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**IMPROVING PRIMARY HEALTH CARE WORKFORCE
RETENTION IN SMALL RURAL AND REMOTE
COMMUNITIES: HOW IMPORTANT IS ONGOING
EDUCATION AND TRAINING?**

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ACKNOWLEDGMENT	2
LIST OF ACRONYMS	4
PREFACE	5
INTRODUCTION	6
WORKFORCE SUPPLY IN SMALL RURAL AND REMOTE COMMUNITIES	6
WORKFORCE RETENTION AND THE ROLE OF ONGOING EDUCATION AND TRAINING	6
HEALTH WORKFORCE RETENTION IN RURAL AND REMOTE AREAS	9
DEFINITIONS OF KEY TERMS	10
WHAT IS WORKFORCE RETENTION AND HOW IS IT MEASURED?	11
THE IMPORTANCE OF WORKFORCE RETENTION	13
WHAT FACTORS ARE RESPONSIBLE FOR WORKFORCE RETENTION IN RURAL AND REMOTE COMMUNITIES?	13
METHODS	16
REFERENCE GROUP	16
FORMULATION OF THE RESEARCH QUESTIONS	16
SEARCH TERMS	16
DATABASES	17
INCLUSION-EXCLUSION CRITERIA	17
DATA COLLECTION	18
DATA EXTRACTION	20
RESULTS	21
EVIDENCE BASE	21
FINDINGS FROM THE LITERATURE	21
LIMITATIONS OF THE STUDY	33
DISCUSSION	34
WHAT LESSONS EMERGE FROM THE SYSTEMATIC REVIEW	36
Context	36
Actors	38
Content	40
Process	42
Costing workforce initiatives such as a CPD/CPE program	43
Benchmarking workforce retention and turnover	44
CONCLUSION	45
REFERENCES	46
APPENDICES	56
APPENDIX 1: METHODOLOGY	56
APPENDIX 2: REFERENCE GROUP TERMS OF REFERENCE	57
APPENDIX 3: SEARCH TERMS AND ALIASES	58
APPENDIX 4: INCLUSION-EXCLUSION CRITERIA	59
APPENDIX 5: DATA EXTRACTION FORM	60
APPENDIX 6: CALCULATING THE COSTS OF TURNOVER	62

LIST OF ACRONYMS

ACRRM	Australian College of Rural and Remote Medicine
AHMAC	Australian Health Ministers' Advisory Council
AHMC	Australian Health Ministers' Conference
AMC	Australian Medical Council
APHCRI	Australian Primary Health Care Research Institute
ARIA	Accessibility/Remoteness Index of Australia
CARPA	Central Australian Rural Practitioners Association
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CME	Continuing Medical Education
CPD	Continuing Professional Development
CPE	Continuing Professional Education
GP	General Practitioner
GPEP	General Practice Evaluation Program
IM/IT	Information Management/Information Technology
IMG	International Medical Graduate
MSOAP	Medical Specialist Outreach Assistance Program
NHWSF	National Health Workforce Strategic Forum
NRHA	National Rural Health Alliance
OT	Occupational Therapist
PA	Physician Assistant
PHC	Primary Health Care
PHCRIS	Primary Health Care Research and Information Service
PT	Physiotherapist
RACGP	Royal Australian College of General Practitioners
RAN	Remote Area Nurse
RDAA	Rural Doctors Association of Australia
RHSET	Rural Health Support Education and Training
RN	Registered Nurse
RRMA	Rural Remote Metropolitan Areas
RRMEO	Rural and Remote Medical Education Online
RRPIGS	Rural and Remote Pharmacy Infrastructure Grant Scheme

PREFACE

The Australian Primary Health Care Research Institute (APHCRI) was established in 2003 to provide national leadership in improving the quality and effectiveness of primary health care through the conduct of high quality priority-driven research and the support and promotion of best practice.

In 2006, APHCRI funded nine (Stream 6) studies focusing on workforce research questions within three topic areas – the number of workers, optimising the workforce, and the place of generalism. These studies were designed to:

“emphasise systematic reviews and the careful synthesis and interpretation of the findings in the Australian context with the goal of providing policy relevant options”.

This systematic processing of knowledge will encourage interactions between researchers and policy advisors with the goal of increasing the capacity of researchers to respond to policy priorities on the one hand (in this case the problems associated with Australia's workforce shortage), and increase the capacity of policy advisors to use research evidence on the other. The outcome provides a strong basis on which national primary health care policy can be informed and clear insights into important knowledge gaps.

A systematic review is an overview of primary studies which contains an explicit statement of objectives, materials, and methods and has been conducted according to explicit and reproducible methodology. While systematic reviews have largely been developed and utilised to determine the effectiveness of clinical interventions, application of this approach to non-clinical or policy content is a developing field that poses new challenges. A critical challenge is the need to balance the scope of such a review to make it 'do-able' within given resources and time, while at the same time ensuring that the outcome is still useful to its target audience.

This systematic review focused on material that is available within the public domain, so that readers can follow up on any studies about which they require more specific detail. Importantly the methods are explicit, detailed, rigorous, comprehensive, reproducible and verifiable. Every attempt was made to ensure a comprehensive capture of relevant literature. While some material captured by the search terms contributed to describing issues relevant to the research problem context, only publicly available material falling within the inclusion-exclusion criteria was selected and reviewed. This material provided the evidence from which the policy framework and synthesis were derived. Limitations associated with the methodology are described in more detail within the report.

Systematic reviews such as this provide a useful summary and synthesis of available evidence about a specific and defined topic of policy interest. What follows then is the result of a systematic review which has utilised the best available evidence to inform and guide the development of appropriate policy and planning designed to maximise the retention of the primary health care workforce in small rural and remote communities.

INTRODUCTION

“Staff retention is the strongest recruitment strategy”.

WORKFORCE SUPPLY IN SMALL RURAL AND REMOTE COMMUNITIES

Many small communities throughout rural and remote Australia experience a shortage of health workers, high levels of staff turnover, and significant problems in recruiting new health workers.^[1, 2] In order to ensure the provision of appropriate, high quality, accessible primary health care services to residents of small geographically dispersed communities, the need to retain competent and confident health workers once recruited is particularly important. Rapid changes characterising the health industry, combined with the challenges and complexities of rural and remote practice, require a well-qualified workforce to meet their roles and responsibilities.

Previous research investigating sustainable rural and remote health services auspiced by the Australian Primary Health Care Research Institute (APHCRI) suggested an association between workforce retention and the availability of ongoing education and training, such that the provision of effective continuing professional development may lower turnover rates of health workers in small rural and remote communities.^[3] At the same time, anecdotal evidence suggests that increasing demands on service delivery have resulted in reduced time available for Continuing Professional Development or Continuing Professional Education (CPD/CPE) activity in many rural and remote services and less support from service providers in relation to staff needs.

This study examines the role and contribution of continuing professional development in enhancing workplace attractiveness and improving retention of primary health workers in small rural and remote communities. In particular, it examines how important education and training is to increasing workforce retention relative to other factors, the best way of providing effective education and training to rural and remote primary health care workers, and evaluates the costs and benefits associated with providing such education and training.

WORKFORCE RETENTION AND THE ROLE OF ONGOING EDUCATION AND TRAINING

Ongoing education and training, often referred to as CPD/CPE, contributes to the workplace in many ways. Educational and professional development activity for health professionals falls into three broad areas:

- *orientation and induction programs* designed for new employees, both new graduates and experienced recruits. These programs cover health service operation, local procedures, protocols and policies of the employer and, where relevant, specific cultural awareness issues, rural issues and other local issues. These programs are usually offered at the very beginning or early in the employment period, and may be followed by a period of mentoring which then becomes part of an ongoing CPD program
- *re-entry programs*, designed for professionals who have been out of their professional workforce for some time, cover updating of skills and changes in professional practice and may be offered by a professional association or educational body, rather than an employer
- *ongoing education and training* programs (the bulk of CPD/CPE activity) include skills and competency maintenance, credentialing and maintenance of registration, up-skilling for advancement (including formal postgraduate qualifications), enabling International Medical Graduates to meet conditions associated with their provisional right to practice, and management of changes in practice or organisational restructures.

Since orientation/induction and re-entry programs relate more to recruitment than retention, it is this third area which is the main focus of this review. Nonetheless, it is recognised that there is invariably some overlap between aspects of recruitment and retention.

While its main *raison d'être* is its contribution to professional up-skilling and competence, and consequently to the quality and safety of patient care, the availability and nature of CPD/CPE has been cited as a critical factor in job satisfaction. Effective continuing professional education can increase workplace attractiveness, professional satisfaction and retention through enhanced coping, greater opportunities for existing workers to serve as educators and mentors, providing 'time out' for isolated practitioners, and by facilitating association with and support from other health workers and education and training organisations. Maintaining workplace skills is most difficult in isolated circumstances where staff fulfil multiple roles and lack of confidence can increase workplace stress and trigger a desire to leave.

Ongoing education and training has also been identified as important in influencing both intention to take-up practice in rural and remote areas^[4] and retention of professional workers,^[5-9] although the linkage between CPD/CPE and workforce supply remains controversial.^[10] In the United Kingdom, the Department of Health and the Central Council for Nursing Midwifery and Health Visiting argued that CPD/CPE not only enhances quality of care but also contributes to job satisfaction and career development, and thus retention.^[8] A Canadian study found that continued professional development was one of the items of greatest importance in retaining University Nurse Graduates.^[11] A US study of nursing staff in hospitals showed that staff development is vital to nurse retention.^[12, 13] A British study of junior occupational therapists linked both retention and withdrawal to access to continuing professional development opportunities.^[14, 15] Another study noted a high proportion of midwives regarded professional development as an important factor encouraging retention.^[16]

The importance of investing in CPD/CPE for health professionals has been recognised in recent years,^[17] although its effect (as one of many influences) on both turnover and health outcomes has been difficult to ascertain.^[18] Results from a US Bureau of Labor Statistics survey of 1,000 companies with 50 or more employees showed that expenditure on employee education in companies with high turnover was less than half the amount spent by companies with low turnover.^[19] A key assumption has been that better career prospects attained through improved access to CPD/CPE should contribute to enhanced commitment, both to the profession and the organisation providing it.^[17] Gould and Fontenla's study of nurses however found that opportunities for CPD/CPE appeared to be less important in achieving either professional or organisational commitment than flexibility, support from employees, opportunity to work in an interesting area or family friendly policy.^[17] Arnold argues that "effective training, development and appraisal of employees can significantly improve the probability that employees will be successful in their organisational roles and improve retention".^[20] Moreover, employees are less likely to leave if remaining in the organisation will enable them to develop their careers and move up. Newman stated that while there is no easy solution to staffing problems associated with high turnover of physiotherapy staff in National Health Service Trusts in the UK, "increasingly staff are very concerned about continuing professional development and career development opportunities".^[21] Other research shows that 'leavers' were more dissatisfied with the amount of in-service training offered than 'stayers'.^[22]

In the case of rural and remote health, anecdotal 'evidence' on the importance of effective education and training in contributing to professional satisfaction and workplace attractiveness and consequent length of stay abounds. "Tele-education may contribute to attracting and retaining staff in the rural sector, where turnover is a continual problem".^[23] There are also formative evaluations which suggest the positive impact of education and training programs on the retention of rural and remote allied health and nursing professionals.^[24, 25]

This study examines the particular role and contribution of ongoing education and training programs (including continuing professional development) in improving retention of primary health workers in small rural and remote communities.

The key research questions are:

1. *How important is ongoing education and training in relation to other factors in improving retention of (primary health) workers practising in small rural and remote communities and how does education and training contribute to workforce retention?*
2. *In relation to workforce retention, what are the best ways of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities?*
3. *What are the costs and benefits of providing education and training which improve workplace attractiveness that contributes to workforce retention in small rural and remote communities?*

In considering the role and significance of CPD/CPE, how best to provide it, and its costs and benefits, it is important to differentiate between health professions. For some health professionals (such as medical practitioners), participation in CPD/CPE is required to maintain their registered practitioner status, although for many others it is not (yet) mandatory. In addition, in Australia the majority of medical practitioners are employed privately, so the costs of engaging in CPD/CPE are borne by their practice earnings. In contrast, most nurses are employed in the public sector, and their employers are obligated to ensure the provision of ongoing education and training as part of their responsibility to ensure the provision of quality care. Other professions, such as the many allied health workers, fall between both public and private sectors.

The situation for Indigenous health professionals is different again. The National Strategic Framework for Aboriginal and Torres Strait Islander Health recognises the need to improve training, supply, recruitment and retention of health related personnel in both mainstream and Aboriginal Community Controlled Health services.^[26] It suggests a strategy of Commonwealth-State co-ordination across health and education sectors in partnership with training providers and health sector employees. Five action areas are identified and underpin the Northern Territory Aboriginal Health Forum Workforce Implementation Plan.^[27] These include:

- increasing the number of Aboriginal and Torres Strait Islander people in the health sector
- improving the clarity of roles and vocational education
- addressing role and development needs
- improving recruitment, training and retention
- including clear accountability to achieve the previous objectives

A focus on improving the clarity of roles of Aboriginal health workers is required more than it is in mainstream health services where clinical roles are clearly defined. The role definition of health professionals obviously underpins effective CPD/CPE, as any education initiative must address the skills associated with a particular role. However with Aboriginal health workers the role is not clearly defined. Tregenza and Abbott noted that doctors and nurses prioritise the role of the Aboriginal health worker on cultural brokerage, clinical work and health education while the Aboriginal health workers and the community place the focus on community care and community-based activities.^[28] These differing priorities impact on what the health worker does as opposed to what the health worker wants to be doing, but also influence education and training priorities in a similar way. This by extension will affect job satisfaction as well.

This systematic review on the link between education and training, workplace attractiveness and workforce retention in small rural and remote communities is significant for several reasons:

- Across the world, health workers are currently in short supply. Many of the current workforce supply measures have a long lead time and cannot provide sufficient health workers to address the immediate workforce needs
- Focusing on workforce recruitment alone is insufficient. Urgent measures are required to retain existing health workers by slowing the 'separation' rate and attracting back those who have left the health workforce but still currently reside in rural and remote areas
- Anecdotal evidence suggests that rural and remote health workers receive less professional support from service providers at the same time that increasing demands on service delivery have resulted in reduced time available for continuing professional development activity, the combined effect of which is detrimental to the retention of a professionally satisfied, competent and confident workforce

HEALTH WORKFORCE RETENTION IN RURAL AND REMOTE AREAS

More than 3.5 million Australians reside in small rural and remote communities (with populations less than 5,000 residents). Many of these communities are ones in which health status is poorest, disadvantage is concentrated, life opportunities most limited, and access to health services most difficult. In order to provide residents of these geographically dispersed communities with appropriate, accessible primary health care services, the need to recruit and retain competent and confident health workers locally is particularly important. Indeed, the current workforce crisis is recognised to be a significant limiting factor in the ability of health services to meet the needs of all Australians.^[2]

The availability of health workers in rural and remote areas is a function of the initial supply (reflecting the pool of Australian and overseas-trained graduates), recruitment (in terms of the numbers who actually decide to take up rural practice), and retention (in terms of how long the health workers maintain practice within a particular community). Unfortunately the importance of the distinction between recruitment and retention and their different determinants has not been fully appreciated.^[29]

Numerous research studies have examined the factors that impede or facilitate the recruitment of medical practitioners and allied health staff into rural practice. This research has shown that students from a rural origin and those with early exposure to rural and remote practice are more likely to take up rural practice.^[30-32] Based on these findings, recent workforce policies and programs have largely focused on reorienting ways to increase recruitment to rural and remote areas through:

- General Practice Rural and Remote Practice initiatives
- University Department of Rural Health and Rural Clinical School programs designed to increase the selection of rural origin students and increase their exposure through rural placements
- wide-ranging scholarship support (Allied Health Profession Scholarships, Rural Australia Medical Undergraduate Scholarships, John Flynn Scholarships) for students from a rural background to enter the health professions

These programs have a long lead time (especially in the case of medical practitioners), while the immediate need for more rural and remote health workers is urgent.

