EDUCATION FOR RURAL MEDICAL PRACTICE

Stephen JY Reid

2010

UNIVERSITY OF KWAZULU-NATAL

INYUVESI YAKWAZULU-NATALI

Thesis presented in fulfillment of a

Doctorate in Education

in the Faculty of Education
University of KwaZulu-Natal

by

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November 2010

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Co-supervisor: Prof M Samuel, Dean Faculty of Education, UKZN

DECLARATION

I, Stephen John Young Reid, declare that:

(i) The research reported in this thesis, except where otherwise indicated, is my original work

(ii) This thesis has not been submitted for any degree or examination at any other university.

(iii) This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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SUPERVISORS

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Prof R Vithal, Supervisor

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Prof M Samuel, Co-supervisor

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ABSTRACT

In the context of a country and a continent that is largely rural, education for rural medical practice in Africa is relatively undocumented and poorly conceptualized. The arena of medical education in South Africa has been largely unchanged by the transition to democracy, despite intentions of reform. The literature reveals a lack of empirical evidence as well as theory in education for rural health, particularly in developing countries.

This report presents twelve original papers on a range of key issues that represent the author's contribution to filling this gap in South Africa. It aims to contribute to the development of a discourse in education for rural medical practice in an African context, and culminates in a theoretical paper regarding pedagogy for rural health. A conceptual framework is utilized that is based on the standard chronological steps in the initial career path of medical doctors in South Africa.

Beginning with the literature that is focused around the need to recruit and retain health professionals in rural and underserved areas around the world, the report then addresses the policy context for medical education in South Africa, examining the obstacles to true reform of a transformatory nature. The selection of students of rural origin, and the curricular elements necessary to prepare graduates for rural practice are then investigated, including the actual career choices that medical graduates make in South Africa. Out in the workplace, the educational components of the year of compulsory community service are described, including organizational learning and apprenticeship as novice practitioners, placed under severe pressure in rural hospitals in the South African public health service. A community-oriented type of medical practice is described amongst exemplary individuals, indicating the aspiration towards a different kind of educational outcome.

Finally the thesis as such is presented in the final paper regarding a theoretical basis for education for rural health, consisting of the combined notions of placed-based and critical pedagogy. It is argued that while the geographic elements of rural practice require a pedagogy that is situated in a particular rural context, the developmental imperatives of South Africa demand a critical analysis of health and the health care system, and the conceptual basis of this position is explained.

PREFACE

a) Introduction

This thesis consists of twelve papers published by the author, that contribute to the theme of education for rural medical practice. It aims to contribute to the development of a discourse in education for rural health in an African context, and culminates in a theoretical position paper. A conceptual framework is utilized that is based on the chronological steps in the initial standard career path of medical doctors in South Africa.

As a device or means of explaining the conceptual thread and linkages between the content of each of the papers, a narrative approach has been used, based on two fictitious characters. They are drawn from the life experiences of numerous medical students and young doctors whom I have encountered, and their story serves as the touchstone for the abstract and complex issues of medical education for rural practice that this thesis examines. The narrative is not intended as a scientific or empirical piece of work, but introduces a qualitative dimension to the report so as to enable a deeper understanding of the issues. It aims to knit together the twelve published papers that form the thesis, by providing a common thread through which the conceptual and theoretical issues can be viewed. It is supplemented by a series of commentaries that link the narrative and the papers. The final paper, entitled “Pedagogy for Rural Health”, represents a culmination of this body of work on medical education for rural practice, and constitutes an outcome arising directly from the process of constructing the thesis.

The traditional sections of a thesis such as Introduction, Methods, Results and Discussion have been replaced, since most of the papers contain each of these components and are complete in themselves. All the papers accepted for publication have already been reviewed by peers and judged to be worthy of publication in a national or international journal. Ten papers have already been published, one has been peer reviewed and accepted for publication in the near future, and one of the papers has been submitted for publication and awaits feedback from reviewers. The task of this thesis therefore is not to present the merits of each individual piece of work, but to present the body of work as a whole. A sequential framework has been used based on the early stages of career development of medical practitioners in South Africa, as this

is standardized. Three of the papers set the scene, including a literature review and a discussion of policy. A methods section including a conceptual framework, then explains how the thesis was conceptualized and constructed. Three further papers deal with selection, curriculum and career choice issues, that are within the area of influence of universities. Beyond the university, apprenticeship and community service is addressed by four more papers, and the final section including two papers sets out an alternative perspective and a theoretical proposal.

A parallel process of methodological and theoretical development underlies the narrative and the sequence of papers, that is alluded to in the commentary sections, and made explicit in the methods section 2 as well as Secton 5b) (An Alternative Discourse). In the positivist tradition, the person of the researcher is kept hidden under the guise of objectivity in a reductionistic framework. By contrast the pattern of this thesis describes a sequential and inexorable movement away from a purely positivist paradigm towards a more diverse and inclusive set of perspectives on the challenges of education for rural medical practice. In this new paradigm, as is accepted in most qualitative research, the person of the researcher is given greater credibility and visibility within the actual documentation, rather than as a footnote or an incidental appendix. This acknowledges that the history, personality and perspective of the individual who is the researcher determines much of the research process, the results and the eventual outcomes. The narrative approach used in this thesis therefore signals the shift out of a biomedical paradigm towards the sometimes strange and foreign lands of interpretivist and critical ways of understanding the world.

b) Tale of Two Doctors

Gugu Nzimande was born and raised by her mother in the very rural community of Ingwavuma, in north-eastern KwaZulu-Natal. Against all odds, she studied medicine at the University of KwaZulu-Natal and became a doctor, returning for her obligatory community service year to work at Bethesda Hospital, a district hospital a little distance from her family home. This is the story of her early career in medicine, and in particular the influences of education on her thoughts and development as a doctor, and her subsequent career.

It is also the story of Phillip Cartwright, a privileged boy from the southern suburbs of Cape Town, who studied medicine at the University of Cape Town, and also found himself at Bethesda Hospital for his community service year. Somewhat to his surprise, the experience became a transforming one. So our two main protagonists share a working environment, for a time at least, as they consider their career options and make significant choices about their futures.

Their story is primarily about medical education, the place that it plays in their preparation for medical practice in a rural district, and in their future careers as doctors in contemporary South Africa.

SECTION 1:

LITERATURE AND POLICY

a) A Caesarian Section in the middle of the night

At midnight on a dry wintery night in July 2009, a bakkie with a canopy arrived at the gates of Bethesda Hospital, Ubombo, carrying an eight-month pregnant woman lying on a grass mat, who needed help urgently. She had started bleeding suddenly that evening, accompanied by severe pain in the uterus, which signified 8inimized placentae, or premature separation of the placenta, a life-threatening condition for both the baby and the mother. Dr Gugu Nzimande, a young community service doctor and graduate of the University of KwaZulu-Natal, was called to see the patient urgently by the midwife and made an assessment. She thought she could hear a fetal heart, meaning that the baby was still alive, and so she ordered preparations to be made for an emergency Caesarian section. Feeling somewhat anxious about handling the condition, she called her colleague Dr Phillip Cartwright, also a community service doctor, to assist her. At 2am, they administered the anaesthetic and Dr Nzimande did the operation, removing a large clot in the uterus and a dead baby – a "fresh stillbirth" as it is termed. They received no support from more senior or experienced doctors, but followed protocols and procedures that they had learnt at medical school and during their internships at larger hospitals. They finished the case at 3.30am and went to catch what sleep they could, before the next day's activities. The delivery was noted in the monthly statistics as resulting in a stillbirth from abuptio placentae, and the patient went home after 5 days to consult a traditional healer as to why her child had died. Drs Nzimande and Cartwright were both trying to make decisions about where to work the following year.

Bethesda Hospital in July 2009, however, was an organization in crisis. The Belgian Medical Manager had just been evicted from his position by a community mass action and told never to return. That brought the medical workforce down to five doctors, out of an ideal establishment of 13, of whom only one had any degree of experience. He was a Congolese-trained doctor 5 years on from graduation, and he assumed the role of senior doctor to four young South African doctors completing their year of compulsory community service. There were four other newly qualified health professionals fulfilling their obligations, including an occupational therapist, a physiotherapist, a dentist and a dietician, all from different backgrounds and universities. This young team was responsible for the clinical care in a 180-bed hospital and its eight surrounding primary care clinics, which was the only affordable health care service for a catchment population of around 50,000 people in this remote rural district.

b) Commentary

Why was the hospital so short-staffed? Why were only 5 of the 13 medical posts filled? Where were the senior doctors? And why were the only South African doctors those who were doing their community service?

Some of the answers to these questions are contained in the literature review that follows (Paper I), which provides a starting point in the field of the recruitment and retention of professional staff in rural and underserved areas. Interventions that have been documented to address the maldistribution of health workers were categorized into four types: selection, training, coercion and incentives. This has subsequently been echoed by the World Health Organization's (WHO) global recommendations for the retention of health workers in rural and remote areas[1,2]. Both bodies of work acknowledge the problem of the recruitment and retention of professionals in rural areas as a global and intractable one, and conclude that the available evidence for the efficacy of the various interventions is weak. They call for scientifically rigorous evaluations of the impact of initiatives and programmes to address the need.

The WHO recommendations include regulatory, educational, financial, and social strategies. This thesis examines the educational component of these strategies, which include the following recommendations:

- Recruit students from rural backgrounds
- Site health professional schools outside of major cities
- Arrange clinical rotations in rural areas during studies
- Develop curricula that reflect rural health issues
- Provide continuous professional development for rural health workers

As documented in the following paper, there is no agreed definition of "rural" or "remote" in the health sector in South Africa, and a wide variety of approaches to the issue of definition has been outlined[3]. For the purposes of this thesis, "rurality" is taken to mean the experience of living or working in a rural area, as understood and described subjectively. Like beauty, it may be best described "in the eye of the beholder", but this leads to confusion when comparisons need to be made. It constitutes an ongoing dilemma in the field of rural health in South Africa, that is not addressed in this thesis beyond this paper.

c) Paper I

Title: **A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas**

Authors: Wilson N, Couper I, Reid S, de Vries E, Fish TJ , Marais B

Journal: *Rural and Remote Health* 9: 1060. (Online), 2009.
http://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=1060

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: DR SJY REID Student no.: 863865946

The student's contribution to the article was as follows:

1. Formulation of the hypothesis: I was leader of the CHEER research team that formulated the concept for this review arising from a previous Systematic Review of the literature.

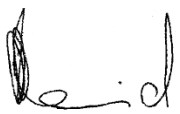
2. Study design: I proposed the design of the study using less stringent criteria for inclusion of studies in the review, compared to the previous systematic review.

3. Work involved in the study: I contributed a personal list of 250 references, but the work of reviewing and categorizing them was performed by the first author.

4. Data analysis: I proposed the framework and commented on drafts.

5. Write-up: I gave input and commented on drafts.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

d) Family Backgrounds

Gugu had grown up at Emanyiseni, an extremely remote corner of South Africa bordering both Swaziland and Mozambique, near Ingwavuma in the Umkhanyakude district. The fourth of five children, she was a quiet child who was respectful in her family duties such as fetching water and cooking, but her mother saw her intellectual potential. Gugu's family was part of a very cohesive community, isolated as it was geographically, and she was schooled in the values of accountability to the extended family and clan. So leaving Emanyiseni in order to stay with distant relatives in Jozini, the nearest town with a high school where she had any chance of passing matric, required much persistent negotiation on the part of Gugu's mother. Her father had deserted the family when Gugu was very young in order to find work in the city, and had never returned. Fortunately his brother, Gugu's uncle, supported her mother in obtaining the consent and blessing of the extended family elders to send the girl to school, but her school teachers consistently remarked on her intelligence and she frequently obtained the highest aggregate marks in the grade throughout junior and high school.

