Vocational career paths of graduate entry medical students at Flinders University: a comparison of rural, remote and tertiary tracks

Paul Worley, Anne Martin, David Prideaux, Richard Woodman, Elizabeth Worley and Michael Lowe

ABSTRACT

Objective: To provide data on the career trajectories of medical students from rural and remote workforce programs at Flinders University (the Parallel Rural Community Curriculum [PRCC] and the Northern Territory Clinical School [NTCS]), comparing them with students at the urban Flinders Medical Centre (FMC).

Design: Retrospective postal survey of all 150 graduates who undertook their Year 3 study in the period 1998–2000.

Outcome measure: Associations with career preference, assessed using univariate analyses and multivariate regression.

Results: PRCC and NTCS graduates were more likely to choose rural career paths than graduates from FMC. The odds ratios were 19.1 (95% CI, 3.4–106.3; $P < 0.001$) and 4.3 (95% CI, 1.2–14.8; $P = 0.026$), respectively, after adjusting for age and rural background. There was no difference in the specialty choices of graduates of the three programs.

Conclusion: This study provides evidence that clinical attachments designed to increase the rural and remote medical workforce do fulfil this objective.

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In 1996, Flinders University School of Medicine was the first Australian medical school to introduce a 4-year graduate-entry medical program.[1] Simultaneously, it piloted two new clinical teaching programs. The first, the Parallel Rural Community Curriculum (PRCC), enabled volunteer students to undertake their entire Year 3 study based in primary care in small rural communities in the Riverland, 250 km from Adelaide.[2] The second, the Northern Territory Clinical School (NTCS), enabled volunteer students to undertake their entire Year 3 study in the remote tertiary referral centre at Royal Darwin Hospital, 3000 km from Adelaide.[3] All other students undertook the standard Year 3 program based at Flinders Medical Centre (FMC), the urban tertiary teaching hospital affiliated with the university.

The PRCC and NTCS programs were funded with the expectation that the experiences would encourage students to choose careers outside capital cities. The graduates of the first three cohorts are now at least 6 years post-graduation. We aimed to determine the career path trajectories of these three cohorts, particularly in relation to general and rural practice.

METHODS

In late 2005, we conducted a retrospective postal survey of graduates who undertook their Year 3 study in the period 1998–2000. There were 150 eligible graduates with contact details on the School of Medicine's alumni database. We developed survey questions using items consistent with the nationally developed FRAME questionnaire.[4] Ethics approval was obtained from the Flinders University Social and Behavioural Ethics Committee.

The main outcome was preference for rural versus urban practice. Age at admission, sex, having lived in a rural community for at least 5 years, and location of Year 3 study were assessed as independent variables. Graduates were also asked to indicate which specialty training program they were either enrolled in or had completed.

Data were analysed using SPSS, version 14.0.0 (SPSS Inc, Chicago, Ill, USA). Associations with career preference were assessed in univariate analysis using *t* tests for continuous variables and χ^2 tests of association for categorical variables. Variables that were significant at $P < 0.1$ were entered into a multivariate logistic regression model that included an adjustment for age.

RESULTS

We distributed 150 questionnaires. Overall, 74 graduates (49%) returned usable data: 45 of 105 FMC students (43%), 16 of 30 NTCS students (53%), and 13 of 15 PRCC students (87%). The median age of respondents at admission to medical school was 24 years (range, 19–42 years) and 54% were women. These data are consistent with the profile of the non-respondents.

Preference for a rural medical career

Graduates were asked whether they were either already in, or training for, practice in a rural location, an urban location, or both. Respondents who indicated either "both" or "unsure" were excluded. In univariate analysis, there were significant associations between practice location and age at admission ($P < 0.001$), medical education program location ($P = 0.001$) (Box), and rural background ($P < 0.001$). Of the 19 graduates with a rural background, 15 (79%) reported a rural career path, compared with 10 (30%) of the other 33 graduates. There was no association between practice location and sex.

In multivariate analysis, PRCC graduates were 19.1 (95% CI, 3.4–106.3) times more likely to choose a rural career path than FMC graduates after adjusting for age and rural background ($P < 0.001$). Similarly, graduates from NTCS were more likely than FMC graduates to choose a rural career (odds ratio, 4.3; 95% CI, 1.2–14.8; $P = 0.026$).