In contrast to the considerable research on rural health workforce recruitment, significantly fewer studies have been conducted on the factors that contribute to rural health workforce retention, length of stay and levels of turnover. Notable exceptions include studies by Kamien, Hays et al., Humphreys et al., and Lonne and Cheers.^[33-36] In many small rural and remote communities, the 'survival' of some health workers, particularly recent graduates and overseas trained professionals, is undoubtedly less than optimal.^[37, 38] Some reports and anecdotal evidence suggest that measures to retain existing health workers by slowing the 'separation' rate and attracting back some who have left the health workforce but still currently reside in rural and remote areas provide an important opportunity to improve retention and increase workforce numbers.^[37]

DEFINITIONS OF KEY TERMS

Ongoing education and training:

Ongoing education and training, continuing professional education (CPE) and continuing medical education (CME) are encompassed by the term continuing professional development (CPD). CPD refers to the ongoing maintenance, acquisition and development of knowledge, skills and attitudes necessary to enable a health practitioner to maintain up-to-date competencies and to constantly improve as a practising professional. CPD encompasses a wide range of activities, including reading professional journals, in-service or external training, conference participation, participation in Professional Association or College activities, and mentoring or being mentored.

Workforce retention:

The term retention refers to the length of time between commencement and termination of employment. The focus here is with enhancing length of stay through interventions that minimise avoidable turnover by addressing diverse and constantly changing needs.

Primary Health Care Worker:

A Primary Health Care Worker refers to someone who delivers universally accessible first-level services that promote health, prevent disease, and provide diagnostic, curative, rehabilitative, supportive and palliative health services. In this study the term is used generically to cover all workers in scope. Where alternative terms such as 'health workers', 'allied health professionals', 'physicians' or 'nurses' are used in the text, these are the terms used by authors of papers under discussion or where a particular primary care profession is being discussed.

Rural and remote:

In this study rural and remote refers to 'non-metropolitan' or 'regional' centres. The focus is on small rural and remote communities, usually those with fewer than 5,000 inhabitants. In Australia these generally fall within the RRMA¹ categories 4-7 or ARIA² categories defined as 'moderately accessible', 'remote' and 'very remote'. In other countries the distinctions are less clearly defined.

¹ Department of Primary Industries and Department of Human Services and Health. Rural, Remote and Metropolitan Areas Classification. Canberra: AGPS, 1994.

² Department of Health and Aged Care. Measuring remoteness: Accessibility/Remoteness Index of Australia (ARIA). Occasional Papers: New Series No. 14. Canberra: Department of Health and Aged Care, 2001.

WHAT IS WORKFORCE RETENTION AND HOW IS IT MEASURED?

Workforce retention has been variably defined as an arbitrary number of years of service,^[39, 40] as an indefinite or unknown length of stay,^[41] as staying for a fixed period associated with indenture,^[42, 43] or as staying for as long or longer than the practitioner intended.^[35, 36] Retention does not imply indefinite practice in one location, but refers to some minimum length of stay within a particular position, organisation, community or profession. Exactly what constitutes this 'minimum' is unclear, and likely to vary according to whether it is defined by the practitioner, community or health authority and depending on the location and characteristics of the community which affect the ease with which the practitioner can be replaced. Retention thus implies some notion of adequacy or sufficiency of length of service, possibly measured in terms of a return on the investment costs associated with training and recruitment or the effects on patient care that is considered to be optimal.

Some insight into *de facto* minimum sufficient lengths of service is gained from three Australian Government programs designed to address medical workforce shortages in rural and remote workforce areas. These suggest what governments consider to be reasonable lengths of service in relation to return on investment. For example, retention grants are paid to doctors under the Rural Retention Program.^[44] These grants reward service of individual doctors progressively according to their length of service in a location, the remoteness of the area they are practising in and the level of services they provide. Minimum qualifying periods of service vary from one year in the most remote communities experiencing the most difficulties in retaining doctors, to six years in areas of relatively less difficulty, with a maximum payment of \$25 000 a year. Secondly, International Medical Graduates (IMGs) seeking permanent residency can be employed with conditional registration in 'areas of need' under 'the 5 year program'. Under this program doctors are required to work for a period of 3–5 years (length of service determined by community category) in designated rural and remote communities, during which time they are expected to pass the Australian Medical Council (AMC) examination or achieve a Fellowship from the Royal Australian College of General Practitioners (RACGP) or Australian College of Rural and Remote Medicine (ACRRM). They may then be granted access to an unrestricted Medicare Provider Number that allows them to practice anywhere in Australia. Thirdly, Medical Rural Bonded Scholarships provide \$22,744 (indexed annually) a year to medical students who agree to practise in rural areas for six continuous years upon completion of basic medical and postgraduate training as a specialist. There are also Bonded Medical Places, which are additional places in medical schools which bond students to 'areas of need' (both rural and outer metropolitan) with no scholarship.

Setting workforce retention 'benchmarks' is difficult in the absence of readily available representative data for different professional groups working in different geographical circumstances. Rural Workforce Agencies routinely collect some minimum data on the medical workforce (see <http://www.arrwag.com.au/site/index.cfm?display=25615>). However, most organisations can only provide indicative data relating to vacancies or length of stay associated with 'leavers' at best. A recent study of Western Australia's procedural medical workforce showed that while the overall turnover rate for doctors over the past three years was relatively constant around 14.0-15.5%, it was much higher for proceduralists and varied significantly between regions, with the remote Kimberley and Pilbara regions exhibiting much higher rates (37% and 28% respectively) than the southern region average of 6%.^[45] An alternative approach to benchmarking minimum retention periods for health professionals is to calculate the turnover costs (see Appendix 6) compared with the benefit of retaining an employee for one year, two years, and so on.

Waldman makes the very important distinction between retention (a continuous measure tracking each individual person from hiring to termination which remains unaffected by recruitment) and turnover (the number of terminations in a set time period divided by the number of active workers in the same category).^[46]

Operationally, employee retention reflects the time between engagement to a practice or community and separation or departure from that practice or community. Thus, it can be seen as a measure of length of service (stay) (commonly measured as a *survival* rate). Retention indicates who is leaving (not simply how many) and who is staying (not simply how many) and for how long.

On the other hand, avoidable employee turnover refers to the actual movement (not related to death, retirement, dismissal, physical disability, promotion or demotion) of workers from one job or organisation to another. Measures of turnover (commonly *separation* rates) thus reflect the degree of movement of individuals coming into or leaving a practice or community.^[47, 48] Usually, the workforce goal is to minimise avoidable workforce turnover.

The distinction between retention and turnover is important because we need to measure what we want (retention) instead of what we don't want (turnover). Waldman argues that retention should be the focus because what the health service wants is improvement through learning (an experienced employee is more valuable than a newly-hired one), retention signals to the workforce that each employee is a valued individual rather than an interchangeable commodity lumped in groups, the resultant quality of care is better due to fewer errors, and long-term employees minimise the cost of reduced productivity. Low retention indicates that not many people are staying long enough to achieve job mastery.^[46]

Because retention is hard to measure and must be tracked over long periods of time, most of the literature has focused on workforce turnover. Turnover rates and associated costs vary widely across professions, organisations and workplace locations. In non-health occupations, for example, annual turnover in traditional food services ranges from 50 percent to 200 percent, and as high as 250 percent in supermarket service^[49], while 29% of first-time teachers changed schools (15%) or left teaching altogether (14%).^[50] In contrast a very large proportion of academic librarians stay within their institutions for their entire career.^[51]

Turnover rates in health professions were almost as variable. For example, in his study of community mental-health residential services, Ben-Dror found a 50% voluntary turnover and 72% separation rate a year.^[52] Gage found an occupational therapy turnover rate of 32.6% in Canada, while Rugg reported a 16% turnover rate among British occupational therapists.^[14, 15, 53] Heard noted unacceptably high turnover of home care aides of 75%.^[54] The average turnover rate in US dental offices was noted by Halmaghi to be 48%.^[55] In one health care organisation Gering and Conner noted that turnover rates averaged 30%, with 20% of departing employees having a tenure of 90 days and 70% six months or less.^[56]

Nurse turnover rates vary between 20-25%^[9, 57, 58], though others suggest between 35% and 60% of new nurses change jobs in their first years.^[59] McCarthy et al. noted a mean turnover rate of 12% in nursing and midwifery in Ireland, with considerable variation across services.^[60] Other studies confirm the variation in turnover rates for nurses - 46% in the Nursing Department in a Wyoming Hospital^[61]; 60-80 per cent in either assisted care or skilled nursing settings^[62]; and 60%-200% in acute care hospitals.^[63]

The operational definition of retention will determine the patterns of communities or geographical areas where retention levels are highest or alternatively where health worker turnover is greatest. Recognising the diversity of rural and remote regions, the optimal length of service within communities may vary. However, adopting an agreed measure of retention will at least enable comparisons across similar types of rural and remote communities, thereby highlighting areas that have difficulty in retaining health workers for an optimal period of time.

THE IMPORTANCE OF WORKFORCE RETENTION

Although estimates vary, what has long been recognised is that the avoidable loss of employees is expensive. Dutschke notes that according to the US Department of Labor, company costs for replacing an employee equal one-third of a new hire's annual salary!^[64] Leibowitz et al. estimated that even twenty years ago it cost \$6,000 to hire a new employee in the United States, and as many as 50 to 60 percent of all new hires left their jobs within the first seven months.^[65] Edel and Alpers state that "nursing turnover costs (in the US) can be as much as \$50,000 per RN",^[66] while an earlier study estimated the replacement cost for a single RN in US at \$2,500-\$3,000 in 1981.^[63] Atencio et al. noted that nurse turnover cost up to two times a nurse's salary.^[57] More recently, the American Management association estimated the costs of replacing an employee at 30% of his or her salary.^[67] Scott noted that Penn State Geisinger Health System estimated that replacing one primary care physician can result in \$20,000-\$26,000 in recruitment costs, loss of \$300,000-\$400,000 in annual gross billings, loss of \$300,000-\$500,000 in inpatient revenue, plus additional loss of speciality referral revenue!^[68]

Ben-Dror highlights the implications of high turnover of mental health workers - the disruption of performance, high recruitment costs incurred, and psychological costs for other members of the leaver's team.^[52] In this case worker longevity is important because it takes time for the worker and client to build enough trust to interact successfully, and high turnover may affect the organisations' ability to fulfil its program goals. Fang stated that nurse turnover has become a serious challenge to the efficiency and effectiveness of any health-care delivery system.^[69] The retention of older health workers is important too because of the valuable intellectual capital they provide to the organisation.^[70]

"Voluntary turnover incurs significant costs, both in terms of direct costs (replacement, recruitment and selection, temporary staff, management time) and also (perhaps more significantly) in terms of indirect costs (morale, pressure on remaining staff, costs of learning, product/service quality, organisational memory) and the loss of social capital".^[71] In contrast, improving employee retention should result in improved patient care as managers have a more experienced group of health care workers who can do their jobs with less direct supervision, and high job satisfaction that results in higher productivity and service quality with lower costs.^[20]

Unreasonably high turnover of health staff results in a significant loss of resources for small rural and remote communities. Excessive turnover of rural and remote health workers results in the loss of significant skills, expertise, knowledge and understanding of rural and remote issues. In recognition of the importance of retaining GPs in rural and remote practice, the Commonwealth government introduced retention grants to reward and retain longstanding practitioners in rural and remote communities.^[72] A recent evaluation of the effectiveness of such measures in retaining doctors in these communities concluded that the Rural Retention Program has been helping to retain GPs in rural and remote areas.^[44]

WHAT FACTORS ARE RESPONSIBLE FOR WORKFORCE RETENTION IN RURAL AND REMOTE COMMUNITIES?

It is important to understand the determinants of workforce retention and turnover so as to define and assess which aspects lie within the control of organisation management.^[34] While acknowledging that issues of recruitment and retention overlap, the extent to which factors that contribute to retention are independent of those influencing initial recruitment to rural and remote practice remains unclear. Health workforce recruitment studies have highlighted the importance of student background, aspirations and interest in rural practice, needs of spouses and partners, the extent to which the training program has a rural mission, rural mentoring and support systems for students and rural educational experiences as the best predictors for taking up rural practice.^[29, 40, 73-79]

While some of these background variables (such as rural background and interest in rural practice) continue to influence practitioner satisfaction in rural practice, other research has found that practice issues such as income and workload were far more significant predictors of practitioner retention in rural areas.^[77] In his research on physicians, Cutchin concluded that: "The decision to locate in a rural practice setting occurs largely from outside that setting. The decision to remain takes place from within the practice setting and arises from the stream of experience there".^[80]

In seeking to improve workforce retention, it is important to distinguish between modifiable and non-modifiable factors. While there are clear limits to the likely effects of policy and program interventions on those factors considered least modifiable (such as worker origin and workplace location), studies suggest there is considerable scope to influence many other factors which serve either as triggers to leave or motivation to increase length of stay.^[81] These factors can be broadly classified under three headings (see Figure 1):

- Professional issues relate largely to the nature of the job itself, vocational satisfaction, support, remuneration, procedural opportunities, physical conditions, high workloads and on-call ratios, and lack of locum relief for time away.^[82] Kamien's ten-year study in Western Australia showed that professional satisfaction (associated with the variety of work, autonomy of practice, and a feeling of doing an important job) was the main reason for doctors staying in rural practice, a finding that corroborated the findings of the Queensland study by Hays et al.^[33, 35] Conversely, professionally dissatisfied rural doctors needed to negotiate professional difficulties if they were going to stay, including problems with obtaining locum relief, the pressure and constancy of after-hours work, access to continuing medical education, and bureaucratic requirements
- Social factors relate to personal and family characteristics that contribute to leaving. These factors included difficulties of coping with change, perceived problems with secondary education for children, lack of occupational opportunities for spouses, remoteness from family, poor housing, personality clashes with colleagues, jealousy by other community members of the doctor's income, and lack of time to spend with the family^[82, 83]
- External factors refer to the many political, economic and social forces of change that often precipitate geographical relocation of employment. Examples include policy changes impacting upon existing practice funding arrangements or levels of professional remuneration (such as changes in medical indemnity or clinical privileging rights), major changes impacting upon the immediate community (such as drought and the impacts of economic restructuring or downturn on the economic base of the town), and changes to the provision of health, education and other community services that result from policies of service rationalisation or centralisation. Community facilities, support and relationships are important influences on the extent to which rural doctors' needs are satisfied. For example, Kamien found that social and personal satisfaction with rural lifestyle was a significant reason for staying, while Hays et al. found that doctors reported that rural communities provided a good environment for their young-to-mid primary school children^[33, 35]

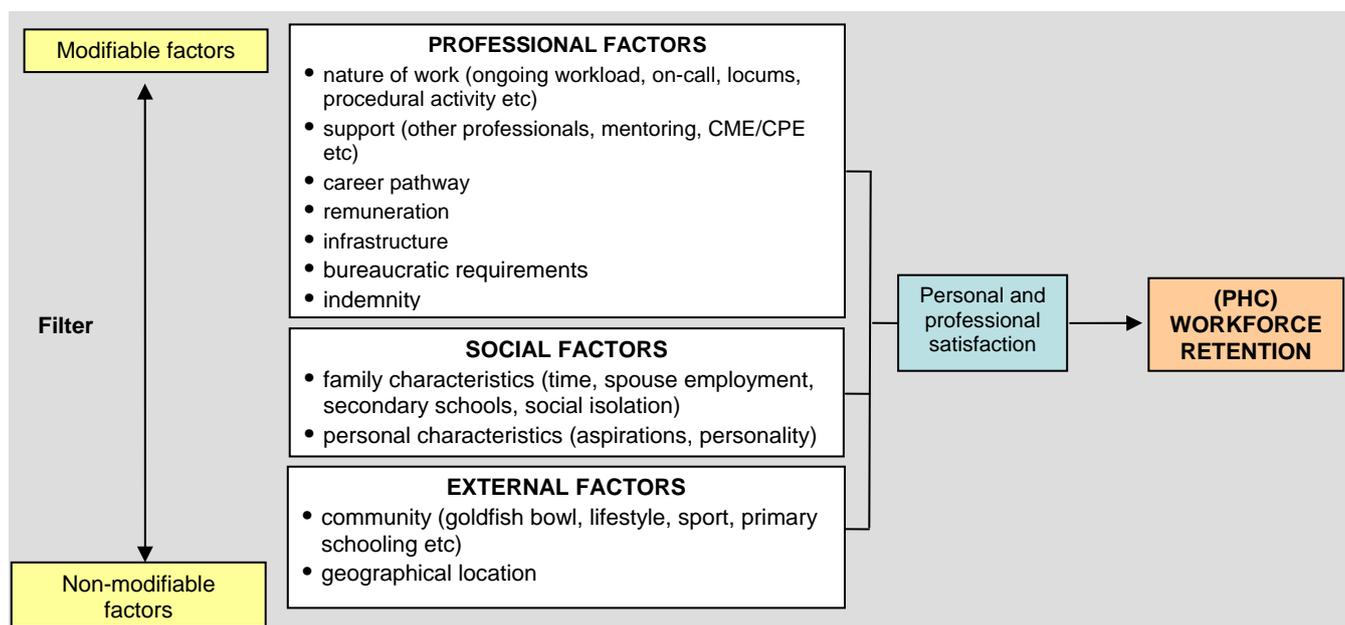
Mills and Millsteed's study of occupational therapists concluded that "retention measures must be wide-ranging as retention is fostered by a combination of satisfaction in both professional and personal realms".^[84] They suggest that the low retention of health professionals is a function of the imbalance between incentives to leave and incentives to stay (Table 1).

