

ORIGINAL RESEARCH

The challenges confronting clinicians in rural acute care settings: a participatory research project

PS Paliadelis¹, G Parmenter¹, V Parker^{1,2}, M Giles², I Higgins²

¹School of Health, University of New England, Armidale, New South Wales, Australia

²Hunter New England Health, Newcastle, New South Wales, Australia

Submitted: 23 November 2011; Revised: 16 February 2012; Published: 29 June 2012

Paliadelis PS, Parmenter G, Parker V, Giles M, Higgins I

The challenges confronting clinicians in rural acute care settings: a participatory research project

Rural and Remote Health 12: 2017. (Online) 2012

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

ABSTRACT

Introduction: In Australia, as in many other developed countries, the current healthcare environment is characterised by increasing differentiation and patient acuity, aging of patients and workforce, staff shortages and a varied professional skills mix, and this is particularly so in rural areas. Rural healthcare clinicians are confronted with a broad range of challenges in their daily practice. Within this context, the challenges faced by rural acute care clinicians were explored and innovative strategies suggested. This article reports the findings of a study that explored these challenges across disciplines in acute healthcare facilities in rural New South Wales (NSW), Australia.

Methods: A mixed method approach, involving a consultative, participatory 3 stage data collection process was employed to engage with a range of healthcare clinicians from rural acute care facilities in NSW. Participants were invited to complete a survey, followed by focus group discussions and finally facilitated workshops using nominal group technique.

Results: The survey findings identified the respondents' top ranked challenges. These were organised into four categories: (1) workforce issues; (2) access, equity and opportunity; (3) resources; and (4) contextual issues. Participants in the focus groups were provided with a summary of the survey findings to prompt discussion about the challenges identified and impact of these on their professional and personal lives. The results of the final workshop stage of the study used nominal group process to focus the discussion on identifying strategies to address identified challenges.

Conclusions: This study builds on research conducted in a large metropolitan tertiary referral hospital. While it was found that rural clinicians share some of the challenges identified by their metropolitan counterparts, some identified challenges and solutions were unique to the rural context and require the innovative solutions suggested by the participants. This article provides insight into



the working world of rural healthcare clinicians and offers practical solutions to some of the identified issues. The findings of this study may assist rurally based healthcare services to attract and retain clinical staff.

Key words: Australia, challenges, clinician, health care, nominal group technique, participatory research, rural workforce.

Introduction

In Australia a significant minority of healthcare professionals work in locations that are at a distance from major cities and therefore lacking in diverse specialist services. Rural clinical practice differs markedly from the practice of metropolitan clinicians in that it requires greater diversity of skills and knowledge in an environment of scarce resources and minimal support structures¹.

'Rurality' is difficult to define² but generally it reflects smaller populations, and distance and isolation from major centres with a corresponding lack of access to the full range of services and infrastructure.

Acute care in a rural context refers to a level of health care where a patient may be treated for a wide range of acute presentations³, including illness, disease, trauma and surgery. In Australia this type of health care is generally delivered in rural referral hospitals, district health services and multi-purpose services where the patient receives care from a range of medical, nursing and allied health professionals. The context of this study was acute rural, and rural referral hospitals, the type of facilities in Australia which typically offer a range of acute care services, such as emergency care, maternity services and general medical and surgical services³.

The context of rural health is geographically, sociologically and demographically different to metropolitan settings^{4,5}. The profile of rural health services presents a picture of greater access inequity compared with those in metropolitan contexts^{4,6}. Morbidity and mortality rates for rural and remote populations in Australia are significantly higher than for their metropolitan counterparts and this is linked to the

poor availability of the full range of health services and inadequate numbers of health professionals⁷.

