



Contents

- Introduction.....3
- Methodology4
- Results5
 - Defining the analysis dataset5
 - Basic data description5
- Detailed results, including cross tabulations between explanatory variables and location of current work location 11
 - Association between length of time since commencing RAMUS scholarship and remoteness of current work location 11
 - Association between registration type and remoteness of current work location 12
 - Association between gender and remoteness of current work location 13
 - Association between university attended and remoteness of current work location 13
 - Association between remoteness of home address when 5 years old, and remoteness of current work location..... 14
- Discussion 15
- Appendix Tables 21

Introduction

This report describes the characteristics and career destinations of the more than 2,500 Medical students who have been recipients of a Rural Australia Medical Undergraduate Scholarship (RAMUS) since 2000.

The RAMUS Scheme assists selected students with a rural background to study medicine at university. In addition to their rural background, RAMUS holders are selected on the basis of financial need and demonstrated commitment to working in rural Australia in the future.

Medical students could be admitted to the scheme in any year of study (first through to last). Once admitted, RAMUS holders received \$10,000 a year while studying medicine at their chosen university. The basic rationale for the scheme is to help scholarship holders to overcome the financial barriers to studying medicine at university, particularly the costs of moving and living away from their family support structures.

The scholarships are not bonded.

Scholarship holders are encouraged to take part in activities to maintain and strengthen their ties to rural Australia and to develop an appreciation of work as a medical practitioner in rural areas. All scholarship holders have a rural doctor as a mentor and are required to be a member of their university's student rural health club.

The RAMUS Scheme was established in 2000, with the last intake of scholars in 2016. Since then, over 2,500 scholarships have been awarded and over 2,100 RAMUS scholars have graduated and are currently practising medicine in Australia. At the time of the previous (2016) tracking report, more than 500 rural doctors across Australia had participated in the scheme as mentors.

The National Rural Health Alliance has administered the scheme on behalf of the Department of Health since its inception.

The RAMUS Scheme was established on the basis that:

- There was, and continues to be, a severe shortage of medical practitioners and other health practitioners in rural, regional and remote areas of Australia.
- Students originating from rural and remote areas are more likely to go on to work as medical practitioners in those areas, compared with those originating from Major cities.
- Students from rural, regional and remote areas (when compared with those from Major cities) have the joint disadvantages of lower average family incomes and additional costs associated with relocating and living away from home (because the great majority of medical courses are based in Major cities).

This 2019 tracking report follows up on the first (2016) RAMUS tracking report, which found that in 2016, 35% of the 1,741 RAMUS scholars who had completed their medical degree were working in rural, regional or remote Australia.

Methodology

Names of completed RAMUS scholars were matched with current practitioners on the Register of Medical Practitioners. Individuals were matched on the basis of surname, christian and other names, university attended and scholarship completion year.

496 scholars who were not included in the 2016 analysis have been matched and included in this 2019 analysis, as well as 352 additional students who have completed their medical degree since the previous analysis.

The new variable 'cohort' was derived based on the year in which the scholarship was commenced, which was not necessarily the first year of their medical degree.

Variables that were surplus to requirement (eg name, title, maiden name, postcodes, various notes etc) were deleted from the analysis version of the dataset.

The analysis dataset contained the variables gender, university attended when a scholar (university), cohort, jurisdiction where working in 2019 (work state), remoteness area¹ where working in 2019 (work RA), registration type, registration specialty, home jurisdiction when 5 years old (home state) and home remoteness area when 5 years old (home RA).

A simple univariate analysis was conducted in order to describe the data.

Each of the variables were then cross tabulated with the outcome variable (work RA).

The analysis was then stratified by cohort to explore the influence of time and career development.

The new variable 'cohort'

New scholarships have been offered under the RAMUS Scheme over a 17-year period, from 2000 to 2016. Recipients have consequently had different levels of opportunity to return to work in rural or remote areas. In the analysis, scholars have been allocated to one of four cohorts, to provide some allowance for career progression and life circumstances, and consequently differing levels of opportunity to return to work in regional or remote areas.

The new variable 'cohort', has a numeric value of either 1, 2, 3 or 4, based on the year in which the scholar was known to commence their RAMUS studies. RAMUS scholars who commenced:

- prior to 2004 (ie 2000, 2001, 2002 and 2003) were included in Cohort 1
- in 2004, 2005, 2006 or 2007 were included in Cohort 2
- in 2008, 2009, 2010 or 2011 were included in Cohort 3
- after 2011 (ie 2012, 2013, 2014, 2015 and 2016) were included in Cohort 4.

¹ As defined by the ABS Remoteness Areas Classification

Results

Defining the analysis dataset

2,561 individuals have been RAMUS recipients, commencing between 2000 and 2016 inclusive.

Of these, as of 1 May 2019:

- 60 are current scholars
- 165 withdrew and are assumed not to have completed their studies
- 20 are currently not practising medicine
- 18 are currently overseas
- 185 past scholars are unable to be matched against the current Register of Medical Practitioners (with the vast majority being female, unmatched potentially because of change of name through marriage).

All of these 60 current and 388 previous RAMUS scholars were excluded from the analysis.

This leaves 2,113 previous RAMUS scholars, currently working as medical practitioners in Australia, for whom there are sufficient details for the analysis.

There are 50 of these previous RAMUS scholars for whom there is no record of childhood address², while 19 had an overseas childhood address.

Basic data description

Of the 2,113 previous RAMUS scholars for whom there are sufficient details, 899 (43%) were male and 1,214 (57%) were female.

Scholars were fairly evenly distributed across the cohorts, with 28%, 20%, 25% and 27% in cohorts 1, 2, 3 and 4 respectively (Table 1).

Table 1: Number of RAMUS students in each cohort

Cohort	Scholars	Per cent
Cohort 1 (started scholarship 2000-2003)	589	28%
Cohort 2 (started scholarship 2004-2007)	426	20%
Cohort 3 (started scholarship 2008-2011)	529	25%
Cohort 4 (started scholarship 2012-2016)	569	27%
Total	2,113	100%

Scholars attended one of 22 universities (Table 2), with 5 accounting for 54% of all RAMUS scholars (Monash University Melbourne, UNSW, University of WA, University of Melbourne, and University of Queensland).

Other universities featured prominently (James Cook, 9%; Sydney, Flinders and Newcastle, 5% each; Tasmania and Adelaide, 4% each).

² Their address when 5 years old

Table 2: University attended during RAMUS

University	Scholars	Per cent
Monash University Melbourne	255	12%
University of New South Wales	243	12%
University of Western Australia	232	11%
University of Melbourne	201	10%
University of Queensland	201	10%
James Cook University	187	9%
University of Sydney	114	5%
Flinders University	99	5%
University of Newcastle	99	5%
University of Wollongong	88	4%
University of Tasmania	86	4%
University of Adelaide	77	4%
University of Notre Dame Fremantle	43	2%
University of New England	37	2%
Australian National University	35	2%
Deakin University	33	2%
University of Notre Dame Sydney	22	1%
Flinders NT Medical Program	20	1%
Monash University Gippsland	20	1%
Griffith University	15	1%
Bond University	4	0%
University of Western Sydney	2	0%
Total	2,113	100%

RAMUS scholars were drawn from all states and territories (Table 3), with large numbers living in NSW (29%), Queensland (20%), Victoria (22%) and WA (12%) when 5 years old.

