The role of educational strategies to reverse the inverse performance spiral in academically-isolated rural hospitals

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Abstract

The importance of continuous professional development for health care workers is widely acknowledged, but the identification of optimal implementation strategies remains a challenge, particularly in academically isolated rural areas.

We report the results of a qualitative study that evaluated the effect of an educational intervention aimed at rural doctors in the Western Cape Province, South Africa.

We also present a conceptual framework for developing best practice educational strategies to reverse the inverse performance spiral in academically isolated rural hospitals.

Doctors felt that participation in relevant learning activities improved their competence, increased the levels of job satisfaction they experienced, increased their willingness to stay in a rural environment, and impacted positively on the quality of services provided. However, the success of educational strategies is heavily dependant on the local environment (context), as well as the practical applicability and clinical relevance of the activities (process).

Successful educational strategies may help to reverse the inverse performance spiral previously described in academically isolated rural hospitals, however, this requires effective local leadership that creates a positive learning environment and supports clinically relevant learning activities.

The study findings also indicate the need for health care providers and institutions of higher education to join forces to improve the quality of rural health care.

SA Fam Pract 2007;49(7):15

Background

Medicine is a rapidly evolving field, with new evidence becoming available and new products or procedures being introduced on a regular basis. It is not only the rapid rate at which new knowledge accrues, but also the loss of infrequently applied knowledge and/or skills that indicate the need for continuous professional development. Although the need is widely acknowledged, the identification of optimal implementation strategies remains a challenge, particularly in academically-isolated rural areas.

A questionnaire-based survey performed among rural doctors in the Western Cape Province of South Africa in 2001 demonstrated reasonable levels of confidence in the main knowledge and skills areas evaluated.[1] However, actual clinical competence was difficult to assess and the survey demonstrated clear discrepancies between perceived competence, as measured by questionnaire-based self-evaluation, and more objective measures, such as the number of procedures performed.[1] Knowledge and skills gaps were most pronounced among junior doctors, emphasising the importance of workforce retention.[1,2] Following a detailed analysis of doctors' views regarding working conditions in rural hospitals, the concept of an "inverse performance spiral" was developed to demonstrate why retention is such a tenacious problem.[3] (see Figure 1.)

In response to these findings, the Maintenance of Competence project (MoComp), a collaborative project between the Health Department of the Provincial Government of the Western Cape Province, Stellenbosch University and the University of Cape Town was launched as a practical intervention to develop and implement best-practice learning models in academically-isolated rural hospitals. The approach was based on a previously described educational strategy that encourages optimal use of practical in-service learning activities.[4]

The aim of this study was to demonstrate the role that educational strategies may play in reversing the inverse performance spiral experienced in many rural hospitals.

Figure 1: The inverse performance spiral, adapted from the description by De Villiers.[3]

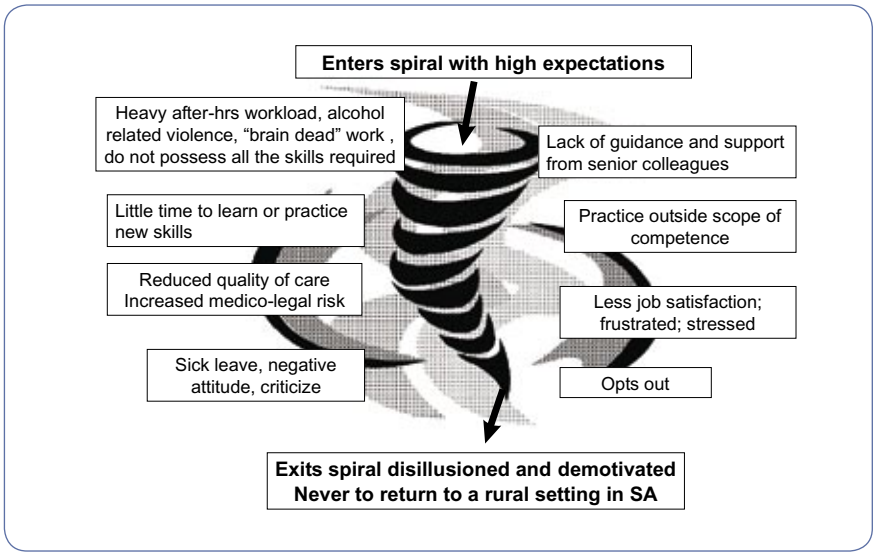
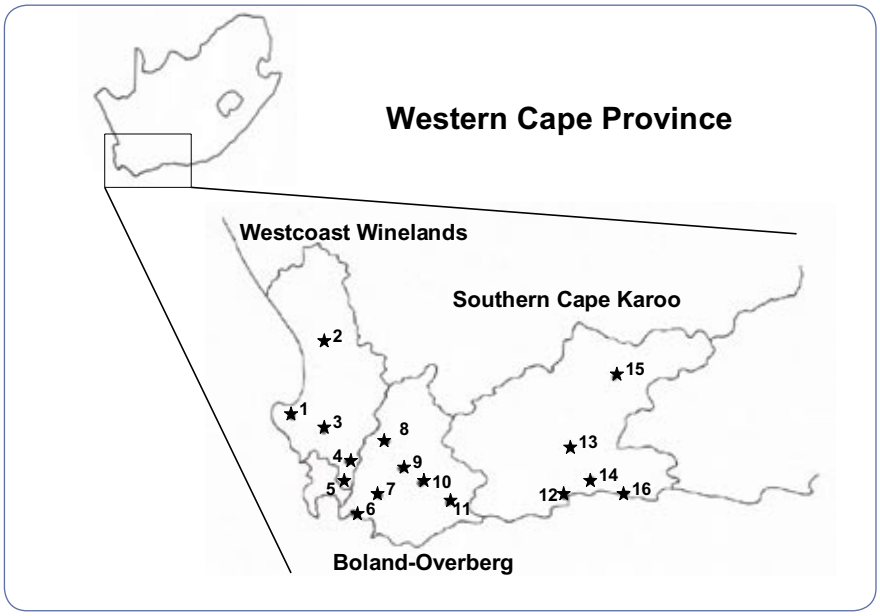


