

2020

What influences trainee decisions to practise in rural and regional Australia?

Alexa Seal

Catherine Harding

Joe McGirr

Follow this and additional works at: https://researchonline.nd.edu.au/med_article

 Part of the [Medicine and Health Sciences Commons](#)

This article was originally published as:

Seal, A., Harding, C., & McGirr, J. (2020). What influences trainee decisions to practise in rural and regional Australia?. *Australian Journal of Primary Health*, 26 (6), 520-525.

Original article available here:

[10.1071/PY19214](https://doi.org/10.1071/PY19214)

This article is posted on ResearchOnline@ND at . For more information, please contact researchonline@nd.edu.au.



This is the author's version of the following article, as accepted for publication.

Seal, A., Harding, C., & McGirr, J. (2020) What influences trainee decisions to practise in rural and regional Australia? *Australian Journal of Primary Health*, 26(6), 520-525.

<https://doi.org/10.1071/PY19214>

This article was published in the *Australian Journal of Primary Health*, 4 December, 2020.

Published version available online at: -

<https://doi.org/10.1071/PY19214>

What influences trainee decisions to practice in rural and regional Australia?

Alexa Seal, Catherine Harding and Joe McGirr

School of Medicine Sydney, Rural Clinical School (Wagga Wagga), The University of Notre Dame Australia, PO Box 5050 Wagga Wagga NSW 2650

Abstract

Although international medical graduates (IMGs) make up a substantial part of the Australian rural general practice workforce, most research on factors associated with rural practice has focussed on Australian medical graduates (AMGs). This study aimed to determine whether there were differences between IMGs and AMGs in terms of these factors. Registrars in-training and recent fellows (Fellowship of the Royal Australian College of General Practitioners/Fellowship of the Australian College of Rural and Remote Medicine) who participated in training in rural and regional Australia were surveyed about practice models and rural practice. Almost two-thirds of participants were practicing or intending to practice in rural areas, with no difference between AMGs and IMGs. None of the variables associated with rural practice for AMGs was found to be associated with rural practice in IMGs in univariate binary regression. Two key variables that are strongly associated with rural medical practice in the current literature, namely rural background and rural exposure, were not significant predictors of rural practice among IMGs. Due to the significant numbers of IMGs in regional training programs, any future incentives designed to improve rural recruitment and retention need to address factors relevant to IMGs.

Key words: international medical graduates, medical workforce, ownership, recruitment and retention, rural

Published online Dec 4, 2020

Seal A, Harding C and McGirr J (2020). What influences trainee decisions to practice in rural and regional Australia? Australian Journal of Primary Health, <https://doi.org/10.1071/PY19214>

Summary Statement

Despite the heavy reliance on IMGs for the rural medical workforce, it is not known what variables are associated with rural practice, recruitment and retention for IMGs. This is one of the first studies to highlight that there are differences between Australian and international medical graduates in terms of the factors associated with rural practice. Neither of the traditional key factors were associated with rural practice in IMGs in this study. Due to the significant numbers of IMGs in regional training programs, future incentives designed to improve rural recruitment and retention need to further explore and address factors associated with rural practice in IMGs.

Introduction

Rural and remote Australia continues to experience poorer health outcomes when compared to metropolitan Australia (Australian Institute of Health and Welfare 2016). An important component to improving health outcomes is the provision of a primary care medical workforce. However, despite recent significant increases in the number of medical graduates in Australia, there remains a relative shortage of medical practitioners in rural and remote areas (Australian Institute of Health and Welfare 2011). Australia continues to rely on international medical graduates (IMGs) to address this shortage and mandates that newly arrived IMGs work up to 10 years in under-serviced, usually rural, areas for reimbursement of clinical services under 'Medicare' (O'Sullivan *et al.* 2019). Continued ability to claim A1 Medicare specialist rebates requires IMGs to obtain a fellowship from a specialist college. For general practitioners (GPs), fellowship is gained through Royal Australian College of General Practitioners (RACGP) or the Australian College of Rural and Remote Medicine (ACRRM), and one pathway to this is vocational training for GP registrars. Most IMGs train for a fellowship on a rural rather than general pathway due to the 10-year moratorium requirement to work in government-defined rural or remote areas although some apply for, and successfully gain, an exemption. This has resulted in a significant number of places in regional training programs being filled by IMGs (Harding *et al.* 2015). Relying on Medicare provider number availability to encourage rural retention of IMGs may be problematic in the longer term because it has been suggested that most IMGs mandated to provide GP services to rural areas would leave these communities after completing the mandated 10 years (McGrail *et al.* 2012).

