

ORIGINAL RESEARCH

What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa?

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ABSTRACT

Introduction: In South Africa, the health system faces a variety of problems, such as an overall shortage of and maldistribution of healthcare workers. The Department of Health in South Africa has attempted to address the shortage of rural doctors by introducing various interventions, including an increase in salaries, introduction of scarce skills and rural allowances, the deployment of foreign doctors, and upgrading of clinics and hospitals. Despite these, the maldistribution of doctors working in South Africa has not improved significantly. This attests to the multifactorial nature of this problem and to the fact that intensive and sustained efforts are needed to rectify it. Few South African studies have been undertaken to establish the needs of rural doctors in South Africa and to seek possible solutions to their problems. While a number of studies have identified some of the major problems, much still needs to be done. Innovative ways to address this crisis are urgently needed. The main objectives of this study were to identify interventions as proposed by doctors in the rural Limpopo province of South Africa and to develop recommendations based on these.

Methods: This study utilised a descriptive qualitative design using a semi-structured questionnaire. Ten doctors from rural hospitals within all six districts of the Limpopo province were randomly selected and interviewed.



Results: Themes recommended included: increasing salaries and rural allowances; improving rural hospital accommodation; ensuring career progression; providing continuing medical education; increasing support by specialist consultants; improving the physical hospital infrastructure and rural referral systems; ensuring the availability of essential medical equipment and medicines; strengthening rural hospital management and increasing the role of doctors in management; improving the working conditions; establishing private-public collaborations with private general practitioners; increasing rural doctors' leave allocations; ensuring adequate senior support for junior doctors; improving rural hospital environments and providing recreational facilities; assisting rural doctors' families, and providing recognition and appreciation for the work rural doctors do.

Conclusion: The resolution of one isolated factor without improving the host of push factors currently present in the health system is unlikely to lead to significant improvements in the retention of rural doctors. The results of this study can be used to assist the Limpopo Department of Health to identify the most pressing needs of rural doctors in the province. A number of interventions are suggested by rural doctors that they feel would retain them in their current rural practices. The recommendations include various interventions involving different levels of the healthcare system. It also recommends an incentive package for doctors willing to serve longer term in rural hospitals.

Key words: doctor, human resources, recruitment, retention.

Introduction and background

Human resources have been described as 'the heart of the health system in any country', 'the most important aspect of health care systems', and 'a critical component in health policies'¹. Despite their importance to rural health systems, rural health workers, and doctors in particular, are scarce all over the world. In an international survey of fourteen countries, it was found that rural doctors made up only 8% to 22% of the population of doctors, while serving between 25% and 70% of the population of these countries². Similarly in South Africa, fewer doctors work in rural areas, where the majority of the population resides (Table 1).

This lack of rural healthcare personnel has a significant impact on health care, and health systems cannot function adequately or effectively without them⁵. Investing in human resources is therefore a vital component of developing countries' strategies to improve health outcomes, such as the Millennium Development Goals (MDG), and if not urgently addressed could form a constraint that renders these MDG unattainable⁶.

Post-apartheid South Africa faces an enormous health challenge and a number of human resource related

achievements have been made post-1994. These include the amalgamation of historically fragmented former national, provincial and homeland governments with their civil services; the introduction of the District Health System; the transformation of statutory health councils regulating health professionals; the founding of training schools; and the deliberate shift in emphasis towards primary health care with concomitant downsizing of sophisticated curative and tertiary care³.

Internationally countries have tried various interventions to increase their numbers of rural doctors. These are ideally packaged in a Rural Health Care Strategy to oversee all planned activities and their implementation^{7,8}. An important component is also the establishment of policies regarding Human Resources Planning⁹.

Various policies for the deployment and retention of public health personnel are mentioned in the literature but results have been mixed¹⁰. These include decentralization of the location of training institutions; the introduction of recruitment quotas to ensure that the most peripheral areas are represented among medical students; and making rural field experience during medical training compulsory.



