

Retention of rural physicians: tipping the decision-making scales

Alison S.A. Pope, BAH, PhD(Cand), Garry D. Grams, PhD, Carl B.C. Whiteside, MD, CCFP, FRCP, Arminée Kazanjian, DSoc

CJRM 1998;3(4):209-16

[\[résumé\]](#)

---

Department of Family Practice and Centre for Health Services and Policy Research, University of British Columbia, Vancouver, BC

Correspondence and reprint requests to: Dr. Carl B.C. Whiteside, Department of Family Practice, University of British Columbia, 5804 Fairview Ave., Vancouver BC V6T 1Z3;  
[cbwh@unixg.ubc.ca](mailto:cbwh@unixg.ubc.ca)

This paper has been peer reviewed.

Acknowledgement: Funding for this study was provided by British Columbia Medical Services Foundation.

---

## Contents

- [Abstract](#)
  - [Résumé](#)
  - [Introduction](#)
  - [Method](#)
  - [Findings](#)
  - [Implications](#)
  - [References](#)
-

**Objectives:** To provide an understanding of the decision-making process that rural physicians and their families undergo when they decide to relocate and to draw implications that might be useful for those facing similar relocation decisions.

**Design:** A qualitative study.

**Method:** The narrative responses of 121 rural physicians to a survey questionnaire on practice location were analysed using grounded theory to develop a theory for understanding the retention of rural physicians.

**Results:** The findings were organized around 3 major categories: community commitment, medical confidence and compensation. Throughout these categories a theme emerged — "tipping the decision-making scales" — which describes the delicate balance of issues that surround the rural physician's decision on practice location. From this theme, important patterns have emerged to explain what tips the balance that leads rural physicians to (1) make a rational decision to leave, (2) wait for the "last straw," (3) experience the "last straw" scenario and (4) make a decision to stay.

[ [Contents](#) ]

---

**Objectifs :** Aider à comprendre le processus décisionnel que suivent les médecins ruraux et les membres de leur famille lorsqu'ils décident de déménager et tirer des conclusions qui pourraient être utiles à ceux qui doivent prendre des décisions semblables.

**Conception :** Étude qualitative.

**Méthode :** On a analysé les réponses narratives de 121 médecins ruraux à un questionnaire sur le lieu d'exercice de la profession en se fondant sur une théorie à base empirique afin d'élaborer une théorie permettant de comprendre la rétention des médecins ruraux.

**Résultats :** Les constatations ont été réparties en trois grandes catégories : engagement communautaire, confiance médicale et rémunération. Dans toutes ces catégories, on a dégagé un thème «qui a fait pencher la balance décisionnelle» et qui décrit l'équilibre délicat entre les enjeux qui jouent sur la décision que prend un médecin rural au sujet du lieu d'exercice de sa profession. À partir de ce thème, on a dégagé d'importantes tendances pour expliquer ce qui fait pencher la balance et incite les médecins ruraux à 1) décider rationnellement de partir, 2) attendre la «dernière goutte d'eau», 3) vivre le scénario de la «dernière goutte d'eau» et 4) décider de rester.

[ [Contents](#) ]

---

Recruitment of physicians to rural practice continues to be a major concern to most rural communities. This problem has been extensively studied, and evidence now exists that physician characteristics,<sup>1-3</sup> training environments,<sup>2,4-8</sup> and a rural training curriculum<sup>8-10</sup> are a few of the important factors related to attracting physicians to these practice locations. More recently, however, the concern has shifted and studies have begun to focus attention on retention and on understanding the factors that influence physicians to stay in their rural settings.<sup>11-16</sup>

A 1991 study by the Canadian Medical Association of 2400 rural physicians of whom 400 had moved from a rural to an urban location identified the professional and personal factors inherent in their decision to stay or to leave their rural practice.<sup>12</sup> It was found that the decision was complicated by both personal and professional concerns. Professional factors for leaving rural practice included work hours, professional back-up, specialty services, additional training, hospital services, [continuing medical education](#) (CME) and earning potential. Personal concerns included children's education, spousal job opportunities, recreation, cultural opportunities and retirement. The most important factors related to physicians staying in a rural practice, in descending order, were: additional colleagues, locum tenens, an opportunity for group practice, specialist services, alternative compensation, CME, improved facilities and emergency transportation.