Rural background and rural exposure have been identified as two key factors predicting whether a practitioner will take up rural practice (Greenhill *et al.* 2015, Herd *et al.* 2016, Playford *et al.* 2014, Walker *et al.* 2012, Jones *et al.* 2009; Somers *et al.* 2007). Walker *et al.* (2012) found that medical students with rural backgrounds were ten times more likely to work rurally than students with metropolitan backgrounds. Recently, it was reported that students who chose to attend a rural clinical school (RCS) were significantly more likely to have rural practice intentions (Walters *et al.* 2016). This research has focussed predominantly on Australian medical graduates (AMGs) and, despite the continued reliance on IMGs for rural workforce, it is not clear to what extent these factors apply to IMGs. The aim of the current study was to determine the factors associated with rural practice in GP registrars and fellows and if there were differences between AMGs and IMGs.

Methods

Prior to the Regional Training Provider Network restructure in 2016, CoastCityCountry General Practice Training (CCCGPT) provided post-graduate speciality general practice training. Previously, registrars (any year) in post-graduate specialty training through CCCGPT in rural and regional Australia (n=220 in mid-2014) were surveyed about their preferred models of practice, and the influence of work-life balance on the choices they make regarding their practice and choice of practice location (Harding *et al.* 2015). Briefly, registrars were recruited through education sessions/registrar training days as part of the CCCGPT program. Non-attending registrars were sent the anonymous questionnaire. In mid-2015, recent fellows (those who gained a fellowship between 2004 and May 2014) with valid practice addresses (n=267) (FRACGP/FACRRM) were also sent the questionnaire.

Questionnaire data were analysed using SPSS (Version 23, SPSS Inc., Chicago, IL, USA). Practice location categories were based on the 2011 Australian Statistical Geography Standard (ASGS) remoteness structure and were collapsed into a dichotomous variable wherein all categories other than the large and capital city category were considered collectively as 'regional/rural'. Practice locations were based on reported intentions for registrars and on actual practice location for fellows, although it is acknowledged that factors such as bonded status of IMGs and family factors may influence where such registrars end up practicing (see 'limitations' for relevant discussion). For the tick-box question 'Do you intend to stay in one region for your whole career or move from place to place?', any options other than 'single region' were collapsed into 'multiple regions' (2-3 regions, 4+ regions and multiple locum placements).

Categorical variables were analysed using Pearson's Chi Square test and continuous variables were analysed using Student's independent t-test ($\alpha=0.05$). Univariate and multivariate binary logistic regression was used to identify variables associated with intentions for rural (non-metropolitan) practice location and calculate odds ratios (OR). Variables were entered as a single block. Confidence intervals (CI) at the 95% level are reported.

Ethics approval for this research was granted by The University of Notre Dame Australian Human Research Ethics Committee.

Results

Questionnaires were received from 99 (45.0%) registrars and 65 (24.3%) fellows (overall response rate-34%). Although fellows were older than registrars ($p<0.001$) and were more likely to have dependent children ($p=0.010$), there was a similar gender split (65%), and there were no differences in the proportion with a rural background or who spent at least one year at a RCS (self-reported variables). There was no difference in the proportion of registrars with rural practice intentions (65.6%) and the proportion of fellows who were reportedly in rural practice (67.2%). This held true when the graduate status (AMG/IMG) of the participants was taken into account. Thus, the dependent variable was collapsed into rural versus non-rural practice, whether it was intentions or actual rural practice.

Overall, 69% of AMGs and 60% of IMGs chose a rural practice location. The characteristics of the AMG and IMG participants split into rural and urban practice locations are presented in Table 1. The urban IMGs were older than the urban AMGs ($t=-3.076$, $p=0.003$). A higher proportion of rural AMGs spent a year at a RCS than IMGs in rural practice ($X^2=10.808$, $p=0.001$). In addition, 7.5 times as many AMGs in rural practice had spent a year at a RCS than AMGs in urban practice ($X^2=16.819$, $p<0.001$). A similar proportion of AMGs and IMGs reported having a rural background. However, a greater proportion of AMGs practicing in rural areas reported having a rural background than AMGs working in urban areas ($X^2=14.080$, $p<0.001$).

