

We examined retention of IMGs organized by annual cohort within their IMG program, where retention was defined by whether IMGs were practising in Manitoba past their return-of-service contracts as of the study end date of August 2015. Inclusion criteria were IMGs who had successfully completed the University of Manitoba 1-year or 3-month program and were past the usual return-of-service contract period of 3 years. Our analysis therefore considered cohorts from program inception (2002 for the 1-year program, 2007 for the 3-month program) until the first cohort of 2012, all of whom therefore had completed at least 3 years of practice since graduation at the time of analysis (August 2015). Current practice location was the main outcome variable, categorized as one of the following: practising in the original sponsoring RHA (all rural), practising outside Winnipeg in a different RHA, practising in the Winnipeg RHA (the main urban centre in Manitoba) or practising out of province. Additional variables included whether the IMG had achieved CFPC certification and CPSM licensure. Predictor variables for retention included participation in the mentorship program (all cohorts beginning in 2008), Manitoba residency at the time

of application, IMG program (MLPIMG or IMGACL) and years since graduation from the program. Data were entered into a binary logistic regression model with retention at time of study as the main outcome variable. We performed logistic regression to ascertain the effects of participation in the mentorship program, Manitoba residency at time of application, IMG program type and years since program graduation on the likelihood that participants had been retained in practice in Manitoba at the time of study data collection. We used SPSS 20 for statistical analyses.

The University of Manitoba Health Research Ethics Board approved this study (H2013: 201).

RESULTS

A total of 197 graduates of Manitoba IMG programs met the inclusion criteria, and 125 (63.5%) of these remained in practice in the province as of August 2015 (Table 1). Of the 72 IMGs (36.5%) who had left Manitoba, 62 (86.1%) remained in Canadian practice, and most of this group were practising in Ontario (Fig. 1).

Of the 125 IMGs who remained in Manitoba practice, 74 (59.2%) remained in RHAs outside of Winnipeg, and 20 (27.0%) of these were in the underserved Northern RHA or worked with the Northern Medical Unit, which does regular fly-in visits to northern communities (Fig. 2). Fifty-three (26.9%) remained in their original sponsoring rural RHA. The 51 (40.8%) physicians who remained in practice in Manitoba had moved their medical practices to Winnipeg. Most of the 125 IMGs remaining in Manitoba had achieved both full licensure with the CPSM and certification with the CFPC (87 [69.6%]), with a few exceptional cases where an IMG was CFPC-certified but had a conditional licence (6 [4.8%]). Of the 106 IMGs past the 5-year grace period in which they were to pass their certification examinations, 26 (24.5%) were not yet CFPC-certified, including 7 (6.6%) who had full licensure but no CFPC certification. Licensure type and certification status were significantly associated with practice location. Individuals with conditional licences, or without CFPC certification, were much more frequently practising outside of Winnipeg than in the city (licensure: $\chi^2_1 = 27.48$, $p < 0.001$; certification: $\chi^2_1 = 10.67$, $p = 0.001$) with a moderately strong relation (licensure: phi = 0.47, $p < 0.001$; certification: phi = 0.29, $p < 0.001$).

The logistic regression model was significant ($\chi^2_4 = 13.94$, $p = 0.007$). The model explained 10.0% (Nagelkerke R^2) of the variance in retention in Manitoba practice and correctly classified 67.4% of cases. Sensitivity was 88.0%, specificity was 31.3%, positive predictive value was 69.1% and negative predictive value was 60.0%. Of the 4 predictor variables, only 2 were significant: years since program graduation and Manitoba residency at time of application (Table 2). International medical graduates who were Manitoba residents when they applied to the IMG program were 2.78 times more likely to remain in Manitoba. Increasing time since completion of the IMG training program was associated with a decreased likelihood of remaining in Manitoba;

Table 1: Graduates of the Manitoba international medical graduate programs past their return-of-service agreements, by program year

Program year	Practice location		Total graduates	Retention, %
	Manitoba	Out of province		
2002	2	1	3	66.7
2003	3	4	7	42.9
2004	6	3	9	66.7
2005	3	2	5	60.0
2006	6	3	9	66.7
2007	16	11	27	59.3
2008	17	15	32	53.1
2009	22	14	36	61.1
2010	31	10	41	75.6
2011	16	8	24	66.7
2012	3	1	4	75.0
Total	125	72	197	63.5

for each additional year since graduation, the odds of having left the province increased by 1.28 times. The type of IMG program approached significance as a predictor (ρ = 0.059); IMGs who completed the 3-month assessment program rather than the 1-year training program were less likely to remain in Manitoba. Participation in the 1-year mentorship program did not add significantly to the model.

