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General practice registrars’ intentions for future practice: implications for rural medical workforce planning

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Abstract

The models of practice general practice registrars (GPRs) envisage undertaking will affect workforce supply. The aim of this research was to determine practice intentions of current general practice (GP) registrars in a regional GP training program (CoastCityCountry General Practice Training). Questionnaires were circulated to 220 GPRs undertaking general practice placements to determine characteristics of ideal practice models and intentions for future practice. Responses were received for 99 participants (45%). Current GPRs intend to work an average of less than 8 half-day sessions/week, with male participants intending to work more hours \( t(91)=3.528, p=0.001 \). More than one-third of this regional cohort intends to practice in metropolitan centres. Proximity to family and friends was the most important factor influencing the choice of practice location. Men ranked remuneration for work as more important \( t(88)=-4.280, p<0.001 \) and women ranked the ability to work part-time higher \( t(94)=3.697, p<0.001 \). Fee for service payment alone, or in combination with capitation, was the preferred payment system. Only 22% of Australian medical graduates intend to own their own practice compared to 52% of international medical graduates \( X^2(1)=8.498, p=0.004 \). Future GPs intend to work fewer hours than current GPs. Assumptions about lifestyle factors, practice models and possible professional roles should be carefully evaluated when developing strategies to recruit GPs into rural practice.

Keywords: health workforce, international medical graduates, practice intentions, work-life balance
1: What is already known on this subject?

- There is a continuing workforce shortage of GPs in regional and rural areas when compared to metropolitan areas despite recruitment and retention strategies developed to address the shortage.

2: What does this study add?

- This study adds information about life style factors and preferred practice models that have the potential to impact on workforce recruitment and the generational change in expectations of work-life balance.
Introduction

A range of strategies have been used to address ongoing rural medical workforce shortages including the implementation of Rural Clinical Schools (RCSs), practice incentives and bonded medical school places. Despite this, nearly 80% of medical practitioners work in major cities and provide services for two-thirds of the Australian population while outer regional, remote and very remote regions have 6.6% of the practitioner workforce for about 12% of the population (Australian Institute of Health and Welfare 2008). The increased prioritisation of work-life balance (Shrestha and Joyce 2011, Australian Medical Association 2007, Skinner 2006) and the increased tendency for medical graduates of both sexes towards shorter working hours (McGrail et al. 2012; Harrison and Britt 2011; Australian Institute of Health and Welfare 2010; Weeks and Wallace 2008) will influence decisions about practice models and location.

Research on the models of practice that GP registrars (GPRs) envisage undertaking might assist in the development of strategies to address rural workforce supply. McDonald and Joyce (2014) interviewed GPs about practice ownership, career intentions and work-life balance, however, the interviewee demographics were not consistent with the national GP workforce, with an under-representation of international medical graduates (IMGs) and an over-representation of older GPs. It is well known that IMGs make up 40% of the rural medical workforce (Australian Department of Health and Ageing 2008), which is much more than the 15% (mainly IMGs from developed countries like Canada, the UK and USA) included in their study (McDonald and Joyce 2014). The aim of this research was to determine GPRs’ future practice intentions and to explore the influences of work-life balance and GP characteristics on preferred practice models in a regional area.

Methods

A questionnaire was developed following a literature review and consultations with registrars and medical educators within CoastCityCountry General Practice Training (CCCGPT), the regional GP training provider in southern NSW and the ACT. The questionnaire was approved by the University of Notre Dame Australia Human Research Ethics Committee and then circulated to all 220 registrars undertaking general practice placements with CCCGPT. The anonymous questionnaires were distributed at registrar training days and then mailed out to non-attenders. Responses were received for 99 participants (45% response rate), with the majority (n=66) via educational events.
Categorical responses were analysed using Pearson’s Chi Square ($\chi^2$) test and continuous variables using Student’s t-test or one-sided analysis of variance, with a significant $p$-value <0.05. Where participants were asked to rank the importance of factors in determining their ideal practice model, first preferences were used to determine most influential factors. SPSS (Version 22, SPSS Inc., Chicago, IL, USA) was used. Missing data were excluded on a case by case basis.

Results

Characteristics of respondents

Approximately one-third of respondents were male and almost half were IMGs, which is similar to the eligible participants as a whole. Male participants were significantly older \[ t(92)=2.393, p=0.019 \] and approximately half reported a rural background \[ X^2(1)=5.864, p=0.015 \]. There were no additional gender differences in participant characteristics (Table 1).