When asked to rank the importance of factors that would influence the choice of practice location, the factors with the highest mean rank were 'proximity to family and friends', 'job opportunities for spouses' and 'opportunities for children'. This was true for rural or urban practice location and true for both AMGs and IMGs. Figure 1 shows the proportion of respondents who selected each factor as the most important factor influencing their choice of practice location. 'Remuneration', 'needs of the community', 'access to a regional airport' and 'distance to capital city' were the least commonly reported most important factor.

However, when binary logistic regression was used to determine which factors were associated with rural practice, none of the aforementioned factors were significant predictors. A model including rural background [OR3.3 (95%CI 1.3-8.6, $p=0.016$)], spending a year at a RCS during training [3.7 (95%CI 1.3-11.0, $p=0.017$)] and having an intended/actual procedural GP role [OR 5.6 (95%CI 1.5-20.2 $p=0.009$)] correctly classified practice location for 71% of participants.

Due to the important contribution of IMGs to the rural medical workforce and the fact that they made up one third of study participants, they were analysed separately. Overall, just over half the respondents were born in Australia and almost 65% of participants were AMGs (Table 2). However, there were 2.5 times as many IMGs in the registrar group (46.5%) than in the fellow group (18.5%) ($p<0.001$). Overall, AMGs were significantly younger than IMGs ($p=0.016$) and were more likely to have attended a RCS for at least one year ($p=0.011$). There was no difference in reported rural background, nor intentions for rural practice between AMGs and IMGs. However, it was found that none of the variables listed in Table 1 was significantly associated with rural practice for IMGs alone.

Univariate binary regression showed that rural background and spending a year at a RCS were significantly positively associated with rural practice for AMGs (Table 2). The characteristics of the preferred practice model significantly associated with rural practice were having a GP role with visiting medical officer (VMO) on-call admitting rights and private group practice (5+GPs), as well as the importance of a large variety of work and a job with a higher sense of responsibility. However, none of these variables was significantly associated with rural practice for IMGs. Practicing in multiple locations and the importance placed on the ability to devote time to family commitments were significantly associated with rural practice among IMGs (Table 2).

When the logistic regression was optimised for IMGs (Table 3), a model including whether the GP intended to practice in a single or multiple regions (dichotomous variable) and placed decreased prioritisation of 'ability to devote time to family commitments' was significantly better at classifying practice location than the intercept-only model [$X^2(2)=12.070$, $p=0.002$]. GPs who intended to work in multiple regions were six times more likely to practice rurally. For each step increase in prioritisation of 'ability to devote time to family commitments', the likelihood of rural practice decreased (OR0.72). This model correctly classified 87% of GPs who practiced or intended to practice rurally.

An optimised regression model for AMGs (Table 3) correctly classified 94% of GPs who practiced rurally, an improvement over the intercept-only model [$X^2=45.110$, $p<0.001$]. After controlling for the other variables, spending a year at a RCS had the largest odds ratio (8.6), followed by having a rural background (OR7.1) (Table 3). For each one-unit increase in ranking of prioritisation for 'higher level of responsibility', odds of rural practice almost doubled (OR1.9).

Discussion

In the present study, both rural background and rural exposure were significantly associated with rural practice intentions for the GPs as a whole; however, neither was associated with rural practice when IMGs were analysed separately. IMGs make up 40% of rural medical practitioners in Australia (Australian Government Department of Health and Ageing 2008) and continue to make up a high proportion of entrants to the GP training program. In 2015, nearly one-third of applicants for the Australian General Practice training program were IMGs and almost 80% of these applied for the rural pathway only as IMGs are only eligible to train on a general pathway if they successfully gain an exemption to the 10-year moratorium requiring them to work in government-defined rural or remote areas (Sureshkumar *et al.* 2016). Data from the Medicine in Australia: Balancing Employment and Life (MABEL) survey show that IMGs are increasingly making up the majority of GPs and other specialists entering the rural workforce (O'Sullivan *et al.* 2019). Of the doctors who entered the workforce in the 1970s, IMGs made up 12.4% of the GP workforce in large regional/rural areas (population >15000) and 16.4% of the GPs in small rural/remote areas (<15000). However, of the doctors who entered the workforce in 2004-2009, IMGs made up 59.0% and 66.7% of the GP workforce, respectively (O'Sullivan *et al.* 2019). Reliance on IMGs is likely to continue as "the current increased production of locally trained doctors is not yet translating to more production of GPs and better rural distribution" (O'Sullivan *et al.* 2019). Similarly, a recent health sector report stated that "it is recognised that IMGs will remain a key part of rural medical workforce supply given the difficulties of getting domestic graduates to work outside metropolitan areas" (Scott 2019). However, there is limited research on factors that influence IMGs to choose or remain in rural practice beyond the regulatory policy aimed at controlling distribution through reimbursement under Medicare.

