Rural Health West

# Critical success factors for recruiting and retaining health professionals to primary health care in rural and remote locations

contemporary review of the literature

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The University of Western Australia
*Achieve International Excellence*

Combined Universities Centre for Rural Health

# Preface

Rural Health West is a not-for-profit workforce agency that has been recruiting doctors with their families to work in rural Western Australia for more than 24 years.

We are, however, far more than merely a recruitment agency. Rural Health West aims to raise the standard of general practice and primary health care in rural Western Australia. By matching doctors to localities and roles, tailoring professional development to rural health needs, supporting practices with locums, administering remote multi-disciplinary outreach services and investing in future workforce as early as high school, we strive to attract, retain and support the health workforce in rural and remote areas to achieve the best possible outcomes for local communities.

Until recently, Rural Health West focused exclusively on the rural medical workforce. The focus has since broadened to include the dental, allied health, midwifery and nursing professions. To ensure that the activities of the organisation continue to be informed by up-to-date evidence of what strategies are most effective, Rural Health West commissioned the Combined Universities Centre for Rural Health (CUCRH) at The University of Western Australia to undertake a review of contemporary academic literature. The review focused on the factors that influence recruitment and retention outcomes in these additional professional groups in rural and remote areas and built on the substantial literature about these factors in medical workforce recruitment.

Rural Health West believes it is essential to operate according to evidence-based principles, albeit seasoned by local contextual issues, to ensure efficient allocation of resources which, in turn, provides us with the best prospects of expanding the primary health care workforce in rural Western Australia; placing the right health professionals in the right place; retaining people longer in rural locations; providing recruitment and retention services that are cost effective; raising the standard of general practice in Western Australia; and improving continuity of primary health care for rural and remote communities.

With so many years in the business, Rural Health West knows and understands rural Western Australia. Everything we do is tailored to a regional perspective and we hope that this review will assist individuals and organisations to achieve our common goals of adequate numbers of high quality health workforce in rural and remote communities.

**Belinda Bailey**
Chief Executive Officer


## Acknowledgments

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# Summary


## Background

Despite efforts to attract sufficient numbers of high quality health professionals, significant workforce shortages persist in rural and remote Australia. A literature review was undertaken on behalf of Rural Health West to broaden its evidence base about the factors impacting on recruitment and retention of medical, nursing and allied health professionals in rural and remote primary health care, building on the substantial recruitment and retention literature related to the medical profession.

## Methods

A systematic search of the literature was undertaken of original research papers 2008-2013 (limited to specific countries) and reviews 2003-2013, identifying a vast body of literature. Papers were screened for relevance and the findings grouped into categories of factors. The researchers first synthesised the results of the review articles, supplementing the main themes with results from original papers where these added to the evidence base. A narrative description of findings and synthesis of data was undertaken, using material from reviews in the first instance and stand alone research to supplement the reviews.

## Results

Of the 67 reviews identified, 55 full text papers were used to identify key themes.

Of the 2,164 original papers, 264 full text articles were fully reviewed. The literature was dominated by papers from the medical literature and the evidence was largely based on observational studies relying on surveys and questionnaires. Such studies are subject to volunteer, non-response and recall bias, providing tenuous evidence of the effectiveness of interventions.

The following key points arose from the review:

- Confirmation of rural origin as the strongest determinant of intent and (possibly) practice in a rural area generalisable to nurses, but absent for allied health professionals.
- Rural content in curricula and its effects on rural workforce is not well covered for dental, nursing and allied health professionals.
- Rural placements have a positive impact on doctors, with positive but weak evidence of effectiveness among nurses and allied health professionals.
- The limited funding for rural placements and financial support/incentives undermines the potential of these interventions for nurses and allied health professionals.
- Marketing for recruitment of rural health professionals appears to not be sufficiently tailored to reflect the diversity of the candidates with respect to age, gender, career stage, professional discipline, cultural and linguistic background.
- The general lack of management/organisational skills in the rural health sector impacts on workforce recruitment and (especially) retention.
- Role creep and work demands are significant issues requiring critical review and realistic management, particularly for nurses.
- Allied health professionals have the lowest retention rates among the groups reviewed, reflecting the absence of rural intake policy. Further work is required on reasons for high turnover and development of appropriate service models, including public/private mix.
- There is limited information and evaluation done on health workforce groups that have not come through the traditional Australian university pathway but who currently play a role in providing services. In addition, fly-in fly-out services are yet to be evaluated.

## Conclusion

Recruitment and retention are a result of a complex interaction between many factors. Overall, health workforce shortages in rural areas require an integrated, sustained and evidence-based approach by universities, governments and civil society to address educational, organisational, financial, social and other factors associated with recruitment and retention of health professionals in rural areas. Although much has been learned from the research into medical workforce, the focus needs to move beyond the medical profession to cover dental, nursing, allied health and associated professions, with more integration across disciplines. Improved study designs should be implemented for the evaluation of interventions to increase the rural health workforce.

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# 1. Introduction

Recruitment and retention of a well trained and rural-ready workforce are key requirements of sustainable and effective primary health care services in rural and remote communities. Primary health care refers to out-of-hospital services provided by general practitioners, nurses and allied health professionals. Despite efforts to attract sufficient numbers of quality health professionals, significant workforce shortages persist in rural and remote areas.[2]

This document reviews the evidence about the critical success factors impacting on recruitment and retention of medical, dental nursing and allied health professionals in rural and remote areas, building on the substantial literature about these factors as they relate to the medical profession. Differences between the professions are highlighted and specific challenges unique to each profession are identified. Gaps in the evidence are noted. This review covers issues related to workforce for primary health care, thus has excluded studies exclusively focused on rural hospital workforce. Retention and recruitment of Aboriginal health and mental health professionals have also not been specifically addressed in this review.

## 1.1 Context of workforce shortages

Maldistribution of the health workforce, with shortages of health professionals in rural and remote areas persists in Australia[2,3] and other countries[4] despite extensive research into its causes and potential solutions and various government policy initiatives. This section provides a brief overview of the context in which these shortages occur in Australia and factors influencing the disparities between supply and demand of the rural health workforce.

**Australian geography and population**

The physical and human geography of Australia reflects a highly urbanised Australian population, concentrated in a small number of coastal cities, with only 9 per cent and 2.3 per cent of the total population living in outer regional and remote/very remote areas respectively. The vast continental landmass has a sparsely occupied hinterland (72.5 per cent categorised as 'very remote'), with areas of extreme remoteness, as reflected in low population densities and poor access to amenities. Although Aboriginal people comprise only 2.4 per cent of the Australian population, 15 per cent of the population are in remote areas and 49 per cent in very remote areas.[5]

Dependency ratios* are highest in inner regional (24 per cent) and outer regional (21 per cent) areas (reflecting migration of retirees to these areas), and lowest in remote (14 per cent) and very remote (9 per cent) areas. The low ratios in more remote areas reflect the higher proportion of Aboriginal people in these areas as well as the number of younger people moving to these areas to work in sectors like mining. People living in regional and remote areas have limited access to services and educational aspirations.[6] The social, cultural and geographic diversity of rural communities is well recognised.

**Health status of the rural and remote population of Australia**

On all indicators, the health status of the population in rural areas are poorer than that in metropolitan areas. This is reflected in higher death rates and further manifest in higher morbidity rates and lower life expectancy.[7] This greater burden of disease is related to inter-regional differences in the composition of the population (greater proportion of Aboriginal people who have significantly poorer health status), behavioural and lifestyle risk factors, environmental risks (for example: occupational, road accidents) as well as more limited access to public health and clinical services.[8]

* Dependency Ratio = ratio of dependents (people aged 0-14 years plus 65 years and over) to the working population (aged 15-64 years).

### Socio-demographic features of the workforce

The age structure of the Australian population is typical of an advanced economy, with 67 per cent of the population aged between 15 and 64 years, a high representation of people aged 20 to 44 years residing in capital cities and a significant number of baby boomers aged 49 to 67 years who are approaching retirement from paid employment.[9] The retiring baby boomers will continue to have a significant negative impact on Australia's workforce in general, and health workforce specifically. The medical, nursing and midwifery, dental and some allied health workforces are relatively aged compared with the median age of Australia's workforce.[2] While still contributing to the workforce, ageing professionals have unique needs and considerations that need to be taken into account. These include fatigue/health issues, multiple personal demands and adaptation to new technology. Because of the changing position of women in society, altered aspirations of women and the academic success of women, a number of traditionally male-dominated professions, notably medicine and dentistry, have become more 'feminised'. As female workforce participants traditionally work fewer hours than their male counterparts due to family commitments, this has implications for the total number of hours worked per health professional, although social expectations of males regarding parenting have also changed[10], thus male hours have also reduced.[2] Additionally, generational (cohort) effects manifest in differences in career/work expectations, with greater emphasis in younger generations on work flexibility, work/life balance and lifestyle. Career fluidity is also a greater part of the expected part of working life than perceived in previous generations.[11]

The increased internationalisation of the Australian population and workforce has increased the ethnic diversity among Australian born/schooled professionals, as well as international graduates (overseas trained health professionals) in the health workforce. Additionally, foreign health students also have expectations of training positions and may seek professional registration and practice in Australia. International graduates are an integral part of the domestic rural workforce, filling in rural vacancies. This requires adequate support at the level of policy and practice (see also Section 8).

### Policy initiatives

Since 2000, the Australian Government has pursued health education strategies (to increase recruitment of Australian students into rural areas) and rural retention strategies (for existing workforce) to reduce workforce shortages in rural Australia. Legislative distribution mechanisms for international medical graduates also exist, designed to increase rural workforce. While strategies for doctors are relatively well-established and funded, those for nursing and allied health are substantially less developed and these professional groups have appealed for more government support to address rural workforce shortages.[2] A detailed outline of all the policies and funding programs targeting the rural workforce is beyond the scope of this review but is outlined in the Mason Review of Australian Government Health Workforce Programs.[2] That review has made a number of important policy recommendations for rural health workforce development.

## 1.2 Definitions

### Recruitment and retention

Workforce supply within a health service is a function of both recruitment and retention. Recruitment involves the attraction and selection of staff to a particular organisation or role, while retention refers to the length of time between commencement and termination of employment. Retention reflects some minimum length of service (rather than an indefinite length of service in one location), possibly measured in terms of return-on-investment costs associated with training, recruitment and effect on patients and varies by the profession, service, location and characteristics of the community.[12] Turnover measures the proportion of terminations of a particular worker type in a specified time period, thus is a measure of workforce flux in an organisation. Recognising that some turnover is unavoidable, retention strategies aim to minimise avoidable turnover to reduce the numerous direct and indirect costs to the organisation and patient care.

**What is rural?**

Classifications of 'rurality' are not consistent in the international literature. A review of predominantly non-Australian literature of various definitions of 'rural background' identified the five most common definitions of rural background as being:

- a positive answer to the question 'Did you grow up in a rural area?';
- a rural county of birth;
- grew up in a townpopulation of less than 10,000;
- graduation from a high school located in a town with a population of less than 10,000; and
- self-declared rural county of residence.[13]

The current classification system used in Australia, the Australian Standard Geographical Classification Remoteness Areas, is in flux. This system categorises areas into remoteness categories according to road distance to facilities and replaced two previous systems, the Rural, Remote and Metropolitan Areas and the Accessibility/Remoteness Index of Australia. Additionally, the Australian Bureau of Statistics is progressively replacing the Australian Standard Geographical Classification with the new Australian Statistical Geography Standard for reporting on census and surveys. Reform of the current systems used for workforce incentive purposes is imminent, with an expert committee recommending it be replaced with a scheme taking into account regularly updated data.[2]

In this literature review, the definition of 'rural' followed that reported in the journal articles and generally refers to non-metropolitan areas including regional towns and other settlements/areas.

**Allied health professionals**

There is no universally accepted definition of allied health professions either nationally or internationally. Instead various definitions are used in different sectors such as government, health service providers and tertiary institutions (http://www.ahpa.com.au/). Allied Health Professions of Australia is the peak body and uses Professions Australia's definition of a profession with additional definitions for allied health professionals who are deemed to have:

- a direct patient care role and may have application to broader public health outcomes;
- a national professional organisation with a code of ethics/conduct and clearly defined membership requirements;
- university health sciences courses (not medical, dental or nursing) at Australian Qualifications Framework Level 7 or higher, accredited by their relevant national accreditation body;
- clearly articulated national entry level competency standards and assessment procedures;
- a defined core scope of practice; and
- robust and enforceable regulatory mechanisms (http://www.ahpa.com.au/).

