


Provision of other medical work by Australian early-career general practitioners: a cross-sectional study

Michael Bentley^A, Kristen FitzGerald^{A,B}, Alison Fielding^{C,D}, Dominica Moad^{C,D}, Amanda Tapley^{C,D}, Andrew Davey^{C,D}, Elizabeth Holliday^C, Jean Ball^E, Catherine Kirby^F, Allison Turnock^{B,G}, Neil Spike^{F,H,I}, Mieke van Driel^J and Parker Magin^{C,D,*} 

For full list of author affiliations and declarations see end of paper

*Correspondence to:

Parker Magin
Discipline of General Practice, School of
Medicine and Public Health, The University
of Newcastle, University Drive, Callaghan,
NSW 2308, Australia
Email: parker.magin@newcastle.edu.au

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ABSTRACT

Introduction. There is a trend towards GPs diversifying their role by working in health areas beyond general practice. However, little is known about whether this trend is apparent among early-career GPs once they make the transition from training to independent practice. **Aim.** To describe the prevalence of and characteristics associated with early-career GPs providing other medical work. **Methods.** A cross-sectional questionnaire-based study of GPs ('alumni') who had followed within the past 2 years from three of Australia's nine regional training programs. The outcome factor was provision of medical work in addition to clinical general practice. Associations of independent variables (encompassing alumni demographics, current practice characteristics and vocational training experience) with the outcome were estimated using univariate and multivariable logistic regression. **Results.** Of 339 responding alumni, 111 (33%) undertook other regular medical work. Sixty-five (59%) of these were in medical education. In multivariable analysis, factors associated with providing other medical work were having a spouse/partner not in the workforce (odds ratio (OR) 5.13), having done any training part-time (OR 2.67), providing two or more of home visits, nursing home visits and after-hours care (OR 2.20), working fewer sessions per week (OR 0.74), and currently working in an area of lower socio-economic status (OR 0.84). Having dependent children (OR 0.27), and being female (OR 0.43) were associated with not providing other medical work. **Discussion.** In this study, many early-career GPs are providing other medical work, particularly medical education. Acknowledging this is important to general practice workforce planning and education policy.

Keywords: career choice, career mobility, education, family practice, general practice, graduate, health workforce, medical, medical education, practice intentions.

Introduction

There is a trend in general practice towards diversification of the GP's professional role.¹ In addition to clinical practice, many GPs are choosing to also work in other health areas.^{2–4} This intention manifests in general practice training, with GP trainees expressing interest in developing portfolio careers.⁵ However, little is known about the profile of GPs' early work patterns once they have completed their training and make the transition to independent practice.

The aim of the study was to describe the prevalence of early-career GPs working in clinical practice who provide other medical work, and the characteristics associated with the provision of other work.

Methods

This was a cross-sectional questionnaire-based study of former registrars ('alumni') from three contiguous regional training organisations (RTOs) in the south-east of Australia; namely GP Synergy, Eastern Victoria GP Training and General Practice Training Tasmania.

WHAT GAP THIS FILLS

What is already known: Many GPs are developing portfolio careers that complement their clinical practice. What is not known is whether this pattern is established early in clinical general practice, and the proportion and characteristics of early-career GPs providing other medical work.

What this study adds: This study establishes that many early-career GPs are choosing to provide other medical work, including medical education. The associations with part-time training and clinical practice and working in areas of low socioeconomic status could help inform general practice workforce planning and education.

Participants were in the first 2 years of independent practice, having achieved general practice Fellowship between January 2016 and July 2018, inclusive. The questionnaire elicited demographic details about the alumni, details of alumni's current practice, and their perceptions of the utility of their vocational education and training on their current independent practice. The full details of the study methodology are described elsewhere.⁶

The outcome factor in this analysis was whether an alumnus was providing other medical work in addition to clinical general practice. Alumni were asked if they do other regular medical work in addition to clinical general practice and, if so, the number of sessions they spend on this other regular medical work on average each week. One session is equal to approximately 3.5 h; for example, a morning session. Alumni were also asked whether their other medical work involved education (eg as a medical educator for GP Registrar Vocational Training, or in an academic teaching role), research, non-GP clinical work, or other specified work.