Previous research has found that family factors, such as the availability of adequate schools for children and employment opportunities for spouses, are key to IMG retention in rural areas (Han and Humphreys 2005, 2006). Similarly, AMGs and IMGs in this study indicated that the most important factor influencing their choice of practice location by far, was 'proximity to family and friends'. However, the importance of this factor was identical regardless of rural or urban

practice location (true for both AMGs and IMGs) and were not associated with actual rural practice/intentions.

Terry *et al.* (2011) conducted a literature review on the acculturation of IMGs in Australian rural practice and found that few studies “recognised quality of life and social needs of IMGs and their families as crucial factors impacting acculturation”. The present study also suggests that there is a gap in research when it comes to specific factors that may influence IMG GPs’ decisions to practice rurally. The two key determinants of rural background and rural exposure that are traditionally reported to influence rural practice were not associated with rural practice for IMG GPs in the present study. This may reflect the fact that rural background and rural exposure may have taken place in another country and hence are not associated with the ties to or positive associations with Australian rural practice these may have when experienced in the Australian context. The absence of these as key determinants may imply an even greater role for the factors of ‘proximity to family and friends’, ‘job opportunities for spouses’ and ‘opportunities for children’ in influencing decisions away from rural practice location for IMGs. The likelihood of rural practice significantly decreased with each step increase in prioritisation of ‘ability to devote time to family commitments’ in logistic regression. There is a need to determine what factors are associated with rural practice in IMGs.

Although this study was only conducted with one regional general practice training provider, the proportion of IMGs in this study (35.4%) is similar to the reported 40% of IMGs who work in rural and remote Australia (Australian Government Department of Health and Ageing 2008). As with many cohort studies, the present study was susceptible to selection bias and the group that opted to complete and submit the questionnaire may not be representative of the eligible group. However, findings from the present study for AMGs supported the published research, confirming an association between rural background and rural exposure with rural practice. Neither of these factors was associated with rural practice for IMGs. Some IMGs who indicated a rural intention may have done so because they are mandated to practice rurally for a set period and the survey did not ask about bonded status. IMGs have restricted provider number access that requires them to practice in distribution priority areas (for GPs) or a District of Workforce Shortage (other specialists) for up to 10 years (Australian Government Department of Health). It is possible that IMGs relocate into urban areas once they have fulfilled their visa

requirement to practice for a set period in an area of need (McGrail *et al.* 2012; Harvey and Faunce 2005). However, there was no difference between the proportion of IMG and AMG fellows who were currently practicing in rural areas in the present study. In addition, only 15.2% of IMGs chose 'provider number availability' as one of their top three factors influencing choice of practice location. There was also no significant difference in the proportion of IMGs in rural practice (actual or intention) between respondents who ranked provider number availability in their top three most influential factors and those who did not. It is also acknowledged that there may be different definitions or understanding of rural background and the concept of a year in a RCS and rural background between IMGs and AMGs. The fact that these traditional factors were not associated with rural practice for IMGs is consistent with the fact that they are constrained by working in an area of workforce shortage. However, it does highlight the fact that we have limited information about what positively links them to continued rural practice.

Despite our continued dependence on IMGs and their substantial role in the rural/remote workforce, they have received little attention in the research and policy areas. Strategies to encourage rural practice have focused on rural background and rural exposure (RCS) for AMGs, and on provider number restriction for IMGs. Although our findings may reflect these differences, they nevertheless highlight the fact that we do not know what predictors are associated with continued rural practice in IMGs.

Funding statement: This project was funded by CoastCityCountry General Practice Training. They had no other involvement in the collection, analysis or interpretation of the data.

Conflict of interest statement: The authors declare no conflict of interest.