Table 1: Distribution of population and health professionals in provinces in South Africa^{3,4}

Province	Percentage of total South African population (46.4 million), 2003	Rural (non-urban)%	All medical practitioners per 100 000 population, 1998	Percentage of total medical practitioners, 1998	Public sector medical practitioners (excluding specialists) per 100 000 population, 2003
Eastern Cape	14.0	63.4	30.3	6.9	12.7
Free State	5.9	31.4	56.5	5.2	23.1
Gauteng	20.3	3.0	135.3	34.8	25.4
KwaZulu Natal	21.0	56.9	54.4	16.0	21.3
Limpopo	11.7	89.0	14.8	2.6	14.3
Mpumalanga	7.0	60.9	33.6	3.3	17.9
North West	8.2	65.1	24.6	2.9	11.5
Northern Cape	1.8	29.9	43.0	1.3	28.4
Western Cape	10.2	11.1	152.9	21.2	31.9
Total	100	46.3	66.1	100	19.7

Policies for reducing migration out of developing countries, especially Africa, are much debated. Various codes of practice such as the Commonwealth code of practice for international recruitment of health workers¹¹ and the Melbourne Manifesto adopted at the 5th WONCA World Rural Health conference¹², have been developed to address recruitment from under-developed countries. These address important issues raised such as the need for developed nations to train more doctors, to select more rural origin students, to pay compensation for doctors recruited at a government-to-government level, not to advertise in the journals of developing countries, and to ensure that recruiters do not make recruitment visits to developing countries¹³.

Other attempts to provide more doctors in rural areas include the recruitment of foreign doctors¹⁴, either on an individual basis or as part of government-to-government cooperation agreements, such as the deployment of Cuban doctors in a number of African countries, including South Africa¹⁵.

Another strategy has been the implementation of programs of compulsory community service lasting for one to two years after graduation for medical doctors^{16,17}. The South African government introduced a system of community service for doctors¹⁸ that has improved the staffing situation in some

provinces, but it is limited as a recruitment and retention strategy¹⁹.

Recognition of health qualifications and substitution of skills has been used in some countries to reduce migration, where qualifications meet the needs of the source country but are not internationally recognized. Developed countries such as the United States²⁰ and a number of countries in Africa, including South Africa^{21,22}, have implemented mid-level worker or similar programs.

Successful strategies to increase the numbers of doctors willing to work in rural areas include the selection of more rural background medical students²³⁻²⁷, providing positive training opportunities in rural areas during medical training²⁸⁻³¹, providing bursary schemes³², and bringing specialist services to rural communities³². Improving the salaries of rural doctors is often mentioned as an intervention to attract and retain rural doctors, but how health workers respond to different reimbursement structures is largely unknown¹.

Little research has been done in South Africa to determine what rural doctors' feel will encourage them to stay on in rural areas. The aim of this study was to identify



interventions that will lead to improved retention of South African qualified doctors in rural hospital service in the Limpopo province of South Africa.

Methods

This study utilised a descriptive survey design. A semi-structured questionnaire was used for the project to collect data.

The population under study consisted of post-community service (a one-year period of compulsory public hospital service after completion of internship), non-specialist South African qualified doctors working in Limpopo public hospitals during 2005. After these doctors were identified with the help of the Limpopo Department of Health (DoH), they were contacted to obtain more details regarding their background information and at the same time were asked if they would be willing to be interviewed, if selected.

Doctors were then purposively selected to maximise variability. The variables taken into consideration were race, sex, age, district (location of hospital), university where undergraduate training was undertaken, and duration of service in rural hospitals. It was ensured that doctors were selected so that the greatest diversity of these variables was included. The selected doctors were then interviewed until saturation point was reached. Saturation point was determined as being reached when no new major themes were identified after three consecutive interviews. This was achieved after 10 interviews.

A semi-structured questionnaire consisting of a main question and five follow-up questions was developed by the researchers in consultations with a number of experts in the rural health field (Fig 1). The questions related to demographics, salary scales, career structure, rural allowances, other incentives, and factors that make doctors want to leave rural practice. Piloting of the questionnaire was conducted prior to commencement of the study.