By contrast, Phillip's course through high school was effortless. His parents were both professionals, his father a lawyer and his mother a high school teacher, and they did not consider any other option than sending both of their children to the private schools that they had attended themselves. Phillip did well enough in all subjects, and managed to stay within the top 10 in the grade throughout high school, as did his sister. He played rugby and cricket, and took music lessons, and was a diligent student in all respects. Not particularly gifted intellectually, he made up for any lack through hard work and discipline, values which his father instilled both explicitly and through example. Their middle class status was tempered by significant involvement in their local church, through which the children learned about charity and altruism, although they had little direct experience of this.

e) Commentary

The optimism and sense of potential that enveloped South Africa following the end of apartheid and the success of the first democratic elections in 1994, gave rise to important plans to change both the education and the health systems in the country. The guiding principle of these documents, to transform the country into a place of development, equal opportunity and mutual respect, appears in the new millennium to have been superceded by the imperative of economic growth in an era of globalization.

This shift is captured in Paper II, which indicated the need to focus on the outcomes in terms of access to health care by the most marginalized citizens in society.

f) Paper II

Title: **Rural Health and Transformation in South Africa.**

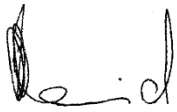
Author: Reid SJ

Journal***: SA Med J* 2006; 96(8): 676-677.**

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

I declare that the entire article, including formulation, design, analysis and write-up, was completed by the author alone.

Signature:  Date: 30 September 2010

g) The New South Africa

Both Gugu and Phillip were born in 1982, so they were 9 years old when Mandela was released, and 12 years old when the first democratic elections were held in the country. Gugu's father disappeared in Durban in 1985 at the height of the State of Emergency, most likely a victim of the extensive violence at that time, and her mother was never able to trace him subsequently. At the same time in Cape Town, Phillip's parents made preparations to leave the country, alarmed by the political situation and the increasing threat that they felt to their safety as a family. However the law firm in which Phillip's father was a partner was kept busy and took on some cases on behalf of anti-apartheid activitists who were imprisoned Through this experience the family was conscientized and made aware of the extent of the crisis. They decided to stay, but like Gugu's family, seldom talked about those years, torn between maintaining an order that they knew, and getting involved in a political situation that was increasingly untenable.

The birth of the new South Africa, and the construction of a democratic order including an inclusive district health system, took place largely when Gugu and Phillip were teenagers. A realization that the country had been spared an awful catastrophe, and the driving imperative to create a new order distinct from the past, was not high in their consciousness. Apart from the absence of Gugu's father, whom she had never really known, and Phillip's competition to get into medical school, neither of them felt the effects of the country's history and transition at a personal level. However, coming from families at opposite ends of the socio-economic scale in South Africa, they represent the disparities of South African society that are actually widening despite the broad political project of "transformation". They completed their student years at medical school largely ignorant of and uninvolved in the political issues of the day, aware that they would have a role to play in health care, but unaware of health as a developmental or political issue.

h) Commentary

"Doctors in a Divided Society"[4] describes the dilemmas facing medical education in South Africa comprehensively, noting that "*despite numerous reforms since 1994, the South African health system remains divided: first-world private care that ranks with middle-income countries internationally at the one end, and at the other extreme, in the rural public sector in particular, conditions that are superior only to the poorest African countries*". However their conclusion merely reiterates the problem, without shifting the discussion.

Paper III examines the policies that govern medical education in the light of the plans to transform both the health system and higher education system. It is critical of the persistent gap between policy and practice, and attempts to understand the intentions and the disconnections from the national level in both health and education, to the tertiary institutional level with respect to medical education.

i) Paper III

Title of the article: **The Transformation of Medical Education in South Africa.**

Author: Reid SJ

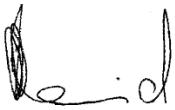
Journal: *South African Journal of Higher Education*

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

I declare that the entire article, including formulation, design, analysis and write-up, was completed by the author alone.

The draft paper was submitted to *South African Journal of Higher Education* on 30 September 2010.

Signature:  Date: 30 September 2010

j) Commentary

Section 1 sets the stage for the rest of the thesis, having presented the literature, the broad context and the policy environment of education for rural medical practice. The literature classified the available evidence regarding interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas into five intervention categories: Selection, Education, Coercion, Incentives and Support. This discussion was then situated in the South African context of "transformation" in the democratic era post 1994, including a reflection on what we actually mean by this term in the health sector. The policies that control medical education, from both the education and the health sectors, were then examined and analyzed in the light of this transformation imperative, and found to be relatively clear in intent but poor in implementation.

Section 2 now examines the particular process by which the thesis was constructed. It includes a conceptual framework that utilizes the sequential progression of medical students through their early career stages, in terms of the policy determinants, as well as their professional and personal responses.

Section 2:

METHODS

a) Content and Process

There are two components to the methodology: content and process. The content includes the educational determinants and factors that contribute to the effective practice of medicine in rural and underserved areas, which is represented by content of the papers themselves. The process, or discourse, includes the methods and approaches used to understand and clarify the issues related to the education of health professionals for rural practice, including ultimately the development of theory. This is represented by the narrative, the commentary, and is explicitly addressed in the final paper.

b) Aim of the Thesis

The aim of the thesis is to contribute to the development of a discourse in education for rural health in an African context.

c) Specific objectives

1. To examine the policies and practices regarding the medical educational response to the maldistribution of health professionals in South Africa
2. To explore alternative understandings and conceptions of these issues
3. To construct theory around the preparation of medical practitioners for practice in rural areas

d) Thesis Design

The design of the thesis consists of the presentation of a series of papers around the common theme of medical education for rural practice. A variety of methods were used, and each study is complete in itself with respect to design, methodology, conclusions and ethical approval.

e) Sampling

Seven papers out of a total of 12 prepared for publication by the author since the date of acceptance of the thesis proposal, were selected for presentation in this thesis. Further to these seven, one paper is included as an additional paper that was published before the thesis proposal, as well as four other additional papers to which the author contributed, all of which support the overall thesis. The criteria used for inclusion of papers included relevance to the educational issues of rural health, the quality of the studies, as well as the need to address each of the key issues, and to demonstrate the author's original contributions to the field of study.

f) Sequence of Papers

I. **Literature:**

Wilson N, Marais B, Couper I, Reid S, de Vries E (2009). A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas'. *Rural and Remote Health* 9: 1060. (Online), 2009.

II. **Transformation:**

Reid SJ. (2006) Rural Health and Transformation in South Africa. *South African Medical Journal.* 96(8): 676-677

III. **Policy:**

Reid S. The Transformation of Medical Education in South Africa.
Submitted to *South African Journal of Higher Education* for publication in 2011.

IV. **Student Selection:**

de Vries E, Reid S (2003). Do South African rural origin medical students return to rural practice? *South African Medical Journal*; 93(10): 789-794.

V. **Curriculum:**

Reid SJ, Cakwe M, Members of the Collaboration for Health Equity through Education and Research (2011). The contribution of South African curricula to preparing health professionals for rural or under-served areas in South Africa: A peer review evaluation. *South African Medical Journal*; 101(1): 34-38.

VI. **Career Choice:**

Reid SJ, Couper ID, Volmink J. Educational Factors that Influence the Urban-Rural Distribution of Health Professionals in South Africa – a Case Control Study. *South African Medical Journal*; 101(1): 29-33.

VII. **Organizational Learning:**

Vermaak K, Reid S, Horwood C. (2009). Factors Impacting on Organisational Learning in Three Rural Health Districts. *SA Family Practice*; 51(2): 138-142.

VIII. **Community Service:**

Ross A, Reid S. (2009). The retention of community service officers for an additional year at district hospitals in KwaZulu-Natal, Eastern Cape and Limpopo provinces. *SA Family Practice*; 51(3): 2490253.

IX. **Praxis:**

Reid SJ (2010). The Path to OPD. *SA Family Practice* 52 (4):1.

X. **Community-oriented practice**

Reid S, Mantanga L, Nkabinde C, Mhlongo N, Mankahla N. (2006). The Community Involvement of Nursing and Medical Practitioners in KwaZulu-Natal. *SA Family Practice* 48(8):16.

XI. **Methodology:**

Reid SJ. (2007). New Perspectives on an Old Problem – Recruitment and Retention of Health Professionals in Rural Areas. Plenary Address to the 11th Rural Doctors of Southern Africa conference, Badplaas, Mpumalanga, 24th August 2007.

XII. **Theory:**

Reid S. Pedagogy for Rural Health. Accepted for publication in *Education for Health*, 2011.

Papers I to VIII relate to the first specific objective, namely to examine the policies and practices regarding the medical educational response to the maldistribution of health professionals in South Africa. Papers IX, X and XI are directly related to specific objective 2, to explore alternative understandings and conceptions of these issues. Specific objective 3 is expressed entirely through the final paper XII, namely to construct theory around the preparation of medical practitioners for practice in rural areas.

g) **Analysis**

Different methods of analysis were used for various sets of data in different studies, using both qualitative and quantitative methods. Some were based on analyses of the literature, while most were based on empirical findings. The method of analysis for the thesis as a whole, is in the interpretivist – critical paradigm. Interpretivism or the hermeneutic approach seeks to understand, as opposed to objectively predict, and recognizes that all participants involved, including the researcher, bring their own unique interpretations of the world or construction of the situation to the research[5,6]. The critical paradigm is focused on eliminating injustice in society and critical researchers today also aim to transform society to address inequality, particularly in relation to ethnicity, gender, sexual orientation, disability, and other parts of society that are marginalized[5,6].

h) Development of the Methodology

The methodological framework for this thesis was established through collaborative research efforts lead by the author, across nine health science faculties in South Africa. In 2003, the author convened a research group funded through a self-initiated research grant from the Medical Research Council, in order to answer the question: *"What are the most effective educational strategies to prepare graduates to choose to practice in rural or underserved areas in South Africa?".* One representative was invited from each of nine health science faculties in the country, and the group was named CHEER, for the Collaboration for Health Equity through Education and Research, chaired by the author[7]. The aim of the CHEER Collaboration is to

promote health equity through appropriate educational and research projects in health science education in South Africa. A strategy was jointly formulated to address the original research question, and five distinct projects were undertaken at a national level through a division of labour amongst the collaborators:

1. A systematic review of the literature[8]
2. A qualitative study[9]
3. A curriculum peer review process (Paper III)
4. A quantitative case-control study (Paper IV)
5. A study of career intentions of medical students[10]

The first CHEER project, the systematic review of the literature on the research question, was achieved through the Cochrane Collaboration, the self-proclaimed "world leaders in evidence-based health care"[11], which applies rigorous criteria to identify studies that are deemed to be methodologically adequate to qualify as evidence. These included 59inimized59 controlled trials, controlled trials, controlled before-after studies and interrupted time series studies evaluating the effects of various interventions (e.g. educational, financial or regulatory strategies) on the recruitment and/or retention of health professionals in under-served areas. All qualitative studies and studies without a comparison group were excluded by these criteria. After reviewing almost 250 studies using these criteria, the authors eventually found that: *"There are no studies in which bias and confounding factors are 59inimized to support any of the interventions that have been implemented to address the inequitable distribution of health care professionals. While some of these strategies have shown promise, this review found no well-designed studies to say whether any of these strategies are effective or not."*

The limits of this approach to developing appropriate interventions are obvious, besides the recognition that the evidence in most systematic reviews originates from high-income countries[12]. Alternative approaches are therefore needed, in order to make the most of the evidence that is available. Accordingly, the bibliography gathered for the systematic review was then subjected to a second review by the author and others (Paper I) using less exacting criteria, so as to allow the inclusion of useful information that the Cochrane Collaboration did

not regard as sufficiently well designed or executed to pass as evidence. Out of an initial 1261 references, 110 articles were finally included, and sorted into categories with examples and comments that would be useful to scholars and policy-makers. The World Health Organization subsequently convened an expert group, including the author, which adopted this same pragmatic approach to evidence in order to produce global recommendations for the retention of health workers in rural and underserved areas[13]. The quality of the available evidence was classified into “high”, “moderate”, “low” and “very low”, and the recommendations were based on these understandings, with the limitations fully acknowledged.