When compared with metropolitan clinicians, rural health professionals, particularly doctors and nurses, require a broader range of clinical skills to function effectively⁸⁻¹⁰. Rural clinicians need to function as generalists, as opposed to a specialists. Indeed, there is significant pressure on rural nurses to develop an increased scope of practice because at times they may be the only health professional available in a given rural or regional area¹¹. Particular challenges cited in the literature include minimal access to professional development, lack of exposure to specialist practice, lack of supervision and peer support, the lack of the opportunity for inter-professional team work and the accompanying challenges of great distances to travel within a widely dispersed and often isolated population^{6-8,12-14}.

Access to professional development is frequently cited in the literature as a significant challenge for rural clinicians^{6,8,14,15}. Job satisfaction has been strongly linked to access to professional development. Many studies have shown that the main reasons doctors, nurses and allied health professionals leave the rural setting are the lack of access to appropriate continuing education and professional isolation^{6-8,12-14}.

Without access to adequate formal education and mentoring new graduates are at risk of becoming professionally isolated and less likely to remain in rural service^{16,17}. Of the limited literature that discusses the specific challenges faced by rural acute care clinicians, a qualitative study of the workforce issues of 21 nurses from seven hospitals in rural Canada found they were concerned about: 'organisational change' and the increased requirement for nurses to attend to administrative, rather than clinical responsibilities; the burden of rural nursing practice as a generalist; and the increasing average age of nurses, with fewer new nurses filling the places of those



who retire⁹. Schofield and Beard also raised concerns about the retirement of the 'baby boomer' generation of doctors and nurses and their loss as experienced mentors for new practitioners¹⁸.

There is also a growing body of evidence that suggests there are generational differences in attitudes towards work^{9,11,19}. New health professional graduates generally prefer to work in larger, well-resourced health facilities that provide professional support to develop skills in specialised practice, rather than accept the generalist or the 'jack of all trades' role required of a rural health professional^{8-10,19}. Further, even when new graduates are recruited to rural practice they are often not retained due to heavy workloads, lack of postgraduate transitional support and the elusiveness of career progression options^{1,15,20}. Hegney et al reported that the older generation of nurses leave rural practice because of factors relating to workplace management practices, the emotional demands of the job, poor recognition of the value of their work, and unsatisfactory remuneration for their level of skill and experience¹⁴. Interestingly, Charles, Ward and Lopez reported similar workforce issues for female general practice registrars who describe the negative aspects of working in rural health settings as a lack of childcare services and their work being undervalued by male peers¹³.

Bushy found common themes relating to the challenges of rural lifestyle existed in Canada, Australia, and the United Kingdom²¹. Lack of anonymity, the blurring of professional boundaries and difficulty maintaining private lives are some identified challenging aspects of employment in rural health settings^{8,11}. Rosenthal suggested that this lack of anonymity occurs because of the degree of contact and familiarity that occurs within small communities⁸. This can bring about 'role conflict' for both health workers and patients and may dissuade new or novice nurses from working and living in a rural setting¹⁷. Conversely, it has also been found that familiarity with a healthcare provider produces a sense of comfort and relief for rural patients⁸, and for general practitioner registrars, the sense of connectedness with the community¹³. The ability to provide 'whole and multigenerational care' was considered a positive and

endearing aspect of working in a rural health setting for general practitioner registrars¹³.

Although the rural health literature is considerable, research on the specific challenges clinicians face in rural acute care is limited and of a very general nature. Invariably studies revolved around the challenges facing doctors (mostly GPs) and in some cases, nurses, but very little was found that related to allied health professionals. In summary, the lack of specific literature on the challenges faced by a range of healthcare professionals in rural acute care clearly indicates the need for further research to explore perceptions of clinicians (across disciplines) about the challenges they face, and their suggestions for overcoming them.

The major aims of this study, therefore, were to better understand the challenges faced by rural acute care clinicians and the impact of these challenges on their capacity to carry out their roles. A secondary aim was to explore and prioritise strategies to address selected challenges.

Methods

This study utilized a participatory process to identify the challenges confronting healthcare professionals in rural acute care settings and explore their priorities for practice change.