Table 3: Home jurisdiction of RAMUS scholars when 5 years old

Jurisdiction	Scholars	Per cent
ACT	7	0%
NSW	610	29%
NT	59	3%
QLD	428	20%
SA	126	6%
TAS	101	5%
VIC	462	22%
WA	251	12%
Overseas	19	1%
Unknown address	50	2%
Total	2,113	100%

When 5 years old, 45% lived in Inner regional areas, 32% in Outer regional areas, 5% in Remote areas, 3% in Very remote areas, 12% in Major cities, and 3% either overseas or in an unknown remoteness area (Tables 4 and 5).

Table 4: Remoteness area of RAMUS scholars when 5 years old

Remoteness area	Scholars	Per cent
Major cities (MC)	263	12%
Inner regional (IR)	945	45%
Outer regional (OR)	667	32%
Remote (R)	111	5%
Very remote (VR)	58	3%
Overseas	19	1%
Unknown address	50	2%
Total	2,113	100%

Table 5: RAMUS scholars, by jurisdiction and remoteness area of home address, when 5 years old

Jurisdiction	Remoteness area (number)					Total
	MC	IR	OR	R	VR	
ACT	7	0	n/a	n/a	n/a	7
NSW	59	362	171	14	4	610
NT	n/a	n/a	29	17	13	59
QLD	50	156	176	27	19	428
SA	24	32	56	12	2	126
TAS	n/a	39	55	4	3	101
VIC	73	289	100	0	n/a	462
WA	50	67	80	37	17	251
Total	263	945	667	111	58	2,044

Jurisdiction	Remoteness area (percentage)					Total
	MC	IR	OR	R	VR	
ACT	100%	0%	n/a	n/a	n/a	100%
NSW	10%	59%	28%	2%	1%	100%
NT	n/a	n/a	49%	29%	22%	100%
QLD	12%	36%	41%	6%	4%	100%
SA	19%	25%	44%	10%	2%	100%
TAS	n/a	39%	54%	4%	3%	100%
VIC	16%	63%	22%	0%	n/a	100%
WA	20%	27%	32%	15%	7%	100%
Total	13%	46%	33%	5%	3%	100%

Note: Excludes 69 who had unknown address or were overseas

The degree of remoteness experienced when RAMUS scholars were 5 years old varied considerably by jurisdiction (Table 5). A greater proportion of scholars from NT (51%), WA (22%) and, to a lesser extent, SA (12%) and Queensland (10%) had lived in remote (ie Remote or Very remote) areas when 5 years old.

Substantial proportions (more than 40%) of RAMUS scholars from NT, Queensland, SA, and Tasmania lived in Outer regional areas when 5 years old.

More than half of RAMUS scholars from NSW (59%) and Victoria (63%) lived in Inner regional areas when 5 years old.

Table 6: Percentage of RAMUS scholars who were living in each jurisdiction/remoteness area, when 5 years old

Jurisdiction	Remoteness area					Total
	MC	IR	OR	R	VR	
ACT	0%	0%	n/a	n/a	n/a	0%
NSW	3%	18%	8%	1%	0%	30%
NT	n/a	n/a	1%	1%	1%	3%
QLD	2%	8%	9%	1%	1%	21%
SA	1%	2%	3%	1%	0%	6%
TAS	n/a	2%	3%	0%	0%	5%
VIC	4%	14%	5%	0%	n/a	23%
WA	2%	3%	4%	2%	1%	12%
Total	13%	46%	33%	5%	3%	100%

Note: Excludes 69 who had unknown address or were overseas

As can be seen from Table 6 above, 30% of all RAMUS scholars 'originated' from NSW; and 3% of all RAMUS scholars came from NSW Major cities, 18% from NSW Inner regional areas, 8% from NSW Outer regional areas, 1% from NSW Remote areas, and approximately 0% from NSW Very remote areas.

Judged by where they lived when 5 years old, other major contributing jurisdictions were:

- Victoria (accounted for 23% of all scholars, while Victorian regional or remote areas accounted for 19% of all scholars)
- Queensland (accounted for 21% of all scholars, while Queensland's regional or remote areas accounted for 19% of all scholars).

Table 7: Jurisdiction in which RAMUS scholars are currently working in 2019

Jurisdiction in which currently working	Scholars	Per cent
ACT	28	1%
NSW	584	28%
NT	80	4%
QLD	441	21%
SA	140	7%
TAS	65	3%
VIC	537	25%
WA	238	11%
Total	2,113	100%

RAMUS scholars are now working predominantly in NSW (28%), Victoria (25%), Queensland (21%) and WA (11%).

Table 8: Remoteness area in which RAMUS scholars are currently working in 2019

Remoteness area in which currently working	Scholars	Per cent
MC	1,369	65%
IR	436	21%
OR	241	11%
R	50	2%
VR	17	1%
Total	2,113	100%

As can be seen from Table 8, 65% of RAMUS scholars are currently working in Major cities, with only 1% in Very remote areas.

Table 9: Registration type of 2,113 RAMUS scholars in 2019

Registration type	Scholars	Per cent
General	1,319	62%
Specialist	712	34%
Provisional	82	4%
Total	2,113	100%

Four per cent of completed RAMUS scholars have provisional registration, the remainder (96%) have general registration, with 34% also having specialist registration (Table 9).

From Table 10 below, of the 712 RAMUS scholars with specialist registration, 265 (37%) specialised in general practice, followed by those registered in anaesthesia (11%), paediatrics and child health (7%), emergency medicine (5%), and obstetrics and gynaecology (4%).

Table 10: Speciality type of the 712 previous RAMUS scholars registered as specialists in 2019

Speciality type	Scholars	Per cent
Anaesthesia	77	11%
Anaesthesia/Intensive care medicine	1	0%
Anaesthesia/Pain medicine	1	0%
Anatomical pathology	5	1%
Anatomical pathology (including cytopathology)	4	1%
Cardiology	14	2%
Cardiology/Nuclear medicine	1	0%
Cardiology/Paediatrics and child health/Intensive care medicine	1	0%
Cardio-thoracic surgery	1	0%
Dermatology	12	2%
Diagnostic radiology	11	2%
Diagnostic radiology/Nuclear medicine	4	1%
Emergency medicine	34	5%
Endocrinology	7	1%
Endocrinology/Chemical pathology	1	0%
Gastroenterology and hepatology	12	2%
General medicine	7	1%
General medicine/Neurology	1	0%
General practice ³	265	37%
General practice/Intensive care medicine	1	0%
General practice/Public health medicine	1	0%
General surgery	14	2%
Geriatric medicine	9	1%
Geriatric medicine/Palliative medicine	1	0%
Haematology	10	1%
Immunology and allergy	2	0%
Infectious diseases	6	1%
Intensive care medicine	4	1%
Intensive care medicine/General medicine	2	0%
Medical administration	1	0%
Medical oncology	10	1%
Medical oncology/Endocrinology	1	0%
Microbiology/Infectious diseases	2	0%
Nephrology	5	1%
Neurology	6	1%
Neurosurgery	3	0%
Obstetrics and gynaecology	28	4%
Occupational and environmental medicine	1	0%
Ophthalmology	5	1%
Oral and maxillofacial surgery	1	0%
Orthopaedic surgery	19	3%
Otolaryngology - head and neck surgery	6	1%
Paediatrics and child health	47	7%
Pain medicine	1	0%
Pain medicine/Anaesthesia	2	0%
Palliative medicine	4	1%
Pathology	1	0%
Plastic surgery	1	0%
Psychiatry	22	3%
Public health medicine	2	0%
Radiation oncology	5	1%
Radiology	9	1%
Rehabilitation medicine	4	1%
Respiratory and sleep medicine	5	1%
Rheumatology	3	0%
Sport and exercise medicine	1	0%
Surgery	1	0%
Urology	2	0%
Vascular surgery	5	1%
Total	712	100%

³ Specialist General Practitioners

Detailed results, including cross tabulations between explanatory variables and location of current work location

The purpose of the RAMUS Scheme was to support an increase in the number of GPs working in rural and remote Australia. For this reason, the outcome variable used in the analyses in this report is the remoteness area where RAMUS scholars now work.