Figure 2: Map of all three rural regions, demonstrating the location of the level 1 district hospitals involved in the study and the regional referral hospitals*



Methods

The project involved 13 level 1 state hospitals from all three rural regions of the Western Cape Province, South Africa (see Figure 2). A provincial steering committee provided overall guidance; project implementation was facilitated by a management team from Stellenbosch University, together with regional and local MoComp coordinators (see Figure 3). Geographic and organisational differences within and between the different regions provided a wide spectrum of scenarios for analysis.

Legend

West Coast Winelands

1. Vredenburg District Hospital
2. Vredendal District Hospital
3. Malmesbury District Hospital
4. Paarl Regional Hospital*
5. Stellenbosch District Hospital

Boland Overberg

6. Hermanus District Hospital
7. Caledon District Hospital
8. Ceres District Hospital
9. Worcester Regional Hospital*
10. Robertson District Hospital
11. Swellendam District Hospital

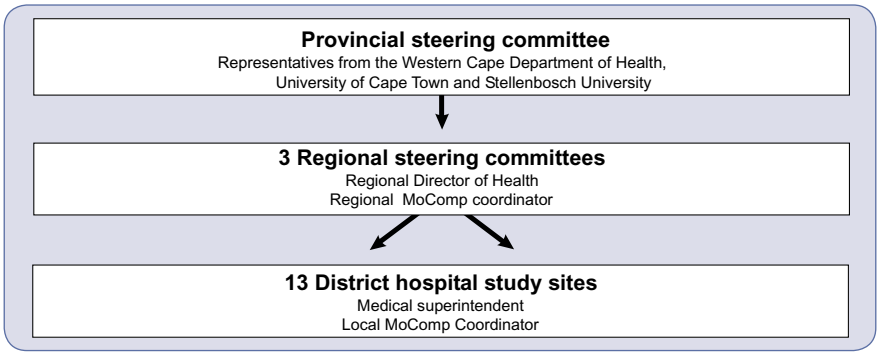
Southern Cape Karoo

12. Mossel Bay District Hospital
13. Oudtshoorn District Hospital
14. George Regional Hospital*
15. Beaufort West District Hospital
16. Knysna District Hospital

Data collection and analysis

Data were collected during visits to each of the level 1 hospitals identified. Data collection consisted of semi-structured interviews with key informants: medical superintendents and local MoComp coordinators at each hospital.

Figure 3: Structures established to facilitate the implementation of the Maintenance of Competence (MoComp) project



Interviews were also held with the three regional MoComp coordinators and the Directors of Health. Apart from the semi-structured interviews held with the key informants, focus group discussions were held with a selection of full-time medical officers (MOs) and part-time general practitioners (GPs) working at these hospitals. Key informants were excluded from these focus group discussions. A sample of convenience, based on availability but taking care to include the full spectrum of seniority, was selected on the day of the visit (see Table 1).

