2021 Best Research Poster Award

Barwon Health

DEAKIN UNIVERSITY

Graduate rural work outcomes of the first 8 years of a medical school: What can we learn about student selection and clinical school training pathways?[1]

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Full text article

INTRODUCTION

As Australian rural clinical schools (RCSs) reach maturity, there has been significant published work evaluating the success of the program as a whole and the factors that are predictive of achieving the greatest rural workforce outcomes[2]. Strategies employed by RCS's to influence rural workforce outcomes have encompassed both selection and training; the admission of student quotas from a rural background, identification of rural practice intention, mandated periods of rural training, extended rural immersion programs of various designs, rural health curricula and rural return of service obligations, with significant variations in approaches observed between RCS programs[2].

Deakin University's School of Medicine was established in 2008 as 1 of 19 Australian RCSs under the Federal Government's Rural Health and Multidisciplinary Training (RHMT) program[3] and expresses a clear mission to address the workforce needs of rural and remote Australia.

This study contributes to the body of RCS graduate tracking studies with an analysis of the School of Medicine's first 8 years of graduates' rural workforce outcomes. The range of both metropolitan, rural Longitudinal Integrated Clerkship (LIC) and rural regional hospital immersion experiences within our clinical school training pathways allows for a comparative analysis of the impact of duration, setting and clerkship design against a metropolitan control group.

OBJECTIVES

➢ Determine the 2019 AHPRA registered work locations of Deakin University medical graduates (2011-2018) and the proportion of graduates working in a rural location.

➢ Determine the student characteristics and clinical school training pathways that are associated with postgraduate rural practice.

➢ Identify selection and training elements that could be applied to the design of a dedicated Rural Training Stream.

METHOD

There were 1024 graduates from the first 8 years of Deakin's BMBS program (2011-2018). Seventy-six of these graduate records were excluded from the analysis as they had an unknown or overseas practice location, transferred or had no recorded clinical school. All the 948 included records had a current practice location registered with the Australian Health Practitioners Regulation Agency (AHPRA) in 2019. Both international and domestic student graduates were included in the study.

Administrative data were extracted from the Deakin University School of Medicine graduate database, matched with their 2019 registered AHPRA practice location (location, state and postcode), de-identified and provided to researchers for analysis. Locations were geocoded according to the Australian Statistical Geography Standard Remoteness Areas (ASGS RA) using a spatial join in ArcGIS. Major cities of Australia (RA1) were classified as metropolitan and locations classified as inner regional Australia, outer regional Australia, remote Australia and very remote Australia (RA2-RA5) were classified as rural. This is consistent with the rural definition stipulated by the RHMT program, which funds Australian RCSs[3].

Univariate (unadjusted) associations between graduate characteristics, duration and setting of clinical school training and practice location were explored using chi-square tests. All associations with P ≤ .1 were retained and used in the binary logistic modelling. The dependent variable used in the binary logistic regression analysis was practice location classified as rural or metropolitan. Each iteration of logistic modelling removed non-significant explanatory variables, with the final model comprising variables with P ≤ .05.

Explanatory variable	OR (95% CI)	*P*-value
Metropolitan (reference)		<.001
Regional RCS 2 years	2.08 (1.37-3.16)	.001
LIC + metropolitan 4th year	1.99 (1.08-3.67)	.028
LIC + regional RCS 4th year	7.09 (3.54-14.19)	<.001
Non-RB (reference)		
RB	2.64 (1.81-3.85)	<.001
Domestic student (reference)		
International student	5.33 (1.65-17.19)	.005
Non-rural bonded place (reference)		
BMP or MRBS	1.57 (1.06-2.32)	.025

TABLE 1 Binary logistic regression model and odds ratios (ORs) of associations between student characteristics, clinical school training pathway and work location (2019) in Remoteness Area 2-5.

RESULTS

83.8% (n=794) of graduates were working in metropolitan Australia (RA1). Of the graduates working in rural Australia (RA2-5), 13.6% (n = 129) were working in inner regional Australia, 2.0% (n = 19) in outer regional Australia, 0.2% (n = 2) in remote Australia and 0.4% (n = 4) in very remote Australia.

Graduates completing both a rural LIC year and a regional RCS year were 7 times more likely to be working rurally than metropolitan trainees (Table 1). A small number of rural background (RB) students completed this combination, 66.7% of whom were practicing rurally (Figure 1). Further associations with rural practice were attending a RCS for 2 years or a rural LIC for 1 year, student having a RB, rurally bonded course placement and being an international student (Table 1). There was a significant association between rural work locations of metropolitan background (MB) students and the duration of time spent in a RCS, with 7.6% (30/394), 13.5% (8/59) and 18.3% (37/202) working rurally for 0, 1 and 2 years spent at an RCS, respectively (χ 2 , 2df = 15.37, P < .001).

