

ORIGINAL RESEARCH

Rural placements are effective for teaching medicine in Australia: evaluation of a cohort of students studying in rural placements

HH Birden¹, I Wilson²

¹University Centre for Rural Health, North Coast, Lismore, New South Wales, Australia

²University of Western Sydney School of Medicine, Sydney, New South Wales, Australia

Submitted: 3 April 2012; Revised: 24 July 2012, Published: 19 November 2012

Birden HH, Wilson I

Rural placements are effective for teaching medicine in Australia: evaluation of a cohort of students studying in rural placements
Rural and Remote Health 12: 2167. (Online) 2012

Available: <http://www.rrh.org.au>

ABSTRACT

Introduction: Medical education in Australia is increasingly delivered through longitudinal placements in general practice and other community settings. Early meaningful exposure to patients has been shown to improve the transition from medical student to junior doctor. This study examines the experience of the first year cohort of the University of Western Sydney (UWS) Medical School long-term rural placement students. Results have been placed in the context of other published results for rural training schemes, comparing and contrasting the present results to those of others.

Methods: Students undertaking a rural placement in their final year of the UWS medical program (n=21) participated in a mixed methods evaluation. Students filled out a quantitative survey, modified from a validated instrument, and also participated in a focus group. Class ranking of students, and changes over the time of their placement, were also examined.

Results: Overall, students were very pleased with their rural experience, both clinically and socially. Students found the rural experience more comprehensive than they had expected. They considered that they had a stronger learning experience in most aspects than they expect they would have received in a metropolitan area. The smaller realm of the medical world in a rural area was considered an advantage in providing more hands-on experience and more interprofessional team approaches to healthcare provision. It was also considered a drawback by some that more advanced cases of all kinds were sent out of the area to metropolitan



hospitals. Between their ranking in the end of Year 3 examination and the examination in the middle of Year 5, during which period students undertook their year-long placement, 14 of 22 students increased their class rank while two experienced no change and six decreased their class rank. Overall, the rural cohort advanced 4.2 places compared to their urban-placed peers.

Conclusions: The present results confirm that rural placements have come into their own in Australia. Curriculum content regarding Aboriginal health issues should emphasise the complexity of culture and range of living conditions that makes up Aboriginal Australia and avoid a 'deficit-based perspective' that emphasises extreme cases over routine presentations. Taken together, the results reported by Australian medical schools now offering long-term rural placements suggest that rural long-term placements are at least as effective, and may even be more effective, than metropolitan hospital placements as an effective means of providing clinical education to medical students in their senior years.

Key words: Australia, clinical education, medical education, rural placement.

Introduction

Rural medical education in Australia

The trend for medical education to be delivered through longitudinal placements in general practice and other community settings^{1,2} is now firmly in place in medical schools worldwide^{3,4}. Curriculum components and methods that optimise effective teaching in rural placement have been developed⁵⁻⁸, and early meaningful exposure to patients has been shown to improve the transition from medical student to junior doctor^{9,10}.

There is robust evidence that rural placements provide incentive for a decision to practise in a rural setting¹¹⁻¹⁹, although this evidence is still contentious²⁰. It has also been established that students who take training through rural placement do at least as well as students who study in traditional, metropolitan hospital-based training sites²¹⁻²⁸. Clinical placements also facilitate the transfer from the learning orientation of medical school to the performance orientation of the clinical setting²⁹. The informal curriculum is influential in determining the perceived worth of a primary care placement experience³⁰.

Delivery of a rural educational program relies heavily on local practitioners. Placements are with a mix of rural General

Practitioners (GPs), rural hospitals and local patient care services of other types, including mental health, community health and population health centres. Support systems for rural practitioners have been developed^{31,32}.

It has been shown that students' individual resilience and ability to adapt to new and sometimes strange-seeming situations is a major determinant in whether a student thrives in a rural setting³³. Student success in rural placements requires clinical educators who are well organised and develop close one-on-one relationships with students³⁴.

The negative effects of social displacement must be balanced against the positive results of rural placements³³, although even students raised exclusively in metropolitan environments consider rural training attractive for the benefits of enhanced patient access³⁵.

This study

The medical program at the University of Western Sydney (UWS) is a 5 year program, established in 2007, that accepts school leavers and those with part or completed degrees. There is a strong focus on the health issues of western Sydney, but the program aims to produce doctors who can work comfortably in any community setting. The UWS curriculum incorporates an immersion experience in rural practice settings as an integral component of assimilation of



clinical skills. These longitudinal community placements are modelled on the Flinders University Parallel Rural Community Curriculum (PRCC)²¹.