The second CHEER project, a qualitative study to explore the factors that influence health professionals to practice in rural and underserved areas[14], was planned as an initial stage of a larger project, in order to develop the tools to be used in a quantitative study of the same issue. The latter produced the fourth CHEER project, a case-control study lead by the author and reported in Paper VI. The third CHEER project demanded the most collaboration as it consisted of systematically reviewing the curricula of each of the nine health science faculties in turn with respect to the research question, over a period of 4 years. It is reported in Paper V.

The work of the CHEER collaboration continues to date, with the appointment of a national coordinator in 2009, memoranda of understanding in place, and research interns based in each of the nine collaborating faculties. The objectives of the collaboration are:

a. To promote health science education that enhances equity
b. To generate new evidence regarding education for health equity
c. To create a platform for sharing information and advocating for evidence-based policy in health science education with regard to equity
d. To build research capacity in health science education

A second round of peer reviews has been initiated, focusing on a different research question, and each faculty has planned and implemented at least one research project. The author continues as chairman of the collaboration, and it is primarily through the university representatives that the outcomes of the studies and this thesis can be disseminated and utilized.

i) Conceptual Framework

A conceptual framework arose out of the CHEER discussions, which formed the basis of the original proposal for this thesis. It is structured around the career development stages of a medical practitioner, in conjunction with three broad issues: policy, professional and personal. The inter-relationship of these issues, together with the papers that relate to each topic, is portrayed in the table below. The papers included in the thesis were selected on the basis that they were directly relevant to the topic of medical education for rural practice, and they were prepared for publication after the submission of the proposal. Those mentioned below that were excluded from the thesis are concerned with rural health in general, but not directly relevant to the education as such.

Each career stage of the medical practitioner is impacted by policy, professional and personal issues. The academic and career path development of health science graduates is a relatively linear one, with a series of discrete undergraduate steps followed by two years of internship followed by a year of obligatory community service in the public health service. In terms of policy, the career stages of the medical practitioner are impacted initially by secondary education policies, which this thesis does not address. Paper III examines the policies that are relevant to undergraduate medical education, and two further studies by the author addressed important policy issues for rural health that are not educational in nature, namely community service and rural allowances, which are indicated in the framework but not included in this thesis. With regards to professional development, the thesis addresses the key issues of selection, curriculum, and organizational learning, through the series of papers IV, V, and VII respectively. The impact of education on the personal choices and practices of rural medical practitioners are addressed through three papers, on career choices (V), community service (VIII), and educational outcomes in terms of community-oriented practice (X).

The papers indicated in red italics refer to the abbreviated titles of the papers included in the thesis, whereas the items in blue italics refer to papers published by the researcher that are not included in the thesis.

Table 1: Conceptual Framework according to Stages of Career Development, indicating published papers

CAREER STAGE	POLICY CONTEXT	PROFESSIONAL COMPONENT (public, generic)	PERSONAL COMPONENT (individual, unique)
Pre-medical	Secondary Education system policies	High School University premed ***Paper IV: Rural origin***[15]	Personality Family influences
Undergraduate medical education	HPCSA, Universities Dept of Education ***Paper III: Transformation***	Medical curriculum 1st to 6th years ***Paper V: Peer Review of curricula***	Extra-curricular activities ***Paper VI: Case control study of career choices***
Internship & Community Service	HPCSA Dept of Health ***First year Community Service***[16]	Developing professional role ***Community Service review***[17]	Style of practice Personal choices ***Paper VIII: Community Service***[18]
Postgraduate Education	HPCSA College of Medicine Universities	Refining professional role ***Paper VII: Organizational Learning***[19]	Career choice ***Paper IX: The Path to OPD***
Later Medical Practice	Independent practice ***Rural allowance***[20]	Specialist role Experience ***Community-oriented primary care***[21]	Site of practice Lifestyle ***Paper X: Community involvement***[22]

Human resource planners write of the so-called "rural pipeline"[23] denoting the sequence of career development, including rural student recruitment and rurally based education and professional development, that is most likely to lead to eventual medical practice in rural areas. The rural pipeline metaphor is constructed around the managerial challenge of supplying human resources for health services in rural and underserved areas. It is useful in that it allows us to identify points of leverage along the career path of the rural health professional, that are likely to increase recruitment and retention of staff in rural areas. It is a linear concept, and we

know that these career choices are complex and multi-factorial. But more importantly, it is a managerial concept, not an educational one – in other words, it does not help us in thinking specifically about how we should teach, or help students to learn. The evidence that placing students in a rural environment for a significant length of time is likely to increase the chance of them choosing to practice in such an environment once they are qualified, is still not well established empirically[24]. But more importantly, the pedagogical basis of this outcome has not been clarified.

j) Narrative Theory

Stories help us to understand the world in terms of lived experience. My own story of working as a young doctor in a rural hospital in KwaZulu-Natal, provided background data as well as the motivation for this thesis. Making sense of a lived experience, combined with that of others who have found themselves in similar circumstances, allows us to develop understandings that can be helpful to those coming after, and design actions that can alleviate the most pressing common problems. The development of ideas, concepts and theories arises from the sharing of our experiences, comparing and contrasting them, and finding common ground.

Fisher[25] contrasted the rational paradigm, in which people make decisions based on logical arguments, with the narrative paradigm in which people make decisions based stories which include history, biography, culture, and character. Narrative enquiry[26] has gained a respectable place in standard research methodology, as it allows for the voice of the lived experience to be highlighted. This is particularly helpful in the health arena, where the patient experience is of primary interest[27], and a number of authors emphasize the social construction of wellness and illness. Using social construction theory, Murray[28] argues that the social context within which the stories are constructed is just as important as the events themselves: through the narrative "*a community is engaged in the process of creating a social representation while at the same time drawing upon a broader collective representation.*"

And so in this report, even though the narrative was contrived, I aimed to keep the concrete and the abstract, as well as the individual and the collective, in constant tension, allowing the reader to judge the validity of the assertions made in the papers against authentic experience of the subjects of the studies in the real world.

k) The Role of the Author

Here it is necessary to clarify the role of the author, and delineate it in terms of researcher, leader (of CHEER), educator , advocate and reviewer. My primary role in undertaking and implementing the studies represented by the papers has been as a researcher, usually as leader or as member of a small group of researchers in the usual manner. However the CHEER peer review process reported in Paper III involved a major degree of leadership, fundraising and coordination involving 9 faculties over a period of 5 years. The process of negotiating the reviews and acting as reviewer placed me in the role of evaluator and in some cases, provocateur in the eyes of the institutions under review, which is by no means a neutral space. Thirdly as an educator I was deeply involved in experimenting with and changing elements of the very programmes which were being investigated. This is related to the fourth role in advocacy for rural health, in that both are characterized by agency, and arose out of my own experiences as a medical practitioner in a rural area. My submission to the Truth and Reconciliation Campaign hearings in 1997[15] summarizes this perspective, and provides an insight into the worldview that was shaped by the political and historical context into which we were thrust as medical graduates.

As author of this thesis, I am therefore clearly no dispassionate reviewer of distant activities and writings: it is obvious that I have participated fully in all of the activities reported on in these papers, such that the task of reviewing and reconceptualizing the assumptions on which these activities are based, constitutes a form of praxis in itself.

l) Limitations of the study

This thesis was not intended as a comprehensive exposition of all the many facets of medical education for rural practice, but rather as the author's original contributions to addressing some of the key aspects of the field in South Africa. There is a growing body of literature on the topic, most of which originates in North America and Australia, so original empirical studies and reflective papers from Africa are relatively rare. It was interesting therefore to find the Australians calling for theory specific to the field of rural health[29].

The thesis contributes twelve original pieces of work to the field, but there are gaps, particularly with respect to the implications of applying a different theoretical framework to medical education, in terms of curriculum, teaching and learning practice, assessment, and evaluation. This then sets the agenda for future work.

The qualitative papers VIII, IX and X, could be criticized as being subjective and biased by my particular viewpoint. However, this is in the nature of qualitative research methods, and they display the progression of paradigmatic development through the thesis. The authenticity of voices that are not my own were ensured through accepted methods of quality control for each study. Assertions made in the review papers III , XI and XII, deliberately constitute an individual viewpoint which may or may not be shared by others, so no apology is made for subjectivity. The particular audience at which the papers were targeted, namely medical educators and managers, differs substantially from the readers of this thesis. Qualitative methods and interpretive analysis are not well understood in the health sciences arena, and critical theory is distinctly foreign. So it was necessary to frame the projects in language and methods that are acceptable and accessible to medical academics who operate from an exclusively positivist worldview.

My original thesis proposal aimed for 7 papers that I planned to write as first author, and in the final analysis I present 7 papers as first author written between 2006 and 2011. One of the papers in the sequence, Paper IV, was published in 2003, well before the thesis proposal was accepted, but it has not been excluded since it covers the important aspect of selection, and was seminal in terms of subsequent work. I was not the first author of 4 of the papers in the

final sequence, but I have included them since they help to document the development of the thesis, and I was intimately involved in their production.

SECTION 3:

SELECTION, CURRICULUM & CAREER CHOICE

a) **Commentary**

Having set the stage in section 1 and described the methodology in section 2, this section now addresses some of the key issues in undergraduate medical education with regard to rural medical practice. The conceptual framework is demonstrated in the sequence of 3 papers that explore the issues of admission and selection, curriculum, and career choice across all health science faculties in South Africa.

b) Application and Selection

In her grade 11 year, Gugu's high school was invited to attend an open day at the local hospital, organized by the hospital management in order to expose learners to the idea of careers as health workers. Seeing the possibilities, she registered her interest in the Friends of Mosvold Scholarship Scheme by completing a form, and responded to their suggestion of doing voluntary work at the hospital during her holidays. During grade 12 she was called for an interview with the local committee, and was offered financial support if she could obtain a place in health sciences at university. This entailed an application fee as well as a trip to Durban to write an entrance test, for which she needed to request permission from her elders at home. Never having been to Durban before, this was a daunting prospect for Gugu, but she was accompanied by two fellow scholars to write the test, and they were met by the Friends of Mosvold staff who assisted them to navigate the city and visit the university. Gugu was awed by the buildings and the numbers of people in the city, and redoubled her efforts to succeed in matric.

Phillip's application to medical school was a process of weighing up the options, choosing between a number of career possibilities that were open to him. He considered accounting, attracted by the offer of a generous bursary from a large accounting firm, and the guarantee of a high income. His father talked about following him into law, or going into business science through a commerce degree. But an uncle who was a general practitioner in Johannesburg invited Phillip during his grade 11 year to spend some time in his practice for the work experience required by the school, and that week decided his career direction irrevocably. He enjoyed his uncle's approach to his patients and saw that he could make a decent living while at the same time being of benefit to society. There were a limited number of places for white students, and Phillip did all that was possible to maximize his chances of acceptance through volunteer work, requesting letters of recommendation and visiting the medical schools personally in each city, supported by his parents. In the end however, he knew his acceptance depended largely on obtaining at least 5 distinctions in his matric, so he took extra tuition and made this his goal.

Gugu's application to the University of KwaZulu-Natal rested on her matric results alone, and she was fortunate to be offered a place in medicine on the basis of a C-aggregate and the fact that she was black. She was daunted by the implications of living in the city, and went to tell the family at home. Phillip's application with 5 A's and an A aggregate was rejected by 3 other universities but accepted at the University of Cape Town, his first choice. He was overjoyed at the news, and went to celebrate.

c) Commentary

Who gets admitted to medical school and who does not, is one of the most significant factors that determine the outcomes of medical education, including the career choices that graduates make after qualifying. The selection procedures and policies are therefore crucial, and rely heavily and at some institutions, exclusively on academic performance at secondary level. Medical schools characteristically admit the top academic performers, but these do not necessarily make the best doctors, and the predictive science of selection is highly contested.