From Table 8 above, 35% of RAMUS scholars now work in rural or remote areas.

However, these previous scholars are at different stages of their careers, and it is possible that the length of time since commencing their scholarship, and consequently their career stage, may influence their opportunity to work in rural and remote areas. Other factors may also be associated with remoteness of current practice, including gender, university, and remoteness of home address when 5 years old. Each of these is examined for association with remoteness of current work location.

Association between length of time since commencing RAMUS and remoteness of current work location

Table 11: Remoteness of work location in 2019, for each cohort of RAMUS scholars

Cohort	Remoteness area (number)								
	MC	Regional			Remote			Ex-MC	Total
		IR	OR	Total	R	VR	Total		
2000–2003	378	131	60	191	14	6	20	211	589
2004–2007	274	90	44	134	14	4	18	152	426
2008–2011	352	97	61	158	14	5	19	177	529
2012–2016	365	118	76	194	8	2	10	204	569
Total	1,369	436	241	677	50	17	67	744	2,113

Cohort	Remoteness area (percentage)								
	MC	Regional			Remote			Ex-MC	Total
		IR	OR	Total	R	VR	Total		
2000–2003	64%	22%	10%	32%	2%	1%	3%	36%	100%
2004–2007	64%	21%	10%	31%	3%	1%	4%	36%	100%
2008–2011	67%	18%	12%	30%	3%	1%	4%	33%	100%
2012–2016	64%	21%	13%	34%	1%	0%	2%	36%	100%
Total	65%	21%	11%	32%	2%	1%	3%	35%	100%

Table 11 describes the number and percentage in each cohort who are now working in each remoteness area. All cohorts appear to be equally likely to work in rural and remote areas, with those commencing their RAMUS studies between 2008 and 2011 slightly less likely.

Association between registration type and remoteness of current work location

Past RAMUS scholars have either provisional or general registration, with some who have general registration also registered as specialists.

Tables A1 and A2 describe the remoteness of the location where these RAMUS scholars currently work.

Of the 2,113 RAMUS scholars, 82 had provisional registration, 1,319 had general registration only, while 712 were also registered as specialists.

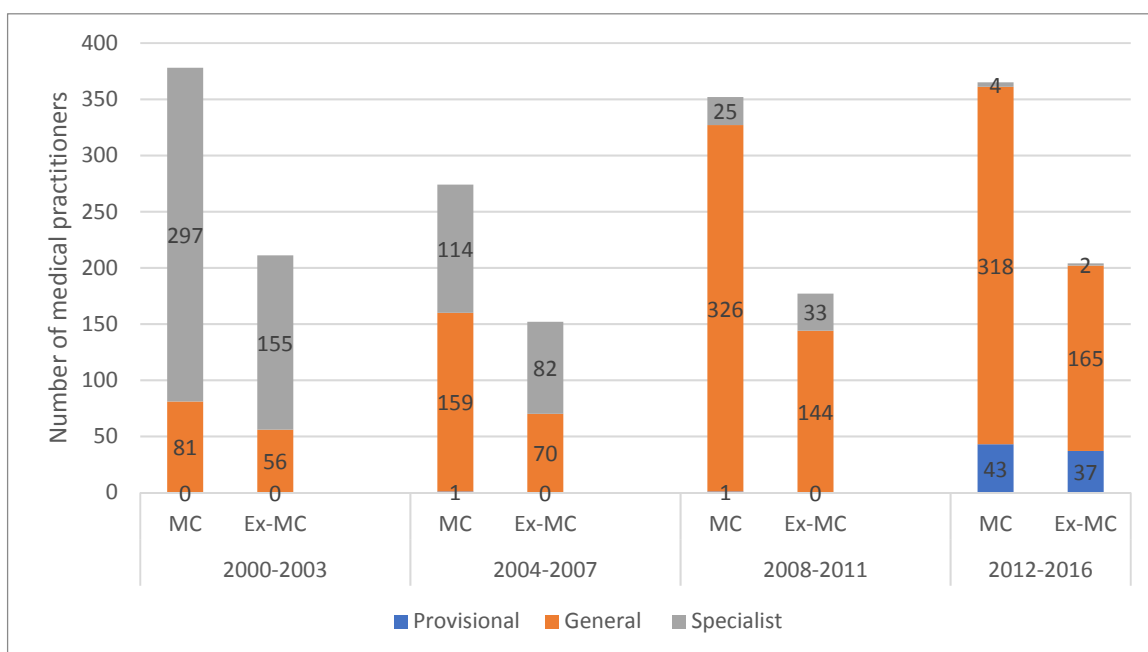
Of those with provisional registration, 45% worked outside Major cities. All but two of these are members of the most recent cohort (started their scholarship between 2012 and 2016), with 46% of those from this cohort who had provisional registration working in either regional or remote areas.

Of those 1,319 with general registration only, 33% currently work outside Major cities. This reflects the percentage of those in the most recent three cohorts working in these areas (34%, 31% and 31%). Those in the earliest (2000–2003) cohort were most likely to work in regional or remote areas (41%).

Of the 712 who were also registered as specialists, 38% worked outside Major cities. Thirty four per cent (34%) of the 452 with specialist registration from the oldest cohort are currently working outside Major cities. This compares with 42% of the 196 and 58% of the 58 with specialist registration from the 2004–2007 and 2008–2011 cohorts. Two of the six specialists from the most recent cohort currently work outside Major cities.

Figure 1 describes the current distribution of provisionally registered medical practitioners, and those with general and specialist registration.

Figure 1: Number of graduated RAMUS scholars from each cohort, currently working inside and outside Major cities



Association between gender and remoteness of current work location

Female RAMUS scholars appear more likely to work in rural or remote areas, compared with males. Appendix Tables A3 and A4 describe the current work location of male and female RAMUS scholars. The tables show considerable differences between the sexes.

Overall, 32% of male RAMUS scholars now work in either a rural or remote location compared with 38% of female RAMUS scholars.

The effect differs slightly between cohorts:

- 35% of males in the most recent (2012–16) cohort currently work outside Major cities, while 30% of those in the oldest (2000–2003) cohort currently work in these areas
- 36% of females in the most recent (2012–16) cohort currently work outside Major cities, while 41% of those in the oldest (2000–2003) cohort currently work in these areas.