This study examines the experience of the first year cohort of the UWS Medical School long-term rural placement students. Results are placed in the context of other published results for rural training schemes, comparing and contrasting the present results to those of others.

Methods

Design

A mixed methods approach was taken for the evaluation. Each student completed a survey and participated in a focus group.

Population

All students who had completed a rural placement during the final year of their UWS medical program were invited to complete the evaluation. None declined. A total of 21 students completed the evaluation.

Data collection

Students filled out a 46 item quantitative survey consisting of 37 closed-ended and nine open-ended questions. The survey was modified from a validated instrument³⁶. Closed-ended responses were captured in six item Likert³⁷ scales.

Students also participated in one of two focus groups³⁸. An audio recording was made of each focus group and the recording transcribed verbatim.

Class rankings of students, and changes over the time of their placement, were also examined. The evaluation was carried out at the end of the placement year.

Data analysis

Quantitative data were analysed in Microsoft Excel (descriptive statistics) and Statistical Package for Social Sciences (Pearson's χ^2 test, paired *t*-test; SPSS Inc; www.spss.com). Data analysis for qualitative results was aided by NVivo v9 (QSR International; www.qsrinternational.com).

Ethics approval

The evaluation was carried out under approval of the University of Sydney Human Research Ethics Committee, protocol number 13006, issued 8 September 2010.

Results

Overall, students were very pleased with their rural experience, both clinically and socially. Logistics and administrative support, both before the beginning of the placement and on arrival, were well regarded.

Survey results

Rating scores submitted by students regarding all aspects of the placement are summarised (Table 1). Clinical experiences in all areas received uniformly high scores across both groups. Clinical preceptors were highly regarded. The smaller realm of the medical world in a rural area was considered an advantage in providing more hands on experience and more interprofessional team approaches to health care provision. It was also considered a drawback by some in that more advanced cases of all kinds were sent out of the area to metropolitan hospitals. All students were critical of their required community medicine group research project, rating it collectively at less than 2.9 on a scale of 5.

In the social realm, the placement experience was highly rated. Criticisms of the experience both socially and clinically were essentially anecdotal, with only one or two students voicing any particular criticism. Accommodation and local transport were universally mentioned as needing improvement.



Table 1: Survey results (n=21)

Attribute	Rating (of 5)	SD
Prior to arriving at placement		
Placement briefing	4.4	0.6
Organising accommodation	3.7	1.5
Travel arrangements	3.8	0.8
How well were your questions answered?	4.5	0.5
On arrival		
Reception	4.7	0.7
Accommodation	3.5	1.4
Local transport	2.8	1.2
Welcome by staff	5.0	0
Welcome by community	4.5	0.5
Formal orientation	4.8	0.4
Clinical experience		
Range of patient conditions	4.5	0.6
Parallel Consulting	3.6	1.1
Developing clinical skills	4.4	0.6
Breadth of experience	4.6	0.5
History & examination skills improvement	4.5	0.5
Managing patients	4.2	0.8
Undertaking procedures	4.0	0.8
Communication skills	4.4	0.6
Quality of teaching	4.7	0.5
Quality of support	4.8	0.4
Medicine	4.5	0.5
Surgery	4.5	0.6
General practice	4.1	0.9
Paediatrics	4.4	0.5
Mental health	4.3	0.6
Indigenous health	3.5	0.7
Oncology & palliative care	3.8	1.0
Community medicine group project	2.5	1.0
Discovering the local region	4.7	0.5
Meeting new people	4.2	0.6
Fitting into a rural community	4.2	0.7
Social activities	4.5	0.6
Involvement in community activities	3.8	0.8
overall	4.9	0.4
Would you recommend a rural placement to another student in the school?	4.9	0.3
Likelihood that you will work in any rural location in the future	4.3	0.5

SD, Standard deviation.

Students considered it likely or highly likely that they would consider working in a rural location in future, although only three of 21 actually applied to do their internship in a rural setting. Students' future intentions regarding rural work are summarised (Table 2). Rural lifestyle, the nature of the rural clinical experience and work/life balance were the most

frequently cited decision criteria in selecting a practice location. There was no statistically significant association of factors motivating for or against future rural practice nor for subsequent rural internship placement.