The international literature had showed that students of rural origin were much more likely to end up working in rural areas than those who came from urban areas[30,31]. However this was disputed by South African policy-makers, who claimed that the local practice of sending gifted children from rural areas to urban high schools in order to improve their opportunities, would complicate the picture. We studied the question through a cross-sectional survey in two parts. Although this study was completed before this thesis was conceptualized as a whole, it is included here because it addresses this crucial component of education for rural practice, and was seminal in terms of later work, being frequently cited. Medical practitioners of rural origin, which we defined as those who attended primary school in a rural area in order to allow for the above practice, were found to be 3.4 times more likely to eventually practice in rural areas than their colleagues of urban origin.

d) Paper IV

Title: **Do South African rural origin medical students return to rural practice?**

Authors: de Vries E, Reid S.

Journal: South African Medical Journal 2003, 93(10), 789-794.

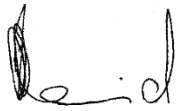
Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

My contribution to the article was as follows:

1. Formulation of the hypothesis (if applicable): I conceptualized the study together with the first author
2. Study design: I designed the study together with the first author.
3. Work involved in the study: the first author collected the data.
4. Data analysis: I performed some of the data analysis.
5. Write-up: I commented on drafts by the first author.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

e) **Commentary**

In retrospect, the methodology of this study was crude and the qualifying factors were subject to a significant response bias, since only a 30% response rate to the postal survey was obtained. Nevertheless, ironically, it has been extensively cited and has been useful as evidence in lobbying for revised selection criteria to medical schools. The paper was content to show that the South African experience was not different to that of other countries with respect to students of rural origin: they are proportionally more likely to return to work in rural areas than those of urban origin. But it did not attempt to explain the phenomenon at all. It did not attempt to measure social class or race in any way, which remains an important area for further research, particularly in the light of later studies in this thesis. In the United Kingdom in 2004 it was found that ethnic minorities and women were no longer under-represented in UK medical schools, but lower socioeconomic groups still were[32]. This is likely to be the case in South Africa in the near future. Using the perspective of social reproduction, it has been suggested that medicine reproduces itself in terms of power and class by preferentially selecting applicants from middle class backgrounds. If race and place of origin is to some degree a proxy for social class, the proportions and trends would be important to study in the South African context.

The barriers that the application process itself creates, particularly for students from rural areas and other disadvantaged groups, is a key issue in access to tertiary education that has been underestimated, and deserves further study. The success of the Friends of Mosvold Scholarship Scheme[33], now known as Umthombo Youth Development, has demonstrated that learners from remote rural areas do have the potential to succeed, given adequate support and encouragement.

f) Socialization and the Curriculum

Gugu's first few years at the University of KwaZulu-Natal were a struggle. Firstly she had to make the social transitions from the rural to the urban environment, from schoolgirl to university student, and from a family focus to a wider social network. Living in a university residence gave her the support of peers and others struggling with similar issues, and she drew particular comfort from two other students from the same area as her home. The problem-based curriculum and small group tutorials however, were strange to her, and she preferred to attend the lectures and study on her own. During her vacations she travelled home, and as part of the conditions of her scholarship, continued to offer voluntary services at the hospital. In her second year, one of the courses required students to investigate the health resources of a community, and they were given the option of choosing where to go. Together with two friends, Gugu spent a month completing their assignments in the community of Emanyiseni under the supervision of the professional nurse in charge of the clinic. Gugu was known in that community as a clever child, and the elders did not hesitate to remind her of her duty to return once she was qualified. The team of students planned an intervention project based on their experiences, and returned the following year to implement it. She chose to do this in her own high school, where she talked to the learners about her path to university, and the importance of taking precautions to avoid contracting HIV.

Phillip's first few years at university were much as he had expected. Living at home, as before, meant that not much changed apart from a greater level of independence. His father bought him a small car, and he developed a relationship with a classmate called Donna. Their curriculum was largely classroom-based for the first three years, which Phillip found annoying, as he could not wait to get hands-on experience with real patients. The transition to clinical work in his fourth year in the Cape Town hospitals was a shock, as he was abruptly introduced to the realities of poverty, violence and alcohol and drug abuse within a health care service that itself was abusive. Alarmed by this experience and being a diligent student, he found comfort in studying the correct methods of history-taking and examination, and stuck closely to the teachings of those tutors who had a clearly delineated approach to the clinical medicine, without getting side-tracked by other issues. He was particularly attracted to surgery, and voluntarily joined the Students Surgical Society, which inspired him with a sense of professionalism through seminars with stimulating speakers, where all attendees were expected to wear formal dress. During his whole period of training as a medical student over 6 years, he never left Cape Town for the purpose of any curricular activities.

g) Commentary

The task of preparing medical students with the necessary knowledge, skills and attitudes for the challenges of working as independent medical practitioners in rural and underserved areas in the public health system in South Africa, is complex and demanding. As noted in Paper III, the policies and guidelines that direct medical education are not specific or directed enough to ensure that this is achieved systematically, so it is left up to the individual universities, faculties and departments to interpret the national need into curricular activities.

The CHEER collaboration decided to address this gap empirically by undertaking a series of peer reviews which aimed to identify how each faculty was preparing its students for service in rural or under-served areas. In the process, educational standards and best practices were identified, and solutions to common challenges were shared through the development of a community of practice. These are documented in Paper V.

h) Paper V

Title: **The contribution of South African curricula to preparing health professionals for rural or under-served areas in South Africa: A peer review evaluation**

Authors: Reid SJ, Cakwe M, Members of the Collaboration for Health Equity through Education and Research (CHEER).

Journal: *South African Medical Journal*, 2011; 101(1): 34-38

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: DR SJY REID Student no.: 863865946

My contribution to the article was as follows:

6. Formulation of the hypothesis (if applicable): I was leader of the collaboration that undertook these reviews, and conceptualized this paper. Each member of the CHEER collaboration contributed to certain of the 9 reviews that were undertaken.

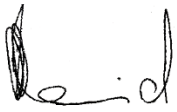
7. Study design: I as leader of the CHEER collaboration, designed the study together with all members of the team.

8. Work involved in the study: I personally participated in 4 of the 9 reviews.

9. Data analysis: I performed 80% of the meta-analysis of the 9 reports, each of which contained analysis sections contributed to by all members of CHEER.

10. Write-up: I rewrote the majority of a first draft by the second author.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

i) Commentary

The peer review process was a thorough, systematic and inclusive process that has yielded some coherence and consensus, at least amongst educators. However, assumptions were made in the drawing up of the criteria for assessment and the protocol for peer review, that were not discussed in the paper, and these deserve to be unpacked. Firstly, the initial generation of the protocol relied primarily on a WHO document from 1987, based on the experience of ten medical schools around the world. Over the 20 years since then, a great deal has changed in the field. Secondly, the reviewers were fellow academics, insiders from the same or similar backgrounds. There were no community members or students in the review teams, for example: the reviewers took it upon themselves to make the judgements that they did. Thirdly, the protocol did not demand any significant introspection or deliberate attempt to uncover the historical development or the conceptual assumptions of the faculty under review. So attention was not given to, and an analysis was not made of the power relations within the faculty, and between the faculty and its outside stakeholders in community-based education. This becomes significant in the light of a shift in perspective that has come from more recent developments in so-called "community-engaged medical education"[34], which is taken up later in the thesis.

j) Career Plans

As the students progressed through their clinical years of training at medical school, they had the opportunity to gain an impression of each specialty in turn. Their views were highly influenced by the enthusiasm and example of their teachers, on whom the students modeled themselves. Towards the end of her studies, Gugu was required to spend a month in a rural district hospital as part of a Family Medicine block. She was allocated to Manguzi Hospital, not far from her home, with three colleagues, and this proved to be a fortunate option for her. The students were welcomed as part of the medical team from the moment they arrived, and given responsibility for patient care to an extent that they felt like real doctors for the first time. From interactions with the medical officers at the hospital, Gugu began to understand what it would be like to work there, and to imagine herself in that situation. Speaking the particular isiZulu of that area with the patients and staff, she felt at home in the hospital for the first time in her medical career, and found an emerging sense of confidence and self-assurance that she had not known before.

Phillip's clinical experience was confined to community health centres and hospitals in Cape Town, where he managed to develop his interest in surgery by volunteering for extra duties in the emergency departments and assisting the surgeons whenever he could. However, there always seemed to be registrars and interns wanting to gain experience ahead of him in the queue, and he began to get impatient. He was sure that he wanted to specialize in a branch of surgery, where things seemed more cut and dried, and he managed to pass the other disciplines by doing the absolute minimum. He chose an elective study period in neurosurgery at the teaching hospital, and was fascinated by the technology as well as by the neurosurgeons themselves, whom he regarded as heroes. His future career started taking shape in his mind's eye, and he started taking his studies seriously again, determined not just to pass the exams, but to be a good doctor with a high level of professionalism.

k) Commentary

Career choice is shaped by a multitude of factors, and the educational influences on health professionals' choices only contribute a part of the motivation. The literature in this field, as seen in the bibliography of Paper I, is dominated by studies from Australia, the USA and Canada. Family considerations, finances, career prospects, and professional development play a major role in career decisions, which I have investigated in the South African context[35,36] but those papers are not included in this series because they do not have an educational focus.

The next paper analyzes the choices that South African doctors in the public service have made between urban and rural careers, in terms of their undergraduate and postgraduate educational experiences. Using a quantitative analysis of a case-control study design, the findings show that doctors are significantly influenced by specific educational experiences to choose rural or urban career paths.

l) Paper VI

Title: **Educational Factors that Influence the Urban-Rural Distribution of Health Professionals in South Africa – a Case Control Study.**

Authors: Reid SJ, Couper ID, Volmink J.

Journal: *South African Medical Journal*, 2011; 101(1): 29-33.

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: DR SJY REID Student no.: 863865946

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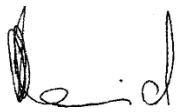
2. Study design: I designed the study together with the other two authors
3. Work involved in the study: I collected the data without the assistance of the other authors.
4. Data analysis: I performed all of the primary analysis of the data.
5. Write-up: I wrote all drafts of the paper.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

SECTION 4:

APPRENTICESHIP AND PRACTICE

a) Commentary

Section 3 addressed the issues of selection, curriculum and career choices of graduates with respect to rural practice. Paper IV demonstrated that students drawn from rural areas in South Africa are more likely to practice in rural areas once they have graduated, while Paper V examined the degree to which medical and health science faculties prepare their students for rural practice in terms of 11 elements. Paper VI then quantitatively analyzed the educational factors that influence medical practitioners' choice of where to practice, showing that it was significantly influenced by community-based and rural experiences within the undergraduate curricula.

Leaving the realm of undergraduate medical education, section 4 now examines the young medical graduate's responses to the educational components during internship and the compulsory community service year, including learning in the workplace and the role of community service itself. Finally in this section, a community-oriented approach to medical practice in rural areas is explored, indicating a more inclusive kind of practice that could result from a different kind of medical education.

b) Internship and Apprenticeship

Passing out of medical school and into the world of medical work in the South African public health system, Gugu and Phillip and their peers experienced a weight of responsibility for patients' lives and health that few other 24-year olds had to deal with. Not only were the patients they looked after in the wards very ill, predominantly as a result of HIV, but the working environment itself in the public hospitals was in a perilous state. Staffing, equipment and drugs were often lacking, and as juniors they were caught in the middle of the dilemma, trying to do their best for their patients. As apprentices, they learned practical skills through repetition, and became more confident as they became competent in a wide range of medical care. They learnt to deal with death and dying patients by assuming a professional detachment, concerning themselves with the clinical correctness of their judgments and decisions, rather than getting involved in the emotional distress of the patients and their relatives. They were strongly socialized into their role as biomedical technicians within a curative hospital system that categorized patients by disease, and marginalized the personal and subjective components of illness and care.

In the second half of their second year, all interns received a letter from the National Department of Health informing them of the process of allocation for their year of community service. It explained that they should respond by choosing 5 sites where they would prefer to serve for the year, out of a published list of accredited sites of public hospitals. Apart from her preference to be closer to home, Gugu had an obligation to return to the district of Umkhanyakude in terms of her scholarship commitment, and so she selected the complex of five hospitals in the district as her first choice. Her dilemma was in selecting four other sites that might take her far away if she was not given her first choice. Phillip, on the other hand, faced the real prospect of having to leave the Western Cape, since he knew that it would be oversubscribed. Not knowing enough about the options in the rest of the country, he decided to apply for sites that he had at least heard of from friends and colleagues.