The main question was distributed to participants one week before the interview, to allow time for reflection on the topic. One researcher (TJK) personally interviewed each participant. The interviews were arranged at a convenient time for both interviewer and interviewee. All interviews were conducted at the hospitals where the doctors were employed, and in a setting that provided maximum privacy. The interviews lasted between 15 and 50 min. The initial exploratory question was asked and respondents were encouraged to respond fully by the use of active listening techniques, clarification, reflective summaries and repetition of the question when necessary. Once the main question was fully explored, the follow-up questions were posed and each of these questions was then further discussed. Interviews were audiotaped and field notes were recorded. Saturation was reached after 10 doctors were interviewed.

The audio-taped interviews and field notes were transcribed in full by the author. Each transcribed interview was individually analysed to identify all themes. Analysis was performed using the approach of namely familiarization with the data, identifying a thematic framework (major and minor themes) and interpretation³³. After analysis of each successive transcription it was then combined to present major and minor themes from all 10 interviews.

Credibility, dependability and conformability

Respondent validation was used to improve the credibility of the research. Analysed data were returned to all 10 participants and the researcher used their comments and further clarifications to make adjustments. The submission of the questionnaire to experts in rural health and piloting of the questionnaire improved its quality and validity. Original audio recordings as well as transcripts of these interviews and field notes form part of the research record. A notebook was kept detailing how the transcripts were made and verified. It includes notes by the researcher about how the research progressed, describes what occurred, how long the interviews lasted, when and where they took place etc. No co-researchers formed part of the study to further enhance dependability.



Main question: What would make it attractive for you to continue working longer-term in rural hospital service in Limpopo?

Follow-up questions:

1. What do you think about the current career structure and salary scales in the public service? Does it act as a significant disincentive or are other factors more important?
2. Would a significant rural allowance make a difference in retaining doctors and how much per annum would this be?
3. What other incentives would you like to see instituted for permanent medical staff in rural hospitals?
4. What really makes you want to leave your current practice?
5. What do you think are the 3 most important issues we've discussed here?

Figure 1: Research questions explored in this study.

Based on the above-mentioned criteria, data generated in this research could be regarded as transferable to situations that are similar in setting so far as the population studied is concerned. To further ensure the transferability, the sampling strategy ensured that a diverse range of individuals and settings were included.

Ethical considerations

Each potential participant was informed about the project and invited to participate. Those who agreed and who were then sampled were approached and the project was explained in depth. If they agreed to be interviewed, written consent was requested. The standard consent form of the Medical University of Southern Africa (Medunsa), adapted for this study, was used and completed by each participant. Ethical clearance was given by the Medunsa Research, Ethics and Publications Committee and the Limpopo Department of Health gave permission to interview the participants.

Results

The demographics of the doctors interviewed are presented first and thereafter the themes identified in response to the main question. This is followed by the themes identified from the follow-up questions.

The diversity of the interviewed doctors is reflected (Table 2). The majority of the doctors had a rural upbringing, and

undergraduate training was completed at a number of universities from all over South Africa. Most of the doctors completed their community service in rural hospitals and had spent from 4 to 9 years in rural practice.

Several interventions are recommended in response to the *main question* (Table 3). The most common themes that emerged follow.

Improving the financial situation of rural doctors

Improving the financial situation of rural doctors was one of the most common themes, usually as part of a broader strategy. Some doctors felt that money was the most important factor to retain them in rural hospitals, while others stated that issues other than money were more important.

I think the most important thing for me to stay on is that money is not the most important factor for any clinician to be working in a rural setting...what is more important is job satisfaction.

One doctor mentioned that the recent increases in public doctor salaries have already attracted a number of private practitioners back to government hospitals.



Table 2: Demographic characteristics of rural doctors working in Limpopo province

Age (years)	Married	No	Upbringing	Sex	Medical Training	Internship	CSD	Years in rural area	Current rank	Religion	Professional Parents	Race
36	No	0	R	Male	Univ. Natal	R	R	9	PMO	C	0	Black
30	Yes	0	U	Female	Univ. Cape Town	U	R	7	PMO	C	2	White
32	No	0	R	Male	Univ. Pretoria	R	R	8	CMO	C	1	White
40	Yes	2	U	Male	Univ. of Natal	U	U	5	PMO	C	0	Black
25	No	0	R	Male	Univ. of Natal	R	R	5	MO	N	0	Black
31	No	0	R	Male	Univ. of Natal	U	R	8	PMO	N	0	Black
32	No	0	R	Male	Univ. Cape Town	U	R	7	PMO	N	0	Black
28	No	0	R	Female	Univ. Free State	U	R	5	SMO	N	2	Black
28	No	1	R	Female	Medunsa	U	R	4	SMO	C	1	Black
30	Yes	2	R	Female	Medunsa	R	R	6	SMO	C	0	Black

C, Christian; CMO, chief medical officer; CSD, community service doctor; MO, medical officer; N, none; PMO, principal medical officer; R, rural; SMO, senior medical officer; u, urban.

