

A critical review of rural medical workforce retention in Australia

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Abstract

The problem of how best to recruit and retain doctors in rural and remote communities has led governments to adopt a range of medical workforce incentives, including retention grants. A comprehensive literature survey suggests that medical workforce retention has been poorly distinguished from other supply issues such as recruitment, and that its determinants and the process leading to retention are poorly understood. Such a knowledge gap is likely to limit the effectiveness of retention incentives. This article reports the results of this literature review, and advances a conceptual framework as the basis for ongoing research and evaluating how best to deliver effective retention interventions.

Background

Given the pivotal role of general practitioners (GPs) as the gateway to the health care system, access to general practice services is of paramount importance in the provision of health care. On average in 1997-98 in Australia each person consulted a GP 6.5 times per annum, less so in rural and remote communities where there is a severe undersupply of GPs (Department of Health & Aged Care 2000). That access difficulties increase with geographical remoteness is hardly surprising given that the population per full time equivalent GP ranges from 1,034 in capital cities to over 1,881 in remote centres (Australian Medical Workforce Advisory Committee & Australian Institute of Health and Welfare 1998).

The shortage of GPs remains a significant issue throughout rural Australia despite a wide range of government initiatives and incentives designed to address problems of medical workforce recruitment and retention in rural and remote regions (Rosenman & Batman 1992; Department of Health & Aged Care 2000, Wilkinson 2000a). The undersupply of rural and remote GPs is not solely a function of supply in terms of graduates from medical training and recruitment of practitioners from overseas or metropolitan regions. It also reflects the related issue of retention in terms of the length of stay of medical practitioners in rural practice, something that has been acknowledged for some time (Jackson & Jackson 1991; Holub & Williams 1996; Humphreys & Rolley 1998).

The loss of a practitioner from a rural or remote community 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 GP Strategy Review recommended retention grants to reward and retain longstanding practitioners in rural and remote communities (Commonwealth Department of Health and Family Services 1998). This recommendation was acted upon by the Department of Health & Aged Care

in its 1999-2000 Budget (Wooldridge 1999). The implementation of retention grants raises a number of significant issues, including how to determine the criteria underpinning their allocation and their effectiveness, issues around which there seems to be a paucity of research.

It is against this background that this research has been undertaken. A comprehensive review of the literature reveals a lack of precision, in fact considerable ambiguity, in separating the issue of retention from other aspects of workforce supply, such as recruitment. Given that the decision to take up practice in a rural or remote community considers different factors from those associated with the decision to relocate, this inadequate distinction between workforce recruitment and retention is problematic.

The specific objectives of this article are:

- to identify what constitutes retention in the non-metropolitan medical workforce and how it is best measured;
- to ascertain the correlates and determinants of non-metropolitan medical workforce retention;
- to identify overlap and differences between medical workforce recruitment and retention; and
- to outline why a specific research agenda focusing on clearly defined measures and definitions of retention is required, and to put forward a conceptual framework around which this research might be conducted.

Methods

A comprehensive systematic literature search was conducted, using the following Australian and international databases: *ATSI Health*, *Consumer Science*, *AusportMed*, *Family & Society*, *Rural*, *HIV*, *Health & Society*, *APAIS Health*, *Drug*, *CINCH*, *Australian Medical Index*, *Pre-Medline and Medline*, *CINAHL* and *Current Contents*. The following search terms were used: 'rural' or 'remote' or 'regional' and 'recruitment' or 'retention'. For Medline databases, the following terms were added to narrow the search: 'family physician' or 'medical workforce' or 'general practice' or 'general practitioner'. The time period covered was from 1991 to April 2001. Additional references were gathered from other sources through a search of the Tables of Contents of the most relevant journals, and from references cited in articles obtained through the literature search.

A total of 212 unique references were identified by the search. The focus was essentially on mainstream peer-reviewed journals and on the Australian context (so that overseas literature is only relevant where it makes a contribution to conceptualisation of the issues). Surprisingly, 184 references were deemed to be of marginal relevance to this study either because they were derivative of original works, medical workforce retention was not addressed as a significant concern of the research being reported, or because the term was used in another context such as referring to clinical trial methodology. This left a core of 28 references that were relevant for analysis.