Table 1: Incentives to leave/remain

	Incentives to leave	Incentives to remain
Professional factors	Lack of professional development Little professional support or recognition Pay and conditions	Development of professional skills Autonomy and independence Good working relationships
Personal factors	Family-related factors Homesickness	Friendships Lifestyle

Workforce turnover research suggests that employment relocation reflects a process of differential transit within both the life- and career cycles of individuals.^[48] In the field of health, turnover is largely an individual choice behaviour. So long as health workers experience professional and personal satisfaction with rural and remote practice they are likely to remain in their existing location. Over time, however, personal and professional needs may change, as do the practice and community circumstances, such that there may be an increase in the employee level of dissatisfaction with their present location. In such situations, the health worker balances influences to stay against influences to move. Where a significant mismatch exists, the health worker considers options for addressing problems of dissatisfaction associated with continuing to practise at the existing location. Where there is a general desire to remain in their community, the health workers may adjust their needs and aspirations in order to remain *in situ*. In this situation, retention is maximised. In contrast, where adjustment is not possible *in situ*, the health worker may decide to relocate to another community.

Figure 1 Factors contributing to decision to leave or stay in rural practice



METHODS

The research team adopted an approach that was as inclusive as possible in capturing published literature and evidence that would be *relevant* and *useful* to informing the questions in focus. Such an approach accorded with that adopted in practice by some organisations that have examined tested business models (regardless of their profession) to assist in developing sustainable strategies to promote workforce retention.^[85] The particular methodological approach is modelled on the meta-narrative review process developed by Greenhalgh et al., as detailed in Appendix 1.^[86] What follows is a summary of the systematic review methodology pursued by the research team within the funding and temporal constraints set within the contract.

REFERENCE GROUP

An eleven-member Reference Group was convened to advise on the focus and scope of the study, to assist with the conceptualisation of the role of continuing professional education/development in workforce retention, to assist with the identification of relevant source material (particularly 'grey' literature) and to advise on the policy drivers and the ways in which study findings can be most useful for policy advisers.

The Reference Group was not intended to be representative of stakeholders. Rather it comprised experts in rural and remote health issues, service provision, health economics, medical education, health consumer issues and health policy with a broad range of relevant experience, particularly with policy development and implementation. While several members of the Reference Group did hold senior positions with peak organisations whose membership comprised relevant stakeholders, it was their expertise that was sought for this research. The research team had worked with many of the Reference Group members previously and had established good rapport and a strong working relationship.

The Terms of Reference and membership of the Reference Group are listed in Appendix 2. The nine Australian members met at two face-to-face meetings in Canberra, while the two Canadian experts participated through separate teleconferences and/or e-mail correspondence.

FORMULATION OF THE RESEARCH QUESTIONS

The research questions were developed and refined iteratively by the research team with input from the reference group. The evolution of the questions is shown in Table 2.

SEARCH TERMS

The primary searches used terms relating to *workforce retention* (T1) and to *ongoing education and training* (T2). Terms were also used for *rural or remote* (T3 and T4) for *primary health care worker* (T5) and for *costs and benefits* (T6). Appendix 3 contains the complete list of search terms used for the black literature searches relating to the research questions. Aliases were used for each search term according to the MeSH terms and thesaurus suggestions available for the different databases used in the searches.

The original strategy proposed that T1+T2 be the first search on each database, with T3 being added (ANDed) if the number of 'hits' exceeded about 200. This would allow identification of non-rural evidence of the primary effect (ongoing education and training on retention) in the absence of a large amount of evidence for the effect in general. In practice, the addition of the 'rural' term led to so few hits that it was decided to terminate all searches after the T1 AND T2 step. This decision meant that a great deal of evidence from non-rural settings was included in the T1 AND T2 citations, some of which may have relevance to the rural setting, and much of which provided valuable information on the context of the research. Final selection for 'rural' (T4) and 'primary health care' (T5) relevance was then done by manual application of the terms by the researchers.

DATABASES

Databases for searching were selected by the researchers based on prior experience, advice from the Liaison Librarian at Flinders University and an inspection of information about the content and scope of each database for potential relevance. The inclusion of non-health databases allowed consideration of material on workforce retention and ongoing education from other sectors such as primary and secondary education. The databases searched and the number of hits are listed in Table 3. There were 4013 hits for the T1 AND T2 searches, including multiple hits.

Recognising that “systematic review of complex evidence cannot rely solely on predefined, protocol driven search strategies”, the research team also sought evidence from outside the electronic bibliographic databases.^[87]

Context material was sourced through literature known to the research team as well as through the literature search. Additional ‘grey’ literature was identified for the review in a number of ways:

- *serendipity - works located while sourcing other material*
- *search engine keyword searches*
- *works already known to the researchers*
- *bibliographic searches of selected review articles*
- *website searches of government organisations, research establishments (APHCRI, PHCRIS), workforce industry, and government funded projects (RHSET, GPEP)*
- *‘grey’ literature sites (New York Academy of Medicine’s Grey Literature Collection, Grey Literature in Education (GRIDOC))*
- *reference group/organisational recommendations*

A total of 20 items of grey literature were retrieved.

INCLUSION-EXCLUSION CRITERIA

The inclusion-exclusion criteria were developed by the researchers with input from the reference group, and refined in an iterative process once the searches had commenced. The final version of the inclusion/exclusion criteria is shown in Appendix 4.

The ‘hits’ were reviewed with respect to both the selection criteria and project feasibility. In order to ensure the project was manageable within the contractual constraints, the following ‘filters’ were applied to the 3881 ‘unique’ T1+T2 hits obtained:

- Exclude non-health sector except to inform context
- Exclude ‘opinion’ articles (that is, no evidence was presented or content was largely unsubstantiated assertion)
- Exclude secondary and tertiary health care (that is, must approximate primary health care)

DATA COLLECTION

A total of 3881 unique citations were reviewed by two researchers (see Figure 2). Where the researchers did not agree, a decision on inclusion was made by a third researcher. In the first instance, exclusion decisions were made on the basis of the Abstract or, where there was no Abstract, on the Title alone. Where there was insufficient specific information but the item appeared to be relevant to the research question, the item was retrieved. This process left 278 articles that were initially retrieved. Once the full article was available for reading it was apparent in a significant number of cases that the inclusion criteria were not met, so these papers were also excluded, leaving a total of only 21 articles from the 'black' literature.

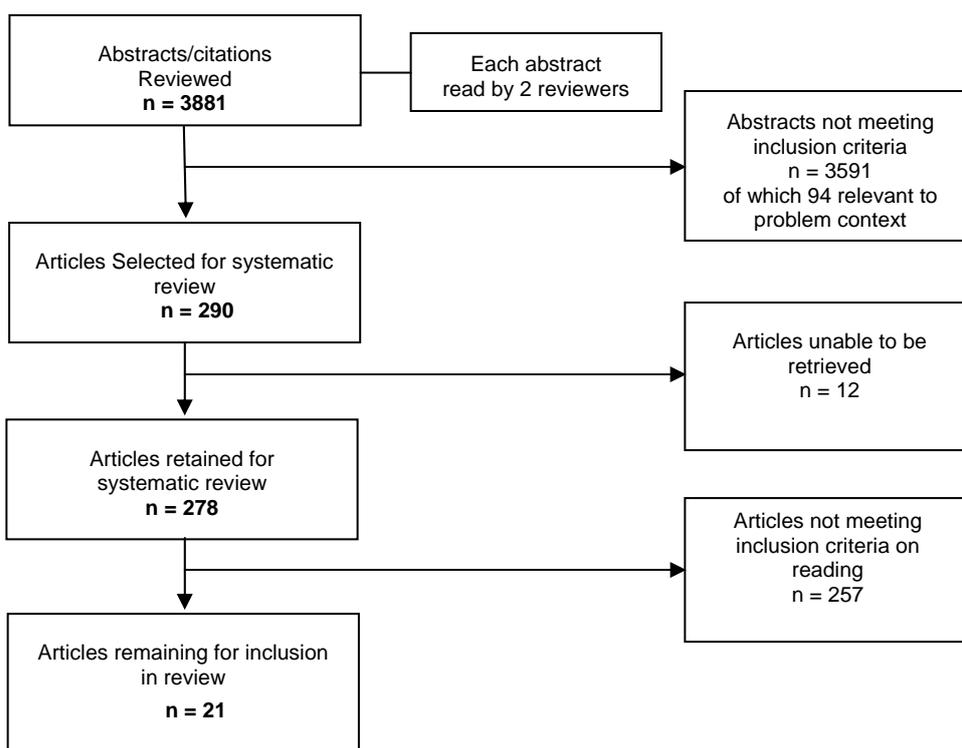
Table 2: Evolution of Research Questions

Original Question	Revision following Reference Group Meeting (29/11/2006)	Subsequent Revision Meeting (19/12/2006)	Revision at Meeting on (6/2/2007)
<p>Q1. Does education and training (including continuing professional development) contribute to workplace attractiveness and worker integration, and thereby improve retention of primary health care workers (including managers) in small rural and remote communities, and how?</p> <p><i>Rationale for change:</i></p>	<p>How important is ongoing education and training in relation to other factors in improving retention of (primary health) workers practising in small rural and remote communities?</p> <p><i>Addresses policy advisers concerns with the importance of continuing education/training relative to other retention factors.</i></p>	<p>How important is ongoing education and training in relation to other factors in improving retention of (primary health) workers practising in small rural and remote communities and how does education and training contribute to workforce retention?</p> <p><i>Allows consideration of how education and training contribute to retention.</i></p>	<p>No changes.</p>
<p>Q2. What is the best way of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities?</p> <p><i>Rationale for change to Q2.</i></p>	<p>'What are the optimal ways of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities?'</p> <p><i>Recognises there may be more than one way and that the choice of the 'best' way may differ in different circumstances.</i></p>	<p>What are the preferred ways of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities to optimise workforce retention (ie to minimise avoidable workforce turnover)?</p> <p><i>Allows consideration of preferences of different parties such as health services and health workers. Maintains focus on feasible workplace interventions.</i></p>	<p>In relation to workforce retention, what are the best ways of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities?</p> <p><i>Ambiguity around the meaning of 'preferred' and recognition of the need to identify the best ways of delivering education and training in relation to workforce retention.</i></p>
<p>Q3. What are the costs and benefits of providing education and training which improve workplace attractiveness that contributes to workforce retention in small rural and remote communities?</p>	<p>No changes.</p>	<p>No changes.</p>	<p>No changes.</p>

Table 3: Hits for T1 and T2 searches – main sources

Database	No. Hits
MEDLINE	1574
CINAHL	766
OT Database	289
Emerald	265
ProQuest	247
ALL OTHER (21 sources)	872

Figure 2 Systematic review tree



DATA EXTRACTION

The 21 papers derived from the systematic review process that met all inclusion-exclusion criteria consisted of empirical research studies shown in Table 4. A data extraction form was developed and piloted on a sample of ten papers (see Appendix 5). Qualifying papers were read independently by at least two reviewers, with each completing the data extraction form.

RESULTS

EVIDENCE BASE

In addition to the 21 'black' papers sourced through the systematic searches of the databases, an additional five 'black' publications^[35, 88-91] were added from hand searches of Tables of Contents of relevant journals (such as the *Australian Journal of Rural Health* and *Rural and Remote Health*), and from relevant material known to the researchers. All these papers addressed or explored some relationship between CPD/CPE and retention, and were specifically in a rural or remote health setting. Because two papers concerned the same study, and were almost identical,^[84, 92] one paper was removed.^[92] The remaining twenty-five papers shown in Table 4, together with relevant material from the 'grey' literature, form the evidence-base presented for this study.

FINDINGS FROM THE LITERATURE

A notable finding of this systematic review is the very small number of articles that met the search criteria, suggesting that there exists only a limited evidence base on which to ascertain the importance of education and training on workforce retention. Nonetheless, findings on the relationship of ongoing education and training to workforce retention are consistent across the available material.

Retention measures used in rural workforce retention studies: Several indicators of retention were used in the eligible studies noted in Table 4. Most of the evidence is based on non-intervention studies examining the self-reported importance of various factors on intended or actual behaviour. No rural-based studies used 'before-and-after' designs controlling for any effect of ongoing educational or training intervention on actual turnover or length of stay. Indicators of retention include measures of actual turnover, implied turnover as in studies of 'leavers', and stated intention to leave/intention to stay which, according to Mobley et al. is the immediate precursor of turnover.^[93] For example, Pathman et al. identified that 33% of rural doctors predicted they would leave their practice in five years, and 36% did.^[94] Other studies used job satisfaction measures as a proxy for retention, although Mobley et al. showed that intentions made a stronger contribution to turnover behaviour than did satisfaction and demographic variables.^[93] Several studies comprised surveys asking 'stayers' or rural workers about reasons to stay or leave, or challenges of rural placement, while three studies comprised focus groups, interviews or surveys of expert opinions as to what retention strategies would work or were in use by employers.

Location of rural workforce retention studies: Twelve of the studies were set in Australia, ten in the United States, two in Canada, and one in South Africa.

Professions involved in rural workforce retention studies: Nine of the studies concerned nurses, five concerned physicians, one concerned physician assistants, seven concerned allied health professionals, two were multidisciplinary and one concerned school-based intervention workers. The papers relating to the Indigenous workforce which met the inclusion criteria were sourced from the grey literature.