Gugu was given her first choice, and was allocated to Bethesda Hospital. On the other hand, none of Phillip's five choices were accepted, and he was asked to reapply with five further choices from a more restricted list. Feeling desperate, he phoned as many people as he could about the hospitals on the so-called "second round" list, but was unable to make an informed choice. He was finally informed that he had been allocated to the Umkhanyakude District in KwaZulu-Natal, a place that he had never heard of, and he felt angry at being manipulated. His firm desire by this stage was to become a neurosurgeon, and community service was merely delaying his plans.

c) Commentary

Away from a tertiary educational environment, formal education and professional development becomes more challenging. In the workplace, and particularly in the public health system in South Africa, the imperatives of patient care in the face of the massive burden of disease most often sweep aside efforts to develop academically, and even to maintain professional competence. Paper VII explores workplace learning in more detail, using the concept of the Learning Organization as a framework.

The concept of the learning organization originated in industry as a means of improving productivity, and as such it is not essentially an educational concept, but a utilitarian one. The industrialization of health care names patients as “clients” and the hospital-based system allows direct application of managerial strategies based on the “plant”. The term “staff development” implies that the overall goal is the success and growth of the organization rather than the growth of ideas, or the benefit of the community being served. The learning organization could be viewed as the antithesis of emancipatory learning in a critical paradigm since it is controlled and directed by management, even though some of the elements may be outwardly similar. Nevertheless, the “culture of change” that was found to be one of the three essential components of a learning organization, represents opportunity for the development of new ideas.

d) Paper VII

Title of the article: **Factors Impacting on Organisational Learning in Three Rural Health Districts.**

Authors: Vermaak K, Reid S, Horwood C.

Journal : *SA Family Practice* 2009; 51(2): 138-142.

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

My contribution to the article was as follows:

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3. Work involved in the study: I led the team that collected the data.
4. Data analysis: the first author performed all of the primary analysis of the data.
5. Write-up: I commented on drafts of the paper by the first author.

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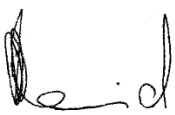
Signature:  Date: 30 September 2010

e) Commentary

Passing out of the tertiary educational institutions into the world of work, learning takes on a different meaning. A local study of an educational intervention in rural hospitals[37] designed to reverse the "inverse performance spiral" showed that this can be successful provided that effective local leadership creates a positive learning environment. The assumption that appointed leaders can and should create a conducive environment for learning, and that learning can only occur if these conditions are provided, indicates a particular worldview that dismisses the student's role in their own learning.

f) Community Service

Gugu and Phillip arrived at the hospital on the same day, and met for the first time in the hospital car park. Phillip was surprised at how far the journey had seemed from Durban, and Gugu felt apprehensive about the year ahead. The eight new community service officers gathered in the Medical Superintendent's office on the first day to receive an orientation to the hospital. It was short and functional, with a division of duties by the Superintendent without discussion. All of them felt alienated by the man's formal style, and immediately after the meeting went to Gugu's flat for tea, where they introduced themselves less formally, and created a team of their own. They agreed that one would host all of them for tea every day on a rotational basis, and this became the meeting place that sustained them all through the year. Gugu took to the work readily, and found to her surprise that she already had the confidence to deal with most of the patients in the wards and outpatients department. The most challenging aspect of the work was the relentless tide of AIDS patients, whom she struggled to convince to be tested in order to be able to get onto anti-retrovirals. She felt least confident in the operating theatre, particularly with general surgical cases, and tended to ask Phillip's advice on these patients. Phillip himself, however, was unhappy in his first few months, resentful that he had been sent so far from home, and irritated by their uncommunicative boss, with whom he quarreled about the night duty roster. But Phillip found satisfaction in the clinical work, especially the patients with surgical problems to which he paid special attention, and here he created his niche.

The team of community service officers decided to arrange their own professional development by setting aside an hour a week for the presentation of a topic from a journal, prepared by each one in turn. On another day of the week they spent on a joint ward round, seeing the patients together that posed interesting or challenging problems. In addition they used the internet to find appropriate information, and set up useful relationships with the specialists at the regional hospital in Empangeni, who were keen to help. In these ways, together with monthly input by visiting consultants, the young health professionals developed their own patterns of learning and reflecting on their work, with little support from their seniors. When Phillip applied to attend a surgical course in Durban, the superintendent turned down his request, saying that the hospital was too short-staffed. So he took annual leave and attended the course on his own terms, resentful that the management was so unsupportive of his contribution to surgical care in the hospital. He started studying in his own time towards his primary examinations in surgery, the first step towards becoming a specialist. Gugu, by contrast, enjoyed the freedom of not having to study, and spent most of her time off duty visiting her family at home, two hours away.

g) Commentary

Compulsory community service constitutes a major recruitment process each year, through which around 2200 young health professionals are brought into the public health system in areas of need. However, it is not a good strategy for retention of staff, and the majority of these leave the public service at the end of their year. One of the objectives of community service is to allow young professionals the opportunity to develop professionally, while at the same time improving the provision of health care to all South Africans. It is primarily a service year, not a period of formal education or training, so learning is informal, unstructured and of an apprenticeship nature, with no accredited educational outcomes.

Paper VIII investigated the reasons that community service officers stay on in district hospitals beyond their obligatory year, and found that a significant factor was the development of confidence in their ability to make independent decisions in the clinical care of patients. This informal learning driven by experience, even within the framework of community service that is coercive, is relatively unstructured and yet powerful, being truly driven by the learner's need to learn arising from practice, in this case the junior medical officer. Put another way, one of the outcomes of the learning process, as this study explores, can be measured by the proportion of them who choose to stay on for a further year voluntarily.

h) Paper VIII:

Title: **The retention of community service officers for an additional year at district hospitals in KwaZulu-Natal, Eastern Cape and Limpopo provinces.**

Authors: Ross A, Reid S.

Journal: *SA Family Practice* 2009; 51(3): 249-253.

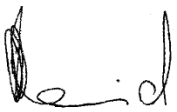
Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

My contribution to the article was as follows:

1. Formulation of the hypothesis: I assisted the first author to conceptualize the study
2. Study design: both authors designed the study
3. Work involved in the study: I assisted the first author in collecting the data.
4. Data analysis: the first author performed all of the primary analysis of the data.
5. Write-up: I entirely rewrote the first draft of the paper by the first author.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

i) Commentary - Praxis

As an additional paper, the short reflective piece “The Path to OPD” captures the relationship of practice and reflection in the rural medical context, and its style signifies an alternative way of seeing the process. It is the personal perspective of the lived experience of the insider, that no amount of measuring or quantification can capture or represent. It is significant because it speaks of praxis, a repeated moving in and out of the world of medical emergencies, from a protected place of “normality”, represented in this piece by the family. The characterization and situation of this “other” space of reflection is significant.

Paulo Freire defined praxis as "reflection and action upon the world in order to transform it"[38], for which an alternative vision is necessary, a conviction that things could and should be different. In the context of the struggle in South Africa in the 1970’s and 1980’s this was self-evident[39], and framed all of the author’s experiences and reflections within a critical paradigm.

j) Paper IX

Title: **The Path to OPD.**

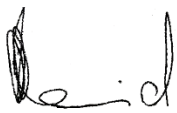
Author: Reid SJ.

Journal**:** ***South African Family Practice*****,** 2010; 52(6): 535.

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

I declare that the entire article, including formulation, design, data collection, analysis and write-up, was completed by the author alone.

Signature:  Date: 30 September 2010

k) A Time of Crisis

Matters came to a head at the hospital in June, when a delegation from the community arrived at the hospital and demanded to see the Medical Superintendent over a patient whom they claimed had been poorly treated by the hospital. He had irritated the staff and alienated the community over the previous two years through his dictatorial management style and lack of communication, and finally this came to a head with the apparent mismanagement of a patient. The young doctors found out that the superintendent had treated a young pregnant woman with high blood pressure and sent her home, where she had had a fit. Family members had then taken her at their own expense to Empangeni, as they no longer trusted the hospital. Now a few weeks later, a large group of community members, joined by a number of hospital staff, marched to the superintendent's office and stood chanting and singing outside. When he finally emerged, they took him bodily and marched him to the hospital gates, where he was told that he was not welcome in the hospital ever again. He collected his belongings and left.

The junior doctors and others felt beleaguered, and somewhat confused. It seemed that the situation was now polarized, and the community did not trust them, whereas they felt they were struggling to offer as reasonable a standard of care as they could under the circumstances. It became a crisis of confidence, and they discussed the situation intensely as a group in an evening meeting. Gugu was chosen to mediate, being a local person, and she asked Phillip to join her when they met with the leaders of the community protest group. In a lengthy and formal meeting at the community hall away from the hospital, chaired by the local Nkosi and held in isiZulu, it was explained to the two young doctors that the problem had been with the superintendent, not with the rest of the staff, and now that he had been removed, things could continue as normal. Gugu explained how short-staffed they were, and asked that the community be informed that there were now only five doctors where there should be more than ten. The community leaders understood the situation and resolved to call on the provincial Department of Health through the MEC for Health, to send more medical staff to assist the young doctors to provide an adequate service at the hospital.

This series of events marked a significant shift in the thinking and attitude to the work amongst the hospital staff. Suddenly, despite being few in number, the young professionals felt that they could work together with the community rather than against it, in tackling the challenges of health care in that sub-district. Rather than waiting for people to get ill enough to come to hospital, they could prevent much disease and distress at a family and community level. Encouraged by the support of the community leaders, Gugu started planning a campaign to counsel and test young people for HIV in the community, with the assurance that those who were found to be positive would be offered anti-retrovirals.

l) Commentary

Conceiving medical practice as more than just the clinical care of an individual patient, to include the social, economic and political dimensions of health, requires a conceptual leap out of a positivist biomedical paradigm towards a more holistic approach to health care. The accepted terminology for such an approach is Primary Health Care, which was formalized and defined at a particular conference in Alma Ata, Russia, in 1978[40]. Prior to this however, a body of literature grew around the concept of Community-Oriented Primary Care, or COPC, which had its origins in South Africa in the 1950's with the work of Drs Sidney and Emily Kark in rural KwaZulu[41]. Community involvement is an essential ingredient of this approach, and this was practiced by the Karks through systematic home visits and consultations throughout the community that they practiced in. Through their work they understood the causes and predisposing factors of childhood malnutrition to be not only poor feeding practices, but also the migrant labour system that took most of the able-bodied adults away from their families. The COPC approach was extraordinarily successfully in reducing childhood malnutrition and mortality in that community, and formed the basis for Primary Health Care as an approach to health. However, the Karks were labeled as political activists by the nationalist government, since they saw and wrote about the direct links between health and apartheid policies of the government, and they were forced to leave the country.

Paper X examines the community involvement of exemplary nursing and medical practitioners beyond the clinical role. Although it has little educational content as such, it is included in this discussion as one of the series of papers in the thesis in order to indicate the kind of outcome in practice that a different approach to medical education could produce. Gruen et al[42] have usefully categorized and quantified these activities outside of the clinical role, based on a helpful model describing professional responsibility[43] beyond providing care to individual patients.

m) Paper X:

Title: **The Community Involvement of Nursing and Medical Practitioners in KwaZulu-Natal.**

Authors: Reid S, Mantanga L, Nkabinde C, Mhlongo N, Mankahla N.

Journal: *SA Family Practice*, 2006; 48(8):16a-e.

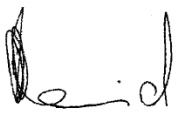
Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

My contribution to the article was as follows:

1. Formulation of the hypothesis: I conceptualized the study
2. Study design: I designed the study
3. Work involved in the study: I supervised the co-authors to collect the data.
4. Data analysis: I performed the analysis of the data together with the co-authors as a learning exercise
5. Write-up: I wrote the paper using drafts of sections by the co-authors.