The review of the literature revealed a wide range of questions that were used to investigate some aspect of medical workforce retention, a concept that was routinely poorly defined or not defined at all (see Table 1). Many studies covered several aspects of both recruitment and retention (Alexander, 1998, Rabinowitz *et al.* 1999a, Strasser 1992b). Other studies, such as Costa *et al.* (1996), focused solely on practice intentions of family practice residents prior to completion of their medical school education. In broad terms, the studies fell within three categories:

1. Retrospective analyses of data based on practice location and variables that correlated with whether the practitioners remained in or left that practice;
2. Questions asking 'Why stay?' or 'What would make you stay?', and
3. Questions asking 'Why leave?' or 'Reasons for leaving?'.

Results

What is retention in the medical workforce and how is it best measured?

As stated previously, the issue of how retention is defined is invariably avoided or at best taken-for-granted. Retention has been defined as an arbitrary number of years of service (eg. Hays *et al.* 1995; Adikhari *et al.* 1993), as

an indefinite or unknown length of stay (eg. Alexander 1998), as staying for a fixed period associated with indenture (eg. Pathman *et al.* 1996), or as staying for as long as or longer than the physician intended (Kamien 1998).

Table 1: Classification of literature relating to medical workforce ‘retention’

Object of investigation	Subjects	Example
Retrospective comparison of characteristics of rural uptakers, stayers & leavers (correlate studies)	GPs who have practised in rural areas Medical practitioners in both metropolitan and non-metropolitan workforce	(Rabinowitz 1993; Pathman <i>et al.</i> 1996; Kamien 1998) (Adikhari <i>et al.</i> 1993; Rabinowitz <i>et al.</i> 1999a; Wilkinson 2000b)
Why they chose rural practice	Practising rural GPs	(Alexander 1998; Hays <i>et al.</i> 1995; Strasser 1992a)
Why they stay in rural practice	Practising rural GPs	(Kamien 1998; Strasser 1992a,b)
What makes them stay	Practising rural GPs who are defined as stayers	(Cutchin 1997a,b; Kamien 1998)
What would make others stay	Practising rural GPs who are defined as stayers	(Alexander 1998; Strasser 1992a,b)
What would make them leave	Practising rural GPs	(Alexander 1998; Strasser 1992a,b)
Why they left	One-time rural GPs defined as leavers	(Hays <i>et al.</i> , 1997; Alexander 1998; Kamien 1998)

For example, Hays *et al.* (1997) implicitly defined retention as the intention to remain in rural practice for 2 or more years. In contrast, Adikhari *et al.* (1993), using cohorts of graduates, examined GP mobility over the first 5-years of practice using the Rural and Remote Areas (RARA) Classification (Department of Health Housing and Community Services 1991). In a study of New England, NSW, Alexander (1998) focuses on the turnover rate associated with GPs practising in the region.

Defining the doctor’s first practice as the ‘index practice’, Pathman *et al.* (1996), in a study of the relationship between rural physician satisfaction and retention, use the following definition: “physician’s retention duration in their index practices was calculated as the number of years they had worked in these practices up to the time of the survey, added to any further years they anticipated working there, up to a conservative two additional years”.

In earlier work with National Health Service Corps (NHSC) physicians, Pathman *et al.* (1992) defined retention in terms of a retention profile. “This concept acknowledges that physicians may be regarded by different observers as successfully retained when remaining in any of several locations. The retention profile, as used here, simultaneously measures for each physician the total years of retention within the index (that is, initial) practice, within the index community (within 24 kilometres of the index practice), and within any non-metropolitan county, and is displayed for a physician group as three survival curves plotted side-by-side”. Similarly, Rosenblatt *et al.* (1996), also working with NHSC physicians, defined long term retention as “encompassing a spectrum of possible end points, from remaining within the practice to which the physician was originally assigned to providing care to underserved populations in an urban setting”.

Clearly the concept of retention has been variably operationalised by different authors. Most recognise that retention does not imply indefinite practice in one location. Rather retention refers to some minimum length of stay within a particular rural community. Exactly what constitutes this ‘minimum’ is unclear, and likely to vary both 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, then, 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.