DISCUSSION

Overall retention of graduates from Manitoba IMG programs is moderate at 63.5%, ranging from 42.9% to 75.6% depending on the program year. About 60% of these remained in rural practice in the province. However, more than one-third of the graduates were no longer in practice in the province; these graduates were more likely to be further out from program completion and to not have been Manitoba residents at the time of application to the program. This raises the concern that some of these individuals may have been using the Manitoba programs as an entry point into Canadian practice with the intention of practising elsewhere after achieving their full credentials. Anecdotally, it is not uncommon for some candidates' families to forgo relocating to Manitoba for the duration of training and/or return-of-service practice assignment, with the candidates commuting to their original place of residence. This may suggest a lack of true long-term commitment to a rural and remote practice location and to practise in Manitoba in general. The importance of being established in Manitoba at the time of application may be an indicator of other factors contributing to retention not observable in the current logistic model, such as spousal employment, appropriate educational facilities for children, access to cultural and religious institutions, and community integration, which have been observed in other contexts and which our group will investigate with the population of Manitoba IMGs in the future.[9,10,13] Ontario seems to be the dominant recipient of IMGs trained or assessed in Manitoba who leave the province. As observed in retention studies in other contexts, compensation for physicians is high in Ontario, with its variety of larger urban centres with high cultural diversity that may entice IMG physicians away from practice in Manitoba, particularly rural Manitoba.[2]

Of those who remained in Manitoba, most did stay in practice outside of Winnipeg past their return-of-service contracts, though not necessarily within their sponsoring RHA. It is worth noting, however, that given the strong association we found between licensure type/certification status and practice location in Manitoba, it is possible that some IMGs who remained in rural practice were doing so because of the limited mobility and employability associated with having conditional licences, rather than the desire to remain in rural practice.

Given that Manitoba has challenges in keeping Canadian medical graduates in rural areas or attracting them there in the first place, the issue may not be one of IMG physician retention necessarily, but of rural physician retention more broadly.[14,15]

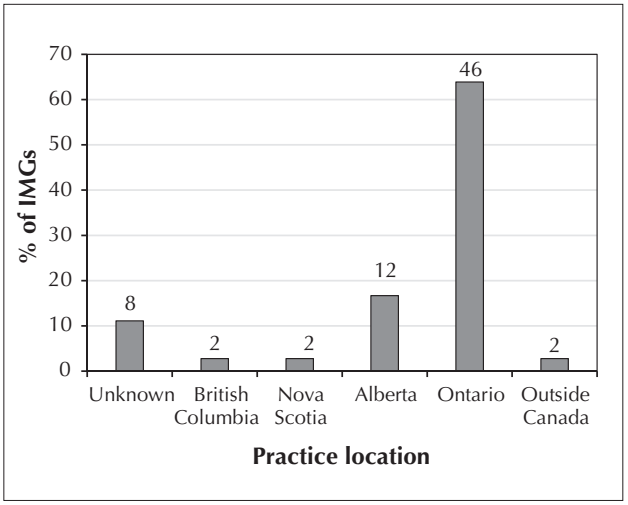


Fig. 1. Practice locations of international medical graduates (IMGs) who had left Manitoba practice as of August 2015 (n = 72).

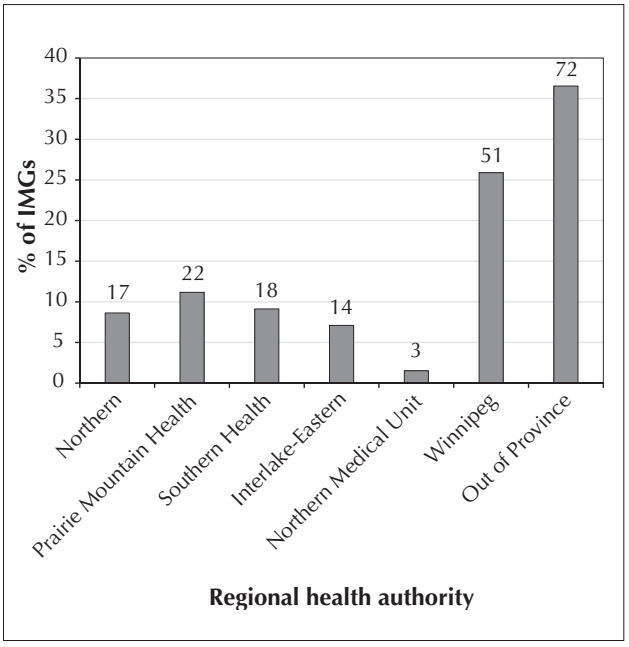


Fig. 2. Practice location of international medical graduates (IMGs) as of August 2015, by regional health authority (n = 197).