Table 3: Main question: What interventions do you think will retain South African doctors in rural hospital service in Limpopo province?

Themes	Interviews									
	1	2	3	4	5	6	7	8	9	10
Improve hospital accommodation	X	X		X		X	X	X	X	
Improve the physical infrastructure	X			X			X		X	X
Improve the financial position of rural doctors	X	X		X	X		X	X		X
Money is not the most important factor			X			X				
Ensure continued education of rural doctors		X				X	X		X	
Provide social and academic stimulating environment		X				X				
Strengthen rural hospital management	X		X	X				X		
Improve staff relations	X			X						
Strengthen relations between communities and doctors					X		X			
Improve job satisfaction		X	X		X					
Improve working conditions of rural doctors						X	X	X		X
Provide support by consultants (specialists)		X					X		X	
Ensure career progression of rural doctors		X				X		X		
Alleviate understaffing and the heavy workload				X				X		X
Improve referral systems							X	X		
Ensure availability of senior doctors		X						X		
Grant more leave		X	X					X		
Provide recreational facilities						X	X	X		



Improving the physical hospital infrastructure

In addition to 'old' mission hospitals being in poor condition, doctors mentioned the lack of basic infrastructure, such as adequate access roads and telephone connections. Many doctors mentioned the lack of appropriate facilities and medical equipment in some of the hospitals. Several doctors tired of this and left rural hospitals.

Yes it's [the hospital] not really good for really working, like the wards are hot, it's also the suspicion of the patients who start looking at you [the doctor] thinking this one is not really a good one.

...the cleanliness of the hospital... the tidiness of the place. Yes I know because I follow people [new doctors] around and some people [new doctors] get tired of it and many leave.

Poor hospital accommodation

The impact of poor accommodation on retaining doctors was clearly stated, and it was mentioned that many doctors leave as soon as they finish their year of compulsory community service because their houses are falling apart. However, some doctors who had good accommodation mentioned that this was one of the more important reasons for them to stay on at a particular hospital.

...the other most important thing is good accommodation; if anybody is going to struggle with accommodation they are not going to enjoy working there... you don't want to wake up in the morning and know that you are going to share your bathroom with four other people and stuff like that.

Interventions to improve the current housing situation included the recommendation that hospital management, in addition to upgrading current accommodation inside

hospitals, should explore accommodation options outside of rural hospitals. These options could include public private partnerships with game farms, lodges and reserves.

Improve the working conditions in rural hospitals

Doctors felt that their current working conditions were poor and this contributed to the 'stress' of working in rural hospitals. A number of doctors stated that the working conditions were one of the most important factors contributing to good job satisfaction.

Okay firstly ... our casualty... there is virtually nothing you know related to emergency... if you want to attend to an emergency patient there isn't much you can use except maybe things like...IV lines...maybe a drip stand; since I came here we didn't have simple things like glucometers. So every time a patient comes and you want to do the glucose level you have to wait for the lab to do it. Recently they have introduced some glucometers but they only work for a few months ... maybe there is one BP machine, which is used by two or three different wards. They have to wait until the other ward is done so they can go and borrow so it is - yeah - it is a problem.

Improvements in continuing medical education

The lack of academic stimulation in rural hospitals was mentioned by a number of doctors. Many doctors reportedly leave rural hospitals to further their academic careers and to specialize. Interventions mentioned included accrediting rural hospitals for post-graduate Masters in Medicine programs. In addition, time spent working in rural hospitals could form part of the accreditation towards attaining post-graduate specialist degrees. Other recommendations included accrediting more rural hospitals for diploma courses, arranging more short courses for rural doctors, and providing internet access for the purposes of distance based education.