The independent variables encompassed alumni demographics, current practice characteristics, and vocational training experience.

The proportion of alumni doing other regular medical work in addition to clinical general practice was estimated with 95% confidence intervals (CI).

Descriptive statistics included frequencies for categorical variables and mean with standard deviation (s.d.) for continuous variables. The frequencies of categorical variables were compared between outcome categories using Chi-squared tests for all variables, except when Fisher's exact test was used (due an expected count of <5 in 25% or more cells). For continuous variables, means were compared using a *t*-test.

Logistic regression was conducted with the outcome, 'performing other work'. Initially, univariate analyses for each covariate with the outcome, plus a full multivariable model including all covariates, were conducted. Any co-variate with $P < 0.2$ in either a univariate or multivariable model was then considered for inclusion in a multivariable logistic regression. Once this model with all significant covariates was fitted,

model reduction was assessed. Covariates that were no longer significant (at $P < 0.2$) in the multivariable model were each tested for removal from the model. If the covariate's removal did not substantively change the resulting model, the covariate was removed from the final model. A substantive change to the model was defined as any covariate in the model having a change in the effect size (odds ratio or coefficient) of $> 10\%$.

Diagnostic tests were conducted to measure goodness of fit and assess influential observations. Goodness of fit was assessed using the Hosmer–Lemeshow (H–L) test for logistic models.

The project has ethics approval from the University of Newcastle Human Research Ethics Committee (Reference number H-2018–0333).

Results

In total, 354 questionnaires were returned (response rate 28%). Of the 339 alumni who completed the question on provision of work other than clinical GP work, 111 (33%, 95% CI [28, 38]) indicated they were involved in other regular medical work in addition to their clinical general practice. And 109 of these 111 alumni reported the number of sessions undertaking other regular medical work, which was, on average 3.2 sessions per week (s.d. 4.0). Of the 111 alumni engaged in other regular work, 65 (59%, 95% CI [49, 67]) worked in medical education roles – as a medical educator (29 alumni), academic (24 alumni) and/or other teaching role (19 alumni). Seven of these alumni had more than one education role. Additionally, 10 alumni (9%, 95% CI [5, 16]) participated in research, 58 alumni (52%, 95% CI [43, 62]) in non-GP clinical work, and 13 alumni (12%, 95% CI [7–19]) in other medical work; for example, as clinical officers on the development of HealthPathways.⁷

The characteristics of the alumni and univariate analysis of alumni's provision of other medical work are presented in Table 1, and the results for logistic regression models with a dichotomous outcome of provision of other medical work are presented in Table 2.

Regression diagnostics showed no violations of the assumptions of heteroscedasticity or normality. Goodness-of-fit tests showed the model was a good fit ($\chi^2 = 9.9$, $P = 0.94$) and there were no influential observations.

In multivariable analysis, factors associated with providing work other than clinical GP work were: having a spouse/partner not in the workforce (OR 5.13; 95% CI [1.40, 18.8]; $P = 0.01$), having done any training part-time (OR 2.67; 95% CI [1.34, 5.32]; $P = 0.005$), providing two or more of home visits, nursing home visits and after hours care (OR 2.20; 95% CI [1.07, 4.53]; $P = 0.002$), working fewer sessions per week (OR 0.74; 95% CI [0.64, 0.86]; $P < 0.001$), and currently working in an area of lower socio-economic status (OR (per Socio-Economic Indicators for Areas: Index of Relative Socioeconomic Disadvantage (SEIFA-IRSD) decile) 0.84; 95% CI [0.75, 0.94]; $P = 0.002$).

Table 1. Characteristics associated with early-career GPs providing medical work other than clinical GP work.