Specialty choice

Despite the apparently higher percentage of PRCC and NTCS graduates who chose general practice, there was no significant difference between these programs and FMC (PRCC v FMC: $P = 0.067$; NTCS v FMC: $P = 0.24$). In univariate regression, for each 1-year increase in age at admission, there was an increased likelihood of choosing general practice of 15% (95% CI, 4%–27%; $P = 0.007$). There was no association between specialty choice and either sex or rural background.

DISCUSSION

We report, for the first time, vocational career choice data for students undertaking the two most popular forms of rural clinical school attachment — a longitudinal rural community-based year, and a year based in a regional tertiary referral hospital. Our data

show that students who chose the PRCC and NTCS programs were more likely to choose a rural career after graduation, even accounting for age at admission and rural background.

Inevitably, small, single institution, cross-sectional studies such as this suffer from significant limitations. Caution should be used in generalising these findings to other institutions. Career choices are made before, during or after undergraduate rotations, and are therefore subject to other influences. As the students were volunteers for both programs, there may have been a selection bias towards students with a prior preference towards rural practice. Our regression analysis accounted for the known influence of rural background.[5,6]

A further limitation is to what extent this result is generalisable to non-graduate-entry courses. The observation that both rural and general practice choices were positively associated with age suggests that differences between the career choices of graduates from these two course types should be the subject of further research.

Of interest is the finding that 39% of the graduates of the PRCC program and 47% of the NTCS graduates chose specialties other than general practice. This is reassuring, as one requirement of all Australian medical schools is that their graduates are capable of undertaking subsequent specialty training across the breadth of medicine. Previous research has demonstrated the excellent academic performance of students in Flinders University's rural clinical school programs.[7] Although the emphasis on general and rural practice is one key aim of the PRCC and NTCS programs, clearly these graduates are also prepared to pursue careers in urban environments and other specialties. Our study shows that these graduates can contribute to meeting the shortfall that exists across many specialties in rural areas.

Career preferences and backgrounds of graduates*

	FMC	PRCC	NTCS	Total
Sex (*n* = 74)				
Male	20 (44%)	6 (46%)	8 (50%)	34 (46%)
Median age at admission to medical school (range)				
	24 (19–38)	25 (20–42)	24 (20–34)	24 (19–42)
Years lived in rural area before medical school (*n* = 52)				
< 5 years	26 (84%)	5 (38%)	2 (25%)	33 (63%)
⩾ 5 years	5 (16%)	8 (62%)	6 (75%)	19 (37%)
Preferred practice location (*n* = 74)				
Rural	8 (18%)	9 (70%)	8 (50%)	25 (34%)
Urban	34 (76%)	2 (15%)	8 (50%)	44 (59%)
Both	2 (4%)	0	0	2 (3%)
Unsure	1 (2%)	2 (15%)	0	3 (4%)
Specialty choice				
General practice	15 (38%)	8 (62%)	8 (53%)	31 (45%)
Internal medicine	5 (13%)	1 (8%)	1 (7%)	7 (10%)
Surgery	4 (10%)	1 (8%)	1 (7%)	6 (9%)
Emergency medicine	3 (8%)	0	2 (13%)	5 (7%)
Psychiatry	4 (10%)	1 (8%)	0	5 (7%)
Ophthalmology	1 (3%)	0	0	1 (2%)
Anaesthetics	5 (13%)	2 (15%)	2 (13%)	9 (13%)
Radiology	1 (3%)	0	0	1 (2%)
Radiation oncology	2 (5%)	0	0	2 (3%)
Obstetrics and gynaecology	0	0	1 (7%)	1 (2%)

* Values are number (%) except for age (years). FMC = Flinders Medical Centre. NTCS = Northern Territory Clinical School. PRCC = Parallel Rural Community Curriculum. ◆

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COMPETING INTERESTS

None identified.

AUTHOR DETAILS

Paul Worley, MB BS, FRACGP, FACRRM, Dean[1]
Anne Martin, PhD, Research Fellow, Department of Medical Education[1]
David Prideaux, BEd, PhD, Professor, Department of Medical Education[1]
Richard Woodman, PhD, MBiostat, MSportsSci, Senior Lecturer in Biostatistics, Department of General Practice[1]
Elizabeth Worley, BN, MEd, GradCertCounsel, Director[2]
Michael Lowe, MB BS, FRACP, Clinical Dean[3]

1 School of Medicine, Flinders University, Adelaide, SA.
2 Healthcare and Education Innovations Pty Ltd, Adelaide, SA.
3 Northern Territory Clinical School, School of Medicine, Flinders University, Darwin, NT.

Correspondence:
paul.worley@flinders.edu.au

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