Provide specialist support in rural hospitals

Doctors believed that the quality of their work and job satisfaction was improved by consultant visits. It was felt that visits by consultants from certain specialities would be more appropriate than others. Visiting consultants could assist rural doctors by attending to complicated patients and by teaching.

...what has helped keep me stimulated is even though we are in a rural area there are so many visiting consultants coming from Wits and Garankuwa and Polokwane... Just knowing that there's people coming every month or so that are interested in what you're doing; that can support you and you can always ask them; it definitely improves the quality of your work and the job satisfaction and you feel less out of touch and that you're doing the right thing, some times you need a bit of reassurance that you are doing the right things under the circumstances.

Ensure career progression for rural doctors

Difficulties with promotions were a commonly stated problem that led to doctors leaving for 'greener pastures'. Interventions recommended include improving career options by creating more senior post in rural hospitals. Providing access to further training programs such as postgraduate Masters in Medicine degrees and diploma courses, as sated above, may also lead to more career development opportunities.

...making a lot of post, senior specialists of level 12 available you know there is something to aim for umm so potentially you can get to level 12 in a rural area.

Improving rural hospital management

Managers were not seen as supportive and it was felt they did not treat rural doctors satisfactorily. Personnel departments

were identified as a specific problem area. Doctors faced difficulties with promotions, and vacant posts were not advertised.

They are difficult, very, very difficult here with promotions. They don't advertise posts that are available, they'll tell you in human resources that the posts are there but even if you qualify for the post they tell you that because it hasn't been advertised, you can't get into [it].

In addition, doctors felt that they should be treated as professionals and felt frustrated by bureaucracy and protocols. They felt that non-clinical managers should not interfere with clinical work, and that hospitals with chief executive officers (CEOs) who understand clinical medicine do better.

Leave

A number of recommendations regarding leave for rural doctors were mentioned. It was felt that a lack of opportunity to utilise annual leave led to 'burnt out', and the granting of unpaid leave and study leave led to doctors staying on in rural hospitals. Interventions mentioned included granting more annual leave, study leave, unpaid leave and sabbatical leave.

...certainly in a rural area study leave is important for those who want it, some people are not interested that's fine, but people that are craving it and not getting it they then leave.

...I was able to take unpaid leave for two months to justify the diploma to gain experience overseas.

Strengthening relationships

Another theme was strengthening relationships among rural doctors, and between doctors and the communities they served.



...for me definitely the relationship between staff, if there is no friction between staff people are more likely to stay on.

I think the thing that makes me stay here is the things are like; the interaction with the community.

Responses to the follow-up questions

Responses to the *follow-up questions* included the following.

Current salary scales and career structure:

Responses to the importance of current salary scales and career structure varied considerably. Most of the doctors regarded the current salary scale and career structure as insufficient but some doctors felt it was adequate. Some doctors felt that the salary was the most important factor, while others felt that other factors were more important.

I believe that the increase in the rural allowance, the fact that doctor's salaries have been upgraded and the scarce skills allowances has to some degree at least created a scenario that doctors are coming to the hospital with the evidence that I am seeing now with general practitioners coming to us now. But as I said initially the salary is not the most important of all the objections.

Rural allowance: While there was no consensus on whether the rural allowance was beneficial, it was regarded by all interviewees as being insufficient (Table 4). Suggestions of the amount that would make a significant difference ranged from R2000 (approximately US\$330/month) after tax, to R10 000 (approximately US\$1600/month, with an average of approximately R4700 (approximately US\$750/month) after tax.

I actually think that it [rural allowance] needs to be individualized and there needs to be a scale of how rural a hospital is; in fact it needs to be individualized but I do believe that there is still some

room for improvement. I think realistically speaking if it could be increased, then maybe it would attract more people.

Other incentives: Other incentives mentioned included providing subsidies for items such as housing, motor vehicles, telephones, electricity, schooling for children, flexibility with bursary work back commitments, and recreational facilities (Table 5).