The importance of ongoing education and training to retention of primary health workers practising in small rural and remote communities

Six studies looked at the importance of CPD/CPE to retention in relative isolation from other factors. Three studies attempted to demonstrate an intervention effect, and the results were mixed. One found no significant relationship between perceptions of supervision or of continuing education and anticipated job retention in mental health workers, although these were found to be predictors of job satisfaction;^[95] one found that a nurse leadership program was successful in improving anticipated retention although travel difficulties resulted in a high

drop-out rate of rural nurses;^[96] and another study of a new graduate nurse orientation program found CPD/CPE successful in increasing retention.^[97]

A fourth study found that an interdisciplinary educational program for rural mental health workers improved their measured job satisfaction, though the link with turnover was not measured.^[98]

White et al. found that 80% of rural doctors attending CME activities reported access to CME was positively related to the likelihood of their remaining in rural practice.^[91] However, this study measured stated intentions rather than actual behaviour, and it should be noted that doctors must meet mandated CME requirements in order to maintain professional standing. In contrast, a study of allied health workers in rural southwest Victoria found no significant relationship between intention to stay and amount of CPD provided.^[89]

The importance of ongoing education and training relative to other factors impacting on retention of primary health workers practising in small rural and remote communities

Most of the evidence assessing the relative importance of CPD/CPE with respect to other retention factors comprises non-intervention studies based on self reporting the perceived importance of various factors on intended or actual behaviour.

Rural doctors: All studies involving rural doctors found that other factors ranked more highly than access to CPD/CPE in decisions to remain in or leave rural practice. In a landmark Australian study, Kamien found professional issues such as lack of locum relief and lack of professional support were the most important issues affecting decisions by the Australian doctors to leave, with family and social issues also important.^[35] Humphreys et al. found that the importance of professional support (CPD) was far less significant than on-call arrangements in doctor's decisions to remain in rural practice, and that its importance varied according to age, gender and length of time in rural practice.^[34] A study of doctors in rural Nova Scotia also found that thirteen professional, social, family and community issues were rated as more important than access to CME in influencing recruitment and retention decisions,^[99] while a South African study showed continuing education was less important than infrastructure and financial issues in relation to what would retain doctors.^[100]

Physician Assistants: The study of eight physician assistants (PAs) working less than eight hours a week with their supervising physician found that confidence in their ability to provide adequate health care, desire for small-town life, and community involvement to be major factors contributing to their retention in small rural communities without doctors.^[88]

Rural nurses: Seven studies examined retention factors in relation to rural nurses. One Australian study found that the five most important factors associated with workforce retention were, in order, country lifestyle, employers' recognition of the importance of CPE, nursing colleagues easy to get on with, job satisfaction, and good place to raise children.^[101] One study found that differences in intention to leave a nursing position varied with level of educational attainment, hours worked per week, gender, practice role and practice activity, and that those currently enrolled in an educational program were less likely to intend to leave than those not enrolled in any program.^[102] Another study found that, compared with provision of continuing education, career ladders and a range of financial incentives and support benefits, support for CPD/CPE through tuition reimbursement was the only incentive related to increased job satisfaction of rural nurses.^[103] Experts in nursing recruitment and retention in New York State identified barriers to continuing education along with workload and scheduling issues, lack of empowerment, use of agency nurses and salaries as the major challenges to workforce retention.^[104] An Australian study of remote area nurses managed from a distance found that nurses would feel better supported and may remain longer in remote practice if their managers and employing organisations recruited appropriate people for the community, provided cultural orientation, provided structure to build capacity for local Indigenous staff, supported equity with

other professionals in terms of provision of incentives, assisted them to attend CPD activities by ensuring relief staff were available, and improved infrastructure, particularly internet access.^[90]

A study of retention of rural hospital nurses identified self and professional development, monetary needs, internal management, and staffing and scheduling as the four major retention strategies, concluding that “hospitals could expect significant benefits from making relatively small investments in professional development and self development programs for nurses”.^[105]

Rural allied health workers: Eight studies looked at retention factors for allied health workers. Lack of access to CPD/CPE was identified as the major disincentive to rural practice by rural dietitians;^[106] as a useful part of employer-provided retention support mechanisms for social workers;^[36] as the third most significant of 22 factors impacting on retention of a range of health professionals;^[107] as the most frequently mentioned incentive to stay sought by oral health workers;^[108] as one of the top ten factors which allied health workers liked least about rural practice and a potential trigger for leaving;^[37] as a significant factor in the decision to leave rural practice by occupational therapists;^[84] as the most reported source of dissatisfaction and eighth most reported source of satisfaction for physiotherapists and occupational therapists;^[109] and as being of major importance in improving skills and quality of service, but not to retention, for social workers.^[110]

Indigenous health workers: Indigenous health workers have particular needs. The role of education and training in relation to the retention of Aboriginal primary health care workers is a major issue in remote health settings. An important underlying consideration is its availability and whether it is carried out in an appropriate way. Education and training are important both at the undergraduate level as well as after graduation.^[111] Sibthorpe et al. show that the short tenure and low numbers of Indigenous workers with degrees suggest “a huge need to enhance indigenous participation in health workforce training, and to develop strategies for certification and recognition of the wide range of non-course-based training being undertaken”.^[112] Moreover, Hecker noted that while “Aboriginal health workers should play a key role in running the health service” they have had little opportunity to do so because of low rates of literacy and numeracy, and standard of training.^[113] Hill et al. noted that while many Aboriginal health workers responded to a difficult work context by resigning, some senior Indigenous managers formulated a range of complex strategies (tactical offensive, oppositional tactics, tactical alliances and tactical withdrawal) in order to cope, or perhaps take advantage of working at the difficult interface between two cultures.^[114]

Factors contributing to job dissatisfaction among Indigenous health workers include high demands and community expectations of the position; high clinical load preventing community focused health promotion activity; problematic working relationships (particularly with nurses); and poor and inequitable working conditions including a lack of equivalence of Aboriginal health workers *vis-à-vis* the rest of the health team and outside providers. Tregenza and Abbott recommend specifically that Aboriginal health worker education programs be reoriented to meet the needs associated with their roles as specified in their job descriptions.^[28] While continuing professional education and training was perceived by Aboriginal health workers as a high priority, deficient on-the-job training and a failure to support continuing education programs contributed to job dissatisfaction. According to Franks and Curr, low morale, confused authority lines, cross cultural misunderstanding, lack of recognition of the vibrancy of traditional Aboriginal culture and its contribution to providing effective health care delivery all contribute to high attrition from the system.^[115] The major barriers to retention identified by Indigenous health managers included widespread institutionalised racism and racist attitudes of non-Indigenous staff, lack of mentoring and support, and salary inequity compared with non-Indigenous staff.^[116, 117] Angus concluded that Indigenous managers are not being recruited to middle and top level positions because of structural and institutional barriers (the ‘glass ceiling’ effect) which prevent the advancement of suitably qualified people.^[116]

Collectively these studies of primary health workers present a mixed picture of what is important in assisting health professionals working in rural and remote communities in Australia to remain in place or reducing the likelihood of leaving. Professional, social/family and the

external/environmental factors are all important for workforce retention, and their importance varies with the ways these interact according to local circumstances and professions.

While CPD/CPE activities are identified as important to retention, they are usually not the most important factor. Moreover, the importance attributed to CPD/CPE varies with gender, age or stage in the life-cycle, years of experience in rural practice or profession, and other professional elements such as career pathways, mentoring, adequate orientation and peer support.^[34, 84, 107-109] A clear conclusion is that a comprehensive retention 'package' is important and each element of it must be addressed.^[84]

Other evidence from studies of CPD/CPE and the retention of non-rural health workers

The findings noted above are consistent with evidence that emerged from a number of 'non-rural' studies that were identified during the systematic review. As with rural studies, few 'non-rural' studies comprised experimental or quasi-experimental designs. One literature review on recruiting and retaining nurses in primary care found only four papers reporting systematic methods of evaluation, all concerning small-scale initiatives with small numbers and none reporting on evidence of impact, comparing different approaches or providing an economic evaluation.^[118]

Although several 'non-rural' studies found CPD/CPE to be important in the context of a whole retention package, most presented limited evidence of any direct effect of ongoing education and training on workforce retention. For example, a systematic review of the evidence of the value of CPD in the retention of occupational therapists working in mental health concluded that the evidence "is neither strong nor conclusive".^[119] Other studies noted that, in addition to a supportive workplace and adequate compensation and benefits, the presence or absence of continuing education and professional development opportunities are important predictors of turnover for nurses,^[11, 120] occupational therapists and physiotherapists,^[121] midwives^[16] and for mental health workers.^[8, 122]

Many of the 'non-rural' studies focused on nurse retention, in particular orientation or induction programs in hospital settings.^[123-125] Orientation and induction programs were found to improve nurse retention in the immediate post recruitment period, especially those including mentors and preceptors,^[126] although the beneficial effects of a good orientation program can be rapidly undermined by nurses' subsequent experiences in the workplace.^[127]

Findings varied in other studies of aspects of CPD/CPE. One control study of employees of an inpatient psychiatric unit found significant reduction in turnover following communication skills training.^[128] In contrast, a US study of child protective service caseworkers found that a special training program designed to address high turnover did not significantly reduce it,^[129] while a study of hospital nurses found no significant relationship between the perception of educational opportunities and the intent to remain.^[13]

Two other considerations relating to workforce retention emerged in the 'non-rural' literature that did not emerge in the specifically 'rural' studies. Jones noted that turnover can be beneficial to some organisations seeking the opportunity to lower salary costs by replacing more experienced, higher salaried practitioners with less experienced, lower salaried ones, and refreshing an organisation or unit with new approaches or views.^[130] Some other papers suggested that support for CPD/CPE may be detrimental to an organisation by making employees more attractive to alternative employers.^[18, 131, 132] Suggested solutions included ensuring that in-service training be favoured over external CPD/CPE as this would provide less portable skills and credentialing, attaching conditions to funding support and promoting those who attain additional qualifications.

The preferred ways of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities to optimise workforce retention

An important consideration to the role and contribution of CPD/CPE to improving workforce retention in rural and remote communities is the modality of its provision (see Table 5). Unfortunately, few published studies are available.

Two key findings emerge from the available evidence. First, face-to-face interaction is valued more than internet-based education.^[99] Opportunities for face-to-face interaction facilitate the formation of supportive networks.^[89, 133, 134] Although other distance education methods could be used for some of the material, face-to-face workshops were seen as essential for teaching certain skills, particularly where 'hands-on' teaching and learning were required. This method was found to be particularly suited to "experienced health and welfare professionals, who, by sharing their collective experiences of rural remote practice, provide a rich medium for individual and group learning growth".^[133]

Secondly, rural and remote health workers generally prefer opportunities to have CPD/CPE offered locally or regionally. Where travel is required, a commitment by employers to support travel, accommodation and work rostering to enable attendance were seen as important by participants. Doctors required locum support to attend distant CME events.^[134]

A recent study of internet use by nine different health professions working in rural Australia found that despite the availability of web-based information and support, its use was problematic for several reasons.^[135] First, internet-based professional development activities did not provide the quarantined time for study outside of the workplace due to interruptions from daily duties. Secondly, many professionals did not have access to the internet at work or home, either due to lack of a personal computer, restricted internet access or because outdated infrastructure did not provide adequate download speeds. Thirdly, unreliable connectivity because of local conditions was a problem.

Table 4: Articles obtained from systematic review

Author, Year, Setting	Aim	Participants and methodology	Findings of relevance to systematic review	Limitations
Studies where actual or implied turnover is indicated				
Kamien, 1998 ^[35] Rural Western Australia	A ten-year follow-up study of a sample of rural doctors who indicated their intentions to stay in or leave rural practice in 1986.	91 respondents in 1996 of the original 101 doctors (1986). Postal questionnaire survey and semi-structured interview.	49% (22/45) of doctors intending to leave had stayed; 24% (11/46) intending to stay had left. Main concerns - overwork, lack of relief and professional contact, specialist backup in emergencies, downsizing of hospitals, CME and income. Stayers solved most professional problems, whereas leavers were unable to.	Numbers too small for statistical analysis
Lonne and Cheers, 2004 ^[36] Rural/remote Australia	To investigate factors affecting the recruitment and retention of rural social workers and strategies to redress high turnover.	Two year longitudinal study recently appointed rural social workers N=194. - mailed questionnaire soon after recruitment- and on departure or after 2 years. Regression analysis	Employer-related factors (33.3%) strongly associated with premature departure. Community and personal factors influence retention. Higher levels of employer-provided CPD did not enhance retention.	Respondents recruited through employer, self-referral, and word of mouth. No discussion of representativeness.
Mills and Millstead, 2002 ^[84] Rural WA	To identify the factors that affect retention of OTs in rural practice, including reasons for leaving rural practice	Ethnographic interviews (N=10) with OTs who had left rural practice within previous 2 years. Purposive sampling and snowballing. Semi-structured interview. Qualitative analysis	Lack of CPD a reason for leaving – Informal PD arranged by OTs included regular meetings with a co-therapist or therapist in nearby town, regional OT group meetings and use of internet and teleconferencing.	Participants recall of events may have been influenced by the time elapsed since their departure from rural practice.
Squires, 2002 ^[97] Pennsylvania, USA	To describe the development of a new graduate nurse orientation program in a rural hospital.	Case study. N=9 new graduate nurses. New orientation program developed and trialed.	Retention rate for hospital increased from 30% to 77% after 1 year, with 7 of 9 program graduates remaining.	Very small number in case study. Generalisability not established
Studies where intention to leave or stay is indicated				
Cross and Wyman, 2006 ^[95] NY State, USA	To determine levels of job satisfaction and anticipated job retention among implementation agents (IAs) in a school-based prevention program	Survey 128 IAs for school-based Primary Mental Health Project. Job Satisfaction Scale, anticipated job retention and perceptions of CPE measures. Multivariate regression.	No significant associations between anticipated job retention and education level, perceptions of supervision and CPE opportunities. Job satisfaction and anticipated job retention unrelated.	Representativeness of respondents to the population cannot be determined. Relies on self-report data only.
Huntley, 1995 ^[101] Rural and remote NSW	To identify the characteristics of RNs working in rural and remote area hospitals, and factors that influence nurses' decisions to stay in or leave their employment.	158 RNs at 6 hospitals. Phase 1 - modified Delphi technique. 52 RN interviews asking reasons for rural work and intention to stay/leave. Phase 2 survey (N=115) based on factors from interview.	CPE high priority as linked to ability to continue effective practice. Major reason to leave was employers' lack of appreciation of importance of in-service education and refusal to support external CPE events.	Generalisability not discussed

AUSTRALIAN PRIMARY HEALTH CARE RESEARCH INSTITUTE

Author, Year, Setting	Aim	Participants and methodology	Findings of relevance to systematic review	Limitations
Rambur <i>et al.</i> , 2003 ^[102] Vermont, USA	To ascertain effect of gender, age, education, setting, position, clinical practice, and population density on nurses' intention to leave in the next year.	Secondary analysis of State Board of Nursing workforce data on intent and reason to leave. Stepwise logistic regression model to predict intention to leave for job dissatisfaction reasons.	Association between education and reason for leaving. Intent to leave for job dissatisfaction decreased with education. Reasons for leaving differ by gender, age, education and job fraction.	Secondary data not gathered for this study. Instrument untested for reliability or validity. Limited generalisability.
Sargeant <i>et al.</i> , 2004 ^[99] Eastern Nova Scotia, Canada	To determine physicians' perceptions of the influence of telemedicine on rural retention and recruitment relative to other factors.	Survey 140 family and specialist rural physicians. Mann-Whitney U-test to compare ratings of users/non-users of telemedicine; Spearman's correlation to assess relationships between remoteness and use of telemedicine.	Telemedicine for CME was a less important consideration influencing physician's decisions to stay in their community than 16 other factors. Face-to-face CME in the local community, region, or Halifax all rated higher than CME via the internet.	Study was descriptive of a small, heterogeneous group of physicians
Solomon <i>et al.</i> , 2001 ^[109] NW Ontario, Canada	To examine the respondents' perceptions of important recruitment and retention factors.	Questionnaire survey of 129 PTs and OTs in NW Ontario, including factors influencing decision to stay, job satisfaction, and involvement in clinical education. Rank ordering and content analysis.	Lack of CPE/CPD most frequent reason for job dissatisfaction (39%). Reasons to leave included professional isolation (13%), proximity to family (29%), lack of job opportunities (27%) spousal influence (24%) and financial (18%).	Relied on therapists' recall of reasons and influence.
Stagnitti <i>et al.</i> , 2005 ^[89] . Southwest Victoria	To identify access and attitudes to CPD amongst allied health professionals	138 of 491 eligible allied health professionals working in Southwest Victoria returned a completed 78 question workforce survey.	Most preferred CPD was training on request (29%), formal in-service (19%) and ad hoc training as required (18%). Mean cost to employers per person of CPD (pa.) was \$2135.27 (median=\$1000). Mean personal cost of CPD = \$1000.28. 42% preferred hands-on training using local face-to-face learning. No significant relationship between CPD and intention to stay.	Reports intention to stay, not actual behaviour
Wilson, 2005 ^[96] Washington State, USA	To report the results of a project to increase management skills and to improve nurses' satisfaction and thereby increase retention.	Pre- and post-work satisfaction measures and Anticipated Turnover Scale with management development program as intervention.	Significant increase in intent to stay in position. No significant differences in elements of job satisfaction.	Small sample with 23% attrition rate of scholarship holders (mainly rural nurses)
Studies where reasons or incentives to stay or leave are nominated or rated by respondents				
Hughes, 1998 ^[106] Rural Australia	Identify and confirm a number of workforce and professional support issues relevant to rural dietitians	Postal survey of 140 rural dietitians. Descriptive data, no bivariate analysis.	Limited CPD opportunities the most frequently mentioned disincentive to rural practice. Distance CPE the most frequently chosen potential support initiative.	Results not linked to retention or intention to stay.