This mixed method study used a 3 phase participatory design, incorporating descriptive and interpretive approaches. Mixed method inquiry involves the use of multiple and diverse methods for gathering, analysing and representing data²². This type of approach is valuable because it captures and combines quantitative and qualitative perspectives in order to address the biases inherent in a single method. This also allows for a 'sequential design' where the results from one study phase can be used to develop or focus the subsequent phases^{23,24}.

The study setting was rural, acute care facilities within northern New South Wales (NSW), Australia. A range of facilities were chosen, based on their location and size, to allow the participation of healthcare professionals employed



in the full range of rural acute healthcare services offered by community hospitals, multi-purpose services, district health services and rural referral hospitals. Participants were drawn from the full range of healthcare professionals, including nursing, medical and allied health staff, who had been employed in the rural, acute care settings for 6 months or longer.

The three data collection phases of this study were:

- Phase 1: the distribution and analysis of a survey questionnaire to all clinical staff of acute care facilities in the region. The 8 item survey asked for demographic data regarding age, sex, professional role, work experience, and the years of employment in a rural setting. The remaining questions asked the respondents to identify and rank in order of significance and impact five professional challenges they face. The survey also included an open-ended section for further comments. All eligible healthcare professionals on the payroll of these rural health facilities were sent a survey.
- Phase 2: focus group discussions of the top ranked challenges drawn from an analysis of the survey questionnaires. Focus groups members were provided with a summary of these survey findings. They were then asked to discuss these challenges from their own perspective and comment on how the challenges impacted on patient care and on their personal and professional lives.
- Phase 3: a series of workshops using a nominal group technique²⁵ was used to generate ideas to address the key challenges identified in the first two stages of the study. The workshops focused participants on discussions of potential strategies and/or projects that might address the identified challenges. Participants were recruited for focus groups and workshops via an expression of interest form attached to the information letter that accompanied the survey in Phase 1.

Data analysis varied according to the data source. Descriptive statistical analysis of survey data was conducted using the SPSS data analysis package (www.spss.com). Thematic analysis of short qualitative answers from the surveys was undertaken by the research team to identify major themes. Interpretive and thematic analysis of focus group transcripts also served to identify individual and collective thinking on the most significant challenges that emerged from the first two data sets. Nominal group processes²⁵ were used to score and rank the workshop findings.

Ethics approval

The project received ethics approval from both the area health service and the University of New England Human Ethics Committee (#HEO9/115) and the identity and welfare of participants were protected at all times.

Results

Phase 1: Survey results

In total, 3000 surveys were distributed across 16 sites including four rural referral hospitals and 12 rural hospitals. The response rate was approximately 10% ($n=226$), and 87% of respondents were female. Of the respondents 14% were less than 30 years, 52% between 30 and 50 years and 34% over 50. The range of health professions represented in the survey responses is shown (Fig2).

The challenges that were identified as priority 1, 2, or 3 by the 226 survey respondents were analysed by the research team and grouped under the following four headings, in descending order of importance:

1. Workforce issues (workload, workplace culture and employment practices)
2. Access, equity and opportunity
3. Resources
4. Contextual issues.



Challenge priority No: _____

.....

.....

.....

.....

.....

.....

.....

.....

Patient care					
Not at all					A great deal
0	1	2	3	4	5
----- ----- ----- ----- -----					
Work practices					
Not at all					A great deal
0	1	2	3	4	5
----- ----- ----- ----- -----					
You personally					
Not at all					A great deal
0	1	2	3	4	5
----- ----- ----- ----- -----					

Figure 1: Example of the survey questions.