Indeed, there is no benchmark against which to compare the IMG retention rate outlined here. In the same way as many medical schools, including the University of Manitoba, have modified their application process to encourage the selection of students likely to work in rural areas in the future, it may be worthwhile to investigate similar processes with IMGs that favour IMG applicants who come from rural backgrounds (e.g., favouring those from rural backgrounds or with considerable rural exposure).[16,17] Our database indicates that many IMGs are from major urban centres in their home countries, and the transition to the remote areas of Manitoba may not be a realistic long-term goal.

One of the most common and pervasive determinants of retention is community integration, both professionally and nonprofessionally.[18–22] Auer and Carson[19] have identified the need for migrant physicians to establish "place attachment" and either adjust or adapt to cope with new locations; if this becomes unsustainable or unfeasible, migrant physicians may move once more. These coping strategies require the ability and capacity to form social networks and integrate into the community. The mentorship program's lack of influence on retention is disappointing, given that this was one major anticipated benefit of this approach.[11] Whereas the mentorship program is designed to promote IMG integration into Canadian medical practice, it is unclear whether this program serves to encourage integration into the community or boost long-term retention rates.

There remains the question of whether investment in training IMGs for Manitoba practice should be continued. Contracts that require a minimum of 3 years return-of-service (recently extended to 4 years) have been shown in other jurisdictions to lead to professional and nonprofessional dissatisfaction among IMG physicians.[23] Although these contracts are unlikely to disappear, they are at best a short-term solution to a long-term problem. Other solutions need to be sought. For instance, the findings of the current study suggest that it may be advisable to reinstate the requirement that applicants to the IMG program reside in Manitoba as a means of predicting long-term retention at least in Manitoba, if not in rural areas. Such a selection policy, however, may create a trade-off between the quality of applicant (which may be lower when drawn from a smaller, provincial pool) and the likelihood of retention.

Retention of physicians, including IMG physicians is an important facet of physician workforce planning. Policies other than return-of-service contracts should be considered, such as an emphasis on program candidates already residing in the province, to ensure that the investment of assessing and training IMGs for Canadian practice is worthwhile in terms of provincial retention. Physician turnover in underserved areas remains a concern, but it is becoming increasingly clear that recruitment of IMGs may not be the panacea that was once envisioned. Given the importance of continuity of care for patient satisfaction and safety, rural retention of physicians should remain a priority in health policy and physician workforce planning.

Limitations

Because this database was newly developed in 2013, it can be used only to identify where IMGs are practising currently. It has not yet been possible to follow IMGs year by year to establish when IMGs in early cohorts left the province, if they did so. Now that this database has been established and is being updated on an annual basis, this type of analysis

Table 2: Binary logistic regression of predictors of retention in Manitoba practice

Variable	β coefficient	Standard error	Wald test	*df*	*p* value	OR (95% CI)
Manitoba residency at application*	1.02	0.41	6.23	1	0.01	2.78 (1.24–6.20)
Years since program completion	–0.34	0.14	6.12	1	0.01	0.71 (0.55–0.93)
IMG program†	–0.62	0.33	3.58	1	0.059	0.54 (0.28–1.02)
Mentorship‡	–0.53	0.59	0.83	1	0.4	0.59 (0.19–1.85)
Constant	2.91	1.23	5.62	1	0.02	18.40

CI = confidence interval; IMG = international medical graduate; OR = odds ratio.
*Compared with non-Manitoba residency at application.
†International Medical Graduate Assessment for Conditional Licensure (3-mo assessment) program compared with Medical Licensure Program for International Medical Graduates (1-yr training) program.
‡Participation in mentorship compared with nonparticipation.

will be possible for future cohorts. As the sample for this study was small, it would be worthwhile to expand the scope of this type of analysis across other provinces that rely heavily on IMGs and that have had issues with retention, such as Nova Scotia.

The sample size also limited the number of variables that could be included in the regression model. For instance, previous training and country of origin may predict retention but were too variable in this sample to be included in the analysis. Certification status with the CFPC and provincial licensure status were not included because it is a requirement for family physicians to be certified by the CFPC to practise outside of the province, so there would be no cases of someone leaving the province and practising elsewhere in Canada without having been certified. Moreover, there were a number of cases where the certification status of physicians who left the province could not be ascertained, for instance, if it was unclear whether they were still practising in Canada.

CONCLUSION

Retention of graduates from Manitoba IMG programs is moderate at 63.5%, with most of these remaining in practice outside of Winnipeg. However, more than one-third of the graduates were no longer in practice in the province; these graduates were more likely to be further out from program completion and to not have been Manitoba residents at the time of application to the program.

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