Allied health professionals practise within an evidence-based paradigm using an internationally recognised body of knowledge to protect, restore and maintain optimal physical, sensory, psychological, cognitive, social and cultural function (http://www.ahpa.com.au/). Current membership of Allied Health Professions of Australia includes audiologists, chiropractors, dietitians, exercise physiologists, genetic counsellors, music therapists, occupational therapists, orthoptists, orthotist/prosthetists, osteopaths, pharmacists, podiatrists, perfusionists, psychologists, social workers, sonographers, speech pathologists, with the Associations for audiometrists, diabetes educators, diversional therapists and practice managers as associates. The allied health workforce includes technicians, assistants and support workers who work with allied health professionals but excludes medicine, dentistry or nursing.

# 2. Methods for literature search

To identify as many high quality peer-reviewed publications as possible, a multi-database literature search was performed at the outset using **Pubmed**, **CINAHL-Plus**, **EMBASE** and **Web of Knowledge**.

With modifications of syntax as required for the different databases, the search terms were:

health occupations (Medline Subject Heading [mh]) OR dentistry [mh] OR audiology [mh] OR occupational therapy [mh] OR physical therapy specialty [mh] OR speech-language pathology [mh] OR general practice [mh] OR community medicine [mh] OR nursing [mh] OR pharmacy [mh] OR podiatry [mh] OR allied health personnel [mh] OR dentists [mh] OR nurses [mh] OR nursing staff [mh] OR pharmacists [mh] OR general practitioners [mh] OR physicians, family [mh] OR physicians, primary care [mh] OR physicians, women [mh] OR foreign medical graduates [mh] OR health occupation* OR health profession* OR medical profession* OR health workforce OR medical workforce OR general practice OR family practice OR primary care OR community health OR health centre* OR health center* OR general practitioner* OR gp OR doctor* OR family physician* OR international medical graduate* OR img* OR dentist* OR nurse* OR midwif* OR midwives OR allied health OR therapist* OR physiotherap* OR occupational therapy OR dieti* OR speech pathologist* OR podiatrist* OR audiologist* OR pharmacist* OR optician* OR optometrist* OR orthoptic* OR orthoptist* OR dental hygienist*OR dental therapist* OR oral health therapist* OR dental prosthetist* OR dental assistant*

**AND**

rural health [mh] OR rural population [mh] OR rural health services [mh] OR rural OR remote OR geographically isolated

**AND**

health manpower [mh] OR manpower OR workforce OR staffing OR human resources OR recruit* OR retention OR retain* OR turnover OR shortage* OR maldistribut* OR relocation OR career OR incentiv* OR attract* OR hire* OR hiring

The search was restricted to English language publications and date restricted to publications from 2008 onwards. Only articles from Australia or countries/jurisdictions with comparable health systems and geography (Canada, Scotland and Scandinavia) were considered for inclusion.

The references retrieved from the literature search (n=2,164) were manually screened for relevance in two stages (Figure 1). Firstly, articles not from the stated countries or not related to health workforce were identified and discarded. Secondly, titles/abstracts of the remaining articles (n=354) were perused jointly by two people for relevance and categorised by profession(s) studied.

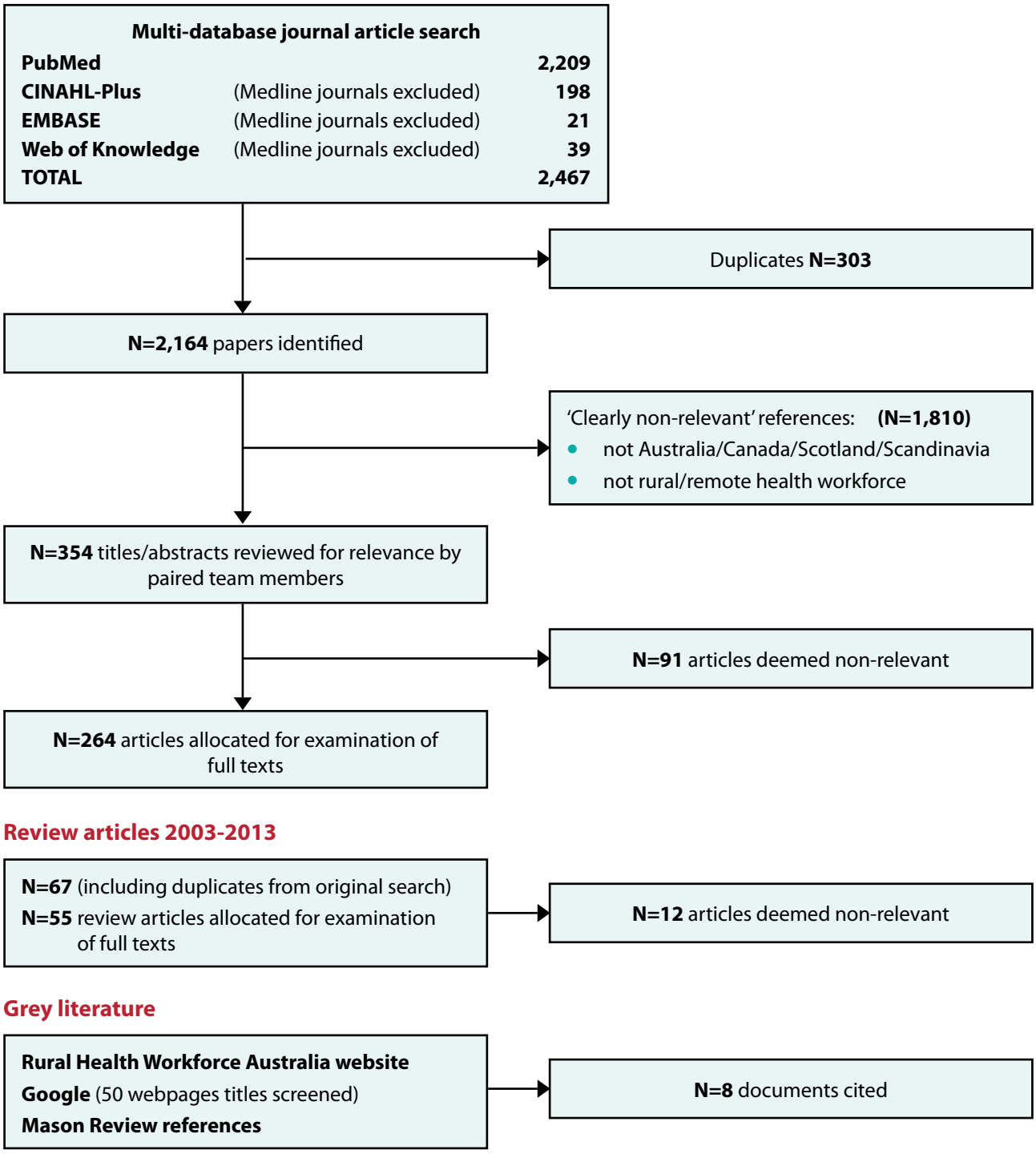
It became clear from the initial literature search that the literature on the topic of rural health workforce is vast, with considerable repetition. A decision was made to base the report on a 'review of review articles', albeit supplemented with scrutiny of all of the original research articles for novel interventions or evidence. To this end, a further literature search was performed, using the same search terms but limited to review articles, with the date range extended to 2003 onwards.

The full texts of original and review articles deemed to be potentially relevant were allocated to the various authors of this review who entered data from each paper onto standardised Excel spreadsheets, which were used to structure the report.

Finally, the non-peer reviewed 'grey' literature was pragmatically searched for relevant reports by:

- examination of the Rural Health Workforce Australia website and its state/territory subsidiaries;
- examination of footnoted references in the 2013 Mason Review for relevance; and
- screening of the first 50 results from a Google search 'site:.au rural health recruitment retention' for relevance.

## Original research articles 2008-2013




## Review articles 2003-2013




## Grey literature




***Figure 1: Database search flowchart***

A narrative description of findings and synthesis of data was undertaken using material from reviews in the first instance and stand-alone research to supplement the reviews.

# 3. Frameworks for reviewing factors associated with rural health workforce sustainability

Health worker responses to recruitment and retention in rural employment occur within a political, socio-economic, cultural and professional context. Within that broad context, a range of factors operating at different levels determine their choice of workplace and the length of stay. These include resource allocation, regulatory frameworks, accountability mechanisms and other health workforce policies that operate at the macro or health system level. Micro-level factors in the workplace (health facility/organisation) like equipment, management practices/arrangements and infrastructure are also important.[4] Individual factors like personality, personal circumstances and professional/career stage remain important influences on job choices but are often not modifiable.

A key concept that emerges in the health professional literature is that of the rural pipeline. This refers to a career pathway for rural health professionals, conceptualised as a career continuum starting at school and ending in a committed, appropriately-trained and supported rural health practitioner.[14-19] Integral to this concept is the multi-faceted, integrated sequence of interventions made over time with the aim of supporting a particular individual to develop as a willing (motivated) and able (well trained) rural health practitioner.[17] Originally developed for increasing the rural medical workforce, this approach is now applied to all health workers, including nursing and allied health professionals.[16]

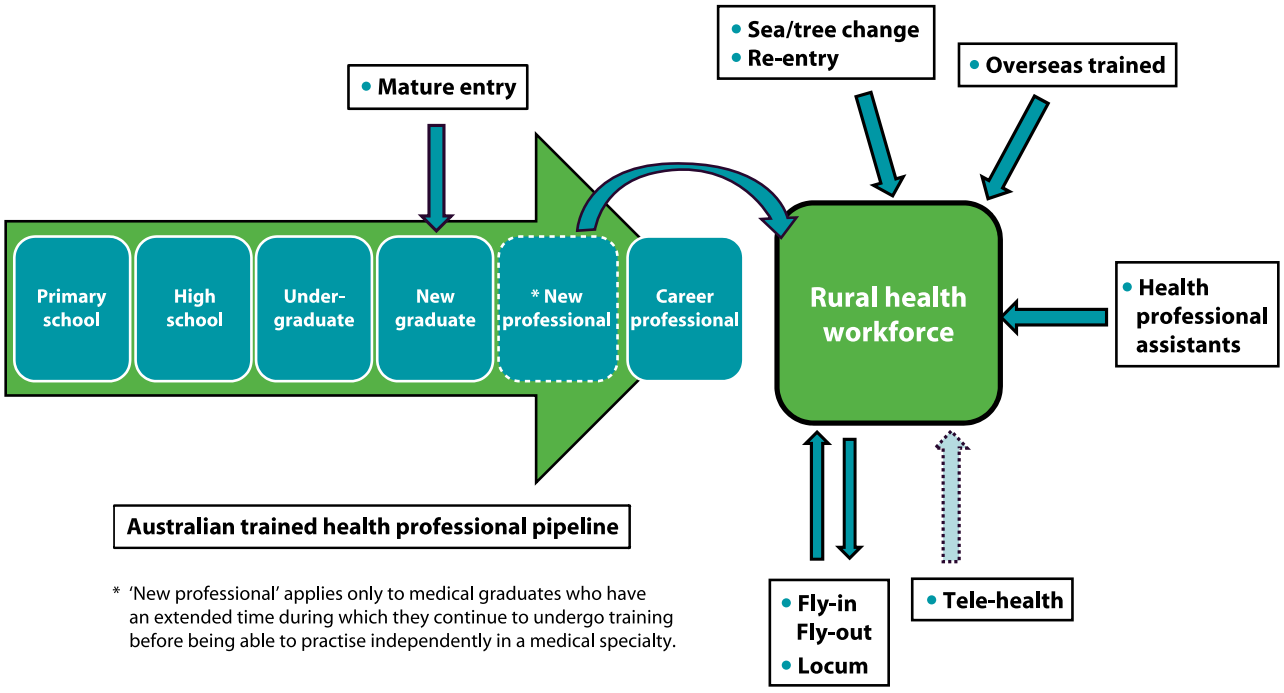



***Figure 2: The rural pipeline and other sources of Australian rural health professionals***

Pipeline adapted from : Jones D (poster) [18]

The pipeline (Figure 2) starts at school where students are exposed to information about health careers to encourage aspirations to apply for entrance to health professional training institutions after finishing school. The undergraduate stage is where the aspiring health professional is exposed to a curriculum and rural placements that encourage intention to practise rurally.

Graduates who choose rural practice need to be retained in the system to remain on the pipeline. Medical graduates have a much longer training period which also extends into the postgraduate years so that they have an additional stage in the pipeline, that of the 'new professional', when graduates undertake internships and specialist training.[2] Once fully registered all health professionals are 'career professionals' who then get recruited (and retained) into the rural health professional workforce.