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Author, Year, Setting	Aim	Participants and methodology	Findings of relevance to systematic review	Limitations
Humphreys et al., 2002 ^[34] Rural/remote Australia	To ascertain which factors are most significant in a GP's decision to stay in practice and whether these factors vary with geographical location and GP characteristics	Mailed questionnaire survey of GPs (n=677) in non-metropolitan practice. Paired-comparisons analysis.	Availability of CPD far less important than good on-call but more important than non-professional factors. Importance of CPD varied with age, sex, family status, length in practice, and geographical location	50% response rate; insufficient GPs to distinguish between large and small remote communities.
Huntley, 1991 ^[107] Rural and remote NSW	To discover if CPD was a factor influencing recruitment and retention of health professionals in rural and remote areas.	Qualitative methodology. In-depth interviews with hospital CEO, doctors, dentists and pharmacists, and survey of 200 health professionals.	CPE is 3 rd of 22 factors impacting on retention, with gender, age and family status differences. Rankings differed by professional group.	Generalisability not discussed. Includes PHC and other settings.
Kruger and Tennant, 2005 ^[108] Rural/remote WA	Analysis of factors influencing oral health professionals to practise in rural areas, why they remain in rural practice and reasons for leaving.	Postal questionnaire survey of 90 oral health professionals.	CPD rural practice, differentiated by group. Lack of PD/support/isolation' rated 10 th (5%) of 15 reasons for leaving. Video and internet courses seen as part solution to expense and time for accessing CPD.	No discussion of representativeness of non-responders.
Olson and Helmer, 1992 ^[105] Rural USA	To study influence of retention strategies in US hospitals on decision to stay by rural hospital nurses.	Nurse questionnaires in 54 rural hospitals rating influence of 43 retention strategies on decision to stay.	Top 4 strategies ranked as self- and professional development, monetary needs and benefits, internal management, and staffing and scheduling.	Low nurse response rate. No evidence of actual effectiveness of strategies, just self-reported influence.
Sacco, 1994 ^[110] Small rural areas of NSW, Qld, Tasmania	To examine the level and type of skills required by employers in rural human service organisations and to identify strategies to overcome problems associated with the selection and retention of personnel.	Questionnaires to 60 staff working in social worker roles in 5 towns designated as 'rural other'.	Reasons to stay include aspects of rurality (26%), employment factors including access to CPD (17%). Reasons to leave include changes in work circumstances (15%), family or personal issues (8%). No evidence of link of CPD to retention.	Describes problems of CPE/CPD provision in small rural locations, rather than its relationship to retention.
Weymouth et al., 2007 ^[90] Remote NT, SA and WA	To identify remote area nurses' (RAN) perspectives on the effects of distance management and how these effects might affect their retention.	Faxed surveys sent to all non-Aboriginal-controlled remote area health services (N=61). Semi-structured interviews of sample of ex-RANs and 9 nursing executives with distance management experience.	Lack of support from managers the main cause of high turnover and poor retention. Access to CPD rated as poor by 44% of RANs. Better management practices the key to ensuring RANs feel supported and valued and hence improving retention.	Difficulty sampling SA and WA so 90% of sample from NT. Possible self-selection bias. RANs from Aboriginal-controlled remote health services excluded.
White et al., 2007 ^[91] Rural/remote Queensland	To examine the efficacy of rurally relevant CME programs in retaining medical practitioners in rural and remote communities.	Evaluation data for 426 to 429 CME workshop attendees over 3 year period on whether participation reduced professional isolation, increased confidence and commitment to practising in a rural/remote locality.	Access to CME contributes to confidence in practice (94%) and alleviates professional isolation (93%); 80% agreed they were less likely to remain in rural practice without access to CME.	Results based on self reported intention. Cannot discern impact of professional support from other factors influencing decision to remain.

AUSTRALIAN PRIMARY HEALTH CARE RESEARCH INSTITUTE

Author, Year, Setting	Aim	Participants and methodology	Findings of relevance to systematic review	Limitations
Studies where respondents are experts identifying retention factors or reasons to leave or stay which influence others				
Brewer <i>et al.</i> , 2006 ^[104] NY State, USA	Workforce needs assessment focusing on the major barriers and facilitators to nursing recruitment and retention.	56 practicing nurses, nurse managers, educators and health care administrators. Qualitative assessment.	Workforce retention challenges include work intensity, staffing and scheduling, lack of empowerment, travel, compensation, barriers to CPD education, work culture.	Perspective of senior health care administrators may not be adequately represented. Limited generalisation.
Kotzee and Couper, 2006 ^[100] Limpopo, RSA	To identify interventions leading to improved retention of doctors in rural hospital service	Semi-structured questionnaire and interviews with 10 doctors.	CPE nominated by 40% behind accommodation and remuneration. 20% rated CME among the 3 most important interventions to retain doctors.	Very small sample and one location only.
Stratton <i>et al.</i> , 1992 ^[136] 6 US States	To compare basic RN staff characteristics, recruitment and retention strategies used within rural hospitals and Skilled Nursing Facilities.	Telephone interviews with all DON of rural hospitals and SNFs(441).	Hospitals used more retention strategies than SNFs. CPE and tuition reimbursement were the most used strategies by both.	Link between offering CE and turnover tenuous using aggregate data.
Studies where job satisfaction measures are used as proxy retention indicators				
Bhatara <i>et al.</i> , 1996 ^[98] Rural South Dakota, USA	To improve job satisfaction (and possibly job retention) of Rural Mental Health Practitioners through reduced professional isolation.	Workshops for health professionals caring for persons with a mental health problem. 3 year pre- and post-satisfaction scales. Paired t-tests.	Significant improvements occurred in number of peers and CPE opportunities available; but not in community or family's satisfaction with community	No control group. Measured job satisfaction, not retention.
Henry and Hooker, 2007 ^[88] Rural Texas, USA	To determine the factors that influence autonomous rural Physician Assistants (PAs) to remain in remote locations.	Qualitative exploratory study. Direct observation of clinics, semi-structured interviews with 8 PAs and focus groups of residents.	Factors contributing to retention include confidence in ability to provide adequate health care, desire for small-town life, and involvement with the community.	Small sample, No measure of retention used. Findings may not extend to other rural locations.
Stratton <i>et al.</i> , 1995 ^[103] 6 US States	To compare variations in nurses' job satisfaction across three rural practice settings, with specific emphasis on the use of retainment incentives.	Interviews with 556 DONs for information on incentives. Nurse questionnaire survey of 3514 nurses using 37 item job satisfaction Likert scale. Stepwise regression model.	90.6% of community/public health nurses received continuing education; 56.3% received tuition reimbursement. Tuition reimbursement contributed to job satisfaction.	Possibly generalisable to the Australian setting.

Table 5: Advantages and disadvantages of alternative forms of providing CPD/CPE

Form	Findings	Examples
Face-to-face, in person	Preferred mode, especially if accessible locally. Essential for 'hands-on' teaching of skills and particularly appropriate for experienced professionals. Benefits include time-out from workplace; quarantined study time; networking opportunities; opportunity to benchmark skills against those of others. Travel time/ costs may limit participation; locum or backfill required but not always available.	Early Management of Severe Trauma 2-day intensive course offered by RACGP; MSOAP
Interactive on-line (including via videoconference or satellite broadcast)	Accepted role where travel time and costs preclude face-to-face contact, but not most preferred. Limited networking opportunities, and does not provide time-out from workplace or quarantined study time. No locum or backfill required. Reliant on quality of IT/CT equipment and connectivity.	Satellite broadcasts from Rural Health Education Foundation.
Self-directed CPD activity	Can take place when and where convenient and be customised to user needs. Requires skills in self-directed learning and discipline to plan a program. May be difficult to get quarantined time in the workplace. No special infrastructure required, though may require reliable equipment and robust connectivity, including access to electronic databases and libraries.	Reading journals, manuals, and accessing electronic library resources to research an evidence-based question.

Nonetheless, many rural professionals used the internet for professional development purposes, particularly where prohibitive travel time and costs preclude face-to-face contact for professional development. Beginning professionals used it to find material relevant to practice in their own profession, such as codes of practice and policy documents. Other uses of the internet for CPD/CPE included use of e-mail to maintain professional contact and contact through listservs for professional support and supervision. More could be done to improve access to post-graduate courses and online mentoring.

Huntley's finding that appropriate forms of CPD/CPE may differ across professions found support in some of the 'non-rural' literature which noted that programs designed for graduates do not suit experienced professionals taking up positions with new organisations, and those re-entering the workforce after an extended absence require something else again.^[107] For example, Tourigny and Pulich suggest that training for older employees requires more than just in-house up-skilling programs – "The most effective training takes place when older employees can attend external training programs, workshops, or seminars where current environmental and technological changes that directly impact their professions are discussed at length".^[137] Moreover, the background and skills of participants are important considerations in the development of CPD^[118] and orientation and induction programs.^[138, 139]

The costs and benefits of providing education and training which improve workforce retention in small rural and remote communities

Whatever its impact on workforce retention, the cost for employing organisations of providing employee education is significant. Recent estimates claim that US organisations alone are spending between \$16 billion and \$55 billion on "developing employees' knowledge and skills".^[131] Generally, however, few studies have investigated cost-effectiveness of CPD despite claims that "offering high-quality education can be one of the best ways to attract, motivate and retain talented people".^[140]

For small organisations, a significant issue is the higher training costs per employee, because unlike larger firms they cannot spread fixed costs of the training over a large group of employees. Moreover, production losses from having one additional worker in off-site training are higher.^[141]

With respect to workforce retention, an assessment of the costs and benefits of CPD/CPE should be matched against the risk of avoidable turnover that results from not meeting the professional needs of employees. While the maintenance and up-skilling of staff may require investment in ongoing education and training and salary increases, it also usually provides significant productivity gains through increased professional satisfaction and reduced intention to leave. In contrast, the unnecessary loss of valuable employees invariably results in high recruitment costs.

No rural studies were identified that provided full costings for CPD/CPE activities. However, the literature did outline the wide range of workforce and workplace benefits associated with CPD/CPE activities in addition to their role in contributing to improved quality of care. These include improved ability to do the job itself, the opportunities to develop professional networks and reduce professional isolation, and a feeling of being valued by the employer who sponsored the activity.^[89, 91, 133, 134] Collectively these benefits all contribute to increasing the attractiveness of the workplace to existing and potential employees.

Only limited published information on actual expenditures on CPD was available. Allied health professionals in Southwest Victoria reported a mean annual cost of professional development to their employers of \$2,135 per capita (median \$1,000) and a mean personal cost of \$1,000 per person.^[89] Figures on organisational expenditure on CPD/CPE were not readily available and apparently are not always collected, although a recommendation for Victorian nurses suggests continuing education be funded at 2% of total nursing EFT for rural facilities.^[142]

Several 'non-rural' papers provided more comprehensive rationales and checklists for calculating the full costs of providing a CPD/CPE activity, including salaries of participants, venue hire, presenter fees, travel, and backfill staffing costs.^[140, 143-146] For mentor and preceptor programs these costs will also include reduced productivity of both the mentor or preceptor and the new staff member over an extended period. Although some studies reported reduced turnover following the CPD/CPE intervention, the applicability of the intervention to rural primary health care situations was not apparent.

The 'non-rural' literature also includes methods for calculating turnover costs so that staff recruitment costs can be calculated and compared with the costs of retention packages.^[130, 144, 147-151] Recruitment costs associated with loss of staff include advertising, selection committee time, temporary replacement agency staff, orientation/induction, reduced productivity over an extended period as the new person comes up to speed, as well as the less tangible but significant loss of continuity in patient care, loss of human capital and the instability within the remaining workforce caused by high levels of turnover.^[147, 148]

These methods can be used to estimate the costs and benefits of retention strategies in rural facilities (see Appendix 6). Information on the actual costs of turnover can be used by organisations to "make more appropriate resource allocation decisions, set organisational turnover and retention policy, and develop a business case for nurse retention".^[152] For example, calculations of 'pay-back time' for an orientation program demonstrated to improve retention indicated a retention period of four years would be required for the hospital to break even.^[144] These approaches suggest that CPD/CPE costs (and possibly costs of other retention strategies) could be amortised over a number of years by sponsoring organisations.

LIMITATIONS OF THE STUDY

The findings of this research reflect the ability of researchers to source extant literature relevant to the topic, including access to important 'grey' literature that may require use of the Freedom of Information Act. The systematic review findings and conclusions are based on material obtained within the time constraints of the contract, and should acknowledge several other considerations.

1. The extent to which contradictory or indeterminate findings may reflect differences in operationalising the concept of retention, definitions of dependent variables and choice of data. The contradictory evidence of the status of job satisfaction as a predictor of stated intention to leave/retention/turnover was clear. Moreover, despite the abundant anecdotal evidence that CPD/CPE impacts on workforce retention, there is considerable confusion in the literature resulting from the failure to distinguish between recruitment and retention (terms which are frequently but inappropriately used interchangeably), and differences in the definition of turnover rates and types of turnover at both the aggregate and individual levels. Similarly, widely varying definitions of what constitutes ongoing education and training and CPD/CPE exist, sometimes extending from specific educational courses to include increased recognition, participation as a member of a multidisciplinary team, more challenges, and more autonomy. On occasions the findings appear to be related to the particular investigative approach – for example, studies using only secondary data showed CPD/CPE as more important than primary qualitative investigations
2. The absence of workforce retention baselines against which to monitor the impact of changes affecting workforce retention and the paucity of controlled studies that specifically sought to assess the impact of some intervention relating to CPD/CPE. While there exists considerable research on workforce retention, many studies focussed rather narrowly on identifying the significance of individual factors in isolation from each other. There is a need for multivariate research that assesses the role of individual occupational and personal variables, job-related perceptions, external perceptions, individual values, and potential moderating variables with aggregate level effects of various organisational and economic or labour market variables. "The limited number of multivariate studies indicates that greater variance in turnover can be explained by using multiple variables, that a great deal of variance is still unexplained, that inclusion of intentions significantly enhances the prediction of turnover, and that satisfaction is an inadequate summary variable for capturing the effects of other demographic, organisational, occupational, or external variables)^[93]
3. The appropriateness or adequacy of a systematic review methodology to capture the vast array of literature relevant to understanding complex topics like this. While a systematic review methodology brings benefits associated with objectivity, transparency, and replicability, there are significant concerns about choice of search terms and missing relevant evidence with a complex topic underpinned by key concepts that are not easily defined unambiguously. Objectives 2 and 3 were predicated on the outcomes of Objective 1. The inconclusive results resulting from the paucity of rigorous studies on the effect of CPD/CPE on retention and lack of time to pursue additional strategies to investigate objectives 2 and 3 independently may have resulted in inadequate coverage of these questions
4. As with any research, the issue of quality of studies and evidence is paramount, particularly in terms of the rigor and robustness underpinning each study. While the time constraints of the contract precluded any assessment of the quality of the studies underpinning this systematic review in terms of specific checklists, guidelines, or lists of appraisal questions, significant variation in approaches and methodologies used was apparent

DISCUSSION

“It’s not just what you do to make them stay – it may be what you don’t do that is likely to make them leave!”