Factors that make doctors want to leave rural hospital practice:

Factors that made doctors want to leave rural hospital practice included the factors already mentioned, such as insufficient salary, heavy work load and understaffing, poor housing, poor hospital management, lack of basic medical equipment, personal relationships, no recreational facilities and specialisation. A number of other factors were also mentioned, including the lack of managerial input as a doctor, poor relationship with colleagues, lack of transport and lack of good schooling for children. Last, some doctors found living in a rural area 'just dull' and preferred an urban lifestyle

The most important interventions: The most important interventions as mentioned by the participants (Fig 2; Table 6) included improving salaries, proving adequate career pathing, improving hospital accommodation, providing continuing medical education, better working conditions and improving the hospital environment in rural hospitals. Other factors included receiving recognition and appreciation for ones work as a rural doctor, receiving adequate support from senior doctors, facilitating good relationship between staff, supporting rural doctors families, providing more leave and recreational facilities in rural hospitals.

Currently the rural allowance for medical officers is 22% of basic salary. For senior and principal medical officers this is approximately R2700 (US\$450) – R4000 (US\$670) per month after tax.



An incentive package can provide recognition for time spent in rural hospital practice as measured in years spent in service at a particular hospital. Such an incentive package could consist of any of the following:

- Creating high level posts for doctors committed to long-term rural service. Identify doctors with the necessary motivation, dedication and ability timeously and promote them to senior posts to serve as an incentive to keep them in underserved rural hospitals.
- Offering bursaries and study leave for training opportunities such as diplomas, rotation at higher levels of care, short courses at universities or specialisation programs (eg family medicine)
- Offering sabbatical leave that can be utilised for additional training and experience in selected disciplines at various sites (national and international)
- Offering unpaid leave to doctors who request it
- Providing various subsidies, such as housing, motor vehicle allowances, telephone allowances and electricity payments
- Providing bursaries to children of rural doctors for schooling
- Providing assistance to families of rural doctors, such as assistance with employment for spouses
- In addition, local hospital management should allocate all available resources to improve the physical infrastructure of hospitals and hospital accommodation for doctors as a matter of urgency.

Figure 2: Incentive package to attract and retain doctors in rural hospitals.

Table 4. Do you think the current rural allowance leads to the retention of doctors, and is it sufficient? If not what would you suggest it should be?

Interview	Yes	No	Sufficient	Suggested amount per month (1 US\$ = R6.00)
1	√		No	R5,000.00 (US\$ 830)
2	√		No	33% of basic salary (US\$ 1100)
3	√		No	50% of basic salary (US\$ 1600)
4		X	No	R5,000 after tax (US\$ 830)
5		X	No	R2,000 after tax (US\$ 335)
6		X	No	Rather increase basic salary than allowances
7	N	N	No	R4,000 (US\$ 670)
8		X	No	R5,000 after tax (US\$ 830)
9		X	No	R3,000 after tax (US\$ 500)
10		X	No	R3,000 after tax (US\$ 550)

N, not answered by participant.

Discussion

Almost all the doctors participating in this study stated that *improving their salary* was one of the three most important factors in retaining doctors in rural practice and almost half mentioned it as the most important factor. Around the world, dissatisfaction with income is one of the major causes of doctors leaving public service³⁴, and improving salaries is often mentioned as an intervention to attract and retain rural doctors³⁵⁻³⁸. It was reported that recent increases in the

salaries of doctors in the public sector in South Africa are already leading to a number of private general practitioners returning to public service. Anecdotal reports in the literature also report that salary increases lead to increases in the number of doctors in the public sector³⁵⁻³⁹. However, despite the importance of salaries, many doctors stated that other factors, such as job satisfaction and working conditions, were more important and the salary on its own would not retain them.



Table 5. What other incentives would you want to see instituted for permanent staff in rural hospitals?

Themes	Interviews									
	1	2	3	4	5	6	7	8	9	10
Provide allowances (eg transport, housing, telephone, electricity)	X		X	X	X	X			X	X
Improve the salary					X		X			X
Good accommodation		X			X		X			
Provide better hospital infrastructure							X			X
Provide recreational facilities	X									
Provide further training opportunities (MMed, diplomas etc)							X	X		
Provide more study and unpaid leave		X	X							
Assist with schooling and bursaries for children			X		X	X				
Be more flexible: bursary, work back, commitments					X					

Table 6. Of all the intervention we talked about, which are the most important interventions to retain rural doctors?