What is unclear from these studies is an understanding of what rural physicians go through in order to make the decision to stay or leave. In the past, the emphasis for physicians and communities has been recruitment, but improvements in retention would greatly alleviate physician imbalances. Understanding the decision-making process that rural physicians and their families undergo may serve as a useful guide to those facing similar relocation decisions.

[ [Contents](#) ]

---

## Method

This study is based on a recruitment and retention survey conducted by the Centre for Health Services and Policy Research at the University of British Columbia in 1989.<sup>17</sup> The survey comprised 40 close-ended questions and space for doctors' additional comments. The additional comments are the subject of this analysis.

Grounded theory and the constant comparative method of analysis<sup>18-20</sup> provide a methodical and rigorous way to examine physicians' comments and to develop a theory for understanding the decision to stay or leave. According to the principles of grounded theory, the narrative data were manually analysed word by word and sentence by sentence, by 2 of the members of the research team (A.P., G.G.) to ensure that every idea was identified. All of the ideas that emerged from this process of analysis were named (open coding) using terms that, to us, best reflected the meaning

of the ideas identified. The data were then reviewed by another member of the research team (C.W.) to verify that no new conceptual ideas emerged (saturation) or had been missed. The code names were then organized into a theoretical framework (axial coding), which included 3 major categories, their respective properties, and the types, circumstances and conditions under which the properties exist. The ideas in this framework were then articulated into a theory that describes and illustrates the make-up of these different categories and how they relate to one another.<sup>20</sup> Finally, a major theme was identified (G.D. Grams, Department of Family Practice, University of British Columbia, Vancouver. Rudiments in the process of conducting qualitative research: a working guide to the use of "grounded theory" [unpublished manuscript, 1997]), which speaks to those factors that appear to "tip the balance" in the decision-making process. The conceptual findings that make up this theme provide an overview of the theory of the decision to stay or leave and are presented and "grounded" in the words of the physicians.

Of the original 404 responses from rural physicians, 121 responded with some detailed comments concerning their recruitment and retention experiences that were used in this study.

For purposes of anonymity, the quotations used in reporting the findings of this study have been altered where necessary to conceal the identity of those involved. Ethical approval for the survey was granted by the Behavioural Screening Committee for Research, University of British Columbia.

[ [Contents](#) ]

---

## Findings

### Tipping the decision-making scales

The 3 major categories into which the conceptual analyses were organized were: community commitment, medical confidence and compensation. These categories and their properties describe the issues and the process involved in the decision to stay or leave. Although the theory provides us with a detailed and complex composite picture of the retention issues through the experiences of these physicians, emerging in more than one category is the more general theme, "tipping the decision-making scales." A review of this theme provides a brief overview of the theory and important implications for those struggling with issues of recruitment and retention.

This theme describes how 3 important circumstances interact to affect retention. Specifically, it is the experience the physician has with balancing his or her own lifestyle with commitment to the community, the confidence that s/he has to fulfil that responsibility, and the appropriateness of the compensation which s/he receives that influences the decision to stay or leave a rural community. An important part of the theme is the continual struggle involved in balancing the positive and negative aspects of rural practice, in addition to the subjective nature of satisfaction, all of which occur when practice-location decisions are made. For every factor judged positive by

one physician there is another who sees the same situation in a different light. Each of the 3 components of the theme are considered separately.

#### Community commitment

Rural medicine is more than a vocational commitment. The physician often develops a very close relationship with the community. This can be both a positive and a negative experience, as one physician explains.