Table 2: Likelihood of future rural work (n=21)

Question	Response	
	yes	no
Would you consider working in the region of your attachment?	21	0
Would you now consider working in a rural setting?	18	3
Have you applied to do your internship in a rural region?	3	18
Rate the likelihood that you will work in any rural location in the future	Rating/5	SD
	4.3	0.5
Which of the following have influenced your of choice of location to practice decision or otherwise in a rural area (tick all that apply)?		
Teaching received/available	11	
Clinical experiences	14	
Accommodation	5	
Hospital environment	12	
The community	11	
Lifestyle	20	
Work/life balance	16	
Teacher/tutor attitudes	14	

Improvement in class standing

Between their ranking in the end of Year 3 examination and the examination in the middle of Year 5, during which period students undertook their year-long placement, 14 of 22 students increased their class rank while two experienced no change and six decreased their class rank. Overall, the rural cohort advanced on average 4.2 places compared to their urban-placed peers in the full cohort. The change in class rank was not statistically significant ($p=0.138$, paired t -test), but the improvement in test scores (mean=3.8, SD=2.28) between Year 3 and 5 exams (for rural placement students) was significant at $p<0.0001$ (paired t -test).

Focus group results

Verbatim quotes are included to exemplify major themes raised. Numbers are used to differentiate speakers within a dialogue and (I) is used to denote the interviewer. So as to maintain de-identification of speakers, no gender or ethnicity data are included.

Student participants in focus groups were quite enthusiastic about their experience away from the main campus. Students

found the rural experience more comprehensive than they expected, or that they expect they would have received in a metropolitan area.

...when I heard [from fellow students] of the orthopaedics rotations in [city hospital] often they would focus on one or two joints, but in [rural clinical placement site] it really was everything and I think there was aspects of that in all the other rotations as well ... in [rural clinical placement site] they just sort of cover everything.

The staff support is immense. Especially in medicine and surgery they really went out of their way to give us teaching sessions and things.

... and physical examinations, we expected to learn them, but not as well as we were taught ... I think I got really good at them at the end, and I'm sure everybody else did as well.

They found their communities welcoming and supportive:

We were on the front page of the newspaper several times and people were stopping us on the street and saying, 'Oh, were



you in that —?' They recognise you. They were very excited to have you.

I: How did that feel? Being sort of celebrities?

Awesome.

They also felt that they received more quality time from clinical educators:

1: I felt like I learned more in my year in [rural clinical placement site] than I probably did in the last two years before that in [city hospital] just because of the amount of time that you get to spend with your patients and the sort of breadth of experience that you get, and just the fact that so many of the clinicians are more willing to teach out there, as well.

2: I think I got a lot more direct contact with the specialists than I thought I would get ... and because of that there was a lot of not just clinical teaching, but about life as well.

3: I think I found several mentors ... that I hadn't found in any hospital, despite having a great time and a great learning experience in the city.

And they sensed that there was a camaraderie in rural placement that they would not have experienced elsewhere:

I ... liked the friendly sort of atmosphere between the consultants in the area and ... the students, so you sort of form a friendship with the consultants that are supervising you but they're also friends with each other, and they're also friends with the students from the other universities. And that whole atmosphere is just really nice ... You don't really get that in the city.

I think just being able to talk to them in the social environment, so when the time comes that we're in the clinical environment we're not scared to ask a question that we may have previously been, 'Oh, that's too stupid to ask out loud.' ... Also, they're more willing to engage with us.

And it's much easier to raise things that you're concerned about in a social environment rather than in the hospital, like you can just be like, 'Oh, man, I'm not doing that well at

cannulating,' or something like that and the next day he'll take you around and be like, 'Oh, this is what you told me. Come on, let's do this.' And it's much easier to do that with a friend than with somebody that you see as your superior ...

Students came to their rural placement with some pre-conceived notions that they discovered were false:

When you think of going rural, you think makeshift contraptions they use to do so-and-so procedure because they don't have it because they're rural ... when you go to [rural clinical placement site], it's actually more advanced, in terms of some technologies, than [inner suburb teaching hospital].

Like, they have a cath lab and in [inner suburb teaching hospital] we don't have a cath lab. And they're probably closer to getting an MRI than we are.

... whereas we shopped all of our [city hospital] trauma to [suburban teaching hospital], [rural clinical placement site] keeps it.

... We became more city, ironically.