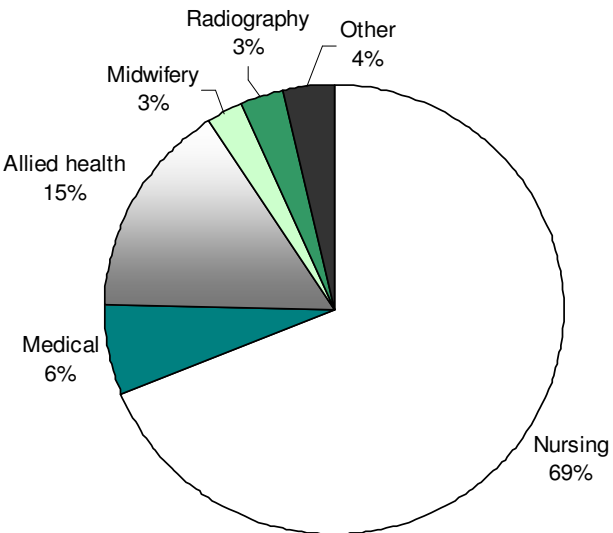


Figure 2: Profile of participants’ disciplines. Note: The ‘other’ category consists of a range of allied health staff such as dieticians, speech pathologists, occupational therapists and social workers all working in the acute care context.

Workforce issues: The most significant challenge was workforce issues, which included the difficulties of rural staff shortages, of being a sole practitioner, the tension between specialist and generalist practice and the inherent de-skilling and multi-skilling this creates. This category also included other workforce issues such as poor rostering practices,

difficulty of backfilling or gaining access to locums and chronic excessive workloads.

Access, equity and opportunity: The next most significant category was access, equity and opportunity. The participants described these as challenges for both staff and patients. For patients, the challenges concerned access to



specialty services, investigative and diagnostic procedures and transport services. For staff, the challenges referred to access to education and staff development, access to experienced clinical colleagues for support and advice and a lack of equity with regard to career prospects.

Resources: The third most significant challenge was a lack of resources, equipment and services in rural settings. In particular this was described in relation to lack of administrative and IT support, and having to work with old or out-dated equipment.

Contextual issues: The final challenge identified was contextual issues, including geographical isolation and remoteness, the impact of drought on rural communities and the perceived metrocentric focus of public acute healthcare services in Australia.

Phase 2: Focus group results

The results of the survey were summarised and provided to focus group participants to inform their discussions. These discussions added insights into the way the identified challenges actually impacted on a range of rural acute care clinicians.

Workforce issues: The most significant challenge identified in the survey, workforce issues, was discussed in terms of staff shortages and inadequate skill mix, which the participants felt impacted on them professionally, personally and on the quality of the patient care they delivered. Excerpts from the focus group transcripts exemplified this:

There are inadequate staff numbers in all areas. When we are busy staff are sent to unfamiliar areas and there are inadequate senior staff to support juniors and those less experienced.

We have multiple care levels so we need to have clinical skills in a wide area. We all manage both inpatient and community caseload with limited staffing.

I am an older nurse, and I've seen many changes – but things have NEVER been this difficult. The hospitals are seen as a business... we lack basic access to qualified staff and we are never thanked for all the overtime.

Access, equity and opportunity: Discussion of the second challenge – access, equity and opportunity – revealed that the clinicians were concerned about their own professional needs as well as inequities in patient access to appropriate healthcare services, as the following excerpts demonstrate:

We have diminished access to conferences and seminars due to distance, cost of travel and have to take time off, with no chance of backfill.

We are expected to travel long distances in our own time for education, what we need is educators to deliver education in rural areas.

Participants were also concerned for patients who are required to transfer to metropolitan centres for procedures and tests that are unavailable in rural settings, and the ensuing difficulties for rural families when loved ones are sent to a large and geographically distant metropolitan facility. These issues were raised by several participants in relation to rural obstetric services where:

Women and infants [are] missing out on quality care due to funding issues and having to transfer them to [name of] hospital over 200 km away.

Resources: The resource challenge was described as a general lack of suitable equipment, space, services and expertise to support the delivery of quality care. For example, outdated equipment, old computers, poorly equipped clinical spaces, lack of radiology services and information technology (IT) support staff were some of the challenges identified. For example, one participant commented:



I think we are considered second cousins when you see the support, equipment and staffing of the city facilities.