A very close bond develops between the small community and its physicians. This can be physically tiring and emotionally draining, but it is very satisfying professionally.

Rural practice is usually characterized by a very demanding work schedule, particularly with on-call responsibilities. Without access to emergency facilities and other physicians to assist with on-call schedules, a rural physician is called upon day and night:

Living in the North or in an isolated community requires a great deal of devotion with respect to your work as you are known wherever you go and everyone knows your telephone number, consequently you will be called upon day and night.

Physicians frequently encounter demands for their service, even during their spare time or while grocery shopping, which one physician described as " 'meat counter' consultations with patients."

As another physician states:

My greatest dissatisfaction with small town practice is the great difficulty in finding personal time without the likelihood of interruption. If I leave it will probably be to work somewhere I can shut the office door and not worry till the next day.

Aside from the direct medical responsibilities, a consequence of a rural practice is the physician's feeling that his or her lifestyle choices and personal life cannot be kept from the public eye:

The only problem I find with living in a small community is the lack of anonymity. Like it or not we have a "high profile" in the community which can be good or bad or both. That takes a lot of getting used to. One cannot have a life-style which is too outrageous or eccentric — everybody knows you.

Other physicians focus more on the opportunities that rural medicine gives them to form close relationships with community members and patients. The commitment a rural doctor is required to make to community residents can bring greater meaning to the practice of medicine.

I wanted to work where I was really needed. A small rural community fulfills this.

A rural physician benefits from being able to treat patients within the context of their social environment, although it also means that medical decisions can take on a very personal nature. Balancing family life with medical responsibilities can be very difficult when a physician has to be available constantly and can be found easily in a small community. Important family events can be missed:

You can never guarantee your spouse or children that you'll be there for special events such as birthday parties, school concerts, etc.

In this regard, family holiday time can be difficult to arrange due to difficulties in finding locum coverage. Not surprisingly marriages can be affected by the constant demands of rural practice:

The general number of hours I put in per week to run my practice and the responsibilities of the practice contributed largely to my marital breakdown.

The challenge, professional growth and the contribution one can make to the community may be the most appealing part of rural practice, but it comes with a heavy burden. The demanding work schedule and the responsibility to each patient and the community as a whole can begin to make you feel as though you are on an "unstoppable treadmill" as one physician wrote. Another physician noted that:

My biggest frustration was burnout that is inevitable in a small town. Due to long hours, heavy call, and extra community responsibilities.

Personal circumstances and values determine how well a physician can balance the burdens and the benefits of living and working in a rural community.

### Medical confidence

Practising rural medicine means practising without first-hand access to the latest medical technology and specialist consultation. In an isolated setting a physician carries much greater responsibility for quick decision-making and must use a wide variety of medical skills. This situation is a tremendous challenge given the responsibility of not knowing what they might encounter next, yet knowing that they will be required to manage the problem with the resources immediately available to them.

I know what it means to have a patient with a bowel obstruction, a newborn with leukemia, a child with Friedlander's meningitis. The anxious hours of fear and worries of wrong diagnosis or of further wrong treatment. The having of not only the medical problem, but to be your own lab technician and radiologist.

Whether physicians see this environment as challenging or overwhelming will depend on their confidence in being able to meet the demands for service. In some cases, this high level of personal challenge is actually what maintains a doctor's interest in practising rural medicine:

The practice of medicine involves making decisions, acting on them, and living with the consequences of those decisions / actions. The level at which I can do this is much higher in a rural setting and thus far continues to expand my skills and competence. Without a continued sense of professional growth I suspect I would lose interest in medicine.

The overall level of confidence that a physician has to cope with the demands of rural practice depends on both personal traits and medical preparedness. Back-up in terms of specialty support (including general practitioners with special skills training) and community health resources such as air evacuation and ambulance services, pharmacy, counselling, psychiatric care and physiotherapy are important contributing factors to the physician's level of confidence, as is the practice environment.