... when I initially left for [rural clinical placement site] I felt like I was losing a bit of the patient-centred aspect of medicine ... But then when I went to [rural clinical placement site], ... I felt like seeing a patient in hospital and then being able to see them somewhere out in the community, ... I felt like it sort of became more about the patients again rather than the disease process ...

Student GP experience differed by practice placement:

1: When I went to my GP ... with my learning objectives list, s/he crossed off four out of the eight because s/he said you'll never see those, and they were STIs, illegal drug use, and other things on that line. S/He said it was too middle class. I was in [town A]. S/He said, 'You just won't see that. There's no point in putting it as a learning objective'.

2: I saw all those.

1: Well, you were in [town B], and I was in [town A].



3: *The practice I went to, it was pretty good in terms of asking me what I needed to get done and making sure they organised that. ... And seeing procedures in rural GP is really good, because they have a bigger role, I think ... in terms of procedural GPs I got to see circumcisions and things like that that I didn't even know a general practitioner could even do.*

An intriguing dialogue was captured in one focus group regarding Aboriginal patients, who did not conform to the students' concept of Indigenous Australians:

1: *... one of the things I find that it was, maybe it was just the practice we went to, the Aboriginal Medical Service, a lot of the Aboriginals that turned up were mainstreams, so we didn't have very much in terms of—*

1: *What do you mean by mainstream?*

[laughter]

1: *Maybe not mainstream, but close to — to be honest, it was kind of like they could have gone to a general practitioner — I'm just digging a hole for myself.*

2: *They identified themselves as Aboriginal, but they may not have looked that way, I guess.*

[laughter]

1: *I guess the problem is, when you talk about Aboriginal health in lectures, they're always talking about the —*

1: *The big problems.*

1: *Yeah, the diseases*

3: *We have to keep in mind that we were seeing Aboriginal people in [regional centre], which isn't the outback.*

1: *Yeah, that's what I kind of mean by 'mainstream'.*

3: *We didn't get exposure to Aboriginal communities.*

2: *Quite clearly we're not very adept at community sensitivity.*

1: *So Aboriginal culture was missing?*

Yeah.

Yeah.

1: *Most people were mainstream and their issues weren't culture-specific?*

Yeah.

3: *I think where this is coming from is that we all noticed an incongruity between what we'd been taught about Aboriginal health, and what we actually saw in the practice.*

4: *... the whole point of the Aboriginal rotation was to at the end of it feel like we could interact with Aboriginal people more and understand if we see an Aboriginal patient in the future what services are available and that sort of thing. And that wasn't aptly demonstrated...*

This theme was not evident in all groups. In fact, one student offered this as a favourite memory of time spent in another rural placement site:

I think clinically one of my favourite experiences in the whole of the medical course to date was an indigenous attachment of a drug and alcohol rehab place out sort of the back of [rural town] that involved a lot of Aboriginal men who had come straight from prison, and I felt like that was a very useful experience for me to have as a [person with a different cultural background], to sort of learn to try and relate to people that I don't share very many cultural similarities with. It was both very, very challenging and very useful.

Students were concerned that if they continued in rural practice through their internship that they would have difficulty integrating into a metropolitan environment:

1: *... a lot of training programs you have to go to a city hospital, ... and it's sort of scary, the idea of doing an internship at a rural hospital and then ... having the city interns ahead of you in terms of getting into those training programs because they're more well-known to the supervisors or they're already working at the hospital where the training program is based.*

2: *I think that's what deterred me from going rural straight away as an intern, because of the differing opinions of the people I talked to as to how easy it is to get into a registrar training program after going to a rural hospital. I think that was one of the factors.*

The students felt that a rural setting was a good place to learn medicine because they saw more of the patient's journey:

I think I've had more of a chance to see and to follow patients through for quite a while because of the general term or



general team you see everyone on the ward, and you can follow them through when you're doing oncology. At the same time you're doing oncology you might see them in their oncology context over at [outpatient clinic] and you might see them back in the hospital, and you might see them in the community and I got to see some of the communication between healthcare providers, whether it was good or bad, and how people reacted to it and reflected on it and I thought that was very interesting.