Table 1: Characteristics of participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Males (n= 36)</th>
<th>Females (n=63)</th>
<th>All registrars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age* [years(SE)]</td>
<td>38.9 (1.4)</td>
<td>35.3 (0.9)</td>
<td>36.6 (0.8)</td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>16.7</td>
<td>23.0</td>
<td>20.6</td>
</tr>
<tr>
<td>Partnered</td>
<td>83.3</td>
<td>77.0</td>
<td>79.4</td>
</tr>
<tr>
<td>With dependent kids (%)</td>
<td>58.3</td>
<td>66.7</td>
<td>63.5</td>
</tr>
<tr>
<td>Birth Status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian</td>
<td>30.6</td>
<td>49.2</td>
<td>42.1</td>
</tr>
<tr>
<td>International</td>
<td>69.4</td>
<td>50.8</td>
<td>57.9</td>
</tr>
<tr>
<td>Graduate (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian</td>
<td>44.4</td>
<td>59.7</td>
<td>54.1</td>
</tr>
<tr>
<td>International</td>
<td>55.6</td>
<td>40.3</td>
<td>45.9</td>
</tr>
<tr>
<td>Background* (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>48.6</td>
<td>24.1</td>
<td>33.3</td>
</tr>
<tr>
<td>Metropolitan</td>
<td>51.4</td>
<td>75.9</td>
<td>66.7</td>
</tr>
<tr>
<td>Rural Entry Stream (%)</td>
<td>23.5</td>
<td>31.7</td>
<td>28.9</td>
</tr>
<tr>
<td>Year at a RCS (%)</td>
<td>30.6</td>
<td>27.0</td>
<td>28.3</td>
</tr>
</tbody>
</table>

*gender differences significant at $p<0.05$

SE – standard error, RCS – rural clinical school
Eighty-six percent (85.7%) intended to complete the Fellowship of the Royal Australian College of General Practice (FRACGP), 7% the Fellowship of Australian College of Rural and Remote Medicine (FACRRM), 2% intended to do both and 5% were undecided. Approximately 5% of this cohort undertaking regional GP training do not intend to practice in Australia after completing their fellowship.

**Workforce intentions**

Workforce intentions varied between genders for work hours and location. Almost two-thirds (63.8%) of registrars intended to work eight or less half-day sessions per week. One registrar indicated that he did not intend to work any half-day sessions and was excluded from the analysis of work hours. On average, men intend to work significantly more hours than women [8.8 vs 7.3 half-day sessions/week respectively, t(91)=3.528, p=0.001].

Of the 94 (95%) registrars who indicated a distinct preference between rural and metropolitan practice, more than one-third intended to practice in major/capital cities. Around 90% of participants with a rural background intended to practice in rural areas, higher than the 54% of participants with a metropolitan background [$X^2(1)=11.067, p<0.001$]. Of the 73 participants who nominated only one of five practice location options as their preferred practice location, over 60% intend to work in rural/regional areas (Table 2).

**Table 2: Intended practice location of 73 participants who made a discrete choice**

<table>
<thead>
<tr>
<th>Practice Location</th>
<th>Background of Participants (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
</tr>
<tr>
<td>remote area</td>
<td>4.5</td>
</tr>
<tr>
<td>rural area</td>
<td>50.0</td>
</tr>
<tr>
<td>regional area</td>
<td>31.8</td>
</tr>
<tr>
<td>large city</td>
<td>13.6</td>
</tr>
<tr>
<td>capital city</td>
<td>0.0</td>
</tr>
</tbody>
</table>

* Includes five participants who did not indicate their background
Almost 82% of men (compared to 56% of women) intend to practice in a rural location ($p=0.013$). When the data are split according to graduate status, this gender difference holds true for the Australian medical graduates (AMGs) only (93.3 vs 53.1%, $p=0.007$).