References

- Australian Government Department of Health and Ageing (2008) Report on the audit of health workforce in rural and regional Australia. Canberra: Commonwealth of Australia.
- Australian Government Department of Health. Medicare billing restrictions: Section 19AB. <https://www.health.gov.au/health-workforce/medicare-billing-restrictions/section-19ab>
- Australian Institute of Health and Welfare (2016) Australia's health 2016. Australia's health no. 15. Cat. no. AUS 199. Canberra: AIHW
- Australian Institute of Health and Welfare (2011) Medical labour force 2009. Bulletin no. 89. Cat. no. AUS 138. Canberra: AIHW.
- Greenhill JA, Walker J, Playford D (2015) Outcomes of Australian rural clinical schools: a decade of success building the rural medical workforce through the education and training continuum. *Rural Remote Health* **15**(3), 2991.
- Han GS, Humphreys JS (2005) Overseas-trained doctors in Australia: community integration and their intention to stay in a rural community. *Australian Journal of Rural Health* **13**, 236-241.
- Han GS, Humphreys JS (2006) Integration and retention of international medical graduates in rural communities. *Journal of Sociology* **42**(2), 189-207.
- Harding C, Seal A, McGirr J, Caton T (2015) General practice registrars' intentions for future practice: implications for rural medical workforce planning. *Australian Journal of Primary Health* **22**(5), 440-444.
- Harvey K, Faunce T (2005) A critical analysis of overseas-trained doctor (OTD) factors in the Bundaberg Base Hospital surgical inquiry. *Law Context* **23**(2), 73-90.
- Herd MS, Bulsara MK, Jones MP, Mak DB (2016) Preferred practice location at medical school commencement strongly determines graduates' rural preferences and work locations. *Australian Journal of Rural Health* **25**(1), 15-21.
- Jones M, Humphreys J, Prideaux D (2009) Predicting medical students' intentions to take up rural practice after graduation. *Medical Education* **43**, 1001-1009.

- McGrail MR, Humphreys JS, Joyce CM, Scott A (2012). International medical graduates mandated to practice in rural Australia are highly unsatisfied: Results from a national survey of doctors. *Health Policy* 108: 133-139.
- O' Sullivan B, Russell, DJ, McGrail MR, Scott A (2019). Reviewing reliance on overseas-trained doctors in rural Australia and planning for self-sufficiency: applying 10 years' MABEL evidence. *Human Resources for Health* 17(8). <https://doi.org/10.1186/s12960-018-0339-z>
- Playford DE, Evans SF, Atkinson DN, Auret KA, Riley GJ (2014) Impact of the Rural Clinical School of Western Australia on work location of medical graduates. *Medical Journal of Australia* 200(2), 104-107.
- Scott A (2019). The future of the medical workforce. Available at:
<https://www.healthsystemsustainability.com.au/wp-content/uploads/2019/05/ANZ-MI-Health-Sector-Report-Future.pdf>
- Somers G, Strasser R, Jolly B (2007) What does it take? The influence of rural upbringing and sense of rural background on medical students' intention to work in a rural environment. *Rural and Remote Health* 7, 706.
- Sureshkumar P, Roberts C, Clark T, Jones M, Hale R, Grant M (2016) Factors related to doctors' choice of rural pathway in general practice specialty training. *Australian Journal of Rural Health* 25(3), 148-154.
- Terry D, Lê Q, Woodroffe J, Ogden K (2011) The quality of life and social needs of international medical graduates: emerging themes in research. *International Journal of Innovative Interdisciplinary Research* 1, 59-67.
- Walker JH, Dewitt DE, Pallant JF, Cunningham CE (2012) Rural origin plus a rural clinical school placement is a significant predictor of medical students' intentions to practice rurally: a multi-university study. *Rural and Remote Health* 12, 1908.
- Walters L, Seal A, McGirr J, Stewart R, DeWitt D, Playford D (2016) The effect of medical student preferences on rural clinical school experience and rural career intentions. *Rural and Remote Health* 16(4), 3698.

Table 1: Demographic characteristics of Australian Medical Graduates (AMG) and international medical graduates (IMG) respondents for rural and urban practice locations

Characteristic	Practice Location					
	Rural		Urban		Combined	
	AMG (n=68)	IMG (n=32)	AMG (n=30)	IMG (n=21)	AMG	IMG
Age [mean (SD)] (years)	38.0 (7.4)	39.6 (7.1)	35.5 (5.7)	41.8 (8.6)	37.2 (7.2)	40.4 (7.9)
Female (%)	64.7	50.0	76.4	61.9	68.4	54.7
Married/partnered (%)	85.3	93.8	73.3	85.7	81.6	90.6
Dependent kids (%)	70.1	86.7	65.5	75.0	68.8	82.0
Spent year at RCS (%)	50.0	15.6	6.7	19.0	36.7	17.0
Rural background (%)	50.0	41.9	10.0	21.1	37.5	34.0