Contextual issues: The challenge of contextual issues as discussed in the focus groups reflected a perceived lack of understanding from senior staff at larger acute care centres about the nature of rural practice. This sometimes led to the requirement to implement systems and procedures not suited to the rural context, for example the introduction of a new interprofessional clinical pathway for heart failure patients that required the sign-off of a wide range of healthcare professionals, when in most rural centres the team consisted of medical and nursing staff only. Other issues related to decisions made by senior managers in larger metropolitan centres, for example:

Decisions have already been made without any consultation with rural colleagues. Budget and KPIs [key performance indicators] seem to be paramount, not so patient care.

Other comments referred to geographical and professional isolation, for example:

We have low-density populations and big distances. I am getting tired just trying to cover the territory. There's only me, there is no one to ask or to give me support. It is my worry, my concern, my responsibility, me who has to live it and deal with it.

Phase 3: The workshops

In this final phase of the project, participants a series of workshops were provided with a summary of the combined survey and focus group findings and asked to consider the key challenges and suggest strategies that might address them. The researchers focused the workshop activities on exploring solutions to the challenges, or suggesting further research that may help to build a deeper understanding of the issues and also build research interest and capacity in rural areas. However, there was also a general acknowledgement that there were some positive aspects of rural practice. In particular, the broad range of clinical experiences and greater

autonomy available for rural clinicians, and the feeling of embeddedness in rural communities, were considered to be the key reasons why these clinicians continued to work in rural areas.

Discussion

While the low survey response rate is acknowledged, and participants self-selected for the focus groups and workshops, the 3 phase design provided some valuable insights on which to build a larger study. The key outcomes of phase 3, the workshops, are presented and discussed here according to the four categories of challenges identified and discussed in the first two phases, and in relation to the literature.

Responding to the challenge of workforce issues: being flexible

The 'being flexible' strategy suggested in the workshops concerned addressing rural staff shortages, dealing with the difficulties of being a sole practitioner and responding to the tensions between specialist and generalist practice and the inherent deskilling and multi-skilling this creates. The Australian Productivity Commission has suggested that one of the disincentives for practice in rural (and remote) communities is the lack of a mass of population to sustain specialty practice and skill or 'meet related infrastructure requirements'⁷. Indeed, the Australian Society of Anaesthetists added that the consolidation of surgical and anaesthetic services in larger metropolitan centres has resulted in a better standard of health care as healthcare professionals are able to⁷:

...maintain and improve their skills due to the combination of collegiate support, enhanced medical infrastructure and the high volume of services provided.

For the participants in this study 'being flexible' referred to strategies to increase interprofessional support and address the need for rural clinicians to be multi-skilled, with a broad clinical knowledge base to manage a diverse range of health



issues. Flexibility also addressed the need to provide services 'around the clock' and not just during traditional business hours. Participants believed this would require a larger pool of skilled staff, to avoid rural clinicians being required to be on-call afterhours.

Key strategies to address these workforce challenges were increased staff numbers and opportunities and support for interprofessional teamwork that enable appropriate response to the specific needs of rural health care. Some of the suggested projects and strategies mirrored those discussed in the earlier study²⁶, such as strengthening leadership and encouraging more effective teamwork to support junior staff. Most importantly for rural areas the focus was more on the need for interprofessional support and education than maintaining a discipline specific focus.

Access, equity and opportunity: overcoming isolation

The isolation of rural practice was considered a double-edged sword by many of the workshop participants, as on one hand they had greater autonomy and sense of belongingness, while on the other they experienced professional isolation and a lack of access to professional education and support. Over time, rural professional isolation has been shown to result in a culture of ambivalence about academic teaching and research¹⁰. Further, in some cases, professional isolation and insufficient exposure to specialist areas of practice may lead to a lack of confidence, as was evident in the study of rural advance practice nurses conducted by Hegney et al¹⁴.