I declare this to be a true reflection of my contributions to this journal article.

Signature:  Date: 30 September 2010

SECTION 5:

MEDICAL EDUCATION AND RURALITY

a) Commentary

This final section of the thesis brings together the various elements of education for rural medical practice using different lenses to those used previously, and proposes an alternative discourse leading to a new theoretical framing of the issue. It represents the heart of the thesis as such, as the culmination of the contextual, policy, curricular, workplace and community issues outlined in the series of papers presented in sections 1, 3 and 4.

b) The Second Phase

Help arrived in August in response to the community leaders' request to the health authorities, in the form of Dr Abraham, an Indian-born surgeon who had completed his specialty training in the United Kingdom. A mature and enthusiastic man, he quickly gained the confidence of staff and community alike, and took the junior doctors under his wing. Phillip could not believe his good fortune, as Abraham encouraged his surgical interest and expanded his repertoire of procedures and operations through patient one-on-one mentoring in the operating theatre. A short course in cataract surgery was offered in Cape Town, and Abraham encouraged Phillip to attend at hospital expense. In this new phase, Gugu was requested by the tribal authority to contribute a medical perspective to a district-wide project involving an extensive network of young unemployed matriculants trained in HIV counselling, in order to provide peer counseling and health education in the community. She used her understanding of local norms and customs to tailor health education messages for the rural youth, using language and images that were readily accepted. Enrolments of younger people who were HIV positive into the anti-retroviral programme increased, as a direct result of this project.

Towards the end of the year, Gugu and Phillip discussed their plans for the following year over tea, reflecting on how different the second half of the year had been with Dr Abraham in charge, compared to the first half. Gugu was thinking of staying on for a while, as the HIV project was just getting going in the community, and she felt that she was learning an enormous amount through the process. She imagined that this might determine the direction that she wanted to take in the rest of her career, possibly through specializing in public health. Phillip was still undecided, not having yet applied for jobs elsewhere. He found the personal mentoring and tutoring that Dr Abraham had provided to be priceless, and he was reluctant to leave when he felt he had so much more to learn. The course in cataract surgery had made him aware of the need not only to be a competent surgeon, but also to work at community level on case-finding and health education in order to be maximally effective.

c) An Alternative Discourse

The rural health discourse is dominated by the workforce management imperative and its accompanying paradigm, and the challenge of using different theoretical and conceptual approaches to understand the particular complexities of educational outcomes has become increasingly apparent.

In response to a submission of paper VI to the journal Medical Education, the following feedback was obtained from an anonymous reviewer:

> 'Social reproduction' approaches have been used to better understand what career choices might be about and how education experiences work, or fail to work, to shape them. Issues of social-class-related patterns of access to higher education have been studied using Bourdieu's theories in the UK to develop a 'sociology of choice'. In the USA, differences in the experiences and outcomes of students at Harvard have also been explored using Bourdieu's theoretical constructs. This strand of literature includes studies of 'emotional capital' and how it is implicated in learning processes of professional socialization, occupational selection, and exclusion of undergraduate health science students. In fact, there is a substantial tradition in the professional education literatures of studies of processes of professional socialization, beginning in medical education at least with the work of Becker and others, and including ethnographical approaches. These offer powerful models for exploring how students experience their education and how it shapes their career choices.
>
> Such models emphasize the importance of understanding learning as a socio-cultural process. For example, postgraduate medical education includes studies about how the postgraduate learner is shaped as an apprentice within a community of social practice through informal workplace learning, with a corresponding emphasis on the importance of educators having tools that allow them to structure experiences (rather than impart knowledge) for this socio-cultural development leading to, for example, the adoption of professional discourses (learning to talk the talk of the social group, not just learning from talk). Medical education has been analyzed in terms of its cultural transmission of different kinds of values: though the term 'transmission' fails to capture the active production and reproduction of not only values, but a wide range of aspects of identity implicit in the term 'social reproduction'. Does our rural and remote education provide the best possible foundation for learning considered as an active socio-cultural process?

This feedback was useful and instructive, and apart from the specific recommendations, it underscored the need to shift from descriptive efforts to a more theory-driven analytical discourse, and reinforced the need to develop a different conversation regarding education for rural health. The reductionist paradigm is clearly limited in understanding Tudor-Hart's "Inverse Care Law"[44] referred to in Paper I, and even less helpful in designing ways of dealing with it through education, as noted above with regard to the systematic review of the literature through the Cochrane Collaboration.

De Bono[45] polarizes the activities of analysis with those of creativity: whereas analysis breaks down existing concepts or observations in order to understand them, creative acts are innovative constructions of ideas that did not exist before. In challenging the existing perspectives on medical education for rural practice, the aim is to initiate a discussion about assumptions, and not necessarily to propose a new set of policies or educational activities, although these are implied and may well follow. The purpose is to reframe the discussion around alternative paradigms, and to make these explicit.

A seminal event in the process of developing different perspectives, was the opportunity to give a keynote address to the 11th annual conference of the Rural Doctors Association of Southern Africa in 2007. Paper XI, "*New Perspectives on an Old Problem – Recruitment and Retention of Health Professionals in Rural Areas"* allowed an exploration of the issues from historic, political, economic, legal, sociological, psychological and educational viewpoints. Although it is not an academic paper as such, it is included here in order to demonstrate the shift in thinking.

d) **Paper XI**

Title: **New Perspectives on an Old Problem - Recruitment and Retention of Health Professionals in Rural Areas.**

Author**: Reid SJ.**

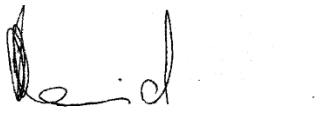
Plenary Address to the 11th Rural Doctors of Southern Africa conference, Badplaas, Mpumalanga, 24th August 2007.

Available at: http://www.rudasa.org.za/conference/conf11/plenary.pdf

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

I declare that the entire article, including formulation, design, analysis and write-up, was completed by the author alone.

Signature:  Date: 30 September 2010

e) Commentary

Drawn towards a vision for a different kind of medical practice as indicated by Paper X, the process of theoretical exploration outlined in Paper XI raised the possibility of pedagogy that could be specific to rural health. The discussion therefore now shifts to the kind of medical practice, and the education to prepare for it, that acknowledges patients and students respectively as co-creative human beings with the potential to exceed the limitations of their professional advisors or teachers. This is in contrast to the patronizing relationships characterized in the traditional paradigm by the power differentials between doctors and their patients, as well as between teachers and their students. A more equal partnership that challenges the assumptions of authority and rights to exclusive knowledge by the professionals, would allow for a greater outcome through the complimentary efforts of both parties. At the collective level, this finds a parallel in the challenge to the exclusion of rural and other marginalized communities from access to health care, through engagement in partnerships as envisaged by the primary health care approach.

The challenge in medical education, nested as it is within the medical system, is to find a feasible alternative in educational theory, particularly for the extension of health care to those in most need. The concepts of critical pedagogy and primary health care share similar principles, as explained above, and the final paper XII examines them both from the perspective of their relevance to medical education for rural practice.

f) Paper XII

Title: **Pedagogy for Rural Health.**

Author: Reid SJ.

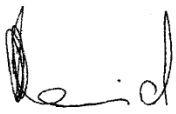
Journal: *Education for Health* 2011: Volume 24, Issue 1.

Declaration regarding a Doctoral Student's contribution to journal articles to be included in a doctoral "Thesis through Publications"

Student name: SJY REID Student no.: 863865946

I declare that the entire article, including formulation, design, data production, analysis and write-up, was completed by the author alone.

Note: The manuscript has been accepted for publication provided that minor changes are made according to recommendations from the reviewers. I will also include the recommendations of the international examiner of the thesis with regard to this paper. The revised manuscript will be resubmitted for publication in the journal *Education for Health* in April 2011.

Signature:  Date: 20 March 2011

g) **Medical Education for Rural Practice**

Beginning from the managerial framework of "human resources for health", and considering the social and political imperatives of post-apartheid South Africa, this thesis documents the limitations of a reductionist approach to the research, policy and practice of education for rural health, illustrates the parallel framework of primary health care, and proposes the alternative theoretical framework of a critical pedagogy of place as a more appropriate perspective. It is important to recognize that what has not been described is exactly how a critical theoretical framework informs educational policy and practice, for example, the curricular implications of critical pedagogy in health sciences education. Bringing the broader philosophical imperatives described above together with the policy frameworks in South African higher education, to bear on the challenge of operational changes to medical curricula, notwithstanding the administrative restrictions referred to in Paper III, is a formidable task. Significant precedents have been set in Australia and Canada, however, and different analytical frameworks have been developed around community-based education. The concept of community engagement, denoting the engagement of students, their teachers, and practitioners in the communities in which they are situated, is currently under discussion[9]. This contrasts with the previous discourse around community participation, which assumed that the "community" would voluntarily participate in activities and priorities of the health services[46]. Worley proposes that community-based educational programmes can be analyzed in terms of relationships[47], and discusses values such as integrity[48], bringing a new perspective to the discourse. However, beyond the implication that community members need to be viewed as equal partners in these projects, there has been little in-depth analysis of the power dynamics between medical professionals, their students and the community representatives.

Discussing medical "vocational" education, Talbot (2001)[49] creates a polarity between education and training. By education he refers to *"an understanding of the wider relevance or organization of things, an understanding of the 'reason why' of things, a probing into the principles underlying things and their place in the order of knowledge".* In order to facilitate this, he argues that we need to initiate and create the expectation of a continuing conversation,

dialogue and debate, between mentor and apprentice in the medical field, around issues of the "common good". He contrasts this with training using a "techno-rationalist" approach to measuring operational competence, favoured because we tend to *"ask questions of those things that may more easily be measured, instead of asking the more difficult questions"*. An alternative, or rather a complementary approach lies in reflective practice mediated by ongoing dialogue between the professional, the apprentice and the profession. A critical approach, which could be part of that conversation, needs to examine the power relations inherent in the medical profession's position in society.

The accepted definitions of medical professionalism acknowledge the importance of social justice as one of its three major pillars[50], but the implementation of this ideal through medical education is not straightforward. Similarly, higher education policy in South Africa now demands institutions to demonstrate how community engagement is formalized and integrated with teaching and learning, but does not stipulate how. Discourse regarding educational theory with respect to these broad intentions is crucial, since theory, policy and practice are interdependent. Wide-spread change requires policy, but critical pedagogy as an approach to learning is difficult to capture in policy, although there have been some remarkable large-scale experiments in South America, and Friere's own experiment in Guinea-Bissau[51]. Friere wrote of "situated pedagogy" as meaning "*dialogic inquiry situated in the culture, language, politics and themes of the students"*[52]. The geographic situation of rural areas and the associated features outlined in Paper XI, including the immersion that students undergo when placed in rural environments, allow for situated learning. Place-based pedagogy, however, is more readily included in educational policy by stipulating levels and sites of teaching, as has been accomplished in Australia where a certain percentage of clinical curricular time must be spent in rural sites.