The compatibility of the other GPs and the general morale of health care people is very good. We are all working together.

Doctors have concerns about their ability to offer certain services, which can be a deciding factor for practice location:

There is a dire shortage of GP anesthetists and therefore a threat exists to our ability to offer surgery. I would not stay here if we could not offer at least general surgery.

Access to special skills training and CME, often limited in rural areas, is critical in maintaining a physician's educational competence, and therefore confidence, to function effectively in a rural environment.

The main professional concern is lack of opportunity to upgrade skills in various areas such as obstetrics, cardiology, trauma care and neonatology.

Confidence to practise effectively in a rural environment is also affected by the expectations of patients and concerns over medical liability. A physician is confronted with questions of legal liability, which can seem overwhelming in an environment where back-up support and medical facilities are not comparable to an urban setting:

If I move, the principal reason will be that the absence of specialist support has finally become too stressful — coupled with the increasingly pervasive concern

regarding the perception of what is adequate care and medico-legal concerns.

Alternatively, some physicians feel that legal liability is less likely to be an important issue once a community comes to know and trust their doctor:

Once a physician becomes established in a small town and shows himself to be caring and dedicated, he is most unlikely to be sued.

But treating patients in a rural area without the same access to the latest treatment technologies and diagnostic tests as urban colleagues can be frustrating:

I worked as a rural GP for 4 years. I left because it seemed to me that patients expected the same type of care/consultations that were available in the city and this is hard to provide.

A medical situation where a physician must use quick decision-making without necessarily having access to appropriate diagnostic technology or specialist consultation can be seen as a challenging experience with potential for professional growth or as an overwhelming responsibility with unwelcome stress and anxiety. The confidence that a rural physician has in his or her ability to deal with the situation will determine how the situation is viewed. Confidence to perform effectively is so crucial to the everyday experience that this can be a critical decision scale-tipper: this issue alone can finalize the decision to leave.

### Compensation

Compensation comes in a number of forms including financial, professional and personal.

Financial rewards can only be measured appropriately when viewed relative to a number of factors, including cost of living, running a practice in a rural location, trade-off in terms of personal time, and future financial security. For some, rural practice can be lucrative due to the "captive" nature of the patient population and the easy access to medical facilities:

It is easy to do house call, it is easy for patients and doctors alike to park their cars. One can easily get to the emergency department in 3-4 minutes. This facility of patient-doctor contact accounts for the high incomes that are made in rural or semi-rural practice. The opposite holds true for city practice.

Although this is a benefit of practice, the positive elements of having a lucrative practice are often offset by a loss of personal time. Conversely, other physicians do not see their practice as lucrative and, instead, feel that financial compensation does not reflect the realities of rural medicine. Specifically, taking more time with patients due to added responsibilities, the high incidence of non-office-based work such as hospital work, house calls and evening visits means a lower income for physicians.

As a rural GP, I feel I carry more responsibility for patient care and work-up than most city GPs. The paradox is that this takes up more time, allowing me to see fewer patients in a day. Therefore, I have more responsibility with less income.

In some cases there is no financial incentive for doctors to undergo additional training to enable them to perform a specialty medical skill. In many cases physicians receive greater compensation for their office-based visits than for operating room work:

GP anesthesia is an example of specialty training where such practice has a negative impact on income. I make less in the OR than I do in the office, despite higher training, stress and malpractice risk while practising anesthesia.

Overall, this income must again be balanced against the costs of living in the community and running a medical practice, and with the potential opportunities the practice and community offer in terms of future financial security.

The professional experience in a rural area is greatly influenced by both community and provincial medical bureaucracy and politics:

The benefits of working in these smaller communities include less red tape to struggle through to get things done for your patients.