RCS—rural clinical school

Table 2: Odds ratios for Australian medical graduates (AMGs) and international medical graduates (IMGs) with rural practice location as outcome

	AMG			IMG		
	OR	95%CI	p-value	OR	95%CI	p-value
Demographic characteristics						
Age	1.06	0.99-1.13	0.096	0.96	0.89-1.03	0.252
Male	1.83	0.69-4.90	0.226	1.53	0.50-4.66	0.455
Married/partnered	2.07	0.72-5.93	0.174	2.58	0.39-16.95	0.323
Dependent kids	1.30	0.51-3.31	0.579	1.73	0.43-6.98	0.439
Year at rural clinical school	14.42	3.18-65.45	0.001	0.76	0.18-3.22	0.709
Rural background	9.00	2.49-32.59	0.001	2.71	0.73-10.07	0.137
Practice characteristics						
Multiple practice locations	0.78	0.32-1.90	0.590	5.65	1.39-22.9	0.015
Ownership	1.28	0.44-3.71	0.655	1.41	0.45-4.39	0.557
GP procedural role	6.65	1.44-30.63	0.015	8.18	0.95-70.44	0.056
Public hospital appointment	1.80	0.46-7.00	0.396	1.23	0.10-14.46	0.872
Solo private practice	0.45	0.03-7.38	0.573	0.59	0.04-10.06	0.718
Private practice - 2-4 GPs	1.04	0.43-2.50	0.933	0.40	0.13-1.31	0.130
Private practice - 5+ GPs	0.32	0.13-0.79	0.014	1.02	0.33-3.11	0.974
VMO on-call admitting rights	6.63	1.83-24.06	0.004	1.28	0.33-4.96	0.721
How important are the following factors in influencing choice of practice location?						
Remuneration	1.20	0.98-1.46	0.081	1.06	0.84-1.33	0.629
Proximity to family and friends	1.00	0.79-1.28	0.976	0.80	0.59-1.09	0.152
Job prospects for spouse	0.96	0.81-1.15	0.679	1.21	0.99-1.47	0.065
Supportive community	1.19	0.95-1.48	0.861	1.09	0.85-1.38	0.502
Opportunities for children	0.98	0.81-1.19	0.861	1.03	0.78-1.36	0.851
Needs of the community	1.28	1.02-1.61	0.037	0.77	0.75-1.27	0.843
Distance to capital city	0.76	0.60-0.95	0.018	0.89	0.68-1.18	0.413
Access to regional airport	0.93	0.74-1.19	0.579	1.15	0.85-1.56	0.365
Facilities available in town	0.81	0.63-1.04	0.093	0.87	0.64-1.16	0.339
Provider number availability	0.94	0.79-1.13	0.542	1.12	0.89-1.41	0.353
How important are the following in determining ideal practice model?						
Flexibility in working hours	0.97	0.84-1.11	0.636	0.78	0.52-1.16	0.216
Ability to work part time	1.00	0.89-1.12	0.995	0.98	0.79-1.23	0.867
Control over work schedule	1.09	0.90-1.33	0.385	0.93	0.73-1.18	0.959
Large variety of work	1.38	1.12-1.70	0.003	0.93	0.73-1.18	0.551
Remuneration for work	0.97	0.87-1.08	0.565	1.11	0.89-1.38	0.346
Fewer on call arrangements	1.00	0.89-1.13	0.947	0.96	0.75-1.23	0.726
Higher level of responsibility	1.66	1.25-2.19	<0.001	0.92	0.73-1.15	0.445
Increased flexibility in career path	1.04	0.91-1.20	0.561	1.35	0.99-1.87	0.060
Ability to devote time to family commitments	1.02	0.90-1.16	0.717	0.75	0.58-0.97	0.030
Time to be involved in research	0.98	0.87-1.09	0.676	1.13	0.82-1.56	0.445
Time to be involved in teaching	1.00	0.89-1.13	0.978	1.32	0.98-1.78	0.064

Table 3: Logistic regression with rural practice as the outcome, optimised for a) AMGs and b) IMGs

a) Australian medical graduates (AMGs)

Variable	OR	95%CI	<i>p</i> -value
Rural background	7.08	1.52-32.89	0.013
Year at RCS during training	8.56	1.55-47.32	0.014
Higher level of responsibility	1.85	1.30-2.65	0.001