RB graduates were more likely to complete at least 1 year at a RCS; however, the greater number of MB students in the cohort meant RB students were still outnumbered 2:1 in the RCS training pathways (261 MB vs 137 RB). Clinical training pathways involving at least 1 year at a RCS produced 62% of the graduate rural workforce.
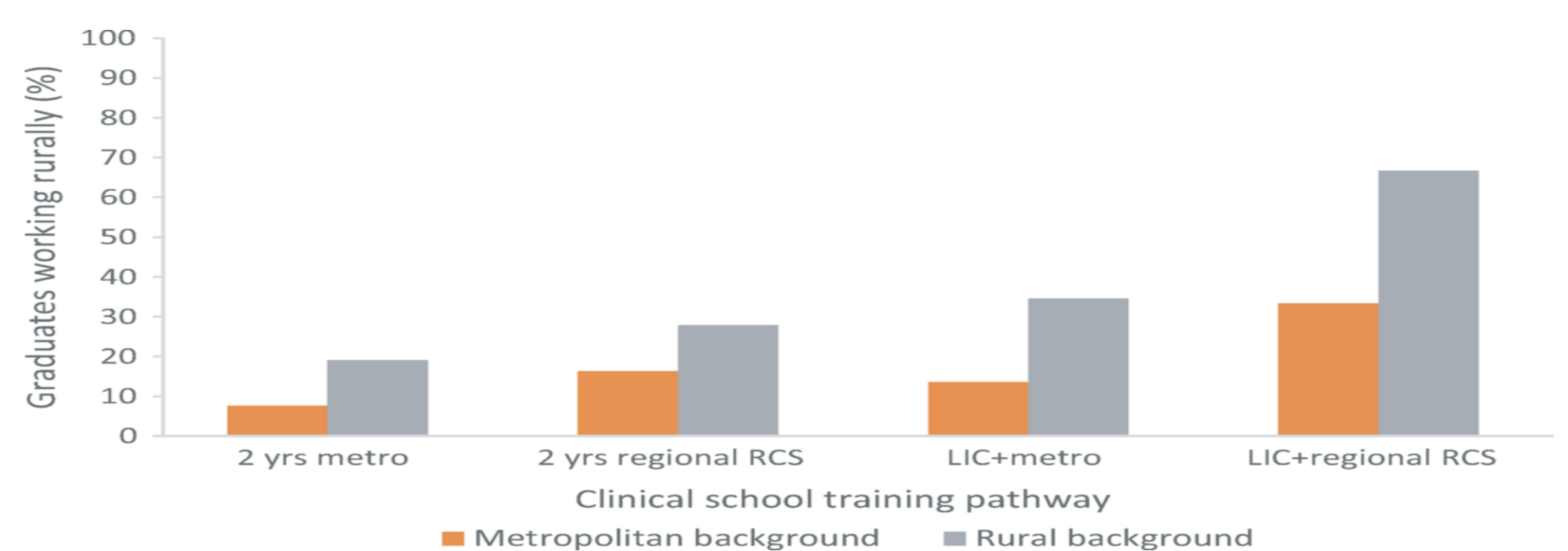

FIGURE 1: Graduates working in rural Australia (RA2-5) by clinical school training pathway

DISCUSSION

The rural practice outcomes for Deakin's RB and MB graduates provoke reflection on the training pathways available to students and outcomes of a preference-based clinical school training pathway allocation process. Rural workforce outcomes for MB students were improved by attendance at an RCS but did not match those of RB students. RCS training pathways produced the majority of the graduate rural workforce, suggesting potential benefits through increasing rural training capacity further. There is a need to expand opportunities for following a LIC/ Regional RCS training pathway, given the superior workforce outcomes for this group of graduates.

Translating the findings of this research, Deakin has established a new Rural Training Stream (RTS) in the MD in 2022 which aligns rural student selection with RCS training pathways. Thirty domestic places will be quarantined for RB applicants, with priority given to applicants from within the geographical area in which our students complete rural clinical training, according to a precisely defined 'rural training footprint'. Students in the RTS will complete their 2 years of clinical training at a RCS, purposefully aligning the independent factors of RB and RCS training and increasing the numbers of RB students completing rural training pathways. This selection strategy has a dual intention to both increase the return of graduates to rural communities and widen access for under-represented populations in these same areas.

CONCLUSION

This analysis of Deakin's first 8 years of medical graduates confirms the factors that independently and collectively enhance rural workforce outcomes, therefore providing further evidence for the alignment of student selection and training strategies in program design models. The potent combination of RB and extended rural training in a variety of settings demonstrates the need to increase the intake of RB students and more purposefully provide them with extended rural training opportunities.

Given the growing evidence supporting longer and repeated periods of rural training during both primary medical and later postgraduate training, strategic use of rural clinical placements is vital to ensure this finite resource is effectively used to achieve the greatest workforce outcomes for the rural communities that we partner with.

REFERENCES & ACKNOWLEDGEMENTS

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