Operationally, 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 (commonly measured as a *survival* rate). On the other hand, measures of turnover (commonly *separation* rates) reflect the

degree of movement of individuals coming into or leaving a practice or community (Australian Department of Labor and Immigration 1974; Pettman 1975). Usually the workforce goal is to minimise avoidable workforce turnover.

The operational definition of retention will determine the patterns of communities or geographical areas where retention levels are highest or alternatively where GP 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 areas and communities, thereby allowing some insight into areas that appear to have difficulty in retaining GPs for an optimal period of time.

In examining geographical patterns of medical workforce retention, it must be remembered too that the issue of geographical scale of analysis is important. Until recently, in Australia, rural and remote differentiation has been based on the Rural Remote and Metropolitan Areas (RRMA) Classification (Department of Primary Industries and Energy & Department of Human Services & Health 1994). Currently, the Department of Health & Aged Care is adopting the Accessibility/Remoteness Index of Australia (ARIA) as its preferred classification for differentiating geographical communities according to size and remoteness (Department of Health & Aged Care & National Key Centre for Social Applications of Geographical Information Systems 1999). ARIA has the benefit of enabling a finer degree of aggregation of rural communities for purposes of comparison of GP survival or turnover rates across rural and remote regions. Relocation of GPs with similar RRMA or ARIA categories does not result in any net change in terms of medical workforce supply numbers for those regions in terms of their *practitioner to population* ratios, whereas relocation between categories results in a changing workforce supply for both regions and is reflected in their workforce statistics. The actual costs associated with the replacement of GPs are borne by the local community in both cases, and may be especially burdensome in situations where an expensive and time-consuming recruitment campaign follows.

What factors are responsible for retention?

Recognising retention as the issue of whether physicians stay or leave their initial practice, Cutchin (1997a, 1662) differentiates the decision to locate from the decision to remain in a community.

“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”.

Despite the extensive investigations into the reasons for moving or staying in a particular practice and location, few studies have satisfactorily distinguished between what might be considered as the correlates and determinants of retention. Most research has focused on the identification of factors influencing the decision-making behaviour and satisfaction of GPs and measurement of relationships between variables that are presumed to have some relevance to whether or how long a GP stays in a particular location (eg: Hoyal 1995; Wilkinson *et al.* 2000; Williams *et al.* 2001). In contrast, ascertaining the determinants of retention is a much more complex theoretical matter that postulates causal links and pathways between interrelated ‘push’ and ‘pull’ variables.

Two exceptions to the paucity of systematic longitudinal research into the determinants of practitioner retention were undertaken in Queensland and Western Australia (Hays *et al.* 1997; Kamien 1998). Factors affecting retention and turnover can be broadly classified under three headings:

- Professional issues – relating to the nature of job itself, vocational satisfaction, support, remuneration, procedural opportunities, physical conditions etc
- Social factors relating to personal characteristics and the family, and
- External factors relating to the community and its geographical location.

Professional factors contributing to a doctor’s decision to move from rural practice include lack of support from local hospitals or community health staff, lack of opportunity to practice procedures due to the small number of cases and high malpractice insurance premiums, lack of support from other medical workers, high workloads and on-call ratios and lack of locum relief for time away (Hoyal 1995). Kamien’s ten-year study in Western Australia showed that professional satisfaction (such as 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.* (1997). 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 and family factors contributing to leaving included difficulties of coping with change, perceived problems with secondary education for children, lack of occupational opportunities for the doctor's spouse, 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 (Hoyal 1995; Hays *et al.*, 1998).

Community facilities, support and relationships have been acknowledged as important influences on the extent to which rural doctors' needs are satisfied. Although Hoyal (1995) found that little research existed on community expectations, Kamien (1998) found that social and personal satisfaction with rural lifestyle was a significant reason for staying. Hays *et al.* (1997) found that doctors reported that rural communities provided a good environment for their young to middle primary school children, although they felt they could get too close to members of the community and lose their objectivity in dealing with their medical problems.