Suggested solutions included developing more formal mentorship and clinical supervision arrangements, as well as lobbying for a guaranteed minimum level of access to study leave, conference leave and professional education. Frustration was expressed about the short-sightedness of publicly funded health organisations in not investing in more locum staff to back-fill those on leave, as a positive retention strategy.

Solving the issues of access and opportunity for patients was seen as more difficult and discussion revolved around

interprofessional teams and practice, and possibly new career pathways for rural clinicians that included advanced practice roles to better meet the needs of rural populations. One of the suggested projects – to identify examples of effective interprofessional teamwork in rural areas – is currently underway.

Resources: working with and apart from larger centres

Resourcing rural acute care settings was the subject of much debate in the workshops, based on an awareness that it would be impossible to resource rural settings with the full range of equipment and services offered in metropolitan centres. However it was suggested that more careful consideration of the impact of withdrawal of services on rural communities, coupled with the development of more effective strategic planning for service locations, would assist in meeting this challenge. The literature highlights a significant range of challenges and negative aspects of working in rural health, but also that it may have appeal to those health professionals who enjoy greater autonomy and the opportunity to practice using a diverse range of clinical skills⁹. However, the inequities are clearly evident⁷ as is the need to adequately support practice that results in positive outcomes for rural clinicians and rural populations. In particular the difficulties created by the withdrawal of some services, such as obstetrics, was highlighted as having wider implications in terms of retaining rural populations and attracting staff and their families to rural areas.

Other resource issues such as the lack of IT services and support staff were considered. The discussion revolved around the provision of adequate IT support services, particularly in light of the forthcoming National Broadband Network (NBN) roll out and its potential to reduce professional isolation and link healthcare staff and patients to resources and colleagues in larger centres.



Contextual issues: valuing and being valued/encouraging participation

In terms of contextual issues, the workshops' outcomes clearly identified that it would only require a minor shift in thinking to improve the way in which larger centres engage with their rural colleagues. Rural clinicians want and need to be consulted or given the opportunity to contribute to changes in procedures and processes. While the literature provides only limited information on governance issues in rural acute care settings, except for the organisational challenges faced by rural nurses in one Canadian study⁹, in this study the participants found that governance issues imposed by a metropolitan based central administration was often irrelevant to rural practice. One particularly troublesome issue, that of 'universal paperwork' which has been introduced into these small rural hospitals, could be overcome by merely seeking input from the interprofessional team to gain an appreciation of the relevance of new processes in the rural context. In particular, participants felt that they were taken for granted and expected to 'just get by', and do more with less.

It was suggested that more effective marketing of the benefits of rural practice would be helpful. Some participants discussed how some small communities have attracted healthcare professionals by seeking employment opportunities for spouses, sourcing appropriate accommodation and schooling options and refunding relocation costs. It was suggested that state government health departments could work with local councils to adopt similar strategies to attract clinicians to rural areas.

Contextual issues such as geographical isolation and remoteness, the impact of drought on rural communities and the perceived 'metrocentric' focus of public acute health care in Australia were also discussed. While no specific solutions were suggested, there was general agreement of a need for health professionals to be sensitive to patient needs during times of drought, floods or bushfires. The issue of patient access to services was also linked back to the earlier discussion of the challenges of access, equity and opportunity.

Limitation

This 3-phase study with a focus on working collaboratively with rural acute care health professionals within rural NSW identified the most significant professional and personal challenges and their priorities for solutions to address these concerns. One obvious limitation was the low survey response rate, however, once the survey results were presented to the focus groups and workshop participants, the findings of the study's first phase were reinforced. As a result of the workshops the following initiatives were suggested by the participants as top priorities for further exploration and/or research.