These apparent trends (for greater female representation overall, and for greater female representation in earlier cohorts compared with more recent cohorts, and for lesser male representation in earlier cohorts compared with more recent cohorts) are also reflected in the two middle cohorts (2004–07 and 2008–11).

In addition, females from each of the cohorts are as likely, or more likely, to work in both regional and remote areas than are males. For example, 37% of female RAMUS scholars from the first cohort now work in regional areas compared with 27% of their male counterparts, and 4% of female RAMUS scholars from the first cohort work in remote areas compared with 3% of their male counterparts.

Association between university attended and remoteness of current work location

It is possible that some universities may be associated with a greater proportion of students who then go on to work in rural or remote locations.

Appendix Tables A5 and A6 describe the current work location of RAMUS scholars who attended each university. The tables show considerable differences between universities.

Over 50% of RAMUS scholars attended Monash University Melbourne, UNSW, University of WA, University of Melbourne or University of Queensland (see Table 2). The percentage of RAMUS scholars from these universities who are now working outside Major cities is, respectively, 27%, 27%, 34%, 37%, and 32%. Of the other universities, there are a number for which the percentage of past RAMUS scholars now working outside Major cities is substantially greater than the average, including:

- 52% of the 187 RAMUS scholars who attended James Cook University
- 53% of the 86 RAMUS scholars who attended University of Tasmania
- 80% of the 20 RAMUS scholars who attended Flinders NT Medical Program
- 49% of the 35 RAMUS scholars who attended ANU.

Association between remoteness of home address when 5 years old, and remoteness of current work location

If rural origin predicts rural practice, then more remote origin may predict more remote location of practice.

Table 12: Percentage and number of RAMUS scholars from each remoteness area, by remoteness area of current (2019) work location

Home RA	Remoteness area (number)								
	MC	Regional			Remote			Ex-MC	Total
		IR	OR	Total	R	VR	Total		
MC	193	43	17	60	7	3	10	70	263
IR	631	241	52	293	16	5	21	314	945
OR	416	108	127	235	11	5	16	251	667
R	62	13	23	36	12	1	13	49	111
VR	29	11	13	24	2	3	5	29	58
Overseas	9	4	5	9	1	0	1	10	19
Unknown	29	16	4	20	1	0	1	21	50
Total	1,369	436	241	677	50	17	67	744	2,113

Home RA	Remoteness area (percentage)								
	MC	Regional			Remote			Ex-MC	Total
		IR	OR	Total	R	VR	Total		
MC	73%	16%	6%	23%	3%	1%	4%	27%	100%
IR	67%	26%	6%	31%	2%	1%	2%	33%	100%
OR	62%	16%	19%	35%	2%	1%	2%	38%	100%
R	56%	12%	21%	32%	11%	1%	12%	44%	100%
VR	50%	19%	22%	41%	3%	5%	9%	50%	100%
Overseas	47%	21%	26%	47%	5%	0%	5%	53%	100%
Unknown	58%	32%	8%	40%	2%	0%	2%	42%	100%
Total	65%	21%	11%	32%	2%	1%	3%	35%	100%

The figures in Table 12 suggest that there is an association between the remoteness of home address when 5 years old, and the remoteness of work location in 2019.

While 27% of RAMUS scholars who lived in Major cities when 5 years old now work outside Major cities, the corresponding percentages for scholars who lived in Inner regional, Outer regional, Remote and Very remote areas at this age are 33%, 38%, 44% and 50%. Interestingly, 53% of RAMUS scholars who lived overseas when 5 years old (locations that are even more remote from Australia's Major cities), now work outside Major cities.

This association is explored further in Appendix Tables A7 and A8. The greater tendency for RAMUS scholars originating from rural or remote areas to work in these areas, and for those from more remote areas to be more likely to work in these areas is seen across all cohorts, with apparent changes in the size of the effect with each cohort.

The effect is greater for the earlier cohorts, with over 50% of remote origin scholars and around 40% of Outer regional origin scholars in the first two cohorts, now working outside Major cities. The effect is evident but not as strong in the most recent two cohorts.

The pattern for RAMUS scholars of Major cities origin appears to be different, with 23% and 26% from the first two cohorts working outside Major cities, compared with 39% and 32% from the most recent cohorts.

Discussion

Over the period 2000 to 2019, 744 RAMUS scholars have been added to the rural, regional and remote GP workforce, which is approximately 14% of the net increase in the number of GPs in these areas between 2000–01 and 2017–18.⁴ Note that the net increase between 2000–01 and 2017–18, of 5,431 GPs (Table 13), is the sum of recruitment to these areas (including the 744 rural working RAMUS scholars) and retirement or migration of GPs who had been working in these areas.

Table 13: Australian GP statistics 2000–01 and 2017–18

	Remoteness area					Total
	MC	IR	OR	R	VR	
2000–01 GPs	15,752	3,673	1,880	364	256	21,925
2017–18 GPs	25,334	6,944	3,285	668	707	36,938
Change in number of GPs	9,582	3,271	1,405	305	451	15,013
Proportional change	1.61	1.89	1.75	1.84	2.76	1.68
% of total GPs 2000–01	72%	17%	9%	2%	1%	100%
% of total GPs 2017–18	69%	19%	9%	2%	2%	100%
2000–01 GP FSE	10,675	2,141	1,060	153	65	14,092
2017–18 GP FSE	18,294	4,571	1,904	238	142	25,149
Proportional change	1.71	2.13	1.80	1.56	2.18	1.78
% of total GP FSE 2000–01	76%	15%	8%	1%	0%	100%
% of total GP FSE 2017–18	73%	18%	8%	1%	1%	100%
2000–01 GP FSE/100,000 pop	n/p	n/p	n/p	n/p	n/p	n/p
2007–08 GP FSE/100,000 pop	83	74	67	58	40	79
2017–18 GP FSE/100,000 pop	104	104	93	81	71	102
Proportional change	1.25	1.41	1.38	1.41	1.76	1.29

Source: Derived from Australian Government Department of Health General Practice Statistics 22/6/2019
[www1.health.gov.au/internet/main/publishing.nsf/Content/Medicare Statistics-1](http://www1.health.gov.au/internet/main/publishing.nsf/Content/Medicare%20Statistics-1)

Note that Table 13 counts only medical practitioners who billed Medicare in the years detailed. This presumably excludes any salaried medical practitioners who did not bill Medicare in these years.

Historically, the prevalence of health professionals in regional and remote areas has been much lower than in Major cities for many years now.

The low supply of health professionals is measured using a conservative metric, which ignores higher need and older age of the people living in these areas, and in the case of general practitioners, the broader scope of work of those working in areas where there are few specialist medical practitioners or allied health workers to whom patients may be referred. The consequence being that statistics describing the undersupply of health professionals in regional and remote areas understate the magnitude of that undersupply.

⁴ Note that the time periods here, although close, do not completely overlap, and that new scholarships were discontinued from 2016. The percentage should be interpreted as approximate and indicative.

Most often cited is the paucity of general practitioners and other medical practitioners, but the supply of essentially all other health professionals in these areas is much lower.