Policy-advisers are under increasing pressure to base policy decisions upon available evidence.^[153] Not only should that evidence be in a form amenable to policy-advisers, but importantly too there is a feeling that systematic reviews bringing together diverse sources of evidence provide a better basis for informing policy than a single study or just expert opinion.^[154] The following section contains a synthesis of available evidence, quantitative and qualitative, including the contextual knowledge available for the research team and Reference Group, to guide policy advisers.

Health workforce retention is increasingly important, particularly given the difficulties and high costs associated with recruitment. Minimising avoidable turnover and retaining the most valuable health workers is the key to workforce stability and the delivery of high quality health care. Workforce retention and length of service in any profession, position, organisation or place will vary according to the circumstances of each employee. (For example, some jobs such as in Information Technology are characterised by a continual high turnover rate, while others such as librarians exhibit long periods of commitment.) For some health professions, such as allied health workers in many small rural health services, the average length of stay is short and often significantly less than optimal.

As we have seen earlier (see Figure 1), workforce retention is a function of many factors and circumstances, some of which lie outside of the sphere of influence of the workplace. Health workers make decisions to stay or leave their workplace on the basis of a complex set of trade-offs between different professional, personal and environmental factors. Central among these factors are workload, professional isolation, family circumstances, hospital closures, inadequate leave from work, lack of child care, lack of spouse employment, lack of anonymity, and reduced educational opportunities for children.^[29, 34, 155] Hence any measures to improve workforce retention must be multi-faceted – designed to redress those triggers to leave and to enhance those factors attracting the health worker to continue employment in that location. The starting point in developing effective workforce retention strategies is to understand why employees stay in or leave an organisation.

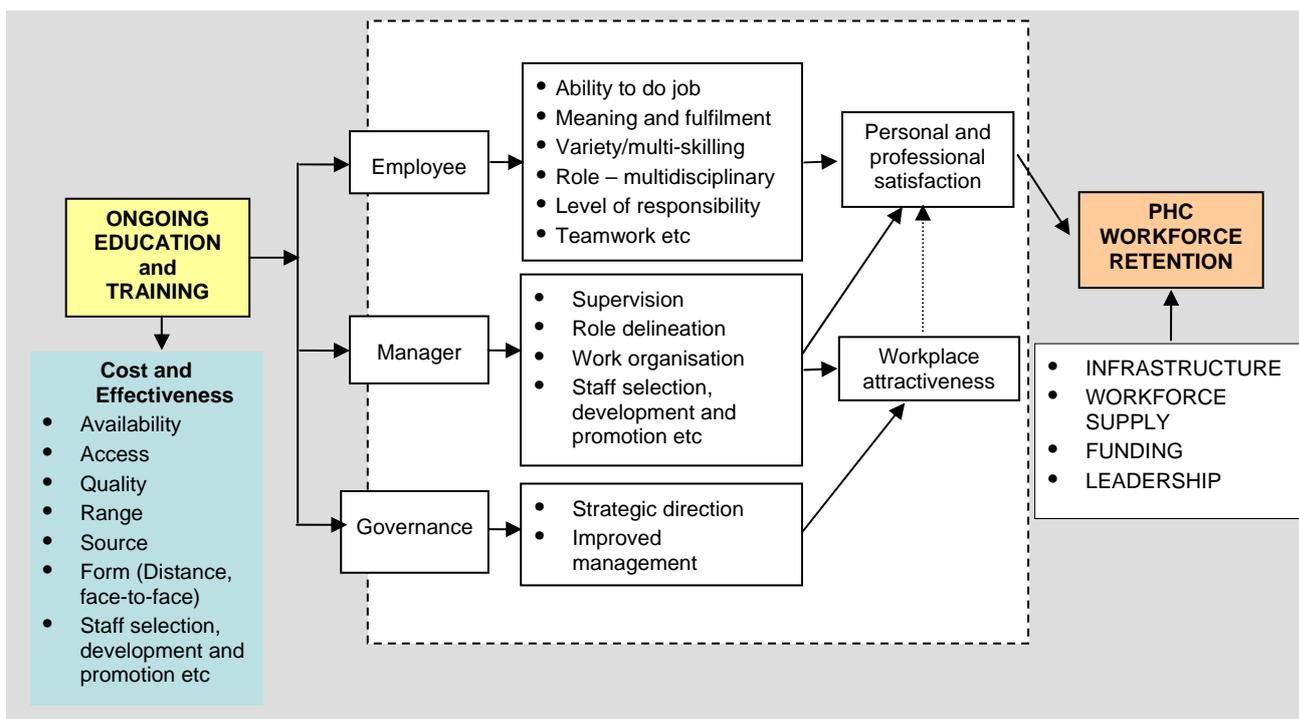
A central concept in the decision-making process is job satisfaction,^[156] with a consistent correlation between turnover and job dissatisfaction.^[93] Figure 3 shows how associations between elements of job satisfaction and anticipated retention reflect the interaction of a complexity of factors. For example, job satisfaction reflects organisational factors (wages, promotion opportunities and career pathways), work environment factors (supervision, autonomy), and individual level variables (age, gender and occupation). According to Mano-Negrin the empirical connection of these variables to organisation attachment has not been demonstrated convincingly.^[157]

Intention to quit is largely influenced by the level of job dissatisfaction, lack of commitment to the organisation and feelings of stress.^[93] Managers have some influence over these variables – such as job overload or job ambiguity. Organisational ethos and culture are equally important, yet often taken-for-granted, macro-scale considerations that impact on turnover rates. Organisations that value and respect their staff have the highest capacity to retain staff.^[158]

Notable too in Figure 3 is the importance of several critical factors that underpin successful models of primary health care in small rural and remote communities and which directly and indirectly contribute to workforce retention.^[3] For example, enlightened leadership that facilitates regular engagement in CPD/CPE and associated opportunities for multi-disciplinary teamwork, career progression and new role development can contribute significantly to the attachment of workers to their place of employment. Similarly, good workforce succession planning and effective recruitment to vacancies can help ensure that workloads are maintained at reasonable levels. Providing adequate infrastructure such as IT and vehicles can minimise problems experienced by health workers in access to CPD/CPE opportunities.

This systematic review sought to ascertain specifically the role and importance of ongoing education and training in relation to other factors in improving the retention of primary health workers in small rural and remote communities. Continuing education is an integral component of organisational employment to improve quality of care and patient safety, and to maintain and develop the competence of health care professionals. Ongoing education and training can help ensure that employees have appropriate skills to handle job requirements, thereby increasing their competence and confidence, in turn job satisfaction, and hence commitment and loyalty to employer and place.

Figure 3 Conceptual framework linking CPD and workforce retention



Despite the small evidence base on which to ascertain the importance of education and training on workforce retention, the findings are consistent across the available material. While there is only limited evidence showing CPD/CPE to be a significant factor contributing *directly* to workforce retention, it does appear to be very important *indirectly* in affecting the propensity of employees to leave. For example, Hatton and Emerson’s study of direct-care staff members of a residential facility for people with multiple disabilities showed that “although staff training per se appears to be a weak predictor of actual staff behaviour ... results of this study do suggest that training may have a general effect in influencing job satisfaction and propensity to leave”.^[159] Similarly Robinson and Tingle found that “dissatisfaction with continuing education opportunities was cited as a reason for leaving, or considering leaving, a first job”.^[8] In a US study of occupational therapists’ reasons for leaving, Bailey concludes that “providing staff with in-service training or with opportunities to attend continuing education ... encourages employees to stay”.^[160] From their study of medical practitioners in Australia, White et al., concluded that “the data support the contention that the availability of professional support from well-qualified colleagues and specialists, and from professional organisations through continuing medical education, is an important factor in the retention of rural doctors”.^[91]

In summary, CPD/CPE may be the 'glue' that holds many important aspects of the workplace environment together, including staff satisfaction associated with feeling able to do tasks competently and confidently, and in turn feeling more valued by the employer and patient, as well as contributing to staff stability and morale. In combination with effective induction programs, mentoring, recognised career paths and promotion prospects, CPD/CPE provides a vehicle that benefits employers, employees and patients.

In contrast, the absence of effective CPD/CPE may trigger increased levels of dissatisfaction and lower workplace morale, with a consequent increase in turnover levels as staff perceive alternative employment opportunities to provide better workplace support. Moreover, the consequences of failing to provide adequate CPD/CPE programs for primary health care workers in rural and remote communities extend beyond retention and turnover to include:

- patient safety and quality of care that may be at risk as practitioners lose confidence in their skills and ability to provide adequate services
- A workforce which is inappropriately oriented and inadequately skilled to meet community needs
- missed opportunities for isolated health professionals to develop supportive peer and professional networks
- lost opportunities for former workers to re-enter the local workforce

Therefore, CPD/CPE is essential to the provision of an adequately skilled, credentialed, professionally supported and professionally satisfied health workforce. Without effective CPD/CPE it is not possible to retain a workforce which is adequately skilled to provide an appropriate, quality primary health care service to small rural and remote communities.

WHAT LESSONS EMERGE FROM THE SYSTEMATIC REVIEW

This study has focused specifically on the relationship between CPD/CPE and workforce retention for primary health care workers in small rural and remote communities. CPD/CPE, despite its avowed importance for quality of care and patient safety and to maintain and develop the competence of health care professionals, represents only one aspect of the complex decision-making environment relating to length of stay or decision to leave.^[29] What follows is an attempt to draw on these broader findings, validated against the expertise and advice from the Reference Group, in order to maximise the relevance of our findings to Australian workforce policy.

While health authorities are increasingly aware of the pre-requisites for successful implementation of policies and how to overcome the impediments associated with translating health policies into effective practices,^[161] only relatively recently has attention focused on how to make research evidence more useful for management and policy making.^[153, 154] Because health policy is a complex matter, it is important to tease out the policy implications from our study with respect to the context in which it applies, the groups to which it is targeted, and the process by which it can be implemented as well as the actual policy content.^[162]

CONTEXT

A critical aspect of this study has been its focus on workforce retention of primary health care workers in small rural and remote communities in Australia. Since the 1990's, Australian governments have recognised the need to formulate and implement specific health policies and programs that are responsive to the specific needs of rural and remote communities.^[163-165] Cognisant of the diversity of rural and remote regions and the pressing need to overcome critical health workforce shortages, the importance of measures to increase the supply and retention of health professionals has been a government priority because workforce shortages have significant implications for the provision of health services in these regions.

In relation to workforce retention in rural and remote areas, the Department of Health and Ageing has implemented a program of retention grants for medical practitioners, some support through the Rural and Remote General Practice Program administered by Rural Workforce Agencies, and infrastructure support through the Rural and Remote Pharmacy Infrastructure Grant Scheme (RRPIGS) (<http://beta.guild.org.au/rural/content.asp?id=206>). Only recently it has expressed an interest to ascertain more comprehensively the extent of monetary compensation required and the role of any non-financial incentives to successfully attract and retain health professionals to rural and remote regions of Australia.

The number of Australians living in many small isolated rural and remote communities located many hundreds of kilometres from large regional centres is comparable to the population of Australia's largest capital city. For health professionals, life and work in rural and remote communities are unquestionably different from that in Australia's metropolitan cities.^[103, 166, 167] While these communities offer excellent lifestyle opportunities for families and proximity to enormous environmental amenity, they contrast with metropolitan areas greatly in terms of choice in cultural, educational, shopping and recreational opportunities. Moreover, in terms of professional practice, health workers are required to address a wider range of complex cradle-to-grave activities,^[168] to practise both independently and within multidisciplinary teams without extensive resources or easy referral, and to operate within culturally contrasting settings. Hence, a critical aspect to any workforce measures designed to increase the length of stay in and attractiveness of rural and remote practice is to ensure that they are appropriate to the diverse geographical contexts that characterise rural and remote regions.

The professional requirements associated with practising in rural and remote areas mean that the nature of CPD/CPE must target the specific contextual needs. Many instances of exemplary CPD/CPE exist – for example, the Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual for primary health care practitioners in remote and rural communities in Central and Northern Australia, the Rural and Remote Medical Education Online (RRMEO) learning platform designed and built specifically for rural doctors by the Australian College of Rural and Remote Medicine, and the Early Management of Severe Trauma program designed to assist doctors in providing the first hour of emergency care for the trauma patient provided through the Royal Australian College of General Practitioners. These activities provide opportunities to up-skill and improve health professional competencies, and hence the quality of local care, as well as impacting indirectly upon the confidence of health workers and their level of professional satisfaction.

At the same time, a wide range of non-professional supports could be implemented that may be equally, if not more influential, in increasing the satisfaction of health workers and their families and their likelihood of staying longer in small rural and remote communities. Hence, support with respect to housing, access to secondary education, locum relief and transport support to enable regular visits to families and larger centres are very significant factors that should be incorporated into any comprehensive workforce retention strategy. It is through overcoming the professional and social isolation associated with Australian non-metropolitan geography that the rural and remote context contrasts most significantly with metropolitan regions.

Geographic isolation also impacts significantly on the way in which health professionals prefer to engage in CPD/CPE. Despite the ability to transcend the 'tyranny of distance' through the various telemedicine and telehealth modalities, personal face-to-face interaction is preferred by many non-metropolitan health professionals. One should not underestimate the importance of 'time-out' for professional networking and to make contact with peers. A major attribute of the Medical Specialist Outreach Assistance Program (MSOAP) (in addition to improving access to specialist health services in rural and remote areas), is the face-to-face contact with visiting specialists who provide up-skilling and professional support to local general practitioners, specialists and other health professionals such as allied health professionals, and provide self-assurance of their skills and personal support for self-worth.

ACTORS

From the policy perspective there can be no doubt that the retention of primary health workers in rural and remote communities will become increasingly important as the rural workforce ages and difficulties in attracting new graduates continue. Regardless of their impact on retention, workforce retention strategies should include adequate support for appropriate ongoing education and training, since it is only with this that workers can stay abreast of advances in best practice, new technologies, the impact of economic and social changes on the provision of health care and health services.

A broad range of players are involved in the provision of ongoing education and training and other initiatives designed to improve the retention of primary health workers practising in small rural and remote communities. This includes Commonwealth, State and Local Governments; Area Health Services; Colleges and Professional Associations; Universities; a wide range of Industry and Peak Bodies, local health services and consumer groups, with each having different roles and responsibilities in supporting the provision of and access to relevant CPD/CPE (see Table 6).