The rural pipeline mainly applies to 'locally' trained (homegrown) health professionals. However, in reality, at any point in time, a number of other health professionals fall outside of the new graduate/new professional feeder group. These include overseas trained health professionals; fly-in fly-out workers; locums; professionals who re-enter the rural workforce after years away; professionals who remotely contribute to rural health care through, for example telehealth; professionals who in their mature years move to rural areas (sea/tree change); and assistants who support health professionals clinically. Besides focusing on the traditional pipeline, recruitment and retention strategies need to harness the potential offered by these non-pipeline professionals as well.[2]

The pipeline approach to increasing the rural health workforce extends the concept of short-term recruitment (placement/employment) to include long-term strategies to nurture potential professionals (Figure 3). Once employed in rural situations, retention strategies are needed to increase longevity in the rural area and reduce staff turnover.[1]

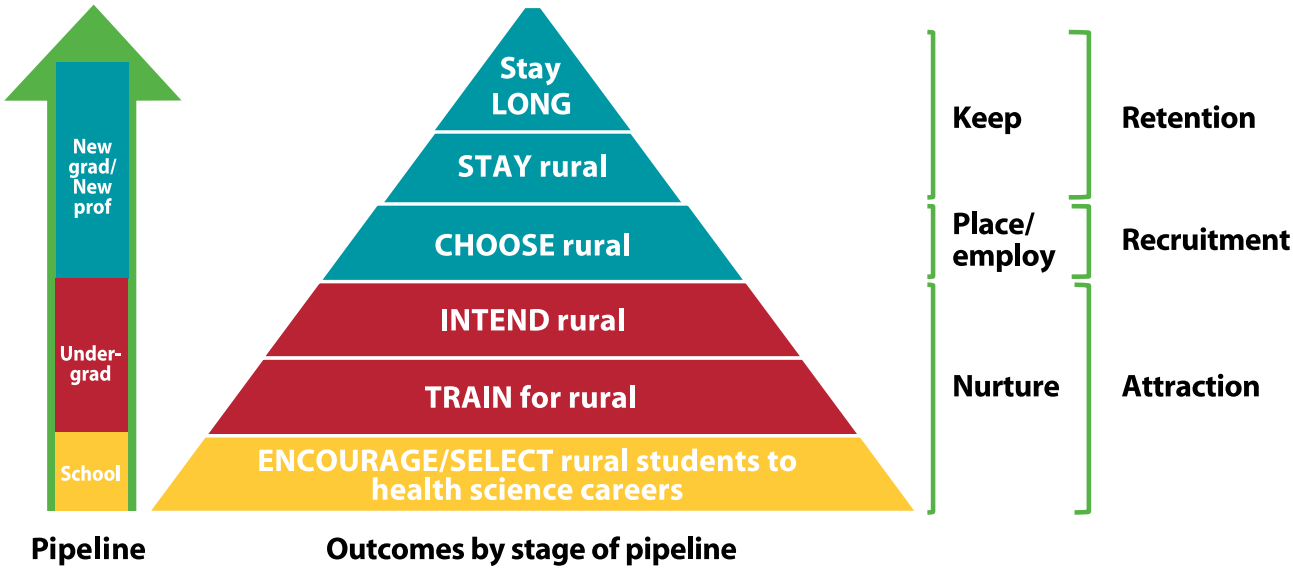



***Figure 3: Relationship of Australian educational continuum (health workforce pipeline or pathway) to recruitment and retention of rural health professionals***

Figure 4 (page 14) provides an overview of the main factors found in the literature to affect recruitment and retention, with these factors applying at various (system, workplace and person) levels and only some being modifiable. The model reflects the extent to which factors are common to both recruitment and retention, implying a need for an integrated approach.

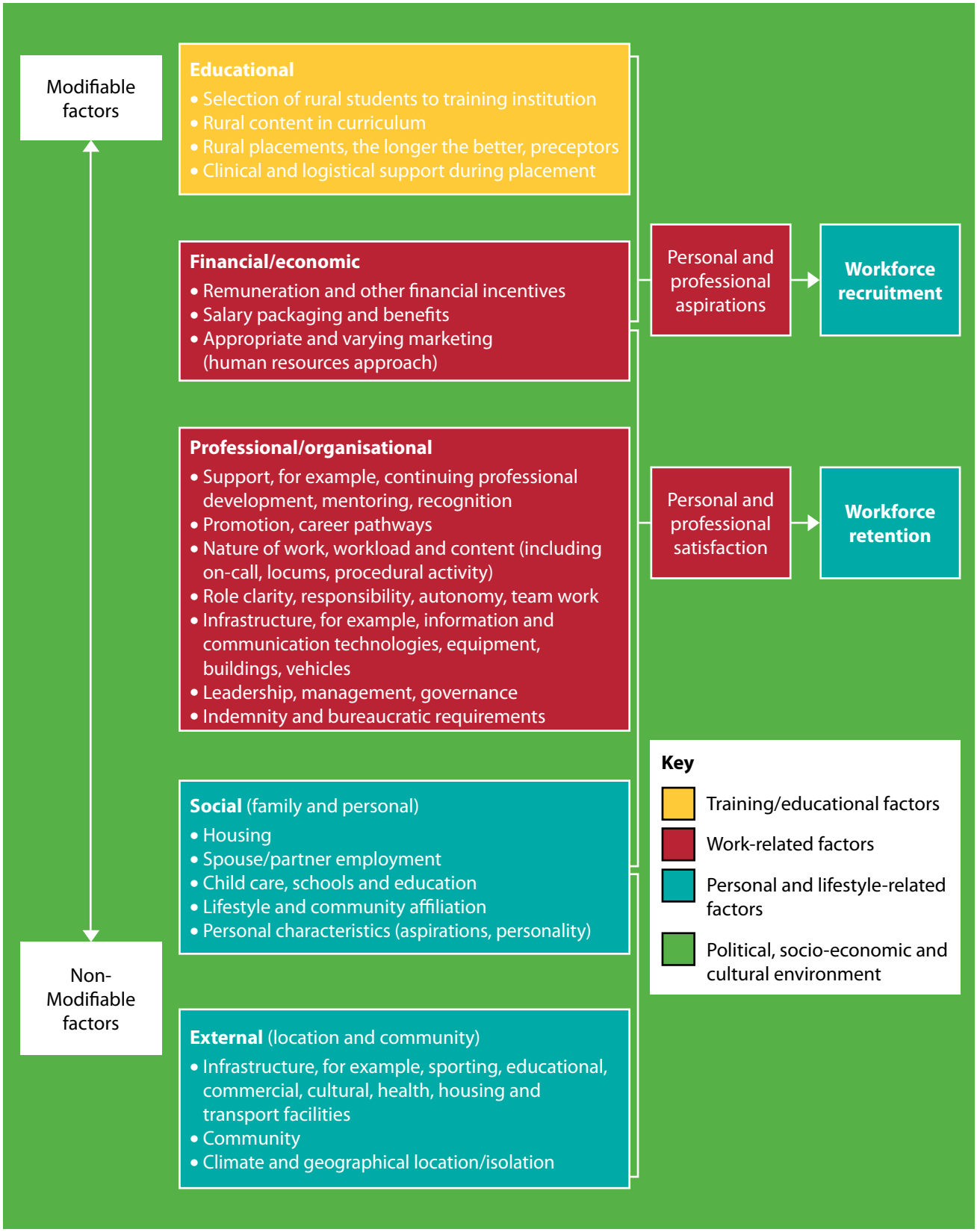



***Figure 4: Factors affecting recruitment and retention to rural areas***

Adapted from: Humphreys et al, 2009[1]
*[Education added to accommodate extension of the model to recruitment]*

While the literature on factors influencing recruitment and retention of health professionals in rural areas is vast, the evidence is largely based on observational studies relying on surveys and questionnaires. Such studies are subject to volunteer, non-response and recall bias, providing tenuous evidence of the effectiveness of interventions. In a Cochrane Review of strategies to increase the proportion of health care professionals practising in rural and other underserved areas, no well-designed studies, for example, randomised controlled trials, controlled before/after studies and interrupted time series were found to definitively say whether any of these strategies are effective or not.[20] Another World Health Organisation-funded review on that topic highlighted publication bias, with a skewed geographical distribution of studies towards high income countries, with some exceptions in developing countries.[21] The limited evaluation of effectiveness of recruitment and retention strategies is lamented by many authors of papers and reviews in the literature. Nevertheless, below we report on the evidence that is available.

The next section (Section 4) highlights the main themes emerging from the literature concerning recruitment and retention of rural health professionals generally. However, the evidence covered here is dominated by that applied to medicine due to the imbalance in the available literature. Additionally, while the focus of this review is on workforce issues for primary health care, many of the issues are shared with hospital-based practitioners. Thus, we excluded studies focusing particularly on hospital-based practitioners but included papers that were applicable to both. Sections 5 and 6 focus on nursing and allied health professionals respectively and highlight where these are different from the generic recruitment and retention factors, although some generic themes are reiterated in these sections. Because the literature for Australian dentists is sparse[22-25], no separate section covers factors associated with their recruitment and retention. While Section 4 predominantly uses material from systematic and other reviews, Sections 5 and 6 draw mainly on original studies (of which there are relatively few) rather than reviews, reflecting the more extensive literature for the medical profession. Sections 4 to 6 follow the broad headings shown in Figure 4. Section 7 describes additional specific groups that impact significantly on the rural health workforce.

# 4. Factors associated with rural health workforce sustainability: Predominantly medical focus

The Australian medical workforce increased by 17 per cent between 2007 and 2011 to 78,833 practitioners employed in medicine. Supply increased from 324 FTE per 100,000 to 360 FTE, with the rise being evident across all remoteness categories.[26] Females comprised 38 per cent of the medical workforce in 2011. The FTE per 100,000 was substantially lower in rural compared with metropolitan areas, reflecting rural medical under-supply.

## 4.1 Educational factors

Educational factors are those that deal with promoting the rural health workforce pipeline (see Section 3) and have been the focus of much research.

**Recommended changes by educational institutions, including clinical placements**

The wide range of papers on the effect of changes in medical training, including rural pathways, to increase the number of graduates who will become rurally oriented physicians was summarised in a systematic review of the literature.[27] Table 1 outlines key interventions to improve the rural training and rural recruitment of medical students. There is limited published data available for other health professionals but these same principles are believed to apply.

In the United States, a number of innovative rural medical programs were developed since the 1970s including the Rural Physician Associate Program[28] (University of Minnesota); the Physician Shortage Area Program[29] (Jefferson Medical College); and the Washington, Wyoming, Alaska, Montana, Idaho[19] program. The Area Health Education Centres[30] program, established in 1972, supports non-profit multi-disciplinary health organisations located within poorly serviced rural regions. A review of North American literature concluded that rural training experiences positively influence students to consider primary care specialty and to consider/choose rural careers.[31] Additionally, such students do as well or better academically than their fellow (urban) students.[31, 32] Following another systematic review, Rabinowitz et al estimated the impact of widespread replication of workforce outcomes from such comprehensive medical school programs in the United States designed to increase the rural physician supply.[33] Between 53 per cent and 64 per cent of graduates from these programs were practising in rural areas. The authors suggested that widespread replication of these models could have a major impact on access to health care in thousands of rural communities.[33]

Rural student selection in Australia has increased significantly over the last decade, as demonstrated by the increase since 1999 from 5 per cent to 21 per cent of students selected for The University of Western Australia medical school due to the progressive introduction of a rural special entry pathway.[34] Rural Student Recruitment (a program to attract and support rural students for selection to medical school) plus changing entry criteria (rural weighting) have contributed to this increase in Western Australia, although Pilbara and Kimberley regions were under-represented in the places offered.[35]

***Table 1: Summary of recommended interventions by medical schools to increase numbers of rurally oriented doctors***

**Selection and admission**

- Screen for interest and experience in rural medicine, rural origins, family currently living in rural community.
- Return-of-service agreements, bursaries, scholarships and other financial incentives.
- Education and career counselling coordinated by medical students to increase awareness of a career in medicine among rural high school students.

**Medical curriculum**

- Integrate rotations in rural family medicine within clerkship years.
- Ensure adequate length of rotations (> 3 weeks).
- Facilitation of rotations with regard to accommodation and travel (with stipends).
- Promote personalised, enhanced clinical training in the rural setting.

**Postgraduate training**

- Establish residency training programs in rural areas.
- Improve practise facilities, allied health care teams and referral networks.
- Consider personalised approach regarding family and practice preferences.

Source: Kapadia and McGrath, 2011[27]

Rural clinical placement is an important component of contemporary training experiences for student health professionals. The rationale for these programs is based on the evidence that positive, well-supervised and supported rural placements increase the likelihood of students to return to rural areas once qualified. There have been many studies of variable quality in the Australian context that focus on different aspects of these training-related initiatives, particularly the federal government funded Rural Clinical Schools which have a medical focus and University Departments of Rural Health which have a broader health professional focus. The findings from selected recent publications are provided here, selection effects and non-response bias non-withstanding. A comprehensive overview of practical educational approaches to the medical workforce was published in 2011, covering invited papers from all over the world.[17] These were not all fully evaluated but the book provides many examples of how programs have been implemented.