Over the years, successive governments have introduced a number of initiatives to address the rural and remote undersupply of GPs, including, among others:

- the requirement for overseas trained doctors to spend a number of years working in rural and remote areas before being permitted to practise in a Major city
- development of Rural Clinical Schools
- bonded scholarships, where the recipient of the medical scholarship is required to practise for a specified time in rural or remote areas
- the RAMUS Scheme.

From the results of this analysis (and the 2016 RAMUS Tracking Report), 35% of RAMUS scholars are currently working in rural, regional or remote areas. But, is 35% good or bad, or indifferent?

From the Medical Deans⁵ reports, it is difficult to know how many medical graduates there were each year. While the number who responded to the survey is typically reported, the response rate (and the actual number of graduates) frequently isn't.

Table 14: Respondents to Medical Deans survey and number of Australian medical graduates, 2010 to 2017 inclusive

	2010	2011	2012	2013	2014	2015	2016	2017
Graduating students	1,986	2,561	2,815	2,872	2,499	2,000	2,259	2,147
Response rate	82.4% for 2010-2013				?	?	?	57%
Inferred graduates	average of 3,105 each year				?	?	?	3,767

Source: see footnote⁶

Based on what information can be gleaned from the reports, there were on average 3,105 medical graduates each year between 2010 and 2013, while in 2017 there were about 3,767 (Table 14).

In the period 2013 to 2017, between 4% and 8% of medical graduates stated a preference to practise medicine outside Australia⁷, which could conceivably reduce the average number of graduates who were available to work in Australia (and potentially in rural or remote areas) by between about 150 to 300.

In comparison, each year between 2000 and 2016, an average of 124 currently practising medical practitioners commenced their RAMUS studies, of whom (on average over the period) 43 are currently working in rural, regional or remote areas.

The comparison is very approximate, but RAMUS scholars (who are currently working as medical practitioners), constitute around 4% of the average annual number of medical graduates (at least when compared with the period 2010 to 2013).

⁵ <https://medicaldeans.org.au/>

⁶ For data from 2010-2014, Medical Schools Outcome database National Data Report 2015. Medical Deans Australia and New Zealand Inc <https://medicaldeans.org.au/md/2018/08/2015-MSOD-National-Data-Report.pdf>. For data from 2015-2017, Medical Schools Outcome database National Data Report 2018. Medical Deans Australia and New Zealand Inc <https://medicaldeans.org.au/md/2018/09/2018-MSOD-National-Data-Report.pdf>

⁷ Medical Schools Outcome database National Data Report 2018. Medical Deans Australia and New Zealand Inc <https://medicaldeans.org.au/md/2018/09/2018-MSOD-National-Data-Report.pdf>

What percentage of medical graduates (and specifically those of Major cities origin) typically go on to work outside Major cities?

A growing body of academic work is better identifying the predictors of medical students going on to work in rural and remote areas. Predictors include rural origin, rural exposure (eg rural placements and rural clinical schools), and prior intention to practise in rural areas. A range of other influences (eg having a partner with a rural background and having a bonded scholarship, among others) also appear very relevant.^{8,9,10,11}

The importance of attendance at a rural clinical school and rural origin is well established.^{12,13}

With regard to rural origin:

- Kondalsamy-Chennakesavan¹⁴ estimates that those with rural origin are 2.3 times as likely as those without rural origin to go on to work in rural areas, while those with rural origin coupled with rural clinical school attendance for 1 or 2 years, were respectively 4.4 and 7 times as likely to go on to work in rural areas.
- Rabinowitz¹⁵ found that medical graduates without rural origin, without intention of rural practise, and without intention of working in family medicine, were half as likely as average medical graduates, and a quarter as likely as graduates with these three characteristics, to go on to work in rural areas of the United States.
- Playford¹⁶ estimates that Australian medical graduates with rural origin are 3.9 times as likely as those without rural origin, to go on to work in rural areas.

Medical Schools Outcomes Database, and longitudinal tracking, is a potentially valuable tool in enhancing ability to understand factors predicting rurality of medical practice. Participating graduates are asked a number of questions, including their preferred region of future practise (Table 15).

⁸ Srinivas Kondalsamy-Chennakesavan, Diann S Eley, Geetha Ranmuthugala, Alan B Chater, Maree R Toombs, Deepak Darshan and Geoffrey C Nicholson. Determinants of rural practice: positive interaction between rural background and rural undergraduate training. *Med J Aust* 2015; 202 (1): 41-45. doi: 10.5694/mja14.00236

⁹ Jones, M, Humphreys, J S, & McGrail, M R (2012). Why does a rural background make medical students more likely to intend to work in rural areas and how consistent is the effect? A study of the rural background effect. *Australian Journal of Rural Health*, 20(1), 29-34. <https://doi.org/10.1111/j.1440-1584.2011.01242.x>

¹⁰ Playford D, Ngo H, Gupta S, and Puddey I. Opting for rural practice: the influence of medical student origin, intention and immersion experience. *Med J Aust* 2017; 207 (4): 154-158.

¹¹ Rabinowitz HK, Diamond JJ, Markham FW, Santana AJ. The relationship between entering medical students' backgrounds and career plans and their rural practice outcomes three decades later. *Acad Med* 2012 Apr; 87(4): 493-7. doi: 10.1097/ACM.0b013e3182488c06.

¹² McGirr, J, Seal, A, Barnard, A, Cheek, C, Garne, D, Greenhill, J, Kondalsamy-Chennakesavan, S, Luscombe, G M, May, J, McLeod, J, O'Sullivan, B, Playford, D & Wright, J (2019). The Australian Rural Clinical School (RCS) program supports rural medical workforce: evidence from a cross-sectional study of 12 RCSs. *Rural and Remote Health*, 19 (1), 4971-4980.

¹³ Judith N Hudson and Jennifer A May. What influences doctors to work in rural locations? *Med J Aust* 2015; 202 (1): 5. doi: 10.5694/mja14.01550

¹⁴ Srinivas Kondalsamy-Chennakesavan, Diann S Eley, Geetha Ranmuthugala, Alan B Chater, Maree R Toombs, Deepak Darshan and Geoffrey C Nicholson. Determinants of rural practice: positive interaction between rural background and rural undergraduate training. *Med J Aust* 2015; 202 (1): 41-45. doi: 10.5694/mja14.00236

¹⁵ Rabinowitz HK, Diamond JJ, Markham FW, Santana AJ. The relationship between entering medical students' backgrounds and career plans and their rural practice outcomes three decades later. *Acad Med* 2012 Apr; 87(4): 493-7. doi: 10.1097/ACM.0b013e3182488c06.

¹⁶ Playford D, Ngo H, Gupta S, and Puddey I. Opting for rural practice: the influence of medical student origin, intention and immersion experience. *Med J Aust* 2017; 207 (4): 154-158.

Table 15: Career intention—first preference of region of future practise for students intending to practise in Australia, 2010 to 2017 inclusive

First preference region of future practise	2010	2011	2012	2013	2014	2015	2016	2017
Capital city and major urban centres	87%	84%	82%	82%	85%	82%	82%	82%
Regional city or large town	10%	11%	12%	12%	11%	12%	12%	13%
Smaller town or small community	4%	4%	6%	6%	5%	6%	6%	6%

Source: see footnote¹⁷

From the table, typically 14% to 19% of medical graduates (with a possible trend towards the higher percentage in later years) indicated a preference to work in regional cities, large or small towns or small communities, but it is not clear what percentage actually did.