Suggested initiatives

The NSW Health Department should invest in better promotion and marketing of rural practice settings, based on the positive aspects, such as greater autonomy and rural lifestyle, particularly to undergraduate health students. Funding grants to support rural placements across all health professions would assist. At the same time, reassurance is required about how some of the identified challenges could be overcome, for example generous study and conference leave, locum services, and mentorship arrangements. Potential partnerships with rural community councils could lead to more integrated support packages being made available to attract clinicians to rural areas. A further study that compares the success of a range of local strategies was suggested as a way forward to compare and benchmark some of the effective recruitment programs.

With the roll out of the NBN, rural centres will have the potential for greater connectedness to clinical colleagues, specialist expertise and clinical support. This will assist in addressing some of the issues of geographic and professional isolation, as long as there is sufficient investment in IT infrastructure to allow ready access to the fast broadband in the clinical context. A pilot project that explores the impact of NBN within the local health network was suggested in order to gain an appreciation of NBN potential.



The models of care in rural areas need to be re-defined to more clearly reflect the interprofessional and expanded nature of practice. Further research was suggested to identify best practice in interprofessional teamwork in order to provide evidence to support the changes needed to rural practice models of care. A study currently underway is exploring the actual and potential interprofessional teamwork models used in a range of rural settings in NSW.

This 3 phase study has provided information that will be valuable for rural workforce planning and strengthening the participation of rural clinicians in order to shape their work contexts. Cultural change is obviously required and this can only be achieved through re-visioning and revising the nature of health professionals' work, and strengthening interprofessional relationships²⁷. Therefore, it is imperative to understand that the challenges facing rural health professionals must be addressed by those who experience them.

This article drew on current literature and a previous study²⁶ regarding the challenges that face rural clinicians. The earlier study identified similar challenges to those found in this study, with the exception of access, equity and opportunities, which were specific to rural contexts. So while the existing literature mostly centred on rural primary care settings rather than acute care, there was some synergy in the issues of staffing shortages and professional isolation¹¹. Much of literature that did identify specific challenges experienced by rural acute care clinicians was from Canada, with little from an Australian perspective, so this study has added to the body of knowledge.

Conclusions

For those who do choose rural practice the challenges are significant, and impact negatively on the recruitment and retention of these clinicians. The findings of this study certainly reinforce and add to the literature which identified rural challenges such as the recruitment and retention of adequate numbers of staff, professional isolation, long and

inflexible working hours, staff shortages, insufficient locum relief, and inadequate support for continuing education. The literature identifies that some of these challenges are also experienced by health professionals in metropolitan acute care settings, however the evidence from this study suggest there are a number of issues experienced by rural clinicians that are uniquely different to their metropolitan counterparts. This supports earlier findings^{3,14}. This study has not only explored the challenges but also involved the participants in identifying potential strategies to address them.

Acknowledgement

This study was funded by a grant from the Nurses and Midwives Board of NSW, Australia.

References

1. Lea J, Paliadelis P, Sanderson H, Thornberry P. The lure of the bush: Do rural placements influence student nurses to seek employment in rural settings? *Collegian* 2008; **15**: 77-82.
2. Muula A S. How do we define 'rurality' in the teaching on medical demography? *Rural & Remote Health* **7**: 653. (Online) 2007. Available: www.rrh.org.au (Accessed 17 July 2011).
3. Jackson D, Daly J. Current Challenges and Issues Facing Nursing in Australia. *Nursing Science Quarterly* 2004; **17(4)**: 352-355.
4. Wakerman J. Rural and remote public health in Australia: Building on our strengths. *Australian Journal of Rural Health* 2008; **16**: 52-55.
5. Australian Institute of Health and Welfare. *Health in Rural and Remote Australia*. Canberra, ACT: Government Publishing Service, 2004.
6. Grobler L, Marais BJ, Mabunda SA. Interventions for increasing the proportion of health professionals practising in rural and other underserved areas. *Cochrane Database of Systematic Reviews* 2009; **(1)**: CD005314.