Discussion

The students in this study reported an overall high level of satisfaction along with some problems, which were mainly systems issues and early-days logistics issues. Findings were similar to other evaluations of rural medical training programs in that students:

- found the teaching and learning program satisfactory^{6-8,17,21,27,39-41}
- relied on local coordinators to help them with the transition to, and functioning in, the new environment^{6,40},
- were apprehensive about whether their learning in the rural setting would adequately prepare them for assessment back on the main campus^{21,39},
- appreciated the collegiality and perceived beneficial life/work balance of rural living/practice^{6,21,40},
- considered themselves better prepared to advance to internship because of the perceived additional attention afforded in a rural location with higher student/educator interaction^{17,21,40},
- experienced a longitudinal, rather than cross-sectional, experience of a patient's journey^{7,21,42},
- were able to actively participate in providing actual patient care^{6,17,21,40}
- appreciated the differences between rural and metropolitan general practice⁴³
- developed trust and confidence in their clinical educators as role models⁴⁴

- felt that they were part of a healthcare team, as opposed to learning observers⁴⁵
- increased their receptiveness to a rural medical career^{12,13,27,46,47}
- assimilated the concept that permissive boundary definitions and dual relationships, which are usually avoided or cautioned against in urban settings, are not only acceptable but can be beneficial when practising in a rural area⁴⁸⁻⁵¹.

Some findings of evaluations of rural students published early in the history of rural placements in Australia were not evident here. These include:

- anxiety over the rural experience^{21,39}
- frustration with the rural experience⁸
- lack of exposure to essential basic procedures such as suturing and airway management⁵².

Experience with Aboriginal health services

With regards to the comments of some of these students regarding their Aboriginal health experience, these students did recognise that part of this was context: they did not see Aboriginal people in their own environments. This is an example of the hidden curriculum at work⁵³, and the inherent disconnection between the classroom and the clinic when it comes to the cultural and social realities of practice⁵⁴. While these students are not racist, their use of language and their conceptual frameworks indicate that their training thus far had not completely prepared them for the reality of Aboriginal health work. They held a stereotypical view of Aboriginal people and Aboriginal health status, one founded on the 'plight'⁵⁵ of Indigenous people. Knowing that the health status of Indigenous Australians is on aggregate worse than that of other ethnic groups, they had fallen into an ecological fallacy where they expected that the ill health (and a certain physical appearance) of all Aboriginal Australians was uniform. This expectation was so strong that it made them question whether the patients they saw – who did not conform to their mental models of what an Aboriginal



Australian should look like or present with – should be seen at a dedicated Aboriginal health clinic.

Instruction in the life and health of Indigenous Australians is a vital part of the social mission of medical schools⁵⁶. Curriculum designers should examine classroom teaching content to ensure that it accurately portrays the Aboriginal community as a whole⁵⁷, emphasising the complexity of culture and range of living conditions that make up Aboriginal Australia⁴³ and avoiding a ‘deficit-based perspective’⁵⁸ that emphasises extreme cases over routine presentations⁵⁹, particularly as Indigenous Australians often come from diverse racial backgrounds⁶⁰ and so do not conform to any classic notion of what an Indigenous person looks like.

A critical reflection tool⁶⁰, developed by Medical Deans Australia and New Zealand to assist in framing Indigenous curriculum components and recently trialled and increasingly incorporated into the school’s curriculum, may be an important element in achieving this. Other good guidance is also available^{61,62}.

Conclusion

Future research is warranted examining:

- the extent to which the apprehension of students in rural placements (especially postgraduate years) regarding their ability to re-integrate into a metropolitan setting is warranted
- the ‘cultural’ effects of rural immersion programs – Are there important differences in the hidden and informal curricula between metropolitan and rural Australian medical education settings? What are the important dynamics of the interaction between metropolitan medical students and rural people?
- the reasons why rural students appear to perform better than their peers in traditional hospital-based clerkships.

The major criticisms revealed in this study are easily remedied; they are indications of start-up logistics problems, not fundamental deficits in program planning or delivery. The students in this study considered their experience worthwhile and indicated that it contributed to their interest in working in rural or regional Australia.

The results of this study are encouraging not only because they indicate that the UWS medical education program is off to a good start, but also because they confirm that rural placements have come into their own in Australia. Taken together, the results reported by Australian medical schools now offering long-term rural placements suggest that such placements are at least as effective as, and may even be more effective than, metropolitan hospital placements in providing clinical education to medical students in their senior years. The ‘Australian rural health education revolution’⁶³ is showing results.

Acknowledgements

The authors thank the students for their willingness to share their reflections on their experience; the Commonwealth Department of Health and Ageing for financial support; Heather Barger Talbot for transcribing focus group recordings; Jenny Akers, Rural Program Manager, UWS, for providing continuing support to students and faculty; and three anonymous reviewers.

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