A survey of medical students' experiences in Rural Clinical Schools affiliated to multiple Australian universities identified that students consider both clinical (access to patients) and non-clinical (friends and academic reputation) factors in their decision to attend rural placements.[36] The same survey reported strong satisfaction, finding that the program was conducive to the development of clinical skills, with good access to patients and clinical supervision/role models.[37] In a South Australian study, volunteer postgraduate medical students who spend their third year in non-metropolitan placements were significantly more likely to choose a rural career path than their classmates who did not undertake rural placements. Three further Australian studies[38-40] confirmed that undergraduate rural placement duration was associated with postgraduate placement in rural areas. The Queensland study found that longer times spent in the Rural Clinical Schools was associated with intent to stay rural.[40] The Western Australian study found the effect to be a stronger predictor of Postgraduate Year Two workplace than Year One, with the effect being independent of the rural origin of graduate.[38]

Descriptive papers have reported that integration by University Departments of Rural Health of clinical and academic roles in a range of nursing and allied health professions has been successful in increasing the number and quality of student placements through placement with rural clinicians[41] with strong community-academic partnerships[42] and inter-professional learning opportunities[43] further strengthening programs.

**Preceptors**

Preceptoring relationships are usually short term, based in a clinical setting for the purpose of skill acquisition and assessment and are quite distinct from mentoring.[44] In a systematic review of the literature on effectiveness of preceptors for medical students, it was found that durations as short as 3 weeks influence the career choice of students when preceptors are rated quality teachers. The opposite is true of poor role models/teachers. Continuity of preceptors, continuity of care and continuity of patient interactions maximise the positive influence of preceptor-student relationships on career choice. The longer the duration of the placement with a preceptor, the greater the influence of preceptors, particularly in the primary health care setting.[45] A number of other reviews have identified positive undergraduate experiences of preceptors as being central to recruitment to rural areas.[14]

## 4.2 Financial/economic factors

**Financial incentives for return of service in rural areas**

Return of service agreements occur when (future) health workers enter into contracts obliging them to work for a number of years in an underserved area in exchange for a financial pay-off. A systematic review of predominantly observational United States studies identified 5 types of programs: service-requiring scholarships; educational loans with service requirements; service-option educational loans; loan repayment programs; and direct financial incentives. The review reported that financial-incentive programs have placed substantial numbers of health workers in underserved areas, with an estimated 71 per cent pooled proportion of participants fulfilling their obligations. In general, program participants were more likely than non-participants to work in underserved areas in the long term although selection effects could not be excluded.[46]

In Australia, where medical education is heavily subsidised resulting in much less significant study loans than in the United States, little research has been done on obligatory bonding on completion of general practitioner training and its effectiveness has been challenged.[3] However, a review of what works in rural health workforce retention,[1] identified strategies incorporating some form of obligation as being most convincing, for example, restricting practise for international medical graduates or loan repayments. More research is needed, with future studies of obligated services strategies in Australia needing to follow employment in all rural areas (including the original and subsequent location of employment) to evaluate the effect of such programs.[1] To date, the literature on financial incentives has been applied mainly to doctors although the same principles could apply to other health professionals.

**Remuneration methods**

A review of remuneration methods in primary health care concluded that the goals of the health system and important other external factors influence the choice of remuneration methods for doctors.[47] When the goal is to recruit doctors to rural areas with low population density, salaries are best. When the goals are quantity of care and risk acceptance, fee-for-service payments are best. High collaboration between providers and delivery of preventive services lend to a capitation-based system. Multiple goals require mixed approaches. A review comparing recruitment and retention of general practitioners in rural Canada and Australia noted the substantial remuneration paid in the Australian rural generalist training pathway that is not available in Canada.[48] An analysis of drivers of mobility of dentists in the Northern Territory reported lower retention in dentists who moved to rural areas as a result of financial incentives compared with those with connectedness to the area and community.[49]

### Marketing, public relations and advertising for rural health workforce

Little practical advice is available in the literature on how to design effective advertisements to attract suitable applicants for diverse situations and outcomes[50], of which rural health workforce is an example. A study of 399 general practitioner recruitment advertisements found that web-based advertisements included more family support attributes than printed advertisements but that both omitted any practice attributes and exhibited too few details to differentiate their organisation, context and job.[50] A survey of responses to these advertisements found that they had not presented full profiles of their practice/position and were not effective in recruiting general practitioners, indicating the need for a rethink on tailoring ads when recruiting. This may be similar for nurses and allied health positions. Given the varying sources and ages of health workers for rural areas, there is also need to tailor recruitment strategies to reflect diversity of rural practitioners (and rural practices) in relation to age, gender, career stage, location – to encourage a 'good fit' between practitioner and practice.[51, 52] Part of the marketing of rural areas as a health worker destination may be to promote a strengths view of rural practice rather than the deficit view and lack of unity between stakeholders as identified in a review of media coverage.[53] These findings indicate that marketing and human resources management skills need to be integrated more fully into the recruitment of health workers to rural areas in Australia.[54]

### Corporatisation of general practice

Since 2000, corporations have bought into traditional general practices, including those in rural areas. A report on rural general practice ownership in New South Wales identified that, until relatively recently, the rural general practice workforce were mostly male who owned or part-owned their practice either as a partner or as an associate and were remunerated by a fee-for-service payment model.[11] Changes have occurred over the last two decades from self-employed rural general practitioners owning and managing their general practices to the then Divisions of General Practice, local government and Rural Doctors' Network supporting diverse models of general practices suited to the local context. These are established independently of general practitioners who may work in the practice. Such changes have been driven by a range of factors including generational change, general practitioner owned rural or remote practices becoming less viable as younger general practitioners want more flexibility, fewer working hours and are less inclined to manage the business side of the practice. The increasing feminisation of the medical workforce and graduates accumulating substantial higher education debts are also contributing factors. Changes to professional practice included vocational registration, general practice accreditation and financial incentives to engage in primary health care and population health activities.[11] The effect of this on recruitment and retention has not been evaluated.

### Costs, governance and business model

Data about the costs associated with policies and strategies to improve health workforce retention are incomplete, fragmented or missing. Consequently, there is a significant lack of knowledge and evidence about these costs.[55] Benchmarks of retention are needed, allowing monitoring of retention length and the costs associated with recruitment and turnover.[56]

No evaluation of the impact of mainstream locally-generated governance/business models on rural recruitment and retention were identified in the literature although the Aboriginal Community Controlled sector in Australia is known to have problems with recruitment and retention of staff.[2]

## 4.3 Professional/organisational factors

### Organisational structure, management and administration

Organisational issues like leadership, vision, communication and efficiency emerge as important determinants of recruitment, especially retention of health workforce.[1, 57, 58] The way an organisation is structured and managed is a major determinant of the level of job satisfaction and may be a more important influence in staff retention.[58] Yet Allan et al's review of the general human resources retention literature and current Australian and international health workforce research literature found minimal reference to retention strategies other than for GPs and no analyses of their effectiveness.[54] The paper argues that health employers need to draw on the substantial knowledge developed in the business sector to implement (and evaluate) consistent recruitment and retention strategies and, in doing so, break down 'silos' created by a sector or discipline-specific approaches. Another systematic review highlighted inadequate attention in the literature to the importance of ensuring good organisation and management within rural and remote health services.[1] Inadequate management across the health system as a whole is seen as contributing to rural health workforce shortages, implying the need for increased opportunities for professional development of clinicians moving into managerial roles.[1] The training of rural health managers needs to cover the unique challenges of the rural system. Good management of rural hospitals is also important for retaining general practitioners (and other health professionals) who need to work closely with the public system.

Supportive management practices including flexible contracts and working arrangements and well-planned induction/orientation for new staff and allowance for continuing professional development are recommended as are the establishment and use of benchmarks for evaluating and developing policies.[1] A number of successful programs (for example Central Australian Nurse Management model) incorporated 'bundles' of retention strategies, again meeting the need for diverse strategies such as locum relief; mentors; linkages with universities; conference/workshop attendance; and flexible rostering.[1]

### Continuing professional development

Although the quality of evidence of the effectiveness of continuing professional development on recruitment and retention is relatively weak,[59] results from a range of health professions consistently reflect that ease of access to continuing professional development influences decisions to leave or stay in rural areas.[60] The type of needs appear to differ across health professions there being robust evidence of unique needs among rural doctors including specialists who are obligated to maintain their skills, for example, advanced procedural skills training.[60-62] information and communication technologies play an increasingly important role in continuing professional development for the rural health workforce through videoconferencing, telemedicine, downloads of lectures and tutorials.

A review of barriers to doctors participating in advanced skills workshops exemplifies the situation for other professions: lack of opportunity; expense associated with maintaining skills; lack of access to locum relief; lack of flexible options for education; time constraints; family obstacles; and bureaucratic requirements.[61]

### Physical infrastructure and equipment

Organisations with limited working equipment, supplies and systems contribute to a poor quality work environment causing dissatisfaction and stress in the workplace and increasing staff turnover.[1]

### Information and communication technologies

In addition to using information and communication technologies as an effective means of delivering interventions and improving patient outcomes, it has increasingly been utilised as a tool for professional education.[63] In this way, information and communication technologies have become a key infrastructural asset for the recruitment and retention of the rural health workforce. Telehealth initiatives, internet, e-learning and online coursework have been introduced as means of counter-acting the professional, social and educational isolation experienced by those in rural or remote practice.[60, 64]

A desire expressed by all health professions is that new technologies may mitigate some of the professional and personal isolation experienced and improve access and equity.[65] Specific examples are present in the literature of how information and communication technologies are being used to facilitate continuing professional development for the purpose of interprofessional learning[66] and rural nurse education.[63, 67] Evidence is still limited about the impact of information and communication technologies on the recruitment and retention of healthcare professionals[60] but there is a suggestion that tele-education may contribute to attracting and retaining health professionals in the rural sector.[68] A systematic literature review showed a potentially positive, often indirect, influence that information and communication technologies (broadly defined) may have on recruitment and retention.[69] However, the authors considered the issue poorly covered in the literature with significant evidence gaps and concluded that further research is required.

**Rural health networks**

Involvement in longitudinal participation in a 'community of practice' by mentoring students was valued by rural professionals in rural Australia, as reported in a qualitative study.[70] Other networks and communities of practice reduce professional isolation.[71] (see also continuing professional development).

## 4.4 Social factors

Personal and family issues have shown to be strong determinants of rural workforce recruitment and retention. At the individual level, there is evidence that rural background, gender (male), values and career aspirations are associated with intent (among students) and decisions (once qualified) to work rurally. (Humphreys 2009) Rural background consistently emerges as a key predictor of intent to practise rurally in the Australian context.[72] However, surveyed rural South Australian high school students and their mentors reported limited health career aspirations and knowledge of the acceptance criteria for universities.[73] Difficulty has been reported in recruiting students with family commitments into year-long rural placement programs, despite incentives.[74] These students will thus have less opportunity to benefit from the strategy of exposing students to rural practice. The single survey of international medical students showed that they too have a preference for urban jobs, although a fair proportion (29 per cent) preferred regional (but not rural) locations.[75]

Personality factors have been investigated as a determinant of rural medical practice. Among Australian doctors, risk aversion and novelty seeking traits have been found to be more common in rural compared with urban practitioners.[76] Among students, rural preference associated with higher self-confidence scores but lower with higher scores on extraversion, autonomy and intraception (driven to understand behaviour of self and others). [77] Considering personality along with other characteristics of the individual might allow targeted 'marketing' of rural practice.

A number of reviews and papers identified the following factors (mostly related to circumstances of other family members) as being most influential: contentedness and employment of the practitioner's spouse in rural communities; preparedness to adopt a rural lifestyle; educational opportunities for children; and proximity to extended family and social circle.[15] A qualitative follow-up study of Rural Clinical School alumni who had been in the workforce for 5-6 years reported that personal/family reasons (and specialty training requirements) were the main drivers influencing their early career decisions, highlighting the fact that inevitable life considerations remain strong influences, despite the best rural educational and recruitment strategies.[78]

## 4.5 External factors

**Location**

Geographical location-related characteristics of communities which influence workplace choice include remoteness (travel times and distances covered during practise, access to urban facilities), climate and appreciation of the rural environment.[1]

**Community**

Professional and community networks provide work and social connectedness which is associated with longer duration of stay.[1] Thus, engagement with the community by training institutions and students is reported in the literature as being an important feature of implementing an appropriate model.