Alternatively, the politics in a small town can be much more personal, and therefore, they can interfere in a greater or more significant way with the medical experience. Further, not only do rural doctors often feel isolated from back-up medical support, they also feel isolated from the powers that be who make important policy decisions affecting their life and practice. Without adequate representation at the British Columbia Medical Association or the College of Family Physicians of Canada, the interests of rural doctors may not be taken into account:

. . . as rural physicians we are not close to politics and powers and as such are being shafted by Medicare, the BCMA, and even the College of Family Physicians of Canada are more influenced by urban doctors.

These professional concerns can be even greater for international medical graduates practising in a rural area. The balancing of professional benefits with professional and personal sacrifices depends on the nature of community politics and the satisfaction a physician has with provincial policy decisions.

Community attributes, opportunities for the physician and family, and sense of community are important personal compensatory factors. A rural environment appeals to those physicians who

love the outdoors:

. . . socially our lot is superior [to urban practice] — I live in a clean, relatively pure environment where I can garden organically, hunt, hike, ski, etc.

A small town can offer a strong sense of community where friendships are strong and supportive, but for many it also means leaving behind close friends and family. Physicians can feel socially isolated given that all community residents are potential patients:

. . . to move to this isolated location on a permanent basis would mean leaving friends and family with the loss of the pleasures of daily interaction. Assuredly with time other friendships will be established but that does not entirely compensate.

The quality of life in the community for a spouse and children are critical aspects of compensation:

My children are healthy and strong and relatively safe. We don't lock our house and can leave the children alone at night.

Other physicians have concerns over the quality of services available such as child care, recreational and educational services, which are necessary for the upbringing of children:

. . . I cannot bring up a young family here. There are inadequate resources and the schooling is poor. There are few cultural amenities and poor sporting facilities.

The age of children can be a critical factor in determining whether community facilities are adequate, and often, as children get older, parents become more dissatisfied with available services:

I suspect that as my children grow older we will want to move to be closer to things like Colleges, music lessons, ballet, etc.

Spouses of rural physicians also have many concerns about community facilities, with additional concerns over employment issues:

I feel very strongly that the number one factor in maintaining physicians in rural communities is ensuring that the spouse has a career if he or she wishes to work.

The distance that must be travelled to reach a larger centre in order to take advantage of the cultural, educational, and personal amenities can have a large effect on the level of satisfaction of

a physician.

The theme explained

The theme describes the interrelated nature of the various components of rural practice and the delicate balance among the 3 components of community commitment, medical confidence and compensation. Rural doctors are given the opportunity to practise front-line medicine where they feel they are truly helping people and where they come to know and care for their patients and community. To do this, a rural physician ends up not only taking on a new job, but also taking on a new way of life. The satisfaction physicians have with this experience will depend greatly on the confidence they have in their abilities to practise rural medicine effectively and the rewards for doing so.

Not only do the various elements of satisfaction weigh the decision in one direction or the other, but each factor comes with a particular "load factor." For example, with respect to community commitment, whether the rural physician views this commitment on the continuum between being a great asset to practising rural medicine at one extreme, or as an overwhelming responsibility at the other extreme will have a great impact on relocation decisions. The "load factor" on the decision scale is greatest for those physicians who see the issue of community commitment at one end of the spectrum. For physicians closer to the middle of the spectrum, a greater struggle will occur where the positive and negative aspects of this situation sway the decision back and forth.

Some important models have emerged from the data to explain the decision-making process of rural physicians with regard to practice location. Four particular decision-making scenarios have been identified.

Rational decision to leave

The first model falls into the "rational decision to leave" category. This describes physicians who have carefully balanced the positive and negative factors of continuing to practise in their current rural location; they have decided that the negative factors outweigh the positive ones, and they have chosen to leave. More specifically, the commitment made to the community and the responsibility involved does not balance with the subsequent compensation. The following physician explains how her practice partners made the decision to leave.

For rural doctors the effort/sacrifice does not measure up to urban financial reward/social/leisure and freedom. Therefore we do not have our 5 former partners.