The open-ended questions explored 1) the perceived value of educational strategies to improve clinical competence, levels of job satisfaction, rural retention and service delivery; 2) the educational value of various learning activities; 3) the influence of the social and organisational context within which they work; and 4) the identification of practical monitoring mechanisms to evaluate the quality of service delivery and the value of specific learning activities. Detailed field notes were kept of all interviews with key informants and focus group discussions; the first five focus group discussions were audio-taped and fully transcribed. All interviews, except the first five focus groups discussions conducted by JK, were conducted by the main investigator (BJM). None of the investigators was previously involved with the project. Data from the transcriptions and field notes were explored and manually coded for content analysis. Main themes were identified and summarised. After each regional visit, a provisional report was compiled and circulated to all the participants to confirm the accuracy of the observations and of the deductions made.

The study was approved by the provincial steering committee, regional committees and by the local hospitals; individual doctors also consented to participation in the study. Focus group participants provided written informed consent and were assured of anonymity. The study received formal ethics approval (Committee C of Stellenbosch University – project no. N06/02/021).

Table 1: Overview of study participants (n=86)

Region	Site	Focus group participants[1]
Southern Cape Karoo	George Regional Hospital Knysna District Hospital Mossel Bay District Hospital Oudtshoorn District Hospital Beaufort West District Hospital	3 Interns / 2 COSMOs[2] 1 SMO[3] / 3 COSMOs 1 PMO[4] / 3 SMOs / 1 COSMO 5 COSMOs 1 PMO / 1 SMO / 1 COSMO
Boland Overberg	Worcester Regional Hospital Ceres District Hospital Caledon District Hospital Hermanus District Hospital Swellendam District Hospital Robertson District Hospital	2 SMOs / 2 COSMOs 1 SMO / 4 COSMOs 2 COSMOs 1 SMO / 1 COSMO 2 SMOs 1 SMO / 1 COSMO
West Coast Winelands	Paarl Regional Hospital Malmesbury District Hospital Vredenburg District Hospital Stellenbosch District Hospital Vredendal District Hospital	3 PMOs / 4 SMOs / 2 COSMOs[2] 2 PMOs / 2 SMOs/ 1 COSMO 1 PMO[4] / 3 SMOs / 1 COSMO 2 SMOs, 1 COSMO 3 GPs[5]

[1]In addition, at each of these sites personal interviews were held with the medical superintendent (in six instances the post was filled by a GP)
[2]COSMO - Community Service Medical Officer
[3]SMO – Senior Medical Officer
[4]PMO – Principal Medical Officer
[5]GP – sessional private General Practitioner

Results

The results are reflected in the following order: 1) general comments regarding the perceived value of educational activities; 2) comments related to the local environment (context); and 3) comments on how to optimise in-service training in everyday practice (process). Monitoring and evaluation were included under process; it emerged that simple and effective monitoring systems seem important to optimise the training process and content.

General

Participants identified a definite need for continuous professional development. They felt that relevant learning activities improve their competence and contribute to overall job satisfaction. *"If you're a doctor, your main source of job satisfaction is derived from providing the best possible care to your patients, you feel bad if you know that you provide a poor service."* Continued academic stimulation was considered an important factor when making long-term career choices, as expressed by a young female doctor: *"I don't want to come to work one day and think to myself – this is really boring. I want to remain in touch with recent advances and feel that I continue to develop as a professional."*

Responses show that service delivery and quality of care are complex variables to define and measure, however, it was felt that these outcomes are highly dependent on the competence of individual doctors and especially their efficiency as a team. A well-functioning educational programme may achieve far more than the mere transfer of knowledge and skills by enhancing the team spirit and sense of camaraderie. *"We enjoy learning from each other. We gain respect for each other and it keeps us on our toes … It also encourages us to get to know each other better and to socialise more."*

Context

The respondents made it clear that the positive contribution of any educational strategy can be easily overwhelmed by negative aspects within the local environment (organisational and social context). Minimum personnel requirements must be met before professional development programmes have any chance of success. *"If you have to see more than 50 ill patients every day you don't have time for in-service training.*