Time out from work and participating in the community are important for rural health professionals.[79] Involvement in community activities is considered key to mitigating a sense of isolation (especially for overseas trained practitioners) and to building a social network.[80] As mentioned above, this is sometimes offset by issues in rural practice related to privacy and confidentiality, particularly with the blurring of boundaries between professional and social life and a sense of accountability to community.[81] Thus, health professionals can find rural health practice challenging, particularly in smaller communities when friends and colleagues may also be patients. Visibility in the community and gossip can lead some health professionals to access health care for themselves outside the community to offset concerns about privacy and confidentiality.[82]

Although not specifically evaluated, a number of authors have described engagement of community stakeholders in training, recruitment and retention efforts. The ground-breaking Washington, Wyoming, Alaska, Montana, Idaho program of creating a 'medical school without walls' (1970) in 5 north-western States of the United States involved an extensive process of involving different state and local level bureaucrats, clinicians and other stakeholders in establishing an innovative training model.[19] A distributed community engaged learning model implemented in Ontario involves community engagement through which communities actively participate in hosting students and contribute to their learning by exposing students to cultural diversity and community needs.[83] The University Departments of Rural Health in Australia have a population focus, with varying levels of community involvement across 14 regions, with Jones et al promoting a model where the focus of interprofessional programs and student placements are guided by the needs of the community and the (often non-medical) facilities available.[84] Innovative programs that involve a broad community approach to medical education have been introduced in different international contexts with an overview of a number of programs having recently been published.[85]

A review of media coverage of rural health educational programs and student placements showed significant support for rural training facilities and placement initiatives by the public.[86] Although no studies were identified that evaluated community participation in recruitment processes, there have been examples of remote communities that developed action plans to attract and retain health professionals.[1]

## 4.6 Summary

Recruitment and retention are a result of a complex interaction between many factors. In a systematic review of evidence across a range of interventions aimed at reducing the rural/urban health professional 'mismatch', Wilson et al summarised the findings to date in terms of content as well as quality (Table 2).[59] They conclude that the evidence only supports the implementation of well-defined selection and education/training policies although incentive and support schemes may have value. Based on the literature, Humphreys et al (2009) recommend that retention measures be 'bundled' within an 'overall package that addresses individual level determinants, the organisational or workplace context and the social and cultural context'.[1]

***Table 2: Overview and rating of interventions aimed at reducing the rural/urban mismatch***

| Intervention | Evidence summary | Rating of evidence | Comments |
|---|---|---|---|
| ***Selection*** | | | |
| Geographic origin | Students with a rural origin are more likely to practise in a rural setting. | Strong | Single factor most strongly associated with rural practice – attending a rural primary school seems most relevant. |
| Ethnicity | Ethnicity students from 'underserved' populations are more likely to practise in these communities. | Weak | Not consistent, suggested in 1 study that evaluated underserved inner-city (not rural) areas. |
| Gender | Men are more likely to practise rural medicine. | Strong | More women entering medicine may worsen rural workforce distribution. May change if more accommodating conditions are created. |
| Career intent | Students whose intent at study entry is to practise rural medicine are more likely to do so. | Strong | This proved an independent predictor of rural practice but 60 per cent of United States rural doctors reported no such career intent initially. |
| Service orientation | Students who report involvement in volunteer activities are more likely to practise rural. | Weak | Observation at the University of North Carolina that these students are more likely to become generalists, no proof of rural practice. |
| ***Training – pre-vocational*** | | | |
| Curriculum content | Emphasising the theoretical importance of rural health issues influence medical students to consider rural practice. | Absent | No evidence that the content of the pre-vocational curriculum influences the decision to enter rural practice. |
| Rural exposure | Clinical rotation in a rural setting influence medical students to consider rural practice. | Moderate | Actual clinical exposure (immersion) seems most important, although the perceived impact of rural rotations may be biased by self-selection. |
| | | Weak | Pre-vocational rural training, post-vocational training and medical school entry criteria favouring rural students are all associated with an increased likelihood of being a rural general practitioner. |
| ***Training – post-vocational*** | | | |
| Fellowships | Rural health specialists and family physicians are more likely to practise in a rural setting. Pre-vocational students from medical schools that offer generalist fellowships are more likely to become rural doctors. | Strong | Results are biased by significant self-selection: No evidence that the creation/availability of these specialties actually reduces the rural/urban mismatch. |
| | | Weak | Many potential confounders, impossible to assess the strength of evidence in the absence of multi-variate analysis. |

***Table 2: Overview and rating of interventions aimed at reducing the rural/urban mismatch – continued***

| Intervention | Evidence summary | Rating of evidence | Comments |
|---|---|---|---|
| Location | Students from medical schools located in rural areas are more likely to practise in a rural setting. | | Rural placement may only be a surrogate of various other factors but there seems to be sufficient evidence that rural medical schools do produce more rural doctors. |
| ***Coercion*** | | | |
| Registration requirement | Requiring that recently-qualified doctors perform 'community service' in a rural area reduces the rural/urban mismatch. | Weak | Forced 'community service' definitely addresses short-term recruitment but there is concern that it may alienate people from the profession and from long-term rural practice. |
| Prerequisite for specialisation | Requiring that doctors spend a minimum number of years in a rural area in order to specialise reduces the rural/urban mismatch. | Weak | Practised in many developing countries, criticised in Indonesia for attracting wrong 'type' of doctor to rural areas and for reducing the return on investment in specialised training. |
| International recruitment | Recruiting foreign doctors, with constraints that limit them to rural practice, reduces the shortage. | Moderate | Foreign recruitment is widely practised but it often initiates a domino effect in exporting countries. |
| ***Incentives*** | | | |
| Bursaries and scholarships | Providing scholarships with an enforceable rural service agreement encourages rural practice. | Moderate | Most of the available evidence originates from the United States. Applicability to other countries are not known or are very limited. |
| Financial compensation | Providing direct financial incentives encourages rural practice. | Moderate | Multi-dimensional programs appeared to be more successful than those relying on financial incentives alone. |
| ***Support*** | | | |
| Continuing professional development | Providing sufficient opportunities for continuing professional development encourages rural practice. | Weak | Only questionnaire-based data. |
| Specialist outreach support | Providing relevant specialty outreach and support encourages rural practice. | Weak | Obligations to ensure that these structures are in place are not met rigorously and are not always sustainable. |
| Time-off | Providing back-up to allow free time during holidays and weekends encourages rural practice. | Weak | The little available evidence indicates a dire need for retention strategies that focus on integration of personal and professional support for rural doctors. |
| Family and lifestyle issues | Addressing the most relevant family and lifestyle issues encourages rural practice. | Weak | Implementation of support programs for lifestyles and families of health care professionals are hampered by lack of infra-structural developments. |

Source: Wilson et al, 2009[59]

# 5. Factors associated with rural nursing workforce sustainability

Nurses account for approximately 60 per cent of the current health workforce and comprise the largest workforce group in the Australian healthcare sector.[2] In 2011, the total number of nurses and midwives employed in Australia was 283,577 and, of these, 30,340 were based in rural or remote locations [Australian Institute of Health and Welfare].[87] Nurses, together with doctors, have the lowest turnover and highest stability of all disciplines practising in rural and remote areas and nurses have a relatively high median length of service in their current position.[12] However, the average age of the nursing and midwifery workforce in rural and remote regions is older than in metropolitan areas. Therefore, while the current distribution may be relatively even, the ageing workforce will lead to a maldistribution in the near future.[2] Nurses are often considered to be the foundation of a nation's health care system and understanding nurse recruitment and retention is fundamental to the delivery of quality and sustainable health care.[88] One Australian study of rural nurses found that the five most important factors associated with workforce retention were rural lifestyle, employers' recognition of the importance of continuing professional development, good professional relationships, job satisfaction and positive enivironment to raise children.[12] Despite the importance of nurses to the health care system, this review has found little research that explores in detail the specific issues of recruitment and retention of rural and remote nurses in Australia.

## 5.1 Educational factors

**Selection of rural students to training institution**

Fisher and Fraser endorse the use of the rural pipeline template in the recruitment and retention of rural medical personnel and recommend the extension of its use to nurses to ensure a coordinated approach to the recruitment and retention of all rural health care professionals.[16] From the literature available, two factors were identified as strong indicators of students' intentions and determinants of practising in a rural setting – attending a rural school and previous experience of living in a rural location. This finding was further explored in a longitudinal cohort study of undergraduate nursing students in Wesern Australia.[89] This study, which examined the workforce location of nursing education on a rural campus compared with short term rural placements out of an urban campus, revealed a significantly higher proportion of rural-working graduates from the rural campus. The study concluded that rural based campuses have a two-fold advantage – they are more effective rural workforce strategies and they encourage access to university education for under-represented rural students.

**Rural content in curriculum**

Although there may be rural content in nursing curricula, this review failed to find any literature that evaluated the effect of additional rural content in undergraduate nursing programs on rural recruitment and retention.

**Rural placements, preceptors, clinical and logistical support during rural placement**

Positive experiences for students on rural clinical placements have the potential for subsequently encouraging the recruitment of qualified nurses to these areas.[16, 90] However, the review revealed a range of challenges, including the implications of insufficient funding, the difficulties associated with living in a remote location and the unpredictable patient mix. Common themes to emerge included the need for adequate preparation of the student prior to the placement and substantial support during the course of the placement.[90] Financial disincentives for students to undertake rural placement are most keenly felt by nursing compared with allied health and medical students, suggesting the need for interventions to reduce the inequitable distribution of scholarships and/or income replacement schemes.[91]

Further examination of support structures for novice rural nurses in order to develop safe, competent practitioners was undertaken in a literature review carried out by Jackman who examined the concept of preceptorship specifically.[92] Jackman calls for further studies on this theme to be carried out, specifically on how rurality may impact on the preceptorship experience. Positive rural preceptorship may have a role to play in developing competent, well-connected nurses who wish to remain in a rural location.[92]

## 5.2 Financial/economic factors

**Remuneration and other financial incentives/salary packaging and benefits**

Generally, financial or economic factors do not feature in the literature as determinants of nurse recruitment or retention in rural and remote Australia. The only aspect identified in which economic factors appear to play a part is in the international migration of nurses. The probable reason for this is that developed countries are able to attract nurses with higher salaries and better benefits packages than poorer countries can afford to offer.[93]

**Appropriate and varying marketing (Human Resource approach)**

Job satisfaction is fundamental to rural nurse retention.[57] Factors identified as contributing to job satisfaction include seniority of position, autonomy of practise, collaborative teamwork and level of community integration. Personal characteristics and experiences, for example, financial and family circumstances, also play a part in determining the duration of rural nurse practise. However, as with other health professionals, the most powerful predictor of retention is previous positive exposure to rural living and work experience. It is a recommendation of the paper that recruitment campaigns target these particular groups for maximum effect. Suggested marketing campaigns include nurses visiting rural high schools to promote the profession and increasing the number of rural-specific seats in nursing programs. However, recruitment strategies for overseas trained nurses require a focus on married rather than single nurses as they have proven to be more sustainable in terms of job retention.[94] Ironically, the main barrier to post-retirement engagement identified by older nurses in a qualitative study held in the Northern Territory was a current focus on the recruitment of younger Australian and overseas trained nurses.[95] The participants in this study identified a range of tangible engagement opportunities 'on and off the floor' to encourage continuing engagement of older nurses in rural and remote areas.

## 5.3 Professional/organisational factors

A qualitative descriptive study exploring the experiences of rural health care managers in Newfoundland Canada identified the barriers and facilitators to nurse recruitment and retention.[96] Barriers were classed as 'undesirable aspects of rural life' including the way the rural nursing system is structured with excessive workloads leading to poor morale, limited professional development and lack of permanent positions. The study identified 'the opportunity for independent practise' as being a facilitator for rural nurse recruitment and retention. Furthermore, the positive working conditions in a rural location reported by newly graduated nurses were also identified in a mixed method literature review as facilitators to recruitment.[97] Strong professional and peer support, relaxed and friendly working environments, variety of work and range of experiences available were all quoted as key elements.

**Professional support: continuing professional development, mentoring, recognition**

Developing supportive relationships with new or novice nurses, by means of schemes such as mentoring, is proposed as a solution to overcome the difficulties associated with recruitment and retention of rural nurses.[98, 99] Mentoring is characterised by new graduates drawing broadly on the experience of mature nurses and concentrating on areas such as personal development and career progression, often conducted outside the work environment and in the participants' own time.[44] Creating supportive environments does not require intensive resources as mentoring is integral to the role of a rural nurse leader. However, it does require recognition and role support.[98, 99]

Effective career planning can play a role in nursing retention.[49] In a study of registered nurses working in rural and remote Canada, career planning and development needs were examined and the study concluded that nurses have a keen interest in planning their careers, remaining employable and understanding future career opportunities. Career development through, for example, distance education degrees run by regional Australian universities, can be expanded to combat the shortage of registered nurses in regional Australia.[100] A bachelor of nursing would enable rural and remote enrolled nurses to upgrade their qualifications to registered nurse. In a further example of how career development could be used to alleviate workforce shortages, Medves suggests that registered nurses should be recruited and trained to care for women with low-risk pregnancies in rural and remote Canada.[101] By doing so, nurses may be used to deal with the rural health care crisis.