Both the Queensland and Western Australian studies show that influences to stay and to leave can be in a delicate balance, and that triggering events can easily lead to the decision to relocate elsewhere. Hays *et al.* (1997) found that most doctors moved to larger rural or regional centres where they could retain some of the benefits of rural practice, but also access the supports and services they wanted for themselves and their families (and which were not available in their previous location).

Given that there are good reasons for maintaining a critical 'minimum' period of service, it is apposite to question if there are critical phases of retention. Evidence from workforce turnover research suggests that some labour turnover and employment relocation reflects a process of differential transit within both the life and career cycles of individuals (Pettman 1975). Invariably, the focus of concern is with avoidable turnover that results from those trigger factors that could be modified, thereby resulting in increased lengths of stay that still accord professional and personal satisfaction to the individual while at the same time providing greater continuity of service and satisfaction to the community. Such trigger factors, which propel the decision to move, are likely to fall into two broad groups – internal and external.

Internal factors reflect characteristics of the individual as, for example, in the case of short-term stayers who experience something of an *induction* crisis soon after taking up a new position. In this situation, individual expectations, aspirations and needs are sufficiently incongruent with the professional or community environment in which the individuals find themselves that important needs cannot be met without geographical relocation (Pettman 1975). For those newcomers whose personal and professional needs are met by the opportunities provided by both the practice and community, a period of *settled connection* may follow, during which the practitioner and his/her family are satisfied with the existing practice location. Over time, changing needs characterising different phases of the lifecycle, such as education for secondary school aged children or pursuing employment opportunities associated with a change in career goals, may trigger geographical relocation. Such a stage approximates a phase that has been considered *differential transit*.

External factors refer to the many political, economic and social forces of change that occur naturally within society, and which may bring with them a range of triggers which precipitate geographical relocation of employment. Examples include policy changes associated with or 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 the impacts of economic restructuring or downturn on the economic base of the town), and other changes to the provision of health, education and other community services that result from policies of service rationalisation or centralisation.

What overlap and differences exist between medical workforce recruitment and retention?

Medical workforce retention is only one component of a bigger issue of how to ensure an adequate supply of rural doctors in rural and remote communities that ensures available, accessible and appropriate medical care to the resident population. It has long been recognised that, for a variety of geographical reasons, some rural and remote communities require innovative ways of meeting their needs for medical care. Perhaps the best exemplar in Australia is the Royal Flying Doctor Service (Page 1977; Woldendorp & McDonald 1994).

In modelling terms, the extent to which available, accessible and appropriate medical care is achieved in rural and remote communities can be viewed as a function of three partially interrelated dimensions. They are the initial supply (reflecting the pool of medical school graduates and overseas trained doctors), recruitment (in terms of the numbers who actually decide to take up rural practice), and retention (in terms of how long the doctor maintains practice within a particular community).

While acknowledging that issues of recruitment and retention partially overlap, the extent to which factors that contribute to retention are independent of those influencing initial recruitment to rural and remote practice remains unclear. The most comprehensive research assessing what factors influence the decisions of medical graduates to take up rural practice has been conducted overseas, particularly in relation to the Washington, Wyoming, Alaska, Montana and Idaho (WWAMI) Program and Jefferson Medical College Philadelphia (Geyman *et al.* 2000; Rabinowitz 1983, 1988, 1993, Rabinowitz *et al.* 1999a,b). The findings from these studies 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.

However, while some of these background variables (such as rural background and interest in rural practice) continue to influence practitioner satisfaction in rural practice, Rabinowitz *et al.* (1999a) found that practice issues such as income and workload were far more significant predictors of practitioner retention in rural areas. More research is required to validate these findings in the Australian context.

Why is a specific research agenda focusing on rural medical workforce retention required?

Several outstanding issues arise because of the confusion that has resulted from lack of research into retention, failure to adequately define exactly what aspect of retention is being investigated or research that is not based on a clear conceptual distinction between recruitment and retention. Critical unanswered questions include:

- What aspects of recruitment to rural practice also influence retention?
- Are there any 'triggers' (such as in terms of stage in the life cycle, type of practice, and nature and size of community) that differentiate GPs who stay in or move from rural communities?
- Under what circumstances do either professional or personal needs and concerns take priority in the decision to stay in or move from practice in a rural or remote community?
- What length of service is optimal for the GP and for the community?
- What are the effects and costs of 'high' GP turnover on patient care, other practitioners in the community, community growth and sustainability and the ability of the community to attract new doctors?
- How can GP retention in rural and remote communities be maximised?
- What measures or incentives may assist to foster a period of *settled connection* for newly arrived GPs?
- What incentives are not currently being implemented which might be effective retention measures?
- What 'triggers' are we unlikely to be able to modify or influence?