Table 6: Measures to facilitate and support access to CPD/CPE

Employer
<p>Role in providing CPD/CPE</p> <ul style="list-style-type: none"> ▪ Organisational commitment to access to CPD for all employees based on recognition of value of CPD/CPE ▪ A committed budget for CPD/CPE (including travel and accommodation expenses; tuition reimbursement; leave with backfill cover to allow release) ▪ Policy and procedures for ensuring equitable access to funding for CPD/CPE ▪ Mentoring program ▪ Organisational commitment to post-graduate education and evidence-based research ▪ Access to quality IT and communication equipment
<p>Role in providing associated workforce support</p> <ul style="list-style-type: none"> ▪ Career pathways which allow advancement in recognition of development and learning ▪ Performance appraisals that assist planning appropriate CPD/CPE activities ▪ Opportunities for leadership, mentoring, teaching and research ▪ Recognition of CPD/CPE achievements through equitable remuneration
Commonwealth and State/Territory governments
<p>Role in providing CPD/CPE</p> <ul style="list-style-type: none"> ▪ Endorsement of a minimum CPD/CPE expenditure per capita for employees of publicly funded rural and remote health services. ▪ National CPD/CPE requirements for credentialing and ongoing registration
<p>Role in providing associated workforce support</p> <ul style="list-style-type: none"> ▪ Local infrastructure such as broadband connectivity, transport networks and services to regional hubs
Professional Associations, Colleges and education providers
<p>Role in providing CPD/CPE</p> <ul style="list-style-type: none"> ▪ Locally relevant CPD/CPE resources ▪ Better access to formal post-graduate qualifications via distance education modes

It is vitally important that in seeking to provide adequate ongoing education and training and other enticements to maintain practice in rural and remote communities that the different needs of doctors, nurses, allied health professionals, managers, and Indigenous health workers are specifically targeted. The importance attributed to CPD/CPE relative to other retention factors varies with age, gender, type of work, experience, qualification, location and length of practice.^[34, 169]

Employees move along different stages of career development, each characterised by different needs, aspirations and expectations. Many of the recent so-called 'Generation X' graduates recruited to rural and remote practice, for example, have different aspirations and expectations compared to the existing workforce.^[170] It follows that the impact of different factors designed to influence workforce retention will vary according to their stage of career, so there is no 'one coat for all' solution to excessive turnover rates or poor workforce retention. Rather, a 'package' of retention interventions is required, with various components targeting the specific needs of the workforce.

Ongoing education and training support provided by employers often favours specific workforce groups, although not necessarily as part of a systematic retention framework designed to cover the whole workforce. For example, Kirsch noted the priority of often limited CPD/CPE resources given to new employees because of their high turnover rates rather than on the development of mid-career nurses.^[12] Other studies identified how CPD differed according to length of practice, with young, recent recruits seeking the benefit of mentorship compared with specific skills development targeting the older longer-established worker seeking to maintain their skills and accommodate changes and new technologies in the workplace. For employees in the early career stages following their induction, mentoring is sought after and has been shown in many studies to be most beneficial. Murphy *et al.* reported the value of new-graduate internship and staff nurse fellowship programs as a recruitment and retention strategy to both employees and managers.^[171] At the same time there is a need to consider other stages of the employee career continuum – for example, Donner and Wheeler highlight the importance of retention strategies targeting the mid-career group of nurses at risk of leaving the profession.^[172] Tourigny and Pulich note the importance of retaining older workers given the shortage of health care workers.^[137]

Recognising that worker needs vary according to their stage in the lifecycle and career trajectory offers the opportunity for better evaluating the specific impacts of public interventions, in the form of incentives designed to retain health workers in rural and remote communities. To date, in Australia, little work has investigated the form in which retention incentives might be most effective. Evidence suggests that "given differing needs and expectations...incentives...are most likely to be effective in retaining those who are reasonably satisfied with extrinsic aspects of work (such as rural practice) but where the content and organisation of the job is an important source of dissatisfaction" which can be modified through some intervention or incentive.^[47] Hence it is important to target retention measures accordingly.

Nowhere is context more important than in those rural and, in particular, remote regions of Australia that rely on the retention of Indigenous health workers. Some fundamental structural issues still need to be addressed. These include adequate support structures and role recognition.^[28, 113] The roles of Aboriginal health workers need to be clearly defined and agreed upon and CPD/CPE tailored to support that role and to meet requirements set through national standardisation of Aboriginal health worker competencies.^[28, 113, 115]

Franks and Curr noted the reasons for staying and leaving given by Indigenous Health Workers.^[115] Reasons for staying included (i) possessing a sense of personal wellbeing, (ii) a sensitive nurse who works in equivalent cross cultural partnership, (iii) the respect and support of other health professionals both insiders and outsiders, (iv) the support and respect of the community, (v) an accorded high status within the community, and (vi) a strong cohesive traditional community. In contrast, the reasons for leaving were (i) a dysfunctional community characterised by breakdown of cultural values, (ii) a low community acceptance/support of the Aboriginal Health Worker program, (iii) a low status as an Aboriginal Health Worker, (iv) a lack of understanding of what the definition of work and time are for Aboriginal people, and a (v) lack of respect and recognition by outsiders of the traditional skills and talents; eg the traditional skills of midwifery, chiropractic, psychiatry, and pharmacology.

The first three reasons for staying can be addressed by appropriate education of all health professionals (undergraduate, postgraduate and in the workplace) and support mechanisms implemented in the work environment. If these issues are addressed, it is likely that the other factors, such as support and respect of the community and being accorded a high status in the community, would also be positively influenced. Possibly also community acceptance/support of the Aboriginal Health Worker program may be improved. While Indigenous community dysfunctionality results from wider systemic problems and is outside the scope of addressable retention issues, a number of reasons for staying and leaving can be readily addressed which could have a considerable impact on Aboriginal Health Worker retention.

The education of non-Aboriginal health professionals in working in both a cross cultural environment and a comprehensive primary health care paradigm is important in maximising understanding and support. The differential power structures and clinical curative health delivery model with which many mainstream health professionals operate is at odds with the comprehensive primary health care model learned by the Aboriginal health workers in their training at, for example, the Bachelor Institute for Indigenous Tertiary Education in the Northern Territory. As Tregenza and Abbott noted, “the non-Aboriginal staff and Aboriginal staff have different expectations of the health workers’ role. It appears that the Health Workers and nurses in particular arrive at work with different agendas”.^[28]

CONTENT

Given the broad range of factors that impact upon professional satisfaction and propensity to stay or leave health services in small rural and remote communities, evidence suggests that an effective retention strategy should be built around a ‘package’ of intervention measures most likely to minimise avoidable workforce turnover. Based on our research it is possible to posit a retention ‘framework’ that identifies five broad inter-related components within which intervention can assist to achieve improved workforce retention as shown in Table 7.

First, maintaining a stable workforce can yield benefits not only in terms of workforce equilibrium and continuity of patient care, but also presenting an organisational culture of valuing its workers and minimising the extent to which workload becomes over-bearing during periods of workforce vacancies. A key aspect at the interface of recruitment and retention is appropriate selection of workers. The importance of ensuring a good ‘match’ or ‘fit’ of the person to the work environment through good selection process should not be underestimated.^[22, 173, 174] “A recent study by Harvard University showed that nearly 80% of turnover is due to hiring mistakes”.^[67]

Secondly, good infrastructure is a critical aspect of the attractiveness of the workplace for potential new recruits and for maintaining existing workers. This includes both workplace support such as access to IT and vehicles, and physical infrastructure, as well as external retention supports for the practitioner and family. For example, Hays et al. identified a range of strategies to address modifiable factors, including improved housing quality, subsidies to support two doctors in one doctor communities, locums for long service leave after 5 years, educational subsidies for children to attend boarding schools and educational and administrative support to meet health services requirements.^[33] Other aspects that have been advocated as means of improving retention include the important role of community participation and place integration^[175-177] and the benefits of case management.^[178]

Thirdly, consistent across most surveys of potential triggers to leave or stay is the issue of appropriate remuneration. Considerable work has been done in relation to rural general practice that highlights the importance of maintaining realistic and competitive remuneration.^[179]

Fourthly, just as the selection and support measures need to be reviewed at the induction stage to lower any significant initial separation rate, so too the provision of ongoing professional development that supports employees to perform their work with greater competence and confidence is likely to improve workforce survival rates.

Incentive training packages that provide ongoing support and training, with locum support and funding towards work-supported education, are undoubtedly worthwhile.^[180] Fostering a workplace culture that recognises and rewards individuals making a significant contribution to patient care is vital.

Fifthly, evidence supports the contention that the length of stay of doctors, nurses and allied health personnel is more influenced by professional autonomy, workplace satisfaction, opportunities to learn, and ability to care for others.^[46] “An effective induction process with committed managerial support ... has an important role in ensuring the successful integration of new staff and inducing strong positive attitudes towards the job and the organisation. In addition, it acts as a foundation upon which further training can be built, to ensure that employees retain a feeling of loyalty towards the employer and a desire to remain working for a worthwhile organisation”.^[127]

There are examples from outside the health sector where retention-related strategies (both individual initiatives and a suite of articulated measures) have clearly impacted on workforce turnover. For example, introduction of a career ladder program in one US company resulted in employee turnover dropping from 44% to less than 24% annually, resulting in reduced recruitment and training costs.^[181] In another case, the annual turnover rate of one engineering and consulting firm dropped from 18% to 8% in one year following the introduction of an employee-focused program that included team mentoring, investment of 2.5% of net revenue on training and career development programs (some \$3,200 per employee), and generous employee benefits and family support. While such examples illustrate the value of retention strategies in reducing avoidable workforce turnover, how well these ‘models’ translate directly to health services in small rural and remote communities is questionable.

Table 7: Rural and remote health workforce retention framework*

1. Maintaining an adequate and (stable) staffing [35, 90, 99, 105, 108]
This helps to ensure a reasonable workload for employees and thereby minimises stresses associated with overload or learning new aspects of work to cover gaps. Face-to-face interviews and personality profiling in recruitment can help to ensure the right types of people are hired.
2. Providing appropriate and adequate infrastructure [90, 100, 101, 108]
Previous research has highlighted the significance of good infrastructure for workforce recruitment, retention and service sustainability. ^[3, 179] Aspects include <ul style="list-style-type: none"> • ready access to IMIT, good communications and technical support • ready access to vehicle, adequate housing etc • air conditioning, • child care and family support
3. Maintaining realistic and competitive remuneration [35, 36, 90, 99, 100, 102, 105, 108, 136]
Remuneration and pay equity is an important aspect of employment. This includes employment benefits (packaging, health care insurance etc) and retention bonuses.
4. Fostering a workplace culture that recognises and rewards individuals making a significant contribution to patient care [35, 36, 84, 90, 91, 96, 97, 99, 101, 105-110, 136]
Workplace support and incentives include <ul style="list-style-type: none"> • good communication • preceptor/mentor ship program • collegial support and supervision • funding for conferences • CPD opportunities • management training • engaging in research and scholarships for academic pursuits
5. Shaping the workplace environment [36, 84, 90, 96, 97, 102, 105, 106, 109, 110, 136]
Desire to stay with an organisation is strongly influenced by the nature of <ul style="list-style-type: none"> • employee induction and orientation program • leadership and management role • degree of autonomy • opportunities for promotion within the organisation or service • career pathways

*This framework has been compiled from the systematic review evidence base.

PROCESS

Evidence suggests that significant measures can be taken to maximise the extent to which the workplace environment fulfils many of the workers' professional and even social needs, thereby minimising avoidable turnover and maximising retention. The need for evidence based research to monitor the impact of retention measures, including CPD/CPE as part of an overall retention strategy, is the key. Currently, despite many surveys ascertaining factors that impact upon employees' intention to leave or intention to stay in their current job, there exists a paucity of rigorous evaluations of the effect of retention strategies, including ongoing education and training, on actual workforce retention behaviour. Based on their systematic review on attracting and retaining nurses in primary care, Drennan et al. concluded that there were only a "small number of initiatives and no longitudinal evaluation of impact".^[118]

Currently retention grants for rural and remote general practitioners reward individual doctors for length of service rendered to the practice and community, regardless of their future intentions to stay or leave. Clearly, evaluation of the effectiveness of retention incentives requires a sound knowledge of the determinants of professional and personal satisfaction and the 'triggers' that provide the catalyst for relocation.

Scope exists for employers to ascertain the specific costs associated with support measures such as CPD/CPE and linking the resulting benefits with impact on workplace satisfaction, workforce retention and levels of staff turnover.

COSTING WORKFORCE INITIATIVES SUCH AS A CPD/CPE PROGRAM

As discussed earlier, CPD/CPE can comprise a diverse suite of activities ranging from relatively inexpensive self-directed activities such as reading journals, to more expensive and time-consuming attendance at professional conferences and the intensive preceptor/preceptee or mentor/mentee relationship. The degree of employer support for these activities varies, often with the employee personally meeting some of the costs. Table 8 (Appendix 6), based on existing literature, lists items to be considered in these cost calculations.^[140, 146]

Employer costs associated with CPD/CPE activity offered off site by an outside agency, such as a professional association, are easily identified as any direct payments of registration fees and travel costs or reimbursement made to the participant plus the salary and on-cost if study leave or conference leave is granted and any costs associated with backfilling the position. Orientation programs and CPD activities offered in-house can be costed on a per-participant or per-session basis.

Fixed costs can be shared over the number of repeats of an activity. Variable costs can be calculated on a per participant basis. Obviously, for participants from a rural or remote location travelling to a regional or metropolitan centre these costs will be very much greater than for locally presented activities. Infrastructure costs involved in supporting videoconferencing facilities for remote delivery of CPD/CPE activities should also be taken into account.

CPD/CPE is expensive and the return may not always be immediately apparent. Where avoidable turnover can be reduced or a length of stay extended beyond a critical minimum through the use of retention strategies including CPD/CPE there is a business case to be made for the amortisation of the costs of the strategies over the benchmark retention period. For positions with high turnover there may also be a business case to be made for the investment of at least some of the cost of turnover into retention packages aimed at retaining the employee for some targeted pay-back period.

Because the benefits of CPD/CPE can be a mixed blessing, some employers are moving to attach a 'commitment-to-service' with funding provided for ongoing education and training. CPD/CPE can make an employee more marketable and increase the opportunities for a move elsewhere (for promotion or other reasons). "If new skills are of value to other employers, then firms risk having their trained employee hired away ...if a firm finds that workers to whom it has given general training tend to leave soon afterward, it may in reaction, cut back training to a sub-optimal level".^[141] Many employees in health care organisations have highly marketable skills and an interest in advancement.^[20] For this reason, CPD needs to be combined with career path opportunities, something that is often difficult to do within small rural and remote health organisations but which can be fulfilled by movement of staff within a region such as with a hub and spoke service model.

BENCHMARKING WORKFORCE RETENTION AND TURNOVER

Ongoing education and training is an integral component of organisational employment to improve quality of care and patient safety, and to maintain and up-skill the competencies of health care professionals. From the employee perspective, CPD/CPE increases their competence and confidence, job satisfaction, and arguably commitment and loyalty to employer and place. From the employer perspective, in addition to providing quality assurance and improved patient care, CPD/CPE can play an important role in 'change-management' by assisting organisations and their staff to adapt to external changes and to deliver more relevant services. This will help to ensure future viability of the organisation and shape its future role and structure in the face of fiscal pressures to "deliver more with less" and to better meet changing consumer needs and expectations. Integral to their strategic workforce planning, organisations can benefit significantly from monitoring their level of workforce retention and rates of staff turnover in relation to retention measures including CPD/CPE.

Employers of health professionals in small rural or remote communities need information on which to determine benchmarks for retention periods for their staff. Comparative benchmarking (that is using an industry average and comparing local performance with it), will not suffice even if the information were available because there is such variation between regions that an average would be meaningless. An alternative method which would yield more realistic benchmarks at a regional level is to set the average turnover rate for say physiotherapists (or all allied health workers) in a regional health service as the benchmark or target rate for physiotherapists (or allied health workers) in a high turnover segment of that service.