More (19/20, 95%) AMGs who spent at least one year at a RCS intended to go into rural practice than those who did not spend a year at a RCS [12/27, 44%, $X^2(1)=13.078$, $p>0.001$]. All AMGs (100%) who reported a rural background intended to go into rural practice, versus 45% of AMGs who reported a metropolitan background [$X^2(1)=14.382$, $p>0.001$]. No such differences were detected for IMGs. When both background status and RCS attendance were considered, all AMG registrars who reported having a rural background intended to practice in rural areas, regardless of whether they had attended a RCS. However, significantly more AMG registrars with a non-rural background who had attended a RCS had rural practice intentions [85.7 vs 31.8%, Fisher’s Exact Test, $p=0.026$]. Only six IMGs had attended a RCS so comparisons could not be made. When asked what factors would influence choice of practice location, ‘proximity to family and friends’ was ranked highest (Figure 1), with 41% ranking this as the most important factor, followed by ‘job opportunities for spouses’ (17.6%) and ‘opportunities for children’ (10.6%). Fewer registrars ranked ‘remuneration’ (3.5%), ‘needs of the community’ (2.5%) and ‘access to a regional airport’ (0%) as the most important factor.

![Figure 1: Importance of factors influencing practice location for GP registrars](image-url)
Overall, 46.4% of participants intended to remain in a single region for their entire career. Registrars with dependent children were more likely to stay in one region [55 vs 27%, $X^2(1)=6.609$, $p=0.010$]. IMGs were more likely to stay in one region [59 vs 36%, $X^2(1)=4.956$, $p=0.026$].

**Preferred practice model**

Almost half (46%) of the registrars indicated their preference as a GP generalist, whereas 25% intended to take up a procedural GP role (obstetrics, anaesthesia, surgery, emergency medicine, mental health) and 29% intended to have a GP role with a specialist focus area (women’s health, Aboriginal health, drug and alcohol, academic medicine) (Table 3). Women’s health and emergency medicine were the highest ranking procedural/specialist foci. More men intend to work in emergency medicine [30.6 v 11.5%, $X^2(1)=5.453$, $p=0.020$] and more women intend to work in women’s health [23 vs 0%, $X^2(1)=9.656$, $p=0.002$]. No registrars intend to have a specialist role in drug and alcohol.

**Table 3: Intended role within general practice according to a participant’s intended practice location**

<table>
<thead>
<tr>
<th>Intended Role</th>
<th>Rural</th>
<th>Metropolitan</th>
<th>All*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>All</td>
</tr>
<tr>
<td>GP Generalist</td>
<td>50.0</td>
<td>30.0$^{b}$</td>
<td>39.7</td>
</tr>
<tr>
<td>Procedural GP</td>
<td>35.7</td>
<td>36.7$^{**}$</td>
<td>36.2$^{**}$</td>
</tr>
<tr>
<td>GP with Specialist Role</td>
<td>14.3</td>
<td>33.3</td>
<td>34.1</td>
</tr>
</tbody>
</table>

$^a$ Includes participants (n=6) who did not discretely choose an intended practice location  
$^b$ Difference is approaching significance ($p=0.052$)  
$^{**}$ Difference between rural and metropolitan counterpart significant at $p<0.01$

**Ideal practice structure**

More than 80% of respondents preferred a fee for service payment model alone (36.6%) or in combination with capitation (46.2%). Almost 9% preferred salaried payment and 8% chose capitation. Approximately 74% of participants indicated private practice as their sole preference,
2% listed corporate/university practice while no participant indicated public practice as their sole preferred practice model. While 59% indicated group practice (≥2GPs) as their sole preference, more than 90% of participants included private group practice (≥2GPs) as one of their preferred practice models. Other preferences included public practice (12%) and corporate/university practice (13%). Men were significantly more likely to select corporate practice [8.6 vs 0%, (Fisher’s Exact Test) $p=0.044$]. Two participants (2.0%) indicated solo private practice as one of their preferred practice models (both born overseas). Only 22% of AMGs intended to own their own practice compared to 52% of IMGs [$\chi^2(1)=8.498, p=0.004$] (Figure 2).

Of 11 possible factors determining the ideal practice model (Figure 3), flexibility in working hours ranked highest with 33.7% ranking this as the most important factor, followed by ability to devote time to family commitments (24.7%) and control over work schedule (12.4%). Fewer registrars ranked time to be involved in research and teaching (0%) and higher level of responsibility (2.2%) as the most important factor. Men ranked remuneration for work higher than women [$t(88)=-4.280, p<0.001$] and women ranked the ability to work part time higher [$t(94)=3.697, p<0.001$].
Although there was no difference overall between those participants who intended to go into rural versus metropolitan practice, rural-bound AMGs placed less importance on flexibility in working hours than AMGs with metropolitan practice intentions [t(44)=-2.060, p=0.045].