Waiting for the "last straw"

The "waiting for the last straw" model describes what could be thought of as the "back and forth" category. For these physicians, their sacrifices and rewards are not in balance, which causes them dissatisfaction with their practice, but they have not yet made the decision to leave:

I felt an economic deterioration to my lifestyle. To maintain my income with regards to inflation and increasing overhead costs, I have been forced to see patients in less time, and to work longer hours (both in my office and on call). This has had an eroding effect on my leisure as well as family time, and has been a detriment to my overall career satisfaction.

It is likely that these physicians will wait until a threshold event occurs that will finally cause them to change locations.

The "last straw"

In the "last straw" model, the final decision to leave is based on one precipitating event at the end of a period of balancing the positive and negative factors that finally causes the physician to decide to leave:

Many doctors (myself included) greatly enjoy rural medicine. In the end, it was the isolation professionally and socially which made me go stale, and decide to head back to the big city.

The move from a rural area to the present semi-urban area was motivated as much by a search for a geographic cure for chemical dependency as for other reasons cited. . . . All four of my practice moves had this as the main motivation, unspoken, to be sure.

Decide to stay

In the "decide to stay" model, the positive benefits of rural practice have outweighed the negative ones, and the physician decides to stay:

Overall I greatly enjoy practising medicine in a rural community. The benefits are of professional freedom, challenge, opportunity to use skills, and a sense of responsibility towards the community.

[ [Contents](#) ]

---

## Implications

For many physicians, the decision to stay or to leave a rural practice is not reached easily. Although this study has provided us with a better understanding of this complex process, we are reminded that the purpose of theory is to increase our understanding, and the findings, although true for those in the study group, can only be generalized to other populations in the form of hypotheses, which must be tested using other methods.

### Implications for the literature

This study both supports the findings from previous studies<sup>11-13,16,17</sup> that personal, community and professional concerns are all important determinants of a physician's satisfaction for practising in a rural community and adds to those findings, providing a framework for understanding how these issues interact and influence each physician. Importantly, these conceptual findings demonstrate that the influence of various factors on individual physicians may best be measured in terms of the balance of efforts and rewards influenced by the personal resources of each practitioner in his or her community, rather than as a rank ordered list of factors. It is apparent that the issues raised in the data are relevant in other communities outside rural British Columbia and are still current. They have been replicated in a recent Australian qualitative study.<sup>21</sup> This study adds to the literature the finding that qualitative methods are useful to help us begin to identify and understand the decision-making behaviour of the different cohorts or subpopulations of physicians practising in a rural setting.

### Implications for practice

For those physicians who ask themselves whether they are satisfied practising in their rural community or if they want to move to a larger centre, the findings from this study imply that the many factors involved in the decision-making process will be similar. The way these factors are weighted, however, and which ones ultimately influence the decision to leave a rural practice, will be unique to each physician. The findings from this study suggest that it is unwise to discuss one element of satisfaction in isolation from others. For example, physicians may feel that the demands by the community are great and the risks of practising medicine without the benefit of consultants and equipment is an extreme challenge. However, they may feel adequately compensated, both financially and professionally. Others may feel that the financial rewards are not sufficient to offset the strain, stress and risks. At the community level, better financial compensation or incentives may influence physicians to stay in one community, while better back-up, educational opportunities or increased locum assistance may be more critical in another.

### Implications for policy

These findings also have implications for policies concerning the need for collaboration among rural physicians, their community, the College of Family Physicians of Canada, the Society of Rural Physicians of Canada and the appropriate government department to ensure that physicians receive fair and adequate compensation for their efforts. In some communities, policies do exist, but there seems to be little collaboration among the parties involved. Policy might ensure that communities, physicians and postgraduate training personnel collaborate to provide adequate support and relief to physicians working in rural communities in order to reduce the risk of "burn-out."