**Nature of work, workload and content**

Three themes, namely expectations, support and workloads, encapsulate what it is that graduate nurses expect of the rural workplace – a supportive learning environment which facilitates the acquisition of the necessary skills to become competent rural practitioners.[102] This theme of assisting graduate nurses making the transition to become experienced practitioners in a rural setting was examined by Ostini who explored the experiences of newly graduated nurses in New South Wales.[103] The study highlighted some areas for program improvement and key messages for those considering a rural placement. However, the consistent theme emerging is the desire for new graduates working in a rural setting to be challenged within a supportive environment.

Nurses in rural areas are more likely to be multi-specialists than generalists due to the requirement to cope with the various emergencies encountered in a rural setting.[101] The extended role required of nurses working in remote areas can add to feelings of stress and low morale.[104] The volume of the workload and extended scope of practice, where the role of the nurse may include managing emergencies, providing primary care for acute and chronic conditions and delivering preventative public health programs, are instrumental in the physical and emotional exhaustion suffered by many remote area nurses. Another factor adding to the workload of the remote area nurse is that many remote areas are not adequately staffed with other health professionals. Therefore, as nurses are the most geographically evenly distributed health professional group, the burden often falls on remote area nurses to compensate for this maldistribution and meet the high demand for health services.[104]

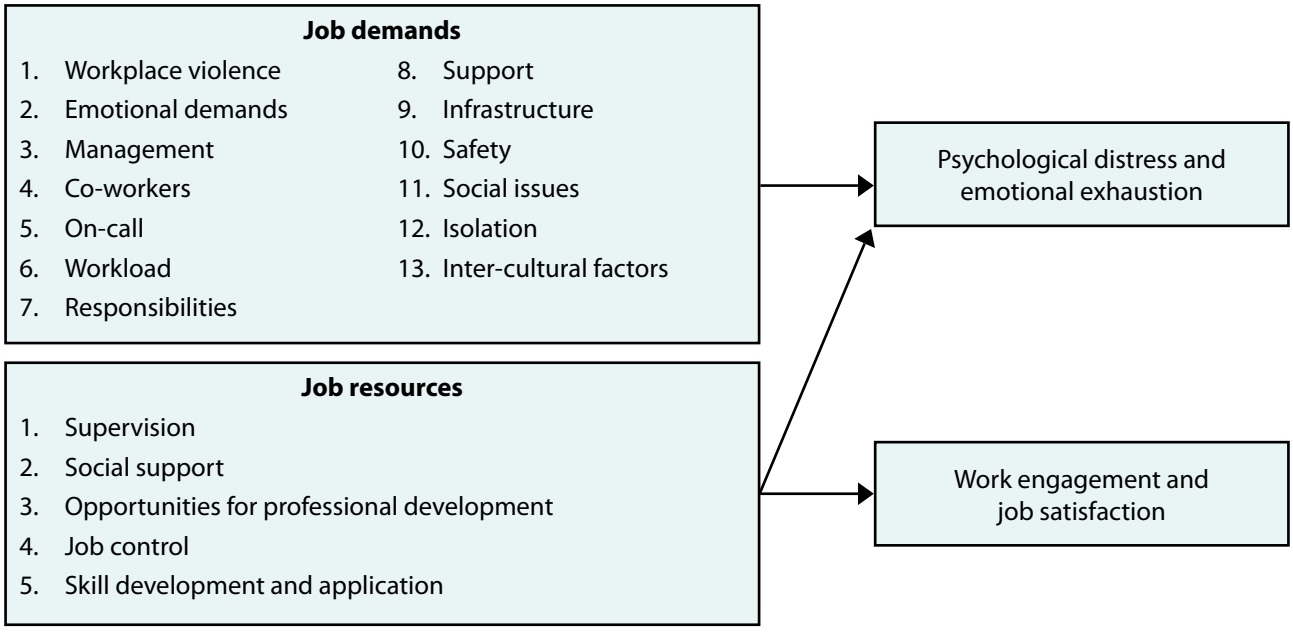



***Figure 5: Job demands/resources model for remote area nurses***

Adapted from: Opie et al, 2010[105]

The theme of stress was further examined in a cross-sectional study of nurses working in very remote Australia.[105] Key job demands combined with poor job resources were identified as contributing to high levels of stress manifested in psychological distress and emotional exhaustion, as represented in Figure 5. The job demands identified included emotional demands, workplace violence, staffing issues and workloads. Job resourcing was poor in terms of supervision and skills and professional development. Although job satisfaction was reported as being moderate and work engagement high, this did not prevent high workforce turnover as remote area nurses experienced higher levels of distress and exhaustion than comparable groups in other sectors of human services.[105]

Fragar et al restricted their qualitative study to specific challenges faced by older nurses practising in rural Australia.[106] As a result of the rural health workforce shortfall, it is often incumbent upon this group to continue working past middle age in order to maintain health services. Many of the issues identified refer to age-related factors that exacerbate difficulties in performing tasks. The age-related factors identified include vision and hearing deficits, increasing tiredness and musculoskeletal changes. Other significant issues identified were working with computers, ongoing education and dealing with more complex professional roles. However, the positive contribution of older nurses is well recognised, with a call to alleviate current staffing shortages by engaging nurses post-retirement being accompanied by flexible strategies to meet their needs.[95]

A further suggestion for addressing the shortfall in the rural nursing workforce is the proposal that family nurse practitioners, rather than general practitioners, should be the first point of contact in rural and remote areas.[107] An early review suggested that these practitioners should be able to diagnose, treat and refer individuals within their clearly defined area of responsibility. In effect, they would be the gatekeepers to the health care services within their community. There is existing evidence that remote area nurses have effectively undertaken the role of nurse and general practitioner due to the advanced practice demands of their isolated location [Lauder et al, #41 Review database]. This view is endorsed by Bagg in a later study who hails the introduction of the nurse practitioner role in South Australia as a positive move.[108] Formal recognition of this role is welcomed by the nursing profession in light of the fact that many rural nurses are already practising in this role out of necessity. Mental health, aged care and critical care have been identified as initial areas for developing the role of the NP in a rural context.[109]

The issues of scope expansion and role recognition are discussed in the literature with a view to increasing job satisfaction and ultimately workforce retention. Hoodless and Bourke examined the role of the enrolled nurse practising in rural Victoria.[110] They cite a small comparative study of enrolled nurses with medication endorsement compared with a group without this competency. The findings of the study demonstrated that the enrolled nurses with the additional accreditation enjoyed additional responsibility and expressed higher job satisfaction than those without this competency. Similarly, a study of community mental health nurses indicated a positive response towards role expansion to prescribing, diagnostics and referral.[111] The driving factor identified is improved access to community mental health care, with consumers of mental health services being the main beneficiaries.

**Infrastructure: information and communication technologies, buildings, vehicles, equipment**

Environmental factors are identified as potential hazards contributing to the risk of violence in a remote workplace.[112] Examples quoted include inadequate security locks in the consulting area, single entry/exit, poor security features of staff accommodation and inadequate security lighting.

Many of the tasks and aspects of work which older nurses reported as becoming more difficult with age relate to equipment and vehicle use, for example, driving long distances, often at night.[106] In particular, challenges associated with computer work were identified as becoming increasingly more difficult with age. Concerns were raised about the information technology education provided, historical-generational learning factors and a general lack of confidence around using computers and new technology.

## 5.4 Social factors

**Spouse/partner employment, education for children**

An additional component of the barriers Aylward classes as 'undesirable aspects of rural life' are personal factors, for example, no family ties, poor employment opportunities for spouse and personal attitudes.[96] Conversely, these factors can also be identified as significant facilitators to rural recruitment and retention that is, having family connections or job opportunities for a spouse. Other positive aspects of a rural location identified are quality of life, connection with the community and a healthy environment in which to raise children.[97]

**Personal characteristics (aspirations, personality)**

Remote nursing is not suitable for all personality types.[113] 'Knowing oneself', together with a preference for the small-town lifestyle and an acceptance of its limitations are crucial. In addition, to be successful in a remote environment, nurses must be calm and adaptable to all types of challenges/stresses including patient health conditions, availability of resources and weather.[113]

## 5.5 External factors

**Infrastructure (sporting, educational, commercial, cultural, health, housing and transport facilities)**

Other barriers included by Aylward under the heading of 'undesirable aspects of rural life' are rural characteristics, for example, geographic isolation and lack of social activities and services. However, for others the 'beautiful countryside, lifestyle and pace' offered by rural life are positive factors.[96]

**Community**

An additional factor that remote area nurses must contend with is highlighted - the problem of violence in the workplace and community.[104] Violence disproportionately affects remote area nurses compared with metropolitan nurses and has been identified as contributing to remote area nurse turnover. In a descriptive study, remote area nurse's inexperience and lack of organisational support were highlighted as contributing to the increased risk of violence.[112] Specific hazards identified included remote area nurse lack of knowledge about the community and dealing with intoxicated patients with mental health issues.[112]

Many remote area nurses work in remote Aboriginal communities. Working in a cross-cultural environment can introduce a range of challenges as the demands of interactions between Aboriginal and non-Aboriginal people can be 'entangled and complex'.[104] As most nurses currently practising in Australia have received minimal cultural training in health care and education, beyond very basic cultural awareness sessions, it is not surprising that intercultural relationships in health care settings often involve significant miscommunication and misunderstandings.[114] This reliance on narrow focused cultural awareness training without significant system and operational changes serve to exacerbate the situation. The logistical, cultural and clinical complexity of working with remote Aboriginal patients requires cultural safety training and mentorship, as well as resilience in coping with the clinical load and systemic challenges.[114] In a study of remote area nurses, the provision of cultural orientation and the structure to build capacity for local Aboriginal staff were among the factors identified as encouraging them to stay longer in remote areas.[68]

**Climate and geographical location/isolation**

Isolation is identified as being an additional 'stressor' remote area nurses must contend with.[104] Isolation extends beyond a geographical concept to encompass social and professional life. In particular, when the support provided by family and friends is not easily accessible, the sense of personal and professional vulnerability can increase. Information and communication technologies are mentioned as a potential means of counter-acting the professional isolation experienced by those in rural or remote practice.[64]

## 5.6 Summary

Nurses comprise the largest group of health care professionals working in rural and remote areas and are the most widely distributed of all the disciplines. This presents issues unique to remote area nurses, in particular the excessive workload they often face and, aligned with this, an extended scope of practice necessitated by the maldistribution of other health professionals. In addition, as nurses are often in the 'front-line' of duty, they must contend with other challenges generally not experienced by others in the workforce, for example, the problem of violence in the workplace and community.

# 6. Factors associated with rural allied health professional workforce sustainability

Allied health professionals apply their skills to diagnose, restore and maintain optimal physical, sensory, psychological, cognitive and social function. They are aligned to each other and their clients'.[115] Evidence of factors informing recruitment and retention is relatively sparse compared to medicine and nursing despite allied health professionals being twice as likely to leave rural practice as doctors or nurses.[116] Allied health professionals are also more likely to stay longer in regional rather than remote locations and leave if career advancement opportunities and access to continuing professional development are limited.[115]

In one study of 11 rural health services in Victoria, Chisholm and colleagues[117] found the median length of stay of mostly female allied health professionals in their position was 3.1 years. However, retention is also influenced by professional discipline – podiatrists stayed on average 18 months in rural practice whereas social workers remained four years.[117] There was an overall low retention rate of allied health professionals after four years.[115, 117] Buykx et al support strategies addressing multiple barriers to retention simultaneously and indicate the need for flexibility towards health professionals working in different contexts.[58] According to Campbell et al there is a dynamic balance between extrinsic factors of motivation to work in a rural area (derived from the job, for example financial remuneration and access to continuing professional development) and intrinsic factors (derived from the individual, for example pleasure from a sense of autonomy in the rural workplace).[116]

While broad themes related to rural recruitment and retention apply across all health professions, much of the recruitment and retention literature discusses allied health as a professional group though differences between individual disciplines were apparent. There was a noticeable lack of evidence of evaluation measures of the effectiveness of recruitment and retention programs.[21]

The literature was analysed according to the same headings as previous sections to identify similarities and differences in findings on recruiting and retaining rural allied health professionals.

## 6.1 Educational factors

**Selection of rural students to training institution**

Recruitment and retention strategies need to link to career pathways where there is structured contact between schools and health professionals in making career choices, recognising attachment to place (rural student selection), taking up rural practice (rural exposure) and staying in rural practice (education and professional support).[16]

**Rural content in curriculum**

Allied health students who had a positive rural placement experience were more likely to want to practise rurally.[118, 119] However, intention was not necessarily linked to action. Of those who chose rural practice, 'Gen Y' age group were the hardest to retain, often staying no longer than two years.[120] Schofield et al also suggest allied health professionals need to be adequately trained in multi-disciplinary care.[121]

In a national study of the rural and remote pharmacy workforce, Smith et al found that rural and remote pharmacists are generally older than urban and most study participants were community pharmacists.[122] Participants highlighted that rural students are likely to enter rural practice if they had attended regional and rural pharmacy schools and/or if they had undertaken rural internship and were four times more likely to have undertaken a rural internship if they had lived in rural area as child and attended a rural university.[123] Integrating rural health into pharmacy curricula with defined structure and goals and integrating content across the years and interprofessional education are important strategies to adequately prepare students.