Conscientious clinicians reach a point where they don't even care about the quality of the service they provide anymore – that is what I define as burn out." Interestingly, providing protected time for relevant learning activities, despite huge personnel shortages, may actually improve the situation. Different management perspectives are summarised by the comments of two medical superintendents. *"Service delivery always gets precedence over academic activities … We don't have time to waste on unnecessary meetings … Our mandate is to see patients…, to clear the heap." "People appreciate protected training time. If this is well utilised it makes them more efficient as individuals and as a team. This improves service delivery; it also attracts more applicants to vacant posts, as people are quick to inform their colleagues of positive and negative work experiences."*

Junior doctors performing their year of compulsory community service (COSMOs) mentioned that they require a lot of guidance and support from experienced clinicians, but that this is often lacking. *"You just have to cope on your own, but doing things your own way isn't necessarily the right way."* They complained that the lack of guidance frequently forced them to practice outside their scope of competence. If things went wrong, this eroded their confidence and exposed them to possible litigation. *"Both of us are inexperienced … We lost a healthy patient during an emergency caesarean section … I felt horrible … I've lost all my confidence and my desire to practice medicine…"* Experienced nurses often play an important role helping junior doctors find their feet. *"Luckily, those first few nights when you work alone you work with nurses who have been there for 30 years, they've seen it all. They know. They're calm. They say 'just do this'. It helps you to relax."* Hierarchical differences made junior doctors vulnerable to exploitation, especially by sessional GPs. *"He rarely comes in after hours, only gives telephonic orders and tells the nurse that the COSMO must sort it out in the morning."* In fact, without adequate guidance and support, the experience of community service doctors may be so negative that they are completely discouraged to work in a rural setting. *"I think at present there is a general negative attitude towards internships and community service, because of the long hours and the low levels of job satisfaction." "They know you have to be here and because you're obliged they don't care how they treat you, they don't respect you and make no effort to encourage or support you." "We do all the routine work, the unexciting stuff that represents the highest workload. There is absolutely no incentive for me to stay on in a rural setting, not after my negative experiences during the past year."*

Participants emphasised the interconnectivity between job satisfaction and social issues. The healthcare consequences of alcohol abuse (alcohol-related violence, motor vehicle accidents, foetal alcohol syndrome, child malnutrition and general neglect) offer the most visible example and were singled out as a major source of demoralisation. Frustration was expressed that so much effort was "wasted" on treating the consequences of alcohol abuse, while very little seems to be done to address the underlying problem. *"What we see here is just a symptom of what is going on out there." "I can't understand why there is so little effort made to prevent this. They make a big fuss of the dangers of cigarette smoking, but no-one seems to care about alcohol, how it destroys people and communities." "I hate weekends because all I do is put stitches into drunk people who are often abusive and don't seem to care about their own health." "Heads get split open and we must just stitch. That's 'brain dead' work. You can understand that doctors get negative if they experience this night after night. You can get very cynical …"*

Managers indicated that the formulation of a clear vision statement by the province and/or region was important to demonstrate commitment towards continued professional development and to align the expectations of various role players. Involvement with outreach and support activities offers an example. *"Specialists at regional referral hospitals should be concerned about (and judged according to) the quality of health care delivered within the region as a whole, not only within their own hospital. However, this will only happen if the province includes this as part of their service agreement."* It was emphasised that the quality of services delivered depends on the competence and commitment of people at all levels of the healthcare system. There is a need to recognise and strengthen the interrelationships between various role players: 1) the different levels of health care within the region (e.g. level 1 and level 2 hospitals); 2) doctors of varying experience; and 3) doctors and nurses (both within the hospital and at primary health care level). *"It does not help if a training initiative targets doctors only. Nurses provide the backbone of our healthcare system and should be taken on board as well."*

One regional MoComp coordinator stated that rural doctors should embrace the central role that they can play in initiating local training initiatives among healthcare workers of all cadres. *"Rural doctors are in a privileged position. They command respect within the hospital and the community; this gives them influence, but also the responsibility to make a positive difference."* All three regional coordinators also emphasised the importance of local leadership. *"When there is someone with enthusiasm and dedication to drive the process locally then everything falls in place. It is not only about numbers, it is mainly about attitude and having someone who provides the spark and takes the initiative."*

Process

Doctors expressed enthusiasm for initiating local training initiatives among themselves, covering topics that are practical and relevant to everyday practice. They ranked the perceived value of various educational activities in the following order: 1) weekly academic meetings held among themselves (this requires at least 1 hr of protected training time/week); 2) regional training courses that are practical and focussed on relevant training needs; 3) visits by regional consultants that incorporate either a teaching ward round or training session; 4) access to a study room/library with essential reference books, protocols, and internet access to relevant medical sites (such as Pubmed); and 5) formal morbidity and mortality meetings. Morbidity and mortality meetings were least popular – junior doctors often felt victimised and indicated that these meetings were rarely a constructive learning experience.