### Implications for further research

Our findings suggest the need for further research in several areas, especially of those physicians who constitute our "last straw" model. Such a study would increase our understanding of the different factors involved in deciding to stay or to leave. It would give us some insight into what

might be done to reduce the likelihood that the decision to leave will be made as a result of frustration or emotional turmoil. It seems clear that we might benefit by a longitudinal prospective study of the recruitment retention phenomenon. Such a study might give us a better understanding of what could be done at the recruitment stage that will lead to physicians who are more satisfied with rural practice and, as a result, stay longer in their rural communities. We are reminded that the findings from these data came from asking physicians to "tell their story," so future researchers might consider the benefits of using qualitative methods and participatory action research models.

[ [Contents](#) ]

---

## References

1. Carter R. The relation between personal characteristics of physicians and practice location in Manitoba. *CMAJ* 1987;136:366-8.
2. Rabinowitz HK. Evaluation of a selective medical school admissions policy to increase the number of family physicians in rural and underserved areas. *N Engl J Med* 1988;319:480-5.
3. Kassebaum DG, Szenas PL. Rural sources of medical students, and graduate's choice of rural practice. *Acad Med* 1993;68:232-6.
4. Steinwald B, Steinwald C. The effect of preceptorship and rural training programs on physicians' practice location decisions. *Med Care* 1975;13:219-29.
5. Burfield BW. Location of medical education and choice of location of practice. *J Med Educ* 1986;61:545-53.
6. Norris T, Norris S. The effect of a rural preceptorship during residency on practice site selection and interest in rural practice. *J Fam Pract* 1988;27:541-4.
7. Gray JD, Steeves LC, Blackburn JW. The Dalhousie University experience of training residents in many small communities. *Acad Med* 1994;69:847-51.
8. Whiteside CBC, Mathias R. Training for rural practice: Are graduates of a UBC program well prepared? *Can Fam Physician* 1996;42:1113-21.
9. Whiteside CBC, Pope ASA, Mathias R. Identifying the need for curriculum change: when a rural training program needs reform. *Can Fam Physician* 1997;43:1390-4.
10. Norris TE, Coombs JB, Carline J. An educational needs assessment of rural family physicians. *J Am Board Fam Pract* 1996;86:86-93.
11. Crouse BJ. Recruitment and retention of family physicians. *Minn Med* 1995;78:29-32.
12. Canadian Medical Association. Report of the advisory panel on the provision of medical services in underserved regions. Ottawa, The Association; 1992.
13. Payne J. Practice and lifestyle preferences of rural family physicians. *Ont Med Rev* 1992; March:37-44.
14. Horner RD, Samsa GP, Ricketts TC 3d. Preliminary evidence on retention rates of primary care physicians in rural and urban areas. *Med Care* 1993;31:640-8.

15. Pathman DE, Konrad TR, Ricketts TC 3d. The comparative retention of national health service corps and other rural physicians: results of a 9 year follow-up study. *JAMA* 1992;268:1552-8.
16. Kazanjian A, Pagliccia N. Key factors in physicians' choice of practice location: findings from a survey of practitioners and their spouses. *Health & Place* 1996;2(1):27-34.
17. Kazanjian, A, Pagliccia N, Aplan LE, Cavalier L, Wood L. Study of rural physician supply: practice location decisions and problems in retention. Vancouver: University of British Columbia Health Human Resource Unit, Centre for Health Services and Policy Research; 1991.
18. Glasser BG, Strauss AL. The discovery of grounded theory: strategies for qualitative research. New York: Aldine Publishing; 1967.
19. Glaser BG. Theoretical sensitivity. Mill Valley (CA): The Sociology Press; 1978.
20. Strauss A, Corbin J. Basics of qualitative research. Newbury Park (CA): Sage Publications; 1990.
21. Hays RB, Veitch PC, Cheers B, Crossland L. Why doctors leave rural practice. *Aust J Rural Health* 1997;5:198-203.