Arguably, a contributing factor for the dearth of knowledge relating to these questions is the absence of a systematic approach or research agenda for medical workforce retention. In particular, the need for a conceptual framework to underpin future research investigating the decision to move to or move from a particular practice location is long overdue. In the words of Cutchin (1997b, 27):

"The dominant view holds that the decision to move – the antithesis of retention - occurs as a stimulus-response mechanism triggered by specific 'factors'. What has been neglected in the research to date is the *process leading to retention*. This omission leaves us without well-defined concepts and theories regarding how and why retention occurs through time. We need, therefore, to address these research issues and widen our perspective on retention".

One means of gaining insight into this problem may be to examine the process and trigger factors leading up to the decision to move. Figure 1 provides a simplified model that identifies the decision-making process and its relationship to recruitment and retention.

Phase 1 - The decision to take up rural practice (Recruitment)

In the recruitment phase, a practitioner contemplating whether to take up practice in a rural or remote community balances a range of personal and professional needs and expectations (internal factors) against his/her perception of the extent to which they can be met in a particular location (external factors). The nature of internal factors influencing a doctor's decision to take up rural practice is wide-ranging, including background, marital status, the aspirations and needs of the doctor's spouse or partner, the household's stage of the life-cycle, perceived variety of practices, particular attraction to a rural place or lifestyle, independence and access to hospitals (Strasser 1992b). In contrast, the external factors relate to the community's size and geographical location, the social and physical environment of the community, the nature of existing health services and infrastructure, the nature of practice the doctor can actually undertake within the community, the nature and extent of professional support and continuing medical education, availability of locum relief, and the extent to which a career path is perceived to be limited by location outside of metropolitan areas. Where the match between internal aspirations and needs and external environment factors is sufficiently congruent, the doctor takes up rural practice.

Phase 2 - The decision to remain in the existing rural practice (Retention)

In the retention phase, many doctors may experience professional and personal satisfaction with rural practice for a long period of time. By remaining in their existing practice location this group represents 'maximum' retention.

Over time, however, personal and professional needs may change for some practitioners, as might the practice and community circumstances, such that there is an increasing degree of divergence or dissonance. According to Hays *et al.* (1997), the practitioner balances influences to stay against influences to move that are triggered by certain changes in existing circumstances. In situations where a significant mismatch exists between the doctor's level of satisfaction and their present location, however, a state of 'stress' (reflected in levels of satisfaction, physical and mental wellbeing) may occur in which some modification is required in order for the practitioners to remain *in situ* (Williams *et al.* 2001). In this situation of dissonance, a process of stress reduction occurs in which the doctor considers options for addressing problems of dissatisfaction or stress associated with continuing to practice at the existing location.

Resolution of this situation can occur in several ways. First, the doctor may adjust his/her needs and aspirations. An example of this may occur in a situation where, under increasing difficulties of maintaining procedural activity, the doctor reorients his/her practice towards public health activities in line with changing needs within the community and more broadly with changing orientation within the health care system.

Second, the doctor may attempt to restructure the immediate environment so that it provides a better match with household needs. For example, opting to send children to boarding school or attracting more locum relief or a partner may reduce the significance of those stressors that were leading the doctor to contemplate taking up a practice elsewhere.