Reference categories: no rural background, no year at rural clinical school (RCS) during training

b) International medical graduates (IMGs)

Variable	OR	95%CI	<i>p</i> -value
Intention to work in multiple regions	6.02	1.29-28.02	0.022
Ability to devote time to family commitments ^a	0.72	0.54-0.96	0.025

Reference categories: intention to work in a single region, ^a for each step increase in prioritisation

OR-odds ratio, CI-confidence interval

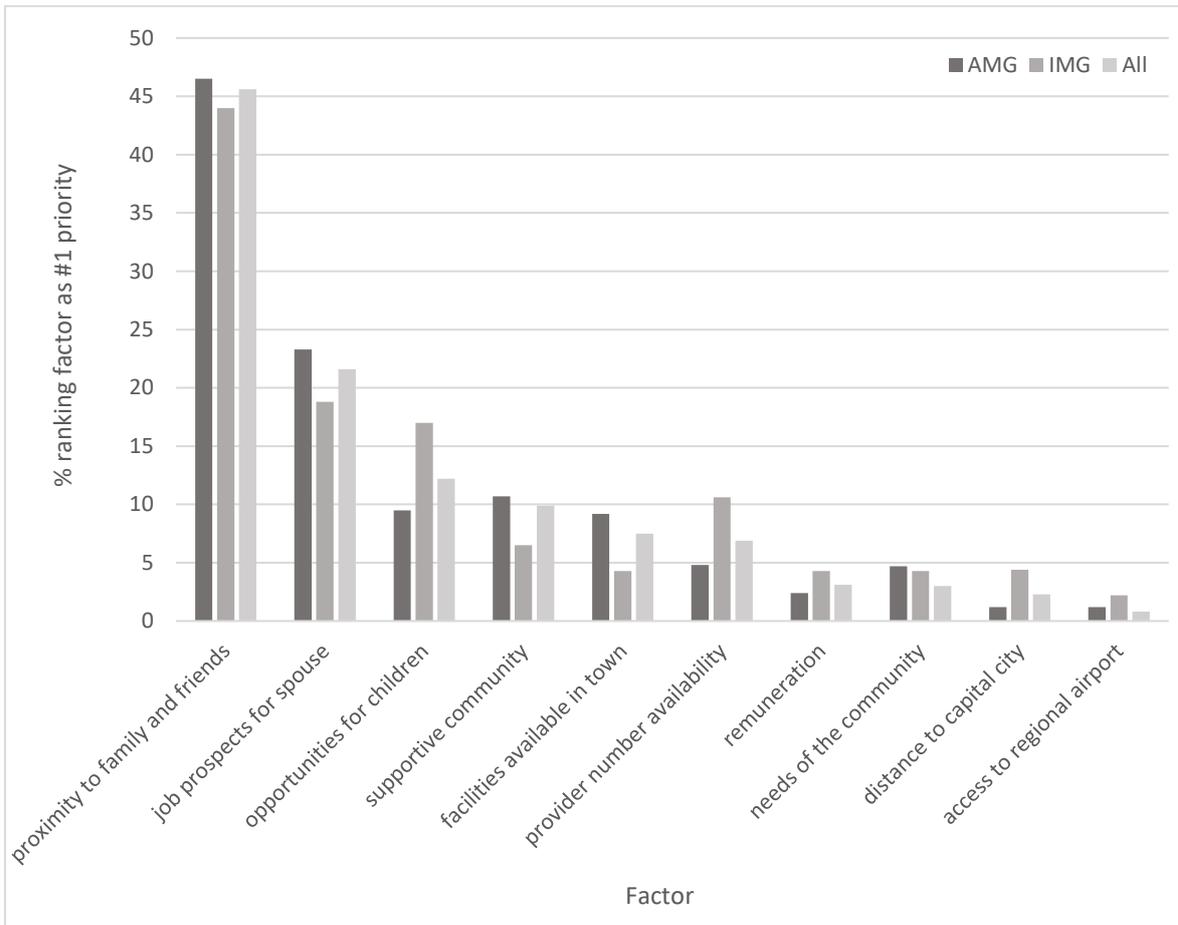


Figure 1: Proportion of GPs ranking each factor as the most important factor influencing decisions regarding practice location (AMGs-Australian medical graduates; IMGs-international medical graduates)