Participants said that, where appropriate, the "train the trainer" concept is an effective way of ensuring that newly acquired knowledge and skills are passed on to colleagues. This was best demonstrated by two MOs who had recently completed a neonatal resuscitation course that utilised the "train the trainer" concept. *"We have already organised two neonatal resuscitation courses for local nurses and nursing assistants; two more have been planned and nurses at local primary healthcare facilities were invited as well." "It is remarkable to see the sense of achievement and the change in attitude that occurs when people complete the course successfully."*

Both junior and senior doctors emphasised the need for an essential skills list that would specify the most important skills required before placement in a rural setting. The essential skills identified were basic resuscitation (child and adult), placement of an underwater chest drain and the ability to perform a caesarean section without supervision. Without these essential skills, rural doctors are unable to perform after-hours calls alone, which places a tremendous strain on their more senior colleagues. The ability to perform regional blocks and general anaesthesia was regarded as a preferred, but not essential skill.

Regarding monitoring and evaluation, everyone agreed that it was necessary to reduce the existing administrative burden. *"The challenge is to adopt simple and pragmatic systems to monitor the value of training activities and the quality of care provided. We collect lots of data. I am not always sure what it is used for, but adequate monitoring systems are not in place at present."* Completing an annual knowledge/skills gap analysis was found to be of little value in settings with a high turnover of doctors. *"COSMOs have big knowledge/skills gaps when they arrive, but by the end of their community service year most of these skills have been acquired. The problem is that few junior doctors are retained and the following year a new group of COSMOs arrive. Without an adequate number of permanent MOs the cycle just repeats itself."*

Training attendance should be monitored, but, in addition, attendees should score the quality and relevance of each training activity. An important consideration that applies, especially to regional training activities, is the need to measure how effective the knowledge and/or skills that were acquired by a select group of course attendees is disseminated locally.

It was pointed out that level 1 hospitals fulfil a central role in the service delivery pyramid, communicating both with primary healthcare services and regional referral hospitals. Therefore, they may provide a good point of reference for identifying training needs and evaluating the quality of health care in rural regions. Participants indicated that an accurate indication of training needs at level 1 hospitals may be provided by evaluating both the appropriateness and quality of referrals sent to regional hospitals. If this is done regularly in each of the major disciplines (surgery, orthopaedics, obstetrics and gynaecology, paediatrics, internal medicine and psychiatry – if available), it will provide a good indication of discipline-specific knowledge/skills gaps within the region. It was suggested that, in return, level 1 hospitals should evaluate the service and support they receive from various disciplines at the referral hospital. In principle, the same reciprocal evaluation system can be applied to monitor the interaction between primary health care facilities and level 1 hospitals. Other indicators mentioned that may indicate how well a rural district hospital is functioning, as well as being useful to point out knowledge/skills gaps, include quarterly morbidity and mortality reports (this is already in place), monitoring the profile (type) of surgical procedures performed, as well as surgical, anaesthetic and obstetric complication rates.

Discussion

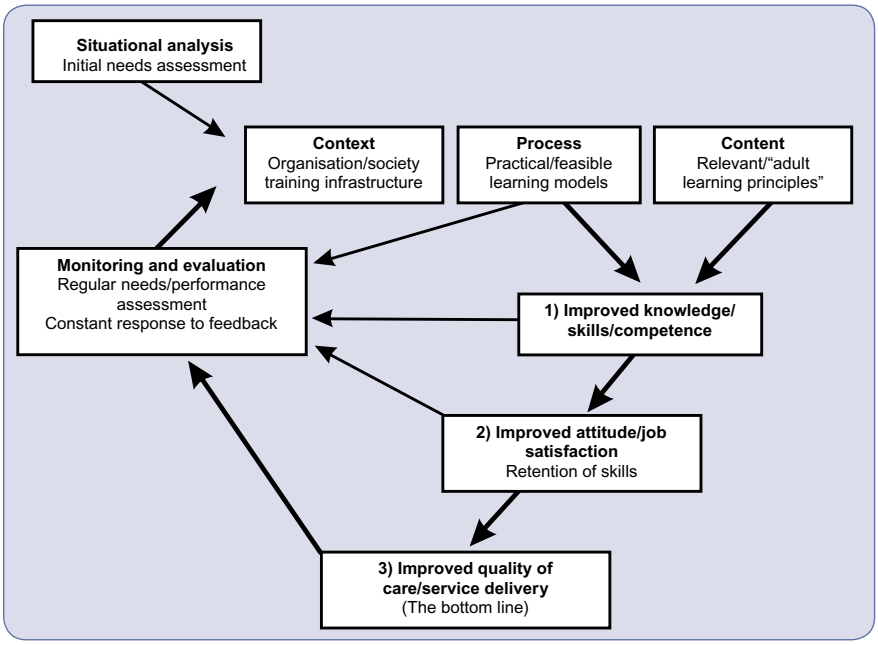
An important finding of this study is the demonstration that educational strategies may provide an important counter to workforce pressures affecting rural healthcare professionals. The value of educational strategies to improve job satisfaction levels and/or workforce retention has been demonstrated in various rural settings, among midwives[5] and GPs in Australia,[6] and among healthcare professionals in the Scottish Highlands.[7] In South Africa, these strategies have received little emphasis to date.