Covariate	Class	Other medical work		P-value
		No (n = 243) ^A	Yes (n = 111) ^A	
Gender	Male	64 (29%)	43 (41%)	0.03
	Female	158 (71%)	63 (59%)	
Rurality of current practice	MMM 1	162 (73%)	57 (58%)	0.008
	MMM 2-7	59 (27%)	41 (42%)	
Relationship status; spouse/partner employment	No spouse/partner	30 (13%)	14 (13%)	0.072
	Spouse/partner employed full-time	135 (61%)	53 (49%)	
	Spouse/partner employed part-time	39 (17%)	22 (20%)	
	Spouse/partner not in workforce	19 (9%)	19 (18%)	
AMG status	IMG	55 (25%)	20 (19%)	0.21
	AMG	168 (75%)	88 (81%)	
Failed any exam component	No	164 (77%)	86 (84%)	0.14
	Yes	49 (23%)	16 (16%)	
Any part-time during training	No	164 (74%)	62 (58%)	0.004
	Yes	57 (26%)	44 (42%)	
Dependent children	No	90 (40%)	48 (44%)	0.48
	Yes	133 (60%)	60 (56%)	
Training in rural area	No	112 (53%)	44 (44%)	0.15
	Yes	98 (47%)	55 (56%)	
Training in low SES area	No	117 (55%)	69 (70%)	0.01
	Yes	96 (45%)	30 (30%)	
Number of HV, NHV and/or AHC	None	88 (39%)	26 (26%)	0.03
	1	64 (29%)	28 (28%)	
	≥2	71 (32%)	45 (45%)	
Alumni age	mean (s.d.)	36.47 (6.28)	36.32 (6.25)	0.84
SES of current practice	mean (s.d.)	6.86 (2.69)	5.97 (2.91)	0.009
Number of sessions p/week	mean (s.d.)	7.54 (2.17)	6.43 (2.66)	<0.001

^An may not add up to 111/243 due to missing data.

MMM, Modified Monash Model (Australian Government definition of location: 1 is a major city and 7 is very remote); IMG, international medical graduate; AMG, Australian medical graduate; NHV, nursing home visit; HV, home visit; AHC, after hours care; SES, socio-economic status (deciles from 1 = most disadvantaged to 10 = least disadvantaged); s.d., standard deviation.

Factors associated with not providing work other than clinical GP work were: having dependent children (OR 0.27; 95% CI [0.13, 0.57]; $P < 0.001$), and being female (OR 0.43; 95% CI [0.21, 0.90]; $P = 0.03$).

Discussion

Main findings and comparison with existing literature

This study has established that early-career GPs who provide other medical work were more likely to work fewer

sessions in clinical general practice than early-career GPs who do not provide other medical work, which is unsurprising. GPs are usually self-employed, unlike salaried, non-GP specialists working in public hospitals whose paid role can include medical education.⁸ Many early-career GPs who are working sessionally in clinical practice also provide medical education, which is important to continuity of the current model of Australian general practice education and training, given the aging of the GP supervisor and academic workforce.^{4,9} More established early-career GPs (up to 5 years) are willing to take on in-practice teaching and supervision as part of their clinical practice.¹⁰ Encouraging an interest in becoming a medical educator can start while in training as a

Table 2. Early-career GP work patterns: logistic regression models with the outcome, 'provision of other medical work'.

Covariate	Class	Univariate model		Adjusted model	
		OR (95% CI)	P-value	OR (95% CI)	P-value
Gender	Female	0.59 (0.37, 0.96)	0.03	0.43 (0.21, 0.90)	0.02
Relationship status; spouse/partner employment	Spouse/partner employed full-time	0.84 (0.41, 1.71)	0.63	1.17 (0.45, 3.02)	0.75
	Spouse/partner employed part-time	1.21 (0.53, 2.75)	0.65	1.38 (0.43, 4.40)	0.59
	Spouse/partner not in workforce	2.14 (0.87, 5.26)	0.10	5.13 (1.40, 18.8)	0.014
Failed any exam component	Yes	0.62 (0.33, 1.16)	0.14	0.55 (0.24, 1.25)	0.15
Any part-time work during training	Yes	2.04 (1.25, 3.33)	0.004	2.67 (1.34, 5.32)	0.005
Dependent children	Yes	0.85 (0.53, 1.35)	0.48	0.27 (0.13, 0.57)	<0.001
Training in low SES area	Yes	0.53 (0.32, 0.88)	0.01	0.55 (0.30, 1.02)	0.06
Number of HV, NHV and/or AHC	1	1.48 (0.79, 2.76)	0.22	1.55 (0.72, 3.33)	0.26
	≥2	2.15 (1.21, 3.81)	0.009	2.20 (1.07, 4.53)	0.033
SES of current practice		0.89 (0.82, 0.97)	0.009	0.84 (0.75, 0.94)	0.002
Number of sessions p/week		0.82 (0.74, 0.91)	<0.001	0.74 (0.64, 0.86)	<0.001
Registrar age ^A		1.00 (0.96, 1.03)	0.8408		
AMG status ^A	IMG	0.69 (0.39, 1.23)	0.2120		
Rurality of current practice ^A	MMM 2-7	1.98 (1.20, 3.26)	0.0076		
Training in rural area ^A	Yes	1.43 (0.88, 2.31)	0.1455		

^AVariables omitted from the final model.