Unfortunately, it is unclear which geographic classification is being used by Medical Deans, but it seems unlikely to be the same as that used in the RAMUS work (ABS Remoteness Areas classification). It isn't clear, but it is quite possible that capital city and major urban areas in Table 15 above includes Newcastle, Wollongong, Sunshine Coast and Geelong (which are also categorised as Major cities in the RA classification), Hobart (which is categorised as Inner regional in the RA classification), and Darwin, Cairns and Townsville (which are categorised as Outer regional in the RA classification).

Consequently, until better mapping between the two datasets is available, comparisons between the two should be cautiously made and interpreted.

The 2016 RAMUS tracking report mentions the results of the annual RAMUS scholar survey. When graduating RAMUS scholars were asked about their intentions to train and work in rural or remote areas, 70% had high intentions to train in rural areas while 88% had high intentions to work in rural areas.¹⁸ These percentages are high when compared with the percentage actually working in these areas, with graduates 2.5 times as likely to have stated an intention to work in rural areas as they were to actually work there.

If the same tendency to be disappointed (in terms of achieving rural practise) applies to the Medical Schools Outcomes Database, then the percentage of all medical graduates who actually manage to work in regional cities, towns or communities (as defined by Medical Deans), may really be somewhere between 5% and 8%. If so, the 35% of past RAMUS scholars currently working in regional and remote Australia (as defined by the Remoteness Areas classification), is very positive at 3 to 4 times what would otherwise be expected of 'average' graduates.¹⁹ The comparison with 'city origin' students is likely to be even more positive.

This comparison should be interpreted with caution, but it may be plausible, given the rural practice exposure required of RAMUS scholars, and the similar findings in those studies cited above (and others). Further work to better make the comparison would be useful.

¹⁷ For data from 2010-2014, Medical Schools Outcome database National Data Report 2015. Medical Deans Australia and New Zealand Inc <https://medicaldeans.org.au/md/2018/08/2015-MSOD-National-Data-Report.pdf>. For data from 2015-2017, Medical Schools Outcome database National Data Report 2018. Medical Deans Australia and New Zealand Inc <https://medicaldeans.org.au/md/2018/09/2018-MSOD-National-Data-Report.pdf>. It is unclear from the Medical Deans report, which geographic classification is being used.

¹⁸ See the 2016 RAMUS tracking report (page 11).

¹⁹ 'Average' graduates include those who have both city and rural origin. If it was possible to restrict the comparison to city origin students, then the apparent advantage of RAMUS scholars would appear greater again.

In addition, further research may shed light on what frustrates the intention of so many medical graduates to work in rural areas, for example, career course (eg specialist training requirements), partnering in Major city areas while studying and training, lack of opportunity in specific rural areas, and other potential issues. A better understanding could be used as the basis for policies and programs that would translate into an even greater proportion of rural origin medical graduates going bush.

Of relevance to RAMUS, Playford also found, in her simplest model, that the odds of working in a rural location decreased substantially with increasing socioeconomic status (by 0.6 per SEIFA quintile). RAMUS assists rural origin students of modest financial means to study medicine. Not only are such rural origin students more likely to work in rural or remote areas, but based on Playford's findings, the implied lower income of their families translates to a greater likelihood of working in rural or remote areas when they graduate.

The length of time since commencing a RAMUS scholarship appears to have little effect on the percentage who go on to work outside Major cities. From the strong increase in the percentage with specialist skills in cohort 1 and especially cohort 2 (Figure 1), a large number of past RAMUS scholars may need to spend some time after graduation working in Major cities so as to develop these skills.

While GPs are undersupplied in rural and remote areas, specialists are especially undersupplied in these areas, being about half as prevalent in regional areas and about a quarter as prevalent in remote areas as they are in Major cities. The very strong tendency for ex-RAMUS scholars to increasingly develop specialist capabilities along with their general registration (19% of rural-working cohort 3, 54% of rural-working cohort 2, and 73% of the oldest cohort currently working outside Major cities), is potentially very useful indeed (and requires further study).

A higher proportion of female RAMUS scholars (38%), compared with their male counterparts (32%) are now working in rural and remote areas, which reflects Playford's non-significant finding that women were 45% more likely than men to go on to work in these areas.

The level of remoteness of home address when 5 years old appears strongly associated with rural practice, with 50% of those from Very remote areas currently working outside Major cities, reducing by 6% for each reduction in remoteness category from 1 (Major cities) to 5 (Very remote areas), declining to 27% of those who lived in Major cities when 5 years old. This effect is especially evident in the earliest two cohorts (2000–2007), less so in the most recent cohort, and not particularly strong at all in the 2008–11 cohort. It is possible that this tendency for older cohorts to more strongly show this effect is related to career progression and completion of specialist training. This effect is probably not surprising; if rural origin students are more likely to go rural, then those from more remote areas are even more likely to go rural. On the basis of this finding, greater encouragement of 'especially' rural/remote students to study medicine would be expected to make an even greater positive contribution to the numbers of medical practitioners working outside Major cities.

Remoteness geographic classification is a very blunt tool (for example, Hobart, Dubbo and Urana are each categorised as Inner regional areas). Of interest would be the reanalysis of the data based on the Modified Monash classification²⁰, in which regional Australia is classified according to immediate proximity to various categories of town centre. In such an analysis, greater differentiation between graduates from regional cities and small rural towns would be possible.

²⁰ www.health.gov.au/internet/main/publishing.nsf/Content/modified-monash-model

Some universities had greater success than others in producing students who went on to work outside Major cities. Certainly, some of the regional universities appeared to perform very well, with 52% of RAMUS scholars who attended James Cook University, and 80% of those from Flinders NT Medical program now working outside Major cities. But some of the city-based universities also did well, for example, 37% of RAMUS scholars who attended the University of Melbourne are now working outside Major cities, compared with 27% of those from Monash University Melbourne. In future evaluations, it may be worthwhile to examine factors that may be responsible for these apparent differences, for example the quality of any rural exposure, programs or focus at individual universities.

RAMUS scholars tended go on to work in the state or territory in which their university had been located, but not exclusively. For example, of the 86 ex-RAMUS scholars from the University of Tasmania, about 47% went on to work in Major cities in other states including Melbourne, of the remainder 73% went on to work in Inner regional Tasmania (Hobart or Launceston).

In summary:

35% of RAMUS scholars who are currently working as medical practitioners in Australia are doing so in rural, regional or remote parts of Australia. On the available evidence, this appears to be several times greater than would be expected of city-origin medical graduates.

Over the years, the RAMUS Scheme has assisted in the addition of 744 medical graduates currently working in rural, regional or remote parts of Australia, equivalent to 14% of the increase in the number of GPs working in these areas.

A large proportion (over 70%) of the 'older' rural-working medical practitioners also developed specialist capacity, which is especially valuable given the great undersupply of specialists working in these areas.

Female RAMUS scholars were consistently more likely to work in rural and remote areas than males.

RAMUS scholars originating from the more remote areas were more likely to go on to work outside Major cities than those from the less remote areas. This effect appeared to be strong.

RAMUS scholars from some universities were more likely to go on to work in rural and remote areas than those from other universities. Further work, to understand why, could be very useful.