Theme	Interview									
	1	2	3	4	5	6	7	8	9	10
Financial (salary and allowances)	B		C	A	A	B		A	A+ C	B
Accommodation	C			B	C		C	C	B	C
Hospital environment / working conditions	C							B		A
Career pathing		A				A	A			
Continuing medical education					B		A			
Good hospital management			B				C			
Recognition / appreciation / treated as an individual		C	A							
Staff relationships	A									
Clinical support from seniors							B			
Family supported		B								
Leave		C								
Recreational facilities				C						
Quality of life						C				

A, Most important; B, second most important; C third most important.

A few of the doctors interviewed in this study felt the current rural allowance was making a significant difference. However, all 10 doctors felt that the amount was not enough.

Targeted financial support is recommended as a strategy to retain doctors in rural areas⁴⁰. In South Africa, the outcome of the introduction of rural and scarce skills allowances in 2003 still needs to be determined. The results of preliminary

research by Reid et al⁴¹ indicate that approximately one-third of health professionals working in rural hospitals were influenced to remain in the rural area by this rural allowance.

The majority of the doctors in the study mentioned *better accommodation* as one of the three most important factors that would influence them to remain in rural areas. Other authors have also reported accommodation to be one of the



factors in attracting and retaining rural doctors^{42,43}. Hospital accommodation is often the only realistic option for rural doctors because many hospitals are situated in extremely underdeveloped areas with inadequate accommodation available in communities outside the hospital. Many of the hospitals in rural Limpopo are old mission hospitals built in the early and mid 1900s and the quality of the hospital accommodation is often inadequate. Attempts by the provincial Department of Health, such as the capital works program, should therefore be prioritised as a matter of urgency. This capital works program is a provincial program to build new clinics and hospitals and to improve the physical infrastructure of existing health care institutions.

Due to the limited budget allocation and the magnitude of the problem, many healthcare institutions have not been upgraded yet. To provide short-term improvements, local hospital management should also look for innovative ways to involve local communities and resources outside the hospital. Many doctors might accept rural service more easily if they and their families are offered the option of a more diverse range of long-term accommodation in and around hospitals. Alternative accommodation options outside hospitals could include public-private partnerships with lodges, farms, and nature and game reserves.

Ensuring career progression has been suggested to be an important factor in retaining rural doctors^{38,43,44}. The creation of more senior posts in rural hospitals is offered as a potential retention mechanism. In this study, a number of doctors mentioned career progression as the most important factor in retaining them in rural hospitals. Rural doctors often face difficulties in the promotion process and personnel departments are specifically identified as a problem area. It was felt that there were delays with promotions, and that vacant posts were not advertised. Doctors often leave because of lack of or delays in rectifying problems with salaries, promotions and annual leave. Lack of the use of basic personnel management tools by hospital managers, such as exit interviews with doctors when they leave rural hospitals, are missed opportunities to identify and correct problems.

Related to this, a number of doctors mentioned *strengthening rural hospital management* as one of the three most important interventions that would lead to retaining doctors. Poor rural hospital management seemed to add to the frustration and dissatisfaction of rural doctors^{42,43,45}. Doctors felt unsupported by hospital managers and felt that they were not being treated satisfactorily. CEOs who understand clinical medicine were seen to manage hospitals better than CEOs who did not have a medical background.

*Rural doctors were frustrated by bureaucracy, protocols and procedures and often did not have enough time to deal with this adequately due to the heavy workload and understaffing. Establishing *proper communication channels* between rural doctors and their local hospital management is critical. This could lead to problem areas being identified and resolved where possible. This has been identified as a key to successful management of rural hospitals⁴⁶. Clinical managers should regularly conduct one-to-one interviews with doctors. This should include entry, follow up, and exit interviews. This could help to identify concerns and lead to their resolution. It would also encourage a culture of problem solving among hospital doctors and alleviate the negative criticism expressed by many who do not feel they have any role in improving their current situation. In addition, good human resource management would minimise conflict between rural doctors. Managing interpersonal relationships was also found to be an important factor, as mentioned in previous research⁴³.