To achieve this, local indicators, both individual and organisational, must be gathered and analysed. Individual indicators pertaining to staff members include workload; professional and job satisfaction measures; stated intentions with respect to length of stay in current position; perceived opportunities for advancement; and, on departure, exit interview information including reasons for leaving. Organisational indicators might include, for various segments of the workforce, annual turnover rates; average length of stay of 'leavers'; average length of stay of 'stayers' at each year's end; number (%) of vacancies in a year; number (%) of vacancies unfilled after 3 months, 6 months, 12 months; for those on fixed term contracts, number leaving before completion of contract period; number (%) of professionals operating as the sole representative of their discipline in a location; amount committed to CPD/CPE as a percentage of total salary budget and so on. (Although such data may not be collected currently, many of these indicators were identified at the recent Australian Health Ministers' Conference as Key Performance Indicators necessary to assess and monitor progress against its seven agreed Principles which underpin the work of the proposed Health Workforce Taskforce.^[182] This endorsement at the highest level should facilitate the collection and future availability of national data at local levels.)

Analysis of current length of stay and turnover rate figures, along with the information collected from occupants of the highest turnover positions will indicate those problems with the high turnover positions which may be addressable, such as result from lack of time off, professional isolation, role ambiguity, lack of the skills required for the job, lack of opportunities to up-skill, and so on.

Measures can then be implemented to address problems related to the high turnover positions with a view to increasing the length of stay towards the average for that type of position. If successful, the average length of stay for physiotherapists (or all allied health workers) in the region will increase and turnover rates will decrease. Through monitoring the indicators over time employers can identify the impact of interventions on retention and develop their own standards of what is a 'reasonable' retention period or turnover rate for particular professions in particular locations, given the realities of both limited resources to allocate to interventions and the unmodifiable characteristics of locations.

CONCLUSION

Workforce retention is a critical aspect of health workforce planning, nowhere more so than in small rural and remote communities where health workers are in short supply and difficult to recruit. In order to maximise workforce retention and minimise avoidable turnover of staff, it is vital to understand those determinants which lie within the control of organisation management and hence are modifiable through workplace incentives and workforce strategies.

The importance of macro-scale environmental factors on the lives of rural and remote health workers should not be underestimated – the relationship between workforce turnover and aggregate level of economic activity, employment levels and vacancy rates is clear - so it is vitally important that appropriate workforce policies parallel them. The current resources boom in Queensland and Western Australia is not only placing additional pressures on health services in rural and remote areas, but enticing health workers to leave for more lucratively remunerated positions with large mining companies.

Macro-level events notwithstanding, in the absence of appropriate recruitment and retention strategies for primary health care workers, the workforce crisis confronting small rural and remote communities can only get worse. The conceptual and strategic frameworks advanced as a result of this systematic review represent an important first stage in providing governments and employers with a platform on which to assess the adequacy and effectiveness of current workforce planning measures, particularly ongoing education and training, that impact upon health workforce retention in small rural and remote communities.

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APPENDICES

APPENDIX 1: METHODOLOGY

The methodological approach adopted in this review is modelled on that of the meta-narrative mapping process, as described in Greenhalgh, et al.^[86]

1 Planning Phase	<ul style="list-style-type: none"> ▪ The first step was to assemble a multidisciplinary team of researchers with relevant expertise and experience in the main areas of literature relevant to the research topic. ▪ The research team convened an 11-member Reference Group of planners and policy advisers and set up regular review meetings (<i>See Appendix 2 for Reference Group Terms of Reference</i>). ▪ An initial scoping of the broad topic and intended research questions was conducted in conjunction with the Reference Group (<i>See Table 2</i>). ▪ In conjunction with APHCRI, key outputs were agreed.
2 Search Phase	<ul style="list-style-type: none"> ▪ The research team conducted initial scoping searches of databases to identify likely sources of relevant material across disciplines including health, education, welfare and business. ▪ Seminal works in workforce retention identified. ▪ In collaboration with an expert librarian, the research team identified appropriate search terms and electronic databases. (<i>See Appendix 3 for search terms and Table 3 for databases used</i>).
3 Mapping Phase	<ul style="list-style-type: none"> ▪ Key factors relating to workforce retention were identified. ▪ A broad conceptualisation of the issue was constructed (<i>See Figure 1</i>). ▪ Inclusion-exclusion criteria were identified (<i>See Appendix 4</i>).
4 Appraisal Phase	<ul style="list-style-type: none"> ▪ An assessment of available evidence was conducted with the Reference Group. ▪ The research team took account of the input from the Reference Group's emphasis on importance of producing a policy-relevant report. In view of the paucity of specific studies examining the effect of CPD on retention, the Reference Group advocated broadening inclusion of evidence relevant to informing policy development on the topic. ▪ Each study was evaluated for its validity and relevance to the question. (<i>See Appendix 5, Data Extraction Form</i>). ▪ The research team extracted and collated key results, grouping comparable studies (<i>See Table 4 summarising Results</i>).
5 Synthesis Phase	<ul style="list-style-type: none"> ▪ The research team developed a revised conceptual framework linking CPD and retention within the rural and remote context (<i>See Figure 3</i>). ▪ Following reflection and consultation with the Reference Group, the research team summarised key findings from the literature (including their commonalities and gaps), along with other evidence from the broader literature and policymaking priorities (<i>See Section 'What lessons emerge from the systematic review'</i>).
6 Recommendation Phase	<ul style="list-style-type: none"> ▪ In accordance with the brief, available evidence and Reference Group advice, the research team distilled a list of considerations and options that take account of the specific rural and remote context; the groups involved with workforce planning, provision and support (<i>see Table 6</i>); and developed a strategic retention framework identifying a package of intervention measures most likely to minimise avoidable turnover (<i>See Table 7</i>).

APPENDIX 2: REFERENCE GROUP TERMS OF REFERENCE

1. To advise on the scope of the systematic review, particularly with reference to the development of inclusion and exclusion criteria
2. To assist with the conceptualisation of the role and contribution of continuing professional education/development in relation to workforce retention, particularly in relation to small rural and remote communities
3. To comment on the development of a detailed search strategy for the review
4. To assist the research team with identification of, and access to, relevant grey literature
5. To advise on policy drivers and impediments to the use of evidence in policy development
6. To work with the research team to develop and implement a research transfer strategy within the Australian Primary Health Care Research Institute process
7. To comment on draft project outputs

Reference group membership

Name	Organisation
Ian Cameron	New South Wales Rural Doctors Resource Network
Gordon Gregory	National Rural Health Alliance, Canberra, ACT
David Lyle	Broken Hill University Department of Rural Health, New South Wales
Martha MacLeod	University of Northern British Columbia, Prince George, BC, Canada
Ian McRae	Australian National University, Canberra, ACT
Sue Morey	Morey Australia, Sydney, New South Wales
Ray Pong	Centre for Remote and Northern Health, Laurentian University, Sudbury, Canada
David Prideaux	Flinders University, Adelaide, South Australia
Alma Quick	Rural Health, Department of Health and Ageing, Canberra, ACT
Kim Snowball	St John of God, Perth, Western Australia
Mark Thomann	Department of Health and Ageing, Canberra, ACT

APPENDIX 3: SEARCH TERMS AND ALIASES

Identifier	Term	Scope
T1	Personnel turnover OR employee turnover OR labour mobility OR career mobility OR labor mobility OR workforce retention OR personnel loyalty	Workforce retention
T2	education, distance/ OR education, professional/ OR education, continuing/ OR education, dental, continuing/ OR education, medical, continuing/ OR education, nursing, continuing/ OR education, pharmacy, continuing/ OR education, professional, retraining/ OR inservice training/ or staff development/ OR mentors/ OR preceptorship/ OR Professional development OR career education OR (education and training) Non-Medline version - Distance education OR professional education OR continuing education OR continuing dental education OR continuing medical education OR continuing nursing education OR continuing pharmacy education OR professional retraining OR inservice training OR staff development OR mentors OR preceptorship OR professional development OR career education OR (education and training)	Ongoing education and training
T3	Rural OR remote OR frontier	Rural or remote
T4 (Medline only)	Rural OR remote OR frontier OR rural health services/ OR rural health/	Rural or remote
T5	Allied health OR physiotherap\$ OR physical therapist OR occupational therapist OR nutritionist OR dietician OR dietitian OR nurse OR nursing OR dentist OR therap\$ OR psychologist OR doctor OR physician OR general practitioners OR family physician OR primary health OR primary health care OR speech pathologist OR social worker OR podiatrist OR aboriginal health worker OR indigenous health worker OR pharmacist OR counsellor OR (community health worker) OR optometrist	Primary health care worker
T6	Costs and cost analysis/ OR cost-benefit analysis	Costs and benefits
Terms ending in '/' are indexed or MeSH terms. Terms without '/' are keyword search terms.		

APPENDIX 4: INCLUSION-EXCLUSION CRITERIA

CRITERIA	INCLUSION	EXCLUSION
Time period	<ul style="list-style-type: none"> ▪ 1990-present 	
Language	<ul style="list-style-type: none"> ▪ English 	
Place of study	<ul style="list-style-type: none"> ▪ All western (developed) countries 	
Geographical delimitation	<ul style="list-style-type: none"> ▪ Small rural or remote communities 	
Independent variable - Aspect of education and training	<ul style="list-style-type: none"> ▪ Based on definition* must impact on the workplace environment or worker retention 	<ul style="list-style-type: none"> ▪ Undergraduate courses commonly perceived to fulfil minimum entry level requirements..
<p>Research Question</p> <p>1. How important is ongoing education and training in relation to other factors in improving retention of (primary health) workers practising in small rural and remote communities and how does education and training contribute to workforce retention?</p>	<ul style="list-style-type: none"> ▪ Must show some impact directly or indirectly (eg: workplace attractiveness, professional satisfaction) on some aspect of workforce retention. 	
<p>2. What is the best way of providing effective education and training (including continuing professional development) to primary health care workers in small rural and remote communities?</p>	<p>Must identify beneficial outcome for PHC workers or the health service in the rural or remote community (ie: delivered in a way that is appropriate/accepted/valued by the workers or the service.</p>	<ul style="list-style-type: none"> ▪ No evidence of effects deriving from education and training, or no evidence of the suitability of the method of providing the education and training for the rural context
<p>3. What are the costs and benefits of providing education and training which improve workplace attractiveness that contributes to workforce retention in small rural and remote communities</p>	<ul style="list-style-type: none"> ▪ Must examine the costs and benefits of providing education and training, including economic, social, opportunity or other costs and benefits 	<ul style="list-style-type: none"> ▪ No evidence of costs ▪ No measure of benefit (ie: mere speculation, assertion or conjecture)

APPENDIX 5: DATA EXTRACTION FORM

1. Article description	
Reviewer Name	
Article author-Date	
Type of study?	<input type="checkbox"/> Systematic literature review? <input type="checkbox"/> Research based on primary data? <input type="checkbox"/> Research based on secondary data? <input type="checkbox"/> Project Evaluation? <input type="checkbox"/> Other?
Location?	<input type="checkbox"/> Australia <input type="checkbox"/> Overseas <input type="checkbox"/> Both <input type="checkbox"/> Not stated
Rural/urban?	<input type="checkbox"/> Rural/remote <input type="checkbox"/> Non-rural <input type="checkbox"/> Both <input type="checkbox"/> Not stated
Health workforce?	<input type="checkbox"/> Health <input type="checkbox"/> Non-health <input type="checkbox"/> Both <input type="checkbox"/> Not stated
PHC Setting?	<input type="checkbox"/> PHC <input type="checkbox"/> Non-PHC <input type="checkbox"/> Both <input type="checkbox"/> Not stated
2: Question 1 - Findings	
Factors identified as impacting on workforce retention:	
Most important retention factors (if stated):	
How did Education and Training* contribute to retention?	
Impact of Education and Training* on other aspects of workplace, eg satisfaction	
Dependent variable used in study	<input type="checkbox"/> Intention to quit <input type="checkbox"/> Actual turnover <input type="checkbox"/> Length of stay <input type="checkbox"/> Other (Please specify)
* Education and Training includes continuing professional development	

3: Question 2 - Findings	
IF STATED, what ways were Education and Training provided?	
IF STATED, what Education and Training worked best?	<i>For employers</i> <i>For employees</i>
IF STATED, how is Education and Training best delivered?	<i>For employers</i> <i>For employees</i>
4: Question 3 - Findings	
ON THE BASIS OF EVIDENCE PROVIDED, what are the benefits of providing Education and Training?	
ON THE BASIS OF EVIDENCE PROVIDED, what are the costs of providing Education and Training?	
ON THE BASIS OF EVIDENCE PROVIDED, what are the costs of <u>not</u> providing Education and Training?	
5: Policy implications	
Any stated implications for workforce retention policies (based on all factors/strategies shown to affect retention)?	
Any stated implications for workforce retention policies (based on specific impact of education and training on retention)?	
6: Limitations and relevance of study	
Limitations to the scope, generalisability or adequacy of the study?	
Any other comments about this article relevant to our Stream 6 study of retention of primary health care workers in small rural and remote communities?	

APPENDIX 6: CALCULATING THE COSTS OF TURNOVER

In order to ascertain the minimum length of stay required to achieve a return on CPD investment in an employee it is useful for an employer to calculate the direct and indirect costs of employee turnover for a position or group of similar positions when considering the cost of an appropriate retention strategy. Because turnover costs vary greatly both across health care professions and regions, rural health service employers would need realistic calculations of the cost of turnover for health professionals within their catchment area. Unfortunately, there is a notable absence in the literature of validated easy-to-use tools for the calculation of turnover costs in the rural health context

Several 'non-rural' papers offer checklists for calculating these costs, although the information required to complete the checklist may not always be readily available or easily derived from existing data. For example, reduced productivity as the new employee learns the job, reduced productivity of the supervisor during the new employee introductory period, reduced productivity of co-workers during a vacancy period and the cost of loss of continuity in patient care are all difficult to quantify. The checklist below is based on existing literature but with the inclusion of some additional costs which particularly pertain to rural or remote situations. ^[144, 150-152, 183]

Table 8: Turnover costs checklist

Cost category	Example cost items - easily measured	Example cost items - difficult to measure
Vacancy	<ul style="list-style-type: none"> Temporary worker replacement over standard salary during vacancy; negative costs include salary savings while position is unfilled 	<ul style="list-style-type: none"> Lost productivity of co-workers; possible loss of income (for example if services limited hospital beds closed, procedures postponed)
Recruitment	<ul style="list-style-type: none"> Preparation of Position Description; advertising; preparing a case for recruitment; interviews (include salaries, travel and accommodation for applicants and panel); fees paid to employment agencies 	<ul style="list-style-type: none"> Recruiting drives at universities and job expos; human resources costs for responding to inquiries, processing applications; short-listing; interview room overheads; time in contract negotiations;
Appointment	<ul style="list-style-type: none"> medical examination; relocation payment; housing subsidy; uniforms/protective clothing; ID card; personalised equipment; negotiated personal package costs; 	<ul style="list-style-type: none"> Background check; credentials check; referee check; time spent with immigration requirements; human resources overheads for new employee start-up
Orientation/induction	<ul style="list-style-type: none"> Formal orientation/induction program costs (including staff and preceptor time, classroom overheads); new hire salary during induction; travel and accommodation costs for any orientation/induction held off-site 	
Reduced productivity period		<ul style="list-style-type: none"> Reduced productivity of recruit while learning the job and supervisor while assisting new hire; reduced productivity of co-workers until full mastery of job
Termination	<ul style="list-style-type: none"> Staff time to conduct and analyse exit interview; HR processing; separation payments; potential losses on eg housing lease until reoccupied 	

An approximate or average figure for turnover costs of particular positions or groups of similar positions derived by a service provider may be used to calculate the benchmark length of service required to see a return on that investment. Even with the problem of items whose cost cannot be readily obtained or calculated, estimating the cost of turnover for an individual position or for a group of similar positions such as registered nurses or physiotherapists may be useful for comparative purposes and can help answer such questions as ‘what is the net cost/benefit to the organisation of retaining employees for different durations?’, and ‘what is the gain from extending average retention by 3 months, 18 months or three years?’