**Discussion**

It is well known that students with a rural background are more likely to practice in a non-metropolitan area. The Rural Clinical Schools Program requires that 25% of all Commonwealth supported students attend a rural clinical school (RCS) for at least one year during their clinical training (Australian Government Department of Health and Ageing 2011). While it was anticipated that attendance at a RCS would increase the proportion of practitioners going into rural practice, there is some controversy over the benefit of such funded programs (Ranmuthugala et al. 2006, Wilkinson et al. 2003, Walker et al. 2012). In the current study, all AMG registrars who reported having a rural background intend to practice in rural areas, regardless of whether they had attended a RCS. However, significantly more AMG registrars with a non-rural background who had attended a RCS had rural practice intentions. This suggests that both rural background and attendance at a RCS positively affect the likelihood of rural practice.
There are several areas where the findings of the current study have implications for future medical workforce strategies. Registrars intending to go into rural practice have significantly different practice intentions to those intending to go into metropolitan practice. Traditionally, the rural GP workforce has compensated for shortages by working longer hours. Younger rural GPs may be unlikely to do this (Schofield et al. 2006). Our finding that registrars intended to work ≤8 half-day sessions/week supports this idea. Such results suggest that the GP workforce will face continued chronic shortages despite the increase in medical graduates (Rural Health Workforce Australian 2008; Joyce et al. 2006). They may also have more interest in a GP procedural role with increased specialisation in emergency medicine than their metropolitan counterparts.

Published research also suggests practice styles may be subject to generational change with a growing preference for group practices (Pedersen et al. 2012; Maiorova et al. 2007). In the current study, 90% listed group practice as a preference; 46% preferred large group (≥5 GPs) practice, with considerably more women (p=0.072) reporting this preference. Charles et al. (2004) reported that in 1991, 25.5% of Australian GPs wanted to go into solo practice, but, by 2003 this had decreased to 13.7%. In the current study, no registrar listed solo practice as their preferred practice model.

A theme emerging from this research is the importance of work-life balance in registrar decision making. The three most important factors in determining ideal practice models all related to work-life balance, namely flexibility in working hours, ability to devote time to family commitments and control over work schedule. Almost 50% of registrars ranked proximity to family and friends as the most important factor influencing a registrar’s choice of practice location. The top three factors related to the importance of the family unit. Overall, remuneration ranked amongst the least influential factors, suggesting that further financial incentives utilised to address the shortage of rural GPs could be better spent recruiting the family unit.

Remuneration is only one of six essential components of an effective retention framework (Humphreys et al. 2009). Included in this framework is the importance of ensuring social, family and community support (Humphreys et al. 2009; Wilks et al. 2008) and the importance of community engagement (Han and Humphreys 2005). It has been suggested that more importance should be placed on multidisciplinary workforce retention strategies that are flexible in order to cater for individual circumstances (Humphreys et al. 2009).
The propensity for metropolitan practice (Walker et al. 2012) impacts on the supply of rural GPs and is an issue for workforce planning. Using simulation models, it was projected that despite the increase in medical schools in Australia, there would be no increase in GP workforce and Australia faces chronic shortages in workforce supply (Joyce et al. 2006). It is in this context that it is important to clarify the expectations of new GP graduates/trainees for practice models.

This study is limited by only exploring intentions of one regional training provider and may not be generalisable to registrars with different regional training providers. This study had a 44% response rate, so it is possible that those registrars more passionate about rural practice were recruited, thereby biasing the results. The proportion of IMGs (46%) in the current study is higher than the 27% cited in the General Practice Registrars Australia Terms and Conditions Benchmarking Report (2014). However, demographics of the CCC GP Training registrar group were similar to registrars who responded to the General Practice Education and Training Limited (2013) GP registrar satisfaction survey of all GP registrars training in terms of age, gender split and fellowship intentions.

In addition, this study only examined registrars during training. Intentions may change after registrars gain fellowship and are no longer in training and this is the focus of current research. Another issue that warrants exploration is reported preferred payment and practice models by current GPRs, as this needs to be taken into account for rural workforce recruitment. Results from this study indicate that 37% prefer the traditional fee for service model and only 22% of AMGs wanted to own their own practice.

When increased GP demand due to population ageing (Harrison and Britt 2011) is coupled with the trend towards shorter working hours (as confirmed in this study), the potential for inadequate general practice supply is of great concern. Current registrars may practice differently to traditional medical practice and such trends in workforce participation with increased prioritisation of work-life balance, will strongly influence GP supply.

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