Improving the *poor working conditions, hospital infrastructure and lack of medical equipment* were mentioned by a number of doctors as among the three most important interventions to retain rural doctors. All of these could be the result of poor management. Lack of basic hospital equipment frustrated many doctors and caused them to leave. Other studies also report on the frustration of rural doctors because they were unable to perform their duties satisfactorily, due to lack of equipment and drugs^{43,47}. A survey conducted in Zimbabwe in 1998 showed that a common cause of health workers resigning from the public



sector was the inability to offer effective care to patients due to inadequate resources in health facilities⁴⁸.

Old mission hospitals are dilapidated and difficult to work in. Basic infrastructure such as hospital access roads and telephone lines should be upgraded. Rural doctors should also be provided with inter-access and recreational facilities. Other authors also found the lack of social amenities at rural hospitals to be a problem⁴⁷.

Granting more annual, study leave and unpaid leave is mentioned as an important intervention that would retain some doctors. This could be offered as an incentive to rural doctors that have completed a specified time in a rural hospital. Sabbatical leave could be a benefit that would attract rural doctors^{43,44}. Clinical managers should ensure that all doctors have the opportunity to utilize their annual leave. This could reduce burn-out and ensure that doctors are well motivated and positive in the daily provision of duties. Organised vacations by the Department were mentioned as a possible incentive to rural doctors.

Using part time private practitioners in district hospitals to reduce after-hours duties for rural hospital doctors was mentioned as a recommendation to *reduce the workload of rural doctors*. Researchers from other rural areas in South Africa also recommend private-public collaboration as an untapped resource^{42,43}. Doctors referred to the heavy work load and specifically to the fact that many patients were unnecessarily seen in hospital casualties during after-hours overtime work. This led to insufficient time to attend to 'real' emergencies and made overtime work extremely demanding. De Villiers and De Villiers⁴³, also recommended addressing the inappropriate primary health care load at district hospitals with *better functional integration of district health services*.

Providing assistance to the families of rural doctors was mentioned in this study and is presented as an intervention to retain doctors in various articles^{40,49,50}.

Limitations of the study

A qualitative research design was chosen to ensure that new themes that were relevant to rural Limpopo were identified. The limitations of qualitative research have to be considered when interpreting the findings of this study. An alternative sampling strategy could be to interview South African qualified doctors who have left rural hospitals. A future study including these doctors may identify valuable additional interventions not raised by the doctors selected in this study.

Three of the 10 interviewed doctors are currently family medicine registrars at the University of Limpopo. This may have led to a bias towards Family Medicine and the University of Limpopo, but it may also reflect that there are a growing number of South African doctors in rural Limpopo who are completing this degree. This study formed part of a Family Medicine Masters' degree research project; researcher bias towards Family Medicine could potentially prejudice the results of this study. An attempt to reduce this bias was made by submitting the research questionnaire to a number of experts in the rural health field and by piloting it before starting the research project. All of the above helped ensure that the questions were not solely devised by the researchers and should, therefore, enhance the validity of the research.

To improve the transferability of the results to situations of a similar population, the sampling strategy helped to ensure that a diverse range of doctors and settings were included. This is reflected in the demographics of the interviewed doctors.

Conclusion and Recommendations

Human resources are finally being recognized as the most important aspect of healthcare systems but, despite this recognition, health personnel continue to be scarce in services where they are most needed. The reasons for this are the numerous 'push and pull' factors that combine to form a serious challenge to rural health care systems.



The resolution of one individual factor, for example increasing rural doctors' salaries, is unlikely to lead to significant long-term improvements in the retention of rural doctors. The challenge to health systems is to identify the most pressing needs of rural doctors and to address them appropriately within the restrictions of available resources.

The interventions proposed by the participating doctors in this study will assist in prioritising the multitude of factors impacting on the retention of rural doctors. The next step will be for health managers to develop interventions based on these and other recommendations. In addition to the multiple health system and policy recommendations discussed in detail in previous sections, the introduction of an incentive package could provide recognition for time spent in rural hospital practice, as measured in years spent in service at a particular hospital (Figure 2).

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