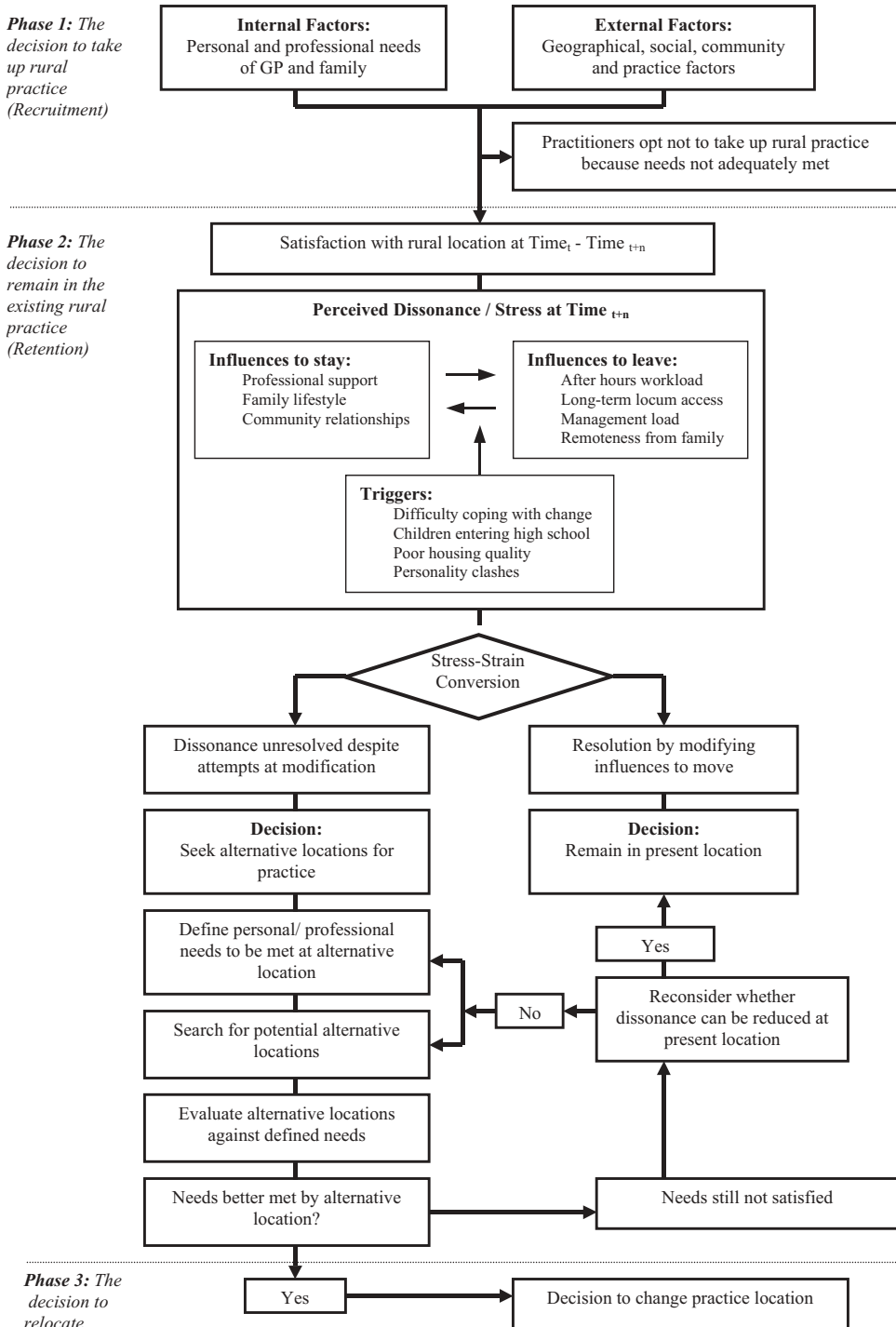
In both these situations rural doctors may be balancing a general desire to remain in their community with an important unmet professional or personal need. Where either of these two stress reduction options occurs, and relocation is avoided, a situation of adjusting *in situ* is attained. In this situation, retention can be considered to have been maximised through minimising 'avoidable' relocation.

In the third option, where the state of dissonance is so great that the doctor feels that adjustment cannot occur *in situ*, he or she may decide to relocate to another community.

Phase 3 - The relocation decision

In this situation, the practitioner may assess alternatives, appraising other potential locations against his/her present site. Although the set of needs that the GP and his/her family seek to meet is multidimensional, those requirements (internal and external) which could not be modified *in situ* usually dominate. The location ultimately selected by the GP will be a place whose characteristics are perceived to possess or promise a relatively higher level of utility and satisfaction than in other places considered as alternative locations.