**Rural placements, preceptors, clinical and logistical support during rural placement**

While only 9 per cent of occupational therapists are in the rural workforce,[124] occupational therapy students' intentions to work rurally also increased after rural placement.[125, 126] For occupational therapists, undergraduate rural programs promoted students' positive perceptions of rural and remote practice by exposure to a rural location, rural fieldwork experience and an inspiring fieldwork supervisor. occupational therapy students' perceptions of rural practice improved over the course of the program from 60 per cent to 79 per cent.[125, 126] Appropriately preparing occupational therapists for rural practice included a rural placement, practical skills in coursework, being mentored and more education on management and organisational skills during training.[127] Good supervision was also suggested as an important factor in attracting and retaining occupational therapists.[128]

## 6.2 Financial/economic factors

**Remuneration and other financial incentives/salary packaging and benefits**

Financial incentives are often implemented as a recruitment strategy but are not always effective in increasing the number of workers to underserved areas[46] – other incentives such as working conditions and housing may be more effective.[58]

**Appropriate and varying marketing (Human Resources approach)**

Evidence suggests that strategies for retention, and arguably recruitment, are not a 'one size fits all' approach but need to reflect diversity within and between allied health professions that include age and life stage, gender, location and discipline.[115, 129] A more targeted approach to rural recruitment and retention addressing diversity within and between allied health professionals can be reflected in, for example, strategies that appeal to women who make up the majority of the allied health professional rural workforce. In a study of 1,879 participants, 70 per cent were female and 60 per cent had a rural origin. While participants generally reported high job satisfaction, the workforce was also ageing and working in both public (46 per cent) and private sectors (40 per cent). Suggestions were also made that recruitment strategies should focus on rural high school students.[130] Targeting specific age groups with discrete strategies is important as younger allied health professionals are less likely to stay in a rural area than older allied health professionals. Career grade also impacts on retention – the more senior the grade, the more likely is the health professional to stay.[120] The Careers in Rural Health Tracking Survey indicated that health professionals preferred to work in urban locations early in their career but would consider rural practice later in life.[121]

In order to attract a diversity of allied health professionals to rural practice recruitment strategies are needed to attract allied health professionals from different cultural and linguistic backgrounds[131] although literature is limited on attracting and retaining overseas trained allied health professionals as the focus is mainly on doctors and nurses.[132]

Peterson et al trialled a marketing strategy that used a DVD developed from interviews with rural and remote health professionals to promote rural practice to pharmacy students.[133] Findings from 4th year students who viewed the DVD showed over 50 per cent had considered rural practice before seeing the DVD and 37 per cent indicated that the DVD had increased their awareness of rural pharmacy practice.

## 6.3 Professional/organisational factors

Urban-centric policy and planning for health professionals often failed to highlight issues relevant for rural practice such as professional isolation, the value of recruiting locally and access to continuing professional development leading to poor preparation and support for rural practitioners.[81] The question posed is what constitutes a reasonable retention rate for rural health professionals and are there inter-disciplinary differences? According to health service managers in rural areas, two years of rural practice for allied health professionals is reasonable.[115]

**Professional support: continuing professional development, mentoring, recognition**

Opportunities for professional development and specialisation for occupational therapists in rural areas were limited and inappropriate referrals and inadequate professional support influenced recruitment and retention.[125, 127] Community recognition of allied health services was an important element in allied health professionals feeling their work was valued.[116]

**Promotion, career pathways**

Strategies to recruit and retain allied health professionals are applicable to all stages of career pathway and sectors of health care including public and private.[134] Professional barriers to recruitment and retention of rural allied health professionals include limited opportunities for advancement, better career opportunities elsewhere, long hours including extensive travel, problems with management and little job satisfaction.[135]

**Nature of work, workload and content**

Poor recruitment and retention rates were noted in some disciplines more than others including podiatry[117] and dietetics.[136] Chisholm et al suggest retention strategies need to target allied health professionals in their first year of rural employment.[117] A recent study identified that the majority of the 90 rural dieticians were new graduates with a third remaining in their position less than six months. Evidence suggests strategies need to address heavy workload and travel, isolation and access to continuing professional development to make a difference.[136] However, the rewards of rural practice were also noted which, for occupational therapists, included autonomy, team work, diversity, flexible work schedule, increased client contact, experience gained and rural lifestyle.[127]

Other structural factors important for some allied health professionals included the mix between public and private rural practice. Older allied health professionals in private practice were more likely to remain in rural areas although there were few incentives to attract private allied health professionals or providing for flexibility of public/private mix.[137, 138] Different profiles were noted between private and public practising health disciplines suggesting a high percentage of young practitioners work in the public sector with a concomitant need for management support, mentoring and career opportunities.[130] Brown et al focused on the need for flexibility in public/private practice for dieticians.[139]

**Role clarity, responsibility, autonomy, teamwork**

Recruiting allied health or therapy assistants as an innovative strategy to meet rural workforce need requires professional, economic and organisational coordination.[140] This is particularly relevant given allied health professionals' ambivalence about their role and skills.[140] While increasing the use of dental therapists/hygienists may be an effective health promotion/prevention strategy in rural areas,[141] dentists are often unaware of their range and level of skills.[142]

**Infrastructure: information and communication technologies, buildings, vehicles, equipment**

An ongoing barrier to recruitment and retention for all rural health professionals was the lack of access to continuing professional development with several reviews and studies highlighting the need for improvement.[81, 115, 134] One suggestion to address the issue was increased use of information and communication technologies including telehealth for continuing professional development, which could reduce professional isolation, invite second opinions and increase job satisfaction.[141, 143]

### Leadership management, governance

Organisational factors were a key theme in the literature with suggestions of inter-sectoral collaboration to attract and retain rural allied health professionals by applying human resource knowledge and strategies to the rural health workforce sector.[82]

## 6.4 Social factors

### Spouse/partner employment, education for children

Rural background, family, employment opportunities for spouse and education opportunities for children were also contributing factors to retention.[122] Pharmacists were more likely to practise rurally if they had a spouse/partner with a non-metropolitan background and were not practising in hospital.[123]

### Lifestyle and community affiliation

Across the literature, social factors including family and friends located in rural settings and lifestyle were positive indicators of recruitment and retention. Rural pharmacists were attracted to rural areas because of quality of life as well as business and job opportunities.[122] Time out from work and participating in the community were also important for rural allied health professionals.[79] This was sometimes offset by issues in rural practice related to privacy, confidentiality, blurred boundaries between professional and social life and a sense of accountability to community particularly when working in smaller rural communities.[81] Personal barriers to recruitment and retention include lifestyle and family or friends relocating.[135]

### Personal characteristics (aspirations, personality)

Self-efficacy and psychosocial skills were considered important in rural practice and the organisational support and career structure to sustain these skills.[144]

## 6.5 External factors

### Community

Allied health professionals are often attracted to rural practice because of the location, friendliness of the community, slow pace of life, sense of adventure and recreation, and quality of life and work/life balance.[120, 145, 146]

### Climate and geographical location/isolation

Distance and excess time spent travelling was considered a barrier to working in rural and remote areas.[127]

## 6.6 Summary

Given the diversity within and between allied health professionals and the range of rural contexts in which they work, a more targeted and innovative approach to attracting and retaining their services in rural areas is called for. This should recognise that the needs of, for example Gen Y health professionals, are not the same as those allied health professionals about to retire. Inter-sectoral collaboration between human resources and marketing with the health sector to explore effective ways to achieve this is one approach. Table 3 provides an overview of suggested responses to the problems facing allied health professional shortages in rural areas. A key gap in recruitment and retention strategies is short and long-term evaluation of interventions for their effectiveness in achieving their goals.

***Table 3: Responses to problems in the recruitment and retention of allied health professionals***

| Problems | Solutions |
|---|---|
| Standardised recruitment strategies | • diverse approaches to recruitment that capture differences, for example, in age, gender, disciplines; and<br>• evaluation of strategies for their effectiveness in increasing recruitment. |
| Inconsistency around retention expectations | • diverse yet realistic approaches to retention based on, for example, age, gender, discipline; and<br>• evaluate strategies for their effectiveness in increasing retention. |
| Lack of student exposure to rural content and rural experience | • rural student placements; and<br>• rural based university or postgraduate centres that can also 'grow' the rural workforce. |
| Professional isolation and lack of access to continuing professional development | • organisational support for increased opportunities for postgraduate education and support;<br>• increase use of information and communication technologies including telehealth; and<br>• inter-professional teams to reduce professional isolation. |
| Inadequate mentoring and supervision especially for solo rural practitioners | • organisational support to implement supervision and mentoring;<br>• education and training for supervisors and mentors; and<br>• recognition of supervisors and mentors. |
| Few opportunities for career advancement | • foster positive workplace culture;<br>• organisational review of grade structures to recognise and reward rural practice;<br>• increase allied health professional promotions to higher grades; and<br>• develop new roles. |
| Limited social opportunities in local community | • good orientation to workplace and community;<br>• improve workplace engagement and social networks;<br>• Rotate allied health professionals in regional services to rural and remote health services to network, provide continuing professional development opportunities and experience;<br>• relocation costs and support for temporary accommodation; and<br>• organise social events that include partners and families. |

Adapted from Humphreys et al, 2010 [115]

# 7. Additional specific groups that impact significantly on rural health workforce

Referring to Figure 2 (page 12) showing the Australian trained pipeline alongside other sources of health workforce, a number of professional groups make a substantial contribution to rural health and are mentioned here to highlight their role in the rural health workforce.

**Overseas trained health professionals**

Given the difficulties attracting and retaining Australian trained health professionals in rural practice, Australia relies on overseas trained health professionals to help fill the gap. Mason's Review of Australian health workforce programs[2] drew on literature that identified approximately 25 per cent of the Australian workforce of doctors as being overseas trained and 15 per cent of nurses. Despite an apparent oversupply of dentists in Australia, maldistribution persists with shortages in rural and remote areas where evidence around specifically recruiting overseas trained dentists is limited.[147] There is also little information on the immigration of overseas trained allied health professions.[2] The Australian Government particularly supports international medical graduates through a range of programs and incentives related to eligibility to practise, registration, medical training, assessment and supervision.[2] While the Lost in the Labyrinth report[148] specifically offered overseas trained doctors professional support, social and cultural support for their families were also highlighted to help them settle to life in Australia. In 2012, the Rural Health Professionals Program was established as part of the Australian Government's International Health Professionals program to provide rural recruitment, orientation, and retention support services to locally and overseas trained nurses and allied health professionals.[2]

**Fly-in fly-out or drive-in drive-out workers**

Recruitment and retention of health professionals to some locations may be so limited or not cost-effective that alternative service models like fly-in fly-out or drive-in drive-out staff may be the only feasible option.[2] In these models, a health professional develops a continuous relationship with one community, spending a fixed number of days at work geographically remote from their home and families, with logistical support provided, before returning home.[149] Such models are reliant on a supportive local primary care team, good infrastructure and good orientation to the community.[150] There is only anecdotal reporting of this practice in the literature for doctors and nurses[149-151] and no evaluation forthcoming. Rotating services using a spoke-and-wheel model are fairly common but do not provide the continuity of care. Systematic, nationally consistent data is needed to provide an overview of the extent and quality of this practice among medical, nursing and allied health professionals.[150]

**Re-entry/late entry**

Re-entry to the workforce did not emerge as a significant theme in the literature in relation to mechanisms to address the shortfall of health professionals in rural and remote settings. Concern is raised about delays, rigidity and obstacles to the re-entry of health professionals to the workforce.[2] This is particularly marked for nurses as the current requirements may result in those who have been out of the workforce for more than 10 years having to enrol in a new entry qualification at university. These stringent requirements, coupled with significant financial burdens, act as deterrents to re-enter the workforce. This has particular implications in rural and remote settings. Access to education to enable easier re-entry to the nursing profession should be a priority. Professional re-entry requirements should be reviewed periodically and more support, including financial assistance, is required.[2]

Likewise, the literature review revealed little mention of the mature entrant. Educational pathways that facilitate mature age entrants to nursing education programs should be investigated as this may enable older applicants in regional and rural areas to consider nursing as a career option. This group should be encouraged as they are more likely to remain within the profession until retirement than are school leavers.[2]

**Health professional assistants**

A workforce strategy to address rural recruitment and retention has been to employ increasing numbers of health professional 'assistants'. These include physician assistants, dental therapists/hygienists, nursing assistants and allied health therapy assistants. Physician assistants work under the direction of medical doctors, dental therapists with dentists and therapy assistants with allied health professionals.