7. Productivity Commission. *Australia's Health Workforce: Research Report*. Canberra, ACT: Productivity Commission, 2005.
8. Rosenthal M, Zaslavsky A, Newhouse J. The geographic distribution of physicians revisited. *Health Services Research* 2005, **40**: 1931-1953.
9. Montour A, Baumann A, Blythe J, Hunsberger M. The changing nature of nursing work in rural and small community hospitals. *Rural and Remote Health* **9**: 1089. (Online) 2009. Available: www.rrh.org.au (Accessed 8 February 2011)
10. Murray R, Wronski I. When the tide goes out: health workforce in rural, remote and Indigenous communities. *Medical Journal of Australia* 2006; **185(1)**: 37-38.
11. Manahan C, Lavoie J. Who stays in rural practice? An international review of the literature on factors influencing rural nurse retention. *Online Journal of Rural Nursing and Health Care*; **8(2)**. (Online) 2008. Available: <http://www.rno.org> (Accessed 18 June 2011)
12. Alexander C, Fraser J. Medical Specialists Servicing the New England Health Area of NSW. *Australian Journal of Rural Health* 2001; **9**: 34-37.
13. Charles DM, Ward AM, Lopez DG. Experiences of female general practice registrars: Are rural attachments encouraging them to stay? *Australian Journal of Rural Health* 2005; **13**: 331-336.
14. Hegney D, McCarthy, Rogers-Clark C, Gorman D. Why nurses are resigning from rural and remote Queensland Health Facilities. *Collegian* 2002; **9(2)**: 33-39.
15. Lea J, Cruickshank M. Factors that influence the recruitment and retention of graduate nurses in rural health care facilities. *Collegian* 2005; **12(2)**: 22-27.
16. Mills J, Francis K, Bonner A. Mentoring, clinical supervision and preceptoring: clarifying the conceptual definitions for Australian Rural Nurses. A review of the literature. *Rural and Remote Health* **5**: 410. (Online) 2005. Available: www.rrh.org.au (Accessed 18 June 2011)
17. Mills J, Francis K, Bonner A. The accidental mentor: Australian rural nurses developing supportive relationships in the workplace. *Rural and Remote Health* **7**: 842. (Online) 2007. Available: www.rrh.org.au (Accessed 20 June 2011).
18. Schofield D, Beard J. Baby boomer doctors and nurses: demographic change and transitions to retirement. *Medical Journal of Australia* 2005; **183(2)**: 80-83.
19. Wilson W, Squires M, Widger K, Cranley L, Tourangeau A. Job satisfaction among a multigenerational nursing workforce. *Journal of Nursing Management* 2008; **16**: 716-723.
20. Hegney D, Plank A, Parker V. Extrinsic and intrinsic work values: their impact on job satisfaction. *Journal of Nursing Management* 2006; **14**: 271-281.
21. Bushy A. International perspectives on rural nursing: Australia, Canada US. *Australian Journal of Rural Health* 2002; **10(2)**: 104-111.
22. Greene J. The generative potential of mixed method inquiry. *International Journal of Research and Method in Education* 2005; **28 (2)**: 207-211.
23. Morgan D. Paradigms lost and paradigms regained: methodological implications of combining qualitative and quantitative methodologies. *Journal of Mixed Methods Research* 2007; **1(1)**: 48-76.
24. Tashakkori A, Teddlie C. *Handbook of Mixed Methods in Social and Behavioural Research*. Thousand Oaks, CA: Sage, 2003.
25. Horton J. Nominal group technique. *Anaesthesia* 1980; **35(8)**: 811-814.
26. Parker V, Giles M, Higgins I. Challenges confronting clinicians in acute care. *Journal of Nursing Management* 2009; **17**: 667-678.



27. Jones J, Cheek J. The scope of nursing in Australia: a snapshot of the challenges and skills needed. *Journal of Nursing Management* 2003; **11**: 121-129.
-