Figure 1: A conceptual model of the decision-making process for rural practitioners.



It should be recognised that movement between communities at different levels of the settlement hierarchy is commonly part of what might be considered a natural process of changes associated with the life cycle or career progression. In all probability the GP will relocate to a larger, usually metropolitan centre where the problems associated with the external characteristics of small rural and remote practices are relieved (Hays *et al.* 1997).

Discussion

This simplified model of the decision-making of doctors contemplating or dissatisfied with rural practice requires further empirical research. Nonetheless, such a framework recognises that the factors responsible for retaining GPs in rural practice are not necessarily the same as those responsible for taking up rural practice. Moreover, the extent to which each factor is modifiable differs significantly. Hence, for example, lack of schooling opportunities within a small rural community may be overcome by deciding to send children to a comprehensive boarding school in the city or regional centre. Conversely, the opportunity to modify the lack of employment opportunities for a spouse may be extremely limited or non-existent. Similarly, while provision for locum relief might help relieve the stresses associated with solo practice, the designated role delineation of a hospital or health service or changes in indemnity costs might preclude a GP from practising surgical procedures and obstetrics without moving to a larger centre.

In addition, the model offers the opportunity for better evaluating the specific impacts of public interventions, in the form of incentives designed to retain doctors in rural and remote communities. It has long been recognised that retention incentives are “unlikely to succeed unless they are preceded by a correct diagnosis of the major causes of turnover” (Australian Department of Labor and Immigration 1974, 23).

To date, little Australian 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 (Australian Department of Labor and Immigration 1974, 26).

Hays *et al.* (1997) postulated a range of strategies to address the 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. Another approach is to formally recognise that many metropolitan-origin and trained doctors will only ever serve in rural communities for a limited time, and to offer rewards and incentives to extend that time, such as guaranteed placement in a larger centre after (say) 5 or 10 years.

Other strategies, undertaken concurrently with individual incentives, promise opportunities for maximising the retention of rural and remote practitioners. The important role of community participation in recruitment and retention has been highlighted in a number of studies (Mills 1997; Veitch *et al.* 1999), with Cutchin (1997b) advocating the importance of “place integration” as the basis for why practitioners stay in rural communities. Another study in Victoria demonstrated the significant benefits of case management in contributing to improved recruitment and retention of practitioners in a rural community (MacIsaac *et al.* 2000).

Currently, retention grants for rural and remote general practitioners focus on survival rates by rewarding the individual doctor for length of service rendered to the practice and community, regardless of their future intentions to stay or leave. In the event that the doctor moves elsewhere, the community may be required to embark upon another expensive recruitment program. In contrast, using separation rates, high turnover practices in rural communities that may not be characterised by the same longevity of individual staff but nonetheless have the ability to ensure continuity of GP services through attracting short-term “stayers”, do not receive any recognition in the form of retention grants. 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.

Conclusion

This article has reviewed the evidence base for medical workforce retention in rural and remote communities in Australia. It argues strongly for greater clarity of focus in ongoing and future research on retention. A conceptual model is postulated that can be used as the basis for investigating many unanswered questions relating to how best to maximise the retention of practitioners in rural and remote communities.

Currently a major research project is being undertaken by a consortium of academics from the University of Adelaide and Monash University to investigate the pattern of medical workforce retention in rural and remote communities. The first stage of this research seeks to profile rural and remote communities characterised by high and low retention according to practitioner turnover rates based on Health Insurance Commission data. The second stage focuses more specifically on how the attractiveness dimension of rural and remote communities weighs in importance vis-à-vis other professional, economic and social influences on the decisions of health practitioners to take up or remain in practice in particular communities.

Further longitudinal research is required, however, to investigate the roles of trigger factors that precipitate a state of dissonance or stress associated with continuing to practice at existing locations and the effectiveness of specific retention measures and incentives designed to modify them with a view to increasing the length of time a practitioner remains *in situ* in rural and remote communities. Only with the knowledge acquired from such research can health authorities have confidence in how best to target and address medical workforce retention issues that currently contribute to the shortage of practitioners in rural and remote communities.

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