Physician assistants provide safe, high quality and cost effective primary care services under the direction of a doctor.[152] Unlike Australia, physician assistants are well established in the United States and are more likely than general practitioners to work in non-metropolitan areas. A systematic review of the role of physician assistants in health care found that: rural physician assistants had greater autonomy and scope of practice than urban physician assistants; practice protocols were informed by evidence based medical guidelines; and this model seemed to be cost effective.[153] Acceptance of physician assistants has increased with time, with variable community understanding of, and confidence in their skills. Professional isolation was found to be the main reason for resignations. A narrative review reported similar findings suggesting physician assistants be allowed to contribute to rural health care in Australia.[154] A small pilot project to test the sustainability of the physician assistant role in Queensland indicated that a delegated physician assistant role can provide safe, quality health care by augmenting an established health care team.[154]

There are a number of terms used to describe individuals supporting nurses and midwives in the provision of patient care. These include nursing assistants, personal care workers and personal care assistants but the term assistants in nursing is more commonly used. These workers provide personal care to vulnerable, generally older, individuals. They are employed largely in the aged care sector, both in residential and community care settings, but are also employed in acute and sub-acute settings. Certificate lll, gained through the vocational education and training (VET) sector, is the most common level of qualification for this workforce but no mandated qualifications apply.[2]

This review failed to find any literature that evaluated the role of assistants in nursing specifically in rural and remote nursing. However, it is recommended that a trained workforce of assistants in nursing be developed and used nationwide to perform routine tasks which would support nurses and midwives to work to the top of their scope of practice.[2] This may ultimately alleviate the shortage of nurses and midwives and promote retention rates. However, the currently unregistered status of assistants in nursing needs to be addressed in order to clarify their scope of practice, establish consistent educational standards and ultimately lead to the acceptance of this group by other health professionals.[2]

The oral health workforce has changed over the years with increasing numbers of dental hygienists, dental therapists, oral health therapists and dental prosthetists adding to services provided by dentists. That has led to a re-examination of pathways for coordinated analysis and planning of the oral health workforce.[147] A review of papers on rural oral health issues recommended increased flexibility and capacity of the oral health workforce for rural areas.[141] This could be achieved with diverse roles and creating new roles and new types of providers, for example, increased autonomy of hygienist, dental therapists and other new providers. Another review of the use of dental therapists as a strategy to meet rural oral health care needs found no studies providing data relevant to efficiency, costs and acceptability of dental therapists/hygienists. Interestingly, while increasing the use of dental therapists/hygienists as a health promotion/prevention strategy in rural areas[141] dentists are often unaware of their range and level of skills.[142]

While allied health or therapy assistants have been recruited to meet rural workforce need, professional, economic and organisational coordination remains key.[140] This is particularly relevant given some allied health professionals' ambivalence and confusion about the role and skills of therapy assistants who often undertake more routine aspects of patient care.[140] Allied health professional peak groups are less supportive of therapy assistant roles and prefer increased allied health specialisation rather than any erosion of professional boundaries.[2]

**Aboriginal health professionals**

Aboriginal and Torres Strait Islander people are under-represented at every level of the health workforce, including in rural areas. Appropriate support and mentoring is required for medical, nursing and allied health students at every level of the educational pathway, with retention strategies also being important for Aboriginal staff working in rural and remote areas in mainstream and community-controlled settings.

A nursing education initiative aimed at increasing the number of Aboriginal nurses in rural and remote Queensland was identified.[155] The benefits resulting from this program are two-fold – firstly, as most of the students on the program were local rural and remote Aboriginal people with close ties and affinity to their traditional land, it is likely that they will remain in these areas once trained and so help to alleviate the shortfall in the numbers of health care professionals. Secondly, such programs have a role to play in contributing to closing the gap by preparing Aboriginal students for entry to nursing programs. The Canadian Ministry of Health has also recognised the importance of recruiting Aboriginal nursing students.[57]

Aboriginal health workers are TAFE or VET-trained health workers who use their knowledge of Aboriginal culture and communities to promote good health practices within community groups and encourage Aboriginal people to take a strong role in controlling and managing their health.[156] Aboriginal health workers in the rural Aboriginal community-controlled sector, unlike those in mainstream and urban services, use a broad range of clinical skills including some procedures thus making a broader clinical contribution in rural areas.[157] In most rural settings, they play a key role in the provision of primary health care to Aboriginal patients, advising/orientating other health professionals and facilitating a more culturally secure service.

**Summary**

This section has described some of the non pipeline groups contributing to the rural health workforce in Australia. There has been a call for the recognition and development of new support and assistant roles as part of best practice rural and remote health delivery in Australia,[52] while still ensuring adequate numbers of fully trained professionals so that access to high quality health care remains in the reach of rural Australians. Strategies also need to be developed to harness the potential of the other categories of workers that can contribute to workforce shortages in rural areas.[2]

# 8. Discussion

This review has found that, while the different professional groups have unique issues influencing their recruitment, retention and practice in rural areas, many factors are common to all. However, the medical profession has had the most attention and is by far the most researched group. This dominance of the literature on doctors is reflected in Table 4 (page 40) showing the strongest and most varied evidence for that profession. The limited information on dentists is noted, as is the relative weak evidence for allied health professionals.

Overall, key factors identified as strong indicators of students' intentions and determinants of practising in a rural setting were attending a rural school and having a positive rural placement experience. In addition, prior experience of living in a rural location was consistently identified as a key determinant of entering rural practice. These were crucial factors irrespective of discipline within the health professions. This underlines the importance of raising awareness of rural health careers amongst students, particularly those from rural backgrounds, of targeting these students with specific programs at an early age to encourage health careers and of nurturing and supporting them throughout their education. This requires the integration of rural health into university curricula with defined structure and goals and providing rural clinical placements to adequately prepare students. Positive, well-supervised and supported placements will increase the likelihood of students returning to rural areas once qualified. However, this requires adequate infrastructure resources to ensure clinical, financial and logistical support for placements to be effective and result in a positive experience that increases the likelihood of students returning to rural practice.

In the context of rural health workforce shortages, the central clinical role of the medical profession and the long period of training have differentiated it from other health professionals, resulting in substantial resources being made available for rural recruitment and retention. Evidence suggests that there is currently an inequitable distribution of financial support across the professions with nursing students, in particular, experiencing financial disincentives to undertake rural placements. Interventions to reduce the inequitable distribution of scholarships and/or income replacement schemes are required and the ongoing funding of the University Departments of Rural Health is vital to sustain rural placements of nursing and allied health professional students.

As the targeting and support of students is necessary, likewise effective marketing to attract suitable qualified applicants for rural and remote situations is required. Evidence suggests that strategies for recruitment and retention are not a 'one size fits all' approach but need to reflect diversity given the varying sources and ages of health workers for rural areas. Therefore, there is a need to tailor recruitment strategies to reflect diversity of rural practitioners (and rural practices) in relation to age, gender, career stage, location, cultural and linguistic background – to encourage a 'good fit' between practitioner and practice. These findings indicate that marketing and human resources management skills need to be integrated more fully into the recruitment of health workers to rural areas in Australia. However, evidence regarding the effectiveness of targeted recruitment campaigns, and specifically the success of any such initiatives, is weak.

Organisational issues like leadership, vision, communication (including information and communication technologies) and efficiency emerge as important determinants of recruitment and especially retention of health workforce. A general lack of good organisation and management within rural and remote health services and inadequate management across the health system as a whole is seen as contributing to rural health workforce shortages, implying the need for increased opportunities for professional development and mentoring of clinicians moving into managerial roles. The review identified a need for health employers to draw on the substantial knowledge developed in the business sector to implement innovative recruitment and retention strategies. Urban-centric policy and planning for health professionals often failed to address issues relevant for rural practice such as professional isolation, the value of recruiting locally and access to continuing professional development leading to poor preparation and support for rural practitioners.

***Table 4: Summary comparison of factors associated with recruitment and retention of different types of health professionals in rural areas***

| Type of factors | Doctors | Nurses | Allied health | Comments |
|---|---|---|---|---|
| **Educational** | *Students types more likely:*<br>• *Rural origin*<br>• *Men*<br>• *Values and rural career aspirations*<br>*Rural exposure/ placement*<br>*Perceptorship* | → | - - - - - - - - - - →<br>Interprofessional education<br>- - - - - - - - - - → | Minimal literature about dentists<br>Late entry: no data |
| **Financial/ economic** | *Financial incentives, for example, return of service, bursaries etc (United States)*<br>Marketing and advertising | | Better marketing | Inequity in funding schemes across professions: Favours doctors |
| **Professional/ organisational** | continuing professional development<br>*Good management practices*<br>Mentors/ supervisors<br>Information and communication technologies | - - - - - - - - - - →<br>- - - - - - - - - - →<br>*Workload*<br>*Role definition*<br>New graduate support | - - - - - - - - - - →<br>Inter sectoral collaboration<br>Professional support<br>Private/public<br>Opportunities/ positions | Fly-in fly-out/sea change: no data<br>Service models needed that incorporate assistants |
| **Social** | *Family support*<br>*Educational/ employment opportunities for family* – – → | - - - - - - - - - - →<br>- - - - - - - - - - → | - - - - - - - - - - →<br>- - - - - - - - - - → | |
| **External** | Geographic isolation<br>*Community networks*<br>Professional boundaries<br>Climate<br>Environmental<br>Life'happens' | - - - - - - - - - - →<br>- - - - - - - - - - →<br>- - - - - - - - - - →<br>Violence/safety<br>- - - - - - - - - - → | - - - - - - - - - - →<br>- - - - - - - - - - → | |

*Red print in italics*, red/solid arrows: strongest evidence
**Black print**, black/dashed arrows: weak evidence

Factors specific to certain disciplines were identified as significant issues impacting upon recruitment and retention, for example, workload volume and extended scope of practice required of nurses working in remote areas. As nurses are the most geographically evenly distributed health professional group, the burden often falls on remote area nurses to compensate for this maldistribution. They often find themselves having to 'fill the gap' due to inadequate staffing with other health professionals. Yet, these extra demands seem to be taken for granted rather than explicitly acknowledged, valued and appropriately recompensed. Separately, an issue of particular significance for allied health professionals included the mix between public and private rural practice. Evidence suggests that allied health professionals in private practice are more likely to remain in rural areas but additional incentives to attract private allied health professionals or providing for flexibility of public/private mix are required. Support on the business management side of private practice for all professions is an area that may require attention.

Personal and family circumstances and the extent to which these can be addressed in the rural setting remain some of the strongest determinants of selecting and staying in rural areas but are not always amenable to intervention. Efforts to integrate health professionals into community life and provide support for workers and their families are important for retention. More broadly, a regional development approach in rural areas addressing social determinants of health and increasing the attractiveness of living in these areas will increase the pull factors to selecting and staying in rural areas.

There appears to be a distinct scarcity of literature available on the role that financial incentives may have on influencing rural and remote recruitment and retention, particularly for nurses and allied health professionals. It is not clear whether this deficit is due to the insignificance of this factor or whether a true gap in the literature exists. Furthermore, there is little evaluation of the impact of mainstream locally-generated governance and business models on rural recruitment and retention. Overall data about the costs associated with policies and strategies to improve health workforce retention are incomplete, fragmented or missing. Consequently, there is a significant lack of knowledge about these costs.

Likewise, this review has not found any literature on the impact of some non pipeline entry groups on the rural workforce. Significantly, there is little or no mention of the mature entrant/re-entrant or the fly-in fly-out professional. Whilst there has been some examination of the issues associated with international medical graduates working in rural settings, there is minimal literature available which examines specifically the experiences of overseas trained nurses and allied health professionals working in similar environments. Additional research is necessary, in particular, longitudinal or cohort studies are required to assess the longer term transition of overseas trained nurses and allied health professionals in addition to their contribution to the delivery of health services.

This literature review has highlighted the absence of strong research designs as a critical shortcoming in the evidence feeding into rural health workforce policy. Good data systems that capture appropriate indicators (including benchmarks) for monitoring and evaluating strategies for recruitment and retention are needed.[1] Overall, better quality study designs, including longitudinal studies and trials using pre- and post-intervention baseline measures, are required to investigate the effectiveness of interventions that aim to improve recruitment and retention in rural areas.

In conclusion, health workforce shortages in rural areas require a coordinated, integrated, sustained and evidence-based approach by universities, governments and civil society to address educational, organisational, financial, social and other factors associated with recruitment and retention of health professionals in rural areas. Although much has been learned from the research into the medical workforce, the focus needs to move beyond the medical profession to cover dentists, allied health, nursing and associated professions as key players in the rural health workforce, with more integration across disciplines.

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