It is evident from this survey that the success of educational strategies is largely dependent on the local environment (context), as well as on the practical feasibility, clinical relevance and educational value of the particular strategy employed (process and content). Doctors were optimistic about starting/maintaining their own local academic activities, as long as the most basic organisational requirements, such as minimum personnel requirements and providing some protected training time, were met.

Figure 4 provides a conceptual framework for developing best practice educational strategies to reverse the inverse performance spiral in academically isolated rural hospitals. It demonstrates the importance of a situational analysis to assess the broader context and to identify specific training needs. Careful thought should be given to the educational value and practical feasibility of various learning activities, ensuring that the content is relevant and that adult learning principles are utilised. The process and content should be evaluated continuously for feasibility, relevance and quality. Once initiated, the positive learning spiral should be viewed as a dynamic process where constant monitoring at the specified levels provides regular feedback, allowing the identification of new training needs and optimisation of the learning process and content. This dynamic interactive process that is sensitive to critical feedback seems the most effective way to shape a "real-life" best practice in-service training model.

The retention of a sufficient number of experienced doctors who can guide and support more junior colleagues in rural settings is a global problem.[8,9]

Figure 4: Developing best practice educational strategies to reverse the inverse performance spiral in academically isolated rural hospitals



Forcing inexperienced junior doctors to work in rural settings for short periods of time, often without proper guidance or support, does not seem to offer a solution. In fact, if the correct supportive environment is not in place, the negative experience of doctors during this year of community service may alienate them from considering a more permanent rural appointment.

The health consequences of alcohol abuse and its effect on the morale of healthcare workers are major causes for concern. According to a 2002 report of the National Injury Mortality Surveillance System, 46% of fatal injuries in South Africa (among those tested) occurred in people with a blood alcohol concentration of ≥0.05 g/100 ml.[10] A report on the causes of premature mortality in the Boland Overberg Region during 2004 indicated that homicide is the most common cause of premature death, followed by tuberculosis, HIV/AIDS and road traffic accidents.[11] Both homicide and road traffic accidents are strongly associated with alcohol abuse. However, awareness among policy makers about the extent of the problem and its multiple knock-on effects seems remarkably absent, as little preventive action has been taken to date.[12]

This study is limited by the inherent subjectivity of qualitative research, although responses were collected from a large and representative sample of rural doctors and every effort was made to present an accurate reflection of their combined response. Eliciting spontaneous verbal responses during focus group discussions and/or personal interviews often provides in-depth insight that facilitates a more comprehensive analysis of the problem. Allowing the medical superintendent to select a sample of convenience may have introduced selection bias in an attempt to look "good". However, the available doctors were only selected on the study day and in the presence of the researcher, after careful scrutiny of the hospital roster to identify people who may be available. There was little incentive for the hospital to look "good"; the honest opinion of doctors was requested to assist the identification of broad themes and principles, not to comment on the functioning of individual hospitals.

The results from this survey may not apply to other settings, but we believe that most of the principles identified would be universally applicable. It remains important to try to quantify the effectiveness of the MoComp model by objectively measuring an improvement in the levels of job satisfaction, retention of healthcare professionals and the quality of services provided; this would require the full cooperation of the provincial monitoring and evaluation unit.

In conclusion, it seems possible to reverse the inverse performance spiral in academically isolated rural hospitals, but it requires effective local leadership to create a positive learning environment and to encourage/support clinically-relevant training activities.

Acknowledgements

We thank the Western Cape Department of Health for their support and all the healthcare workers who were involved for their participation.

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