SES, socio-economic status; NHV, nursing home visit; HV, home visit; AHC, after hours care; OR, odds ratio; CI, confidence interval; AMG, Australian Medical Graduate; IMG, International Medical Graduate; MMM, Modified Monash Model.

registrar, with registrars as teachers an accepted part of the role.^{11,12}

The finding of an association with part-time general practice training suggests that registrars may be developing components of 'portfolio careers' even during their general practice vocational training. That a significant number of early-career GPs are providing other medical work suggests that they may be 'sessional' rather than 'part-time' GPs,² who are developing portfolio careers that may have the potential to improve work satisfaction.⁴ Part-time training has been shown to reduce the stress of training for GP registrars.¹³ Whether other medical work done concurrently with part-time GP training contributes to this reduced stress is a topic for further research.

The finding that working in areas of lower socio-economic status was associated with early-career GPs providing other medical work is consistent with findings from qualitative studies in which GPs who work in areas of social disadvantage, such as prisons, Aboriginal health, refugee health, report that work as complementing their sessional clinical practice.² Furthermore, GPs who embrace working in challenging areas recognise the potential for burnout and often work part-time in the field.¹⁴

Other significant findings in this study are consistent with other research. Factors such as having dependent children and gender have been shown to influence career choices in general practice.^{5,15,16} A previous study of early-career GPs

(up to 5 years) found that those GPs who provide nursing home visits, home visits or work after-hours were more likely to also provide in-practice teaching or supervision, which is a crucial role in the apprentice model of general practice education and training.¹⁷

Strengths and weaknesses

Participants in this study trained in regions covering major cities, regional, rural and remote areas, which suggests generalisability to the wider Australian general practice training program. A caveat to this claim is the overall response rate of 28%. However, this is consistent with surveys of Australian GPs.¹⁸ Furthermore, the cross-sectional design of the study limits it to being unable to infer causal relationships from the associations established.

Implications for policy and further research

A focus on the practice patterns of early-career GPs can provide relevant information on the intentions and choices of recent fellows and help inform GP workforce planning and vocational training planning and policy in general practice. Further qualitative research is warranted to develop a deeper understanding of these intentions and choices.

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Author contributions. All authors contributed substantially to the manuscript.

Author affiliations

^AGeneral Practice Training Tasmania (GPTT), Level 3, RACT House, 179 Murray Street, Hobart, Tas. 7000, Australia.

^BSchool of Medicine, University of Tasmania, Level 1, Medical Science I, 17 Liverpool Street, Hobart, Tas. 7000, Australia.

^CDiscipline of General Practice, School of Medicine and Public Health, The University of Newcastle, University Drive, Callaghan, NSW 2308, Australia.

^DNSW & ACT Research and Evaluation Unit, GP Synergy, Level 1, 20 McIntosh Drive, Mayfield West, NSW 2304, Australia.

^EClinical Research Design and Statistical Support Unit (CRaDITSS), Hunter Medical Research Institute (HMRI), Lot 1, Kookaburra Circuit, New Lambton Heights, NSW 2305, Australia.

^FEastern Victoria General Practice Training (EVGPT), 15 Cato Street, Hawthorn, Vic. 3122, Australia.

^GDepartment of Health Tasmania, GPO Box 125 Hobart, Tasmania 7000, Australia.

^HSchool of Rural Health, Monash University, Churchill, Vic. 3842, Australia.

^IDepartment of General Practice and Primary Health Care, University of Melbourne, 200 Berkeley Street Carlton, Vic. 3053, Australia.

^JGeneral Practice Clinical Unit, Faculty of Medicine, The University of Queensland, 288 Herston Road, Brisbane, Qld 4006, Australia.