Appendix Tables

Table A1: Number of RAMUS scholars from each cohort, working in each remoteness area in 2019, by registration type

Registration type	Cohort	Remoteness area									
		Regional				Remote				Ex-MC	Total
		MC	IR	OR	Total	R	VR	Total			
General	2000–2003	81	34	19	53	2	1	3	56	137	
	2004–2007	159	41	23	64	4	2	6	70	229	
	2008–2011	326	83	50	133	10	1	11	144	470	
	2012–2016	318	96	61	157	7	1	8	165	483	
	All scholars	884	254	153	407	23	5	28	435	1,319	
Specialist	2000–2003	297	97	41	138	12	5	17	155	452	
	2004–2007	114	49	21	70	10	2	12	82	196	
	2008–2011	25	14	11	25	4	4	8	33	58	
	2012–2016	4	0	1	1	0	1	1	2	6	
	All scholars	440	160	74	234	26	12	38	272	712	
Provisional	2000–2003	0	0	0	0	0	0	0	0	0	
	2004–2007	1	0	0	0	0	0	0	0	1	
	2008–2011	1	0	0	0	0	0	0	0	1	
	2012–2016	43	22	14	36	1	0	1	37	80	
	All scholars	45	22	14	36	1	0	1	37	82	
Total	All scholars	1,369	436	241	677	50	17	67	744	2,113	

Table A2: Percentage of RAMUS scholars from each cohort, working in each remoteness area in 2019, by registration type

Registration type	Cohort	Remoteness area								
		MC	Regional			Remote			Ex-MC	Total
			IR	OR	Total	R	VR	Total		
General	2000–2003	59%	25%	14%	39%	1%	1%	2%	41%	100%
	2004–2007	69%	18%	10%	28%	2%	1%	3%	31%	100%
	2008–2011	69%	18%	11%	28%	2%	0%	2%	31%	100%
	2012–2016	66%	20%	13%	33%	1%	0%	2%	34%	100%
	All scholars	67%	19%	12%	31%	2%	0%	2%	33%	100%
Specialist	2000–2003	66%	21%	9%	31%	3%	1%	4%	34%	100%
	2004–2007	58%	25%	11%	36%	5%	1%	6%	42%	100%
	2008–2011	43%	24%	19%	43%	7%	7%	14%	57%	100%
	2012–2016	67%	0%	17%	17%	0%	17%	17%	33%	100%
	All scholars	62%	22%	10%	33%	4%	2%	5%	38%	100%
Provisional	2000–2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	2004–2007	100%	0%	0%	0%	0%	0%	0%	0%	100%
	2008–2011	100%	0%	0%	0%	0%	0%	0%	0%	100%
	2012–2016	54%	28%	18%	45%	1%	0%	1%	46%	100%
	All scholars	55%	27%	17%	44%	1%	0%	1%	45%	100%
Total	All scholars	65%	21%	11%	32%	2%	1%	3%	35%	100%

Table A3: Number of RAMUS scholars from each cohort, working in each remoteness area in 2019, by gender

Cohort	Gender	Remoteness area								
		MC	Regional			Remote			Ex-MC	Total
			IR	OR	Total	R	VR	Total		
2000–2003	Male	183	48	22	70	5	3	8	78	261
	Female	195	83	38	121	9	3	12	133	328
	Persons	378	131	60	191	14	6	20	211	589
2004–2007	Male	115	36	13	49	4	2	6	55	170
	Female	159	54	31	85	10	2	12	97	256
	Persons	274	90	44	134	14	4	18	152	426
2008–2011	Male	151	32	25	57	6	2	8	65	216
	Female	201	65	36	101	8	3	11	112	313
	Persons	352	97	61	158	14	5	19	177	529
2012–2016	Male	163	49	35	84	3	2	5	89	252
	Female	202	69	41	110	5	0	5	115	317
	Persons	365	118	76	194	8	2	10	204	569
All scholars	Male	612	165	95	260	18	9	27	287	899
	Female	757	271	146	417	32	8	40	457	1,214
	Persons	1,369	436	241	677	50	17	67	744	2,113

Table A4: Percentage of RAMUS scholars from each cohort, working in each remoteness area in 2019, by gender

Cohort	Gender	Remoteness area								
		MC	Regional			Remote			Ex-MC	Total
			IR	OR	Total	R	VR	Total		
2000–2003	Male	70%	18%	8%	27%	2%	1%	3%	30%	100%
	Female	59%	25%	12%	37%	3%	1%	4%	41%	100%
	Persons	64%	22%	10%	32%	2%	1%	3%	36%	100%
2004–2007	Male	68%	21%	8%	29%	2%	1%	4%	32%	100%
	Female	62%	21%	12%	33%	4%	1%	5%	38%	100%
	Persons	64%	21%	10%	31%	3%	1%	4%	36%	100%
2008–2011	Male	70%	15%	12%	26%	3%	1%	4%	30%	100%
	Female	64%	21%	12%	32%	3%	1%	4%	36%	100%
	Persons	67%	18%	12%	30%	3%	1%	4%	33%	100%
2012–2016	Male	65%	19%	14%	33%	1%	1%	2%	35%	100%
	Female	64%	22%	13%	35%	2%	0%	2%	36%	100%
	Persons	64%	21%	13%	34%	1%	0%	2%	36%	100%
All scholars	Male	68%	18%	11%	29%	2%	1%	3%	32%	100%
	Female	62%	22%	12%	34%	3%	1%	3%	38%	100%
	Persons	65%	21%	11%	32%	2%	1%	3%	35%	100%

Table A5: Number of RAMUS scholars from each university, working in each remoteness area in 2019

University	Remoteness area								Total
	MC	Regional			Remote			Ex-MC	
		IR	OR	Total	R	VR	Total		
Monash University Melbourne	185	46	18	64	4	2	6	70	255
University of New South Wales	178	53	10	63	2	0	2	65	243
University of Western Australia	153	24	34	58	18	3	21	79	232
University of Melbourne	127	55	17	72	1	1	2	74	201
University of Queensland	136	36	18	54	4	7	11	65	201
James Cook University	90	30	65	95	2	0	2	97	187
University of Sydney	90	20	4	24	0	0	0	24	114
Flinders University	62	17	14	31	5	1	6	37	99
University of Newcastle	61	31	7	38	0	0	0	38	99
University of Wollongong	56	26	4	30	1	1	2	32	88
University of Tasmania	40	34	11	45	1	0	1	46	86
University of Adelaide	52	11	10	21	4	0	4	25	77
University of Notre Dame Fremantle	26	9	3	12	4	1	5	17	43
University of New England	26	8	3	11	0	0	0	11	37
Australian National University	18	14	3	17	0	0	0	17	35
Deakin University	21	7	5	12	0	0	0	12	33
University of Notre Dame Sydney	18	3	1	4	0	0	0	4	22
Flinders NT Medical Program	4	0	13	13	2	1	3	16	20
Monash University Gippsland	12	7	1	8	0	0	0	8	20
Griffith University	9	4	0	4	2	0	2	6	15
Bond University	4	0	0	0	0	0	0	0	4
University of Western Sydney	1	1	0	1	0	0	0	1	2
Total	1,369	436	241	677	50	17	67	744	2,113