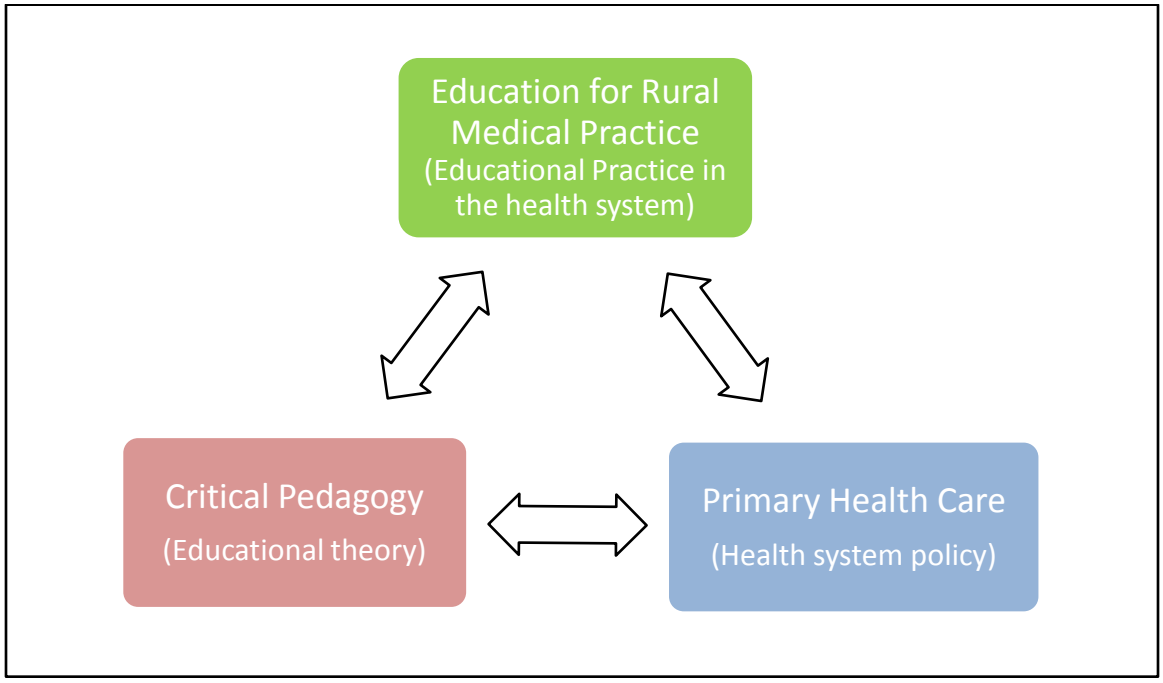
The primary health care approach and critical pedagogy have much in common, both having been developed and defined in the 1970's, fired by a similar reaction to the failure of prevalent systems of health care and education to address injustice and inequalities in society. They rely on a responsiveness by professionals and a reciprocity from civil society, together with a shared

sense of agency and hope for a better future. South African society exists in terms of two contrasting realities, and nowhere is this more apparent than in the differences between the two systems of public and private sector health care, which precisely fulfil Tudor-Hart's "inverse care law"[53]. The study *"Doctors in a Divided Society"*[54] avoided an analysis of why the society is divided, and what the doctors' response to this division has been. Foucault[55] held that this division is the result of significant social and political forces that gained dominance over others historically, and that these hierarchies of power are controlled by the organization of ideas and control of knowledge. It is clearer today that medicine's cultural imperialism is primarily a result of the profit motive rather than a cultural product itself. Illich[56] took this a step further in proclaiming that *"The medical establishment has become a major threat to health"* and cites numerous examples of iatrogenesis in support of his ideology. His argument is that death, pain, and sickness are part of being human, but modern medicine has destroyed these cultural and individual capacities, claiming to be able to defeat them. *"People are conditioned to get things rather than to do them . . . They want to be taught, moved, treated, or guided rather than to learn, to heal, and to find their own way."* Amartya Sen supports this analysis by showing that the more a society spends on health care the more likely are its inhabitants to regard themselves as sick[57]. The power relations that underlie and perpetuate this state of affairs need to be exposed, examined and understood, if we are to make any impact on the health of the disadvantaged.

Without systematic dissemination through policy change in the health system, community-oriented medical practice is likely to continue as a number of isolated ad-hoc initiatives dependent on the commitment and vision of individual practitioners, as documented in Paper X, and rural health is reduced a mere logistic exercise of delivering services to geographically remote areas. And globally it has become clear that while this may be feasible in well resourced developed countries, the exclusion of the most needy from access to health care is likely to persist.

In a similar way, without a critical analysis of the power relations within the medical, health and education systems, and appropriate changes in educational policy, medical education is likely to be essentially "reproductive" in nature, and medical education for rural practice will not become a mainstream concern of health science faculties. Educational policy must be informed by educational theory and practice, and educational practice in turn must be informed by policy and theory.

The following diagram represents the relationship between the educational theory of critical pedagogy, the health system policy of primary health care, and educational practice within the health system as it relates to rural and underserved areas.



The theoretical positions of critical pedagogy in the education field, and primary health care in the health field, reinforce each other and arose from similar philosophical origins at a similar point in history. Concerned with issues of equity and power, they form a powerful theoretical support for a pedagogy of rural medical practice. It is on these foundations and understandings that this thesis has been built.

h) **Implications of the thesis**

The application of a critical approach to health care, after Illich, is propagated by contemporary champions such as Paul Farmer (2003)[58], but there is no large-scale application specifically to undergraduate medical education. DasGupta (2006)[59] frames the question of how to operationalize the lofty education goals of social justice and professionalism, regarding medicine as a practice for social change, and answers it by applying the principles of critical pedagogy in education, clinical care and the broader social context. The classical texts on critical pedagogy[60] emphasize "empowerment" as a key process, but there is a gap between this worthy intention and the practicalities of teaching. Ellsworth (1989)[61] describes the very real complexities of the practice of teaching for liberation, reflecting on her own role as an individual in relation to her students in developing a course on anti-racism. However this degree of insight and preparedness to examine one's role and position in relation to students as well as to patients, is an optimistic expectation, since it involves deprivileging the authority of medical educators who have been raised through the medical hierarchy to become complicit in the medical hegemony. So the design and implementation of courses or programmes based on a critical approach, aligning selection, curriculum, context of learning and assessment with intended graduate outcomes, remains as the next challenge. Individual courses under the control of visionary educators are feasible[62], but they run the risk of being marginalized within a faculty. Whole programmes such as medical undergraduate education, require the consensus and coordinated effort of large numbers of teachers, practitioners, managers, and community role-players, which demands high levels of leadership. This has been achieved in a number of medical schools around the world, particularly where they have been started from scratch[63].

i) Conclusion

The challenges of implementation aside, the application of a critical place-based approach to medical education policy and practice, remains as a coherent theoretical alternative to the assumptions of the biomedical paradigm that adequate health care and best practice will trickle down to those who find themselves at the margins of industrialized society. Geographically situated pedagogy, that acknowledges and utilizes the characteristics of local communities in rural areas as powerful contexts for learning, combined with an applied understanding of the hidden dynamics of power and privilege that pervade the medical world, could ultimately unlock the impasse, and have a significant effect on the challenge of the unequal distribution of health professionals that seems so intractable.

The general principles of place-based critical pedagogy are not exclusive to medical education for rural practice, and could equally be applied to the preparation for other activities in rural areas, such as secondary education. The production of teachers and engineers for example, who are adequately motivated and equipped to work in rural and remote areas, presents equivalent challenges to the production of medical doctors and other health professionals. So the potential exists to explore the further elaboration of this thesis into other fields that have a significant rural arena of practice.

j) Post-script

Both of our doctors remained in the district for another year, but for different reasons: Phillip stayed on at the hospital to gain more generalist and surgical experience, and learned an efficient procedure for cataract extraction from Dr Abraham that had been pioneered in India. He also learned how to establish a district-wide case-finding system to prevent blindness at a population level.

Gugu fell pregnant, and under pressure from her family opened a private general practice in Jozini. She initially worked part-time at the hospital in order to continue her community work, but she found it difficult to balance the demands of her practice and her family, and ultimately abandoned hospital work and left the community project.

Eventually, Phillip returned to Cape Town to specialize in ophthalmic surgery, and opened a private practice in the southern suburbs. Gugu remained close to her roots in rural KwaZulu-Natal in private general practice, but did not work in the public health system again.

A Reflection

Would their careers and contributions been different if they had had different undergraduate educational experiences? Since this is a story, we could imagine a number of different scenarios. The endings above indicate the most likely course of events, based on the current data on the career choices of South African medical graduates. But Phillip could have joined a community eye health programme after specializing in ophthalmology, focusing on blindness prevention in sub-Saharan Africa. Gugu might have stayed on as a government medical officer in the local hospital, and made an ongoing impact on the prevention and treatment of HIV in the area. They might have made these choices as a result of specific transformatory experiences as undergraduate students, rather than reverting to the default roles determined by their respective social backgrounds.

However the story ends, these remain as possibilities in the real world.

k) Post-script 2: An Alternative Perspective

The final piece of data arises from the event of the launch of the World Health Organization's Global Recommendations on the Retention of Health Workers in Remote and Rural Areas, held from 6th to 8th September 2010, to which the author contributed as a member of the "Expert Group". The following is an email sent to members of the Expert Group after the launch, and is self-explanatory.

AN ALTERNATIVE PERSPECTIVE **13 September 2010**

Reflecting on the event of the launch of the WHO Recommendations on the way home after the event, I wondered if we are thinking too narrowly about the issue of retaining health workers in rural and underserved areas. Without wanting to detract from the work of the Expert Group, of which I am a member, or the excellent support of the WHO team in Geneva, I felt that there was a missed opportunity at the meeting: we failed to capitalize on the presence of many people facing the same challenges in different parts of the world, to be more than the sum of our parts, and to present to the funders who were gathered on the podium at the final session, a coherent plan for ongoing support for implementation, monitoring and evaluation.

I arrived at the meeting expecting that we would spend the 3 days delving into the challenges of implementation at a country and district level. The introductory session confirmed my expectations, as Manuel Dayrit made it clear that although we had reached one historic peak, it was the beginning of a further journey, and we still have the mountain of implementation to climb. I was happy to see that there were a number of district and hospital managers present from South Africa, who could have helped to make the challenges of implementing the recommendations real, but they were not given an opportunity. So I was initially expectant, then bored and eventually a little irritated that we spent most of the time going over familiar ground, without any new insights into the challenges of implementation being discussed. Although a number of interesting projects and initiatives were presented, they conformed to known approaches without introducing any significantly different thinking.

So, at the risk of being criticized for only speaking up after the fact rather than during the meeting, I offer the following as an alternative viewpoint for discussion. First of all, the terms themselves betray a particular type of thinking that is managerial in nature: "human resources"

are analogous to other inanimate resources that can be produced and managed and bought and sold and measured – and the human side is subordinated to a utilitarian process. This industrial paradigm determines the terminology and with it the dominant approach to the issues. The terminology and acronyms that have arisen, such as HRH, are convenient and have become accepted without much critical thinking. The term "retention" also makes certain assumptions, that someone already has control over these "human resources" and the task is to merely prevent them from leaving. "Implementation" of the recommendations assumes that they can and will be applied in many countries, despite economic collapse, or wars, or situations that we can scarcely conceive, but we have given little consideration to what "implementation" actually means in reality.

What if we were to use a theoretical framework from the social sciences for describing and analyzing and measuring our work in human resources for health? Paul Worley describes community-based education as a relationship-based process[1]. Words such as commitment, or dedication, which were raised in the session on education as well as the session on professional and social support, would convey less the assumption of external control and more the internal motivation of the health worker. But better words might be partnership, or engagement or mutual development, that convey a more reciprocal relationship between health professional and community, or between health managers and those whom they supervise.

Maybe a sociological or an anthropological understanding would lead to different insights and different interventions and measurements. Sociologists would examine relationships in terms of power and class and race: the power dynamics in rural communities, particularly around health professionals, play a significant part in their role in communities. A feminist perspective would help us to understand the gender-related aspects of the issues, some of which were mentioned at the meeting very briefly. Anthropologists would help us to better understand the complex interrelationships and dynamic systems in rural communities, using narrative and other approaches that do not usually carry credibility in the medical community. The suggestion of a systems approach to evaluation is the closest that we have got towards this way of thinking, but it is not clear that everyone understands what a systems approach means or entails.

In education, the discourse around community engagement is essentially a sociological one. It became obvious when we were discussing the professional and social support issues that these are powerful factors, but there was little time spent on how to understand these more substantially, or how to measure them with validity and reliability. Concentrating on human relationships as the central concept around which all other factors are organized, might help us to design interventions that are quite different to those organized around human resources or health systems. As Dr Pawit said so clearly, "Brain + Duty + Heart + Soul = Continuous

Improvement + Happiness"! Would it be possible to measure things like engagement (vs disengagement), bonding (vs dissociation), culture, "equality", partnership, mutual respect, openness, honesty or integrity? Should we not get some help in defining these issues from those who understand them better? If we were able to "take the temperature" of a group or cohort of health professionals working in a rural area by using valid indicators of these attributes, I think we would be a lot closer to solving the crisis of providing adequate health care in places where the majority of health professionals do not want to go.