Table A6: Percentage of RAMUS scholars from each university, working in each remoteness area in 2019

University	Remoteness area										
	MC	Regional			Total	Remote			Ex-MC	Count Ex-MC	Total
		IR	OR			R	VR				
Monash University Melbourne	73%	18%	7%	25%	2%	1%	2%	27%	70	100%	
University of New South Wales	73%	22%	4%	26%	1%	0%	1%	27%	65	100%	
University of Western Australia	66%	10%	15%	25%	8%	1%	9%	34%	79	100%	
University of Melbourne	63%	27%	8%	36%	0%	0%	1%	37%	74	100%	
University of Queensland	68%	18%	9%	27%	2%	3%	5%	32%	65	100%	
James Cook University	48%	16%	35%	51%	1%	0%	1%	52%	97	100%	
University of Sydney	79%	18%	4%	21%	0%	0%	0%	21%	24	100%	
Flinders University	63%	17%	14%	31%	5%	1%	6%	37%	37	100%	
University of Newcastle	62%	31%	7%	38%	0%	0%	0%	38%	38	100%	
University of Wollongong	64%	30%	5%	34%	1%	1%	2%	36%	32	100%	
University of Tasmania	47%	40%	13%	52%	1%	0%	1%	53%	46	100%	
University of Adelaide	68%	14%	13%	27%	5%	0%	5%	32%	25	100%	
University of Notre Dame Fremantle	60%	21%	7%	28%	9%	2%	12%	40%	17	100%	
University of New England	70%	22%	8%	30%	0%	0%	0%	30%	11	100%	
Australian National University	51%	40%	9%	49%	0%	0%	0%	49%	17	100%	
Deakin University	64%	21%	15%	36%	0%	0%	0%	36%	12	100%	
University of Notre Dame Sydney	82%	14%	5%	18%	0%	0%	0%	18%	4	100%	
Flinders NT Medical Program	20%	0%	65%	65%	10%	5%	15%	80%	16	100%	
Monash University Gippsland	60%	35%	5%	40%	0%	0%	0%	40%	8	100%	
Griffith University	60%	27%	0%	27%	13%	0%	13%	40%	6	100%	
Bond University	100%	0%	0%	0%	0%	0%	0%	0%	0	100%	
University of Western Sydney	50%	50%	0%	50%	0%	0%	0%	50%	1	100%	
Total	65%	21%	11%	32%	2%	1%	3%	35%	744	100%	

Note: Conditional formatting red to blue; red highlighting more positive outcomes for rural and remote areas, blue highlighting the reverse

Table A7: Number of RAMUS scholars, by remoteness area of home address and remoteness area of current work place, by cohort

Cohort	Home RA	MC	Regional		Total	Remoteness area			Ex-MC	Total
			IR	OR		R	VR	Total		
2000–2003	MC	102	19	6	25	4	1	5	30	132
	IR	145	67	12	79	4	0	4	83	228
	OR	90	23	32	55	3	3	6	61	151
	R	9	4	6	10	2	0	2	12	21
	VR	6	3	1	4	0	2	2	6	12
	unknown	26	15	3	18	1	0	1	19	45
	Total	378	131	60	191	14	6	20	211	589
2004–2007	MC	51	10	6	16	1	1	2	18	69
	IR	142	54	12	66	4	3	7	73	215
	OR	69	20	19	39	5	0	5	44	113
	R	10	2	5	7	4	0	4	11	21
	VR	1	3	2	5	0	0	0	5	6
	unknown	1	1	0	1	0	0	0	1	2
	Total	274	90	44	134	14	4	18	152	426
2008–2011	MC	17	8	2	10	1	0	1	11	28
	IR	169	53	14	67	6	2	8	75	244
	OR	126	30	33	63	2	1	3	66	192
	R	26	3	5	8	4	1	5	13	39
	VR	10	2	6	8	1	1	2	10	20
	overseas	4	1	1	2	0	0	0	2	6
	Total	352	97	61	158	14	5	19	177	529
2012–2016	MC	23	6	3	9	1	1	2	11	34
	IR	175	67	14	81	2	0	2	83	258
	OR	131	35	43	78	1	1	2	80	211
	R	17	4	7	11	2	0	2	13	30
	VR	12	3	4	7	1	0	1	8	20
	overseas	5	3	4	7	1	0	1	8	13
unknown	2	0	1	1	0	0	0	1	3	
	Total	365	118	76	194	8	2	10	204	569
Total		1,369	436	241	677	50	17	67	744	2,113

Table A8: Number of RAMUS scholars, by remoteness area of home address and remoteness area of current work place, by cohort

Cohort	Home RA	MC	Remoteness area			Total	Remoteness area			Ex-MC	Total
			Regional		Total		Remote		Total		
			IR	OR			R	VR			
2000–2003	MC	77%	14%	5%	19%	3%	1%	4%	23%	100%	
	IR	64%	29%	5%	35%	2%	0%	2%	36%	100%	
	OR	60%	15%	21%	36%	2%	2%	4%	40%	100%	
	R	43%	19%	29%	48%	10%	0%	10%	57%	100%	
	VR	50%	25%	8%	33%	0%	17%	17%	50%	100%	
	unknown	58%	33%	7%	40%	2%	0%	2%	42%	100%	
	Total	64%	22%	10%	32%	2%	1%	3%	36%	100%	
2004–2007	MC	74%	14%	9%	23%	1%	1%	3%	26%	100%	
	IR	66%	25%	6%	31%	2%	1%	3%	34%	100%	
	OR	61%	18%	17%	35%	4%	0%	4%	39%	100%	
	R	48%	10%	24%	33%	19%	0%	19%	52%	100%	
	VR	17%	50%	33%	83%	0%	0%	0%	83%	100%	
	unknown	50%	50%	0%	50%	0%	0%	0%	50%	100%	
	Total	64%	21%	10%	31%	3%	1%	4%	36%	100%	
2008–2011	MC	61%	29%	7%	36%	4%	0%	4%	39%	100%	
	IR	69%	22%	6%	27%	2%	1%	3%	31%	100%	
	OR	66%	16%	17%	33%	1%	1%	2%	34%	100%	
	R	67%	8%	13%	21%	10%	3%	13%	33%	100%	
	VR	50%	10%	30%	40%	5%	5%	10%	50%	100%	
	overseas	67%	17%	17%	33%	0%	0%	0%	33%	100%	
	Total	67%	18%	12%	30%	3%	1%	4%	33%	100%	
2012–2016	MC	68%	18%	9%	26%	3%	3%	6%	32%	100%	
	IR	68%	26%	5%	31%	1%	0%	1%	32%	100%	
	OR	62%	17%	20%	37%	0%	0%	1%	38%	100%	
	R	57%	13%	23%	37%	7%	0%	7%	43%	100%	
	VR	60%	15%	20%	35%	5%	0%	5%	40%	100%	
	overseas	38%	23%	31%	54%	8%	0%	8%	62%	100%	
	unknown	67%	0%	33%	33%	0%	0%	0%	33%	100%	
Total	64%	21%	13%	34%	1%	0%	2%	36%	100%		
Total		65%	21%	11%	32%	2%	1%	3%	35%	100%	

Note: Conditional formatting red to blue; red highlighting more positive outcomes for rural and remote areas, blue highlighting the reverse