We are talking about nothing less than swimming against the tide here; the analogy of the home-coming salmon swimming upstream against tremendous gradients and barriers is an apt one, if the metaphor of downstream flow is taken as the inexorable drift of professionals out of rural areas to urban areas, out of generalist practice into specialization, out of public service into private practice, and out of developing countries to developed countries. Are we not fooling ourselves, that we can accomplish a reversal of Tudor-Hart's "inverse care law"[2] by merely manipulating a few factors here and there, without a radical and critical understanding of the tremendous forces that give rise to the situation in the first place? As a student reader of Paulo Friere, I do not know of a better conceptual framework than that of critical pedagogy, a redrafting of the power dynamics around health professionals in rural and underserved areas, that would restore the health workers and the communities that they serve to active participation in a process of change and challenging the status quo of the enormous inequity between urban and rural areas.

So my practical proposal, even at this stage in the process, is to enlarge the Expert Group or in some way engage with some critical thinkers as well as a social scientist or two, who could help us understand the issues within different conceptual frameworks, that may lead to different interventions or ways of implementing the existing recommendations.

I would welcome debate on this viewpoint.

Steve Reid

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Appendix A:

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References for Commentaries

Note: References are laid out in the style appropriate to the journal of each particular paper.

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Appendix C

Biography

Appendix C

BIOGRAPHICAL DETAILS
STEPHEN JOHN YOUNG REID
October 2010

DATE OF BIRTH: 28 August 1959

ACADEMIC QUALIFICATIONS

- BSc(Med): University of Cape Town 1981
- MBChB: University of Cape Town 1984
- MFamMed: Medical University of South Africa 1993
- Registered for PhD in Education at the University of KwaZulu-Natal 2005.

ACADEMIC AND EMPLOYMENT HISTORY

1/1/85-31/12/85	Medical Intern, McCord Hospital, Durban
1/1/86-30/6/86	Orthopaedics Registrar, King Edward Hospital, Durban
1/7/86-28/2/90	Religious Objector to military service, Bethesda Hospital, Ubombo
1/3/90-31/3/93	Medical Officer, Bethesda Hospital, Ubombo
1/4/93-31/1/95	Medical Superintendent: Bethesda Hospital, Ubombo
1/2/95-1/2/98	Director: McCord Hospital Vocational Training Programme, Durban
1/2/98-31/8/98	Manager, Rural Health Support: The Valley Trust
1/9/98-31/12/00	Director, Centre for Health & Social Studies, University of KwaZulu-Natal
1/10/99-31/12/09	Lecturer in Family Medicine Department, University of KwaZulu-Natal
1/01/01-31/12/09	Associate Professor: Rural Health & Community-based Education, Director: Centre for Rural Health, University of KwaZulu-Natal.
1/01/10-present	Glaxo-Wellcome Chair of Primary Health Care, University of Cape Town

DETAILED ACADEMIC AND EMPLOYMENT HISTORY

1/1/85-31/12/85 Medical Intern, McCord Hospital, Durban

During this period I served my internship year under the guidance of Dr Cecil Orchard, a missionary doctor and a significant role-model, who encouraged me to consider a future in rural medicine. I completed rotations in surgery, internal medicine and paediatrics. In addition, I prepared a submission to the Board for Religious Objection, in anticipation of being conscripted for military service, stating my reasons for refusing to join the SA Defence Force. I appeared before the Board in November 1985 and was accepted as a "category 3 objector" which stipulated a period of six years of community service in a government institution. I had married the previous year, and my wife, also a UCT medical graduate, supported this decision and its implications wholeheartedly.

1/1/86-30/6/86 Orthopaedics Registrar, King Edward Hospital

While waiting for my placement for community service to be processed, and anticipating the needs in a rural hospital, I spent this time acquiring skills in trauma and fracture management. This was extremely demanding, as it was at the height of the national State of Emergency when there was a high level of local unrest and violence in KwaZulu-Natal, but the experience proved invaluable for the rural situation.

1/7/86-28/2/90 Community Service as a Religious Objector, Bethesda Hospital, Ubombo

During this period I worked as a Medical Officer, one of a team of five doctors at this rural district hospital in north-eastern KwaZulu. Clinical duties were extremely broad, from medico-legal post-mortems to dental extractions, as well as the routine work of wards, outpatients, operating theatre and visiting peripheral clinics. I was involved in the training of local primary health care nurses at the hospital, and took on the coordination of the programme for the purposes of its registration as a formal post-basic nursing diploma on a decentralized basis. My interest in teaching grew out of these experiences. I chose to enrol as a student in the MEDUNSA MFamMed programme in 1988, as this was the most appropriate course available for rural doctors. It was based on thorough adult education principles, with small-group learning centred around the identified learning needs of the students.

1/3/90-31/3/93 Medical Officer, Bethesda Hospital, Ubombo

Having completed the obligations of community service, I continued in a regular MO post, and became involved in community and teaching activities, stimulated by the Kellogg Foundation initiative in Community Partnerships. This was balanced by clinical and management duties as acting Medical Superintendent, following the departure of the previous Superintendent. I served for a period as Chairman of Silwelimpilo, the community-based organization that was formed to foster community partnerships in health, and as Chairman of the KwaZulu PHC Training Board, coordinating the activities of the various PHC training programmes in the KwaZulu health service. I supervised a number of research projects of nursing and medical students, and completed my own research into "The Community-Based Activities of Rural Clinic Nurses" for the purposes of the Masters degree in Family Medicine. All of these experiences gave me a sound understanding of Primary Health Care, and a vision for community-oriented primary care (COPC), as originally described by Drs Sidney and Emily Kark at Pholela Health Centre, with whose analysis and writings I strongly identified.

1/4/93-31/1/95 Medical Superintendent: Bethesda Hospital, Ubombo

Recognizing the need to run the hospital efficiently, I completed a course in Middle Management run by the provincial administration of KZN. In addition to the wide range of administrative, clinical and teaching functions of the position, my management team and I successfully handled a serious labour relations dispute that arose in the hospital at this time. Having identified that my dominant interest lay in teaching and education, I accepted a post as a part-time lecturer with the Dept of Family Medicine at MEDUNSA. Formal links were established with the University of Natal at this time, and I was also appointed as an honorary lecturer in the UND Department of Community Health as a result of our work with the year students who were sent out to the 4 hospitals in our district.

1/2/95-1/2/98 Director: Vocational Training Programme, McCord Hospital

My belief in the need for a training programme specifically focussed on preparing doctors for the rural situation, prompted me to apply for this position. This required setting up the training programme ab initio. The initial 12 trainees responded positively, and many are still serving in rural hospitals in the country. I continued my involvement as a part-time lecturer at MEDUNSA, including the supervision of a number of Masters theses, and as an honorary lecturer at UND. I started publishing the quarterly Rural Health Bulletin, circulated to all rural hospital doctors in the country, and chaired the scientific committee of the Second World Rural Health Congress for WONCA during this period. I was a founder member of the Rural Doctors Association of SA in 1996, and I served as its second chairman. I began the task of defining the specific skills required of the rural generalist, through research and discussion. All of these activities were focussed on the support of rural doctors throughout the country, both academically and professionally.

1/2/98-31/8/98 Manager, Rural Health Support: The Valley Trust

Having established and handed over the Vocational Training Programme at McCord Hospital to a competent successor, I joined the Valley Trust with the long-term aim of establishing an Institute for Rural Health. I saw the Valley Trust as an appropriate facility for the teaching of community-oriented primary care, and continued teaching and year medical students from UND, as well as post-graduate students from MEDUNSA. I addressed the UND Medical Faculty Board in May 1998, on the role of Community-Based Education in the medical curriculum, focusing on the implementation of the 1995 Cape Town Declaration. At the Valley Trust, the support and training of a multi-disciplinary team necessary for effective primary health care became the focus of my work, rather than that of the generalist doctor alone. This lead to my involvement in the promotion of the district health system as a vehicle for PHC, as set out in the policy of the National Department of Health. However the funding for my post was not sustainable by the Valley Trust alone, and I spent a considerable amount of energy raising funds for the project.

1/9/98-31/12/00 Director, Centre for Health and Social Studies, UND

With the funding for this post assured for a year, I orientated my efforts towards the support of the establishment of the district health system in KZN, through appropriate research and training activities. As part of the job I was involved in the Initiative for Sub-District Support (ISDS), a project of the Health Systems Trust. I engaged intensely with the KwaZulu-Natal Department of Health and drew together a "Collaborative Group" of non-governmental organisations, which included the Valley Trust, the Centre for Health and Social Studies (CHESS), the Health Systems Trust (HST), the National Progressive Primary Health Care Network (NPPHCN) and the Eastern Seaboards Association of Tertiary Institutions (esATI). This group aimed to provide support to the implementation of the district health system in KZN, drawing on the wide range of skills of the member organisations in management, governance and health service delivery training. I developed strong relationships with the managers of the health districts, the district and regional hospitals throughout KZN as well as the northern part of the Eastern Cape.

The management and leadership of CHESS deepened my organizational skills, particularly with regard to financial and personnel management, as well as fund-raising, project management and research grant-writing. CHESS was originally established as the research arm of the National Medical and Dental Association (NAMDA), and when I took over it had a complement of 10 staff members, and an annual turnover of R2,3 million which was entirely self-funded. Examples of the projects undertaken by CHESS that I was directly involved in, were a training programme for PHC supervisors in the clinics and CHC's of the Ugu district, the monitoring of Community Service for doctors, dentists and pharmacists nationally , a study of the cross-border flow of patients from Eastern Cape to KwaZulu-Natal, support to Maternal Health teams, and a situational analysis of District Health Information Systems in KZN.

When the idea of Post-graduate Vocational Training was replaced by compulsory community service nationally in 1998, I shifted my attention to the opportunities presented by this bold initiative, through appropriate training and research from CHESS. This has lead to an ongoing relationship with the Human Resource Directorate of the National Department of Health, as I have sought to establish a sustainable monitoring and evaluation process for community service.
I have continued as an advocate for rural health issues through the Rural Doctors Association of Southern Africa (RUDASA), as well as through the international network of rural doctors under the auspices of WONCA, the World Organization of Family Doctors. I contributed to the latter's Working Party on Rural Practice "*Policy on Rural Practice and Rural Health*", which sought to establish a policy framework for sustainable rural medical practice internationally.

1/10/99-31/12/00 Honorary Senior Lecturer, Faculty of Medicine, University of Natal

Initially as a part-time lecturer in the Family Medicine Department, this appointment entailed responsibility for the -year block in community-oriented primary care (COPC) at the Valley Trust, as well as the year rural hospital rotations. In addition, the Faculty through the Curriculum Development Task Force commissioned me to investigate the feasibility and relative cost of developing new teaching sites throughout the province, for the new undergraduate curriculum. This plan was interrupted by the crisis faced by the needs of large student classes in the old curriculum, and I was instrumental in the rapid development of the Pietermaritzburg sub-campus in 2001 as a result.

01/01/01- 31/12/09 Associate Professor: Rural Health & Community-based Education, and Director: Centre for Rural Health, University of KwaZulu-Natal.

I was appointed to a permanent post at the University of Natal in 2001, and refocused the strategic vision of CHESS towards the issues of rural health, renaming it the Centre for Rural Health (CRH). From 2001 I consolidated the Centre within the university structures at the Nelson R Mandela School of Medicine, in terms of the vision to be "the leading agent for improvements in rural health in Southern Africa". The Centre eventually employed 23 people directly and had an annual budget of around R10m. Recent projects include:

- The development of a Learning Complex of rural health institutions (R16m over 3 years)
- District-based Learning in Zululand District (R17m over 3 years)
- The Collaboration for Health Equity through Education and Research (R9m over 3 years)
- The Impact of the PMTCT programme in 6 districts of KZN (R13m over 18 months)
- A Strategy for the support of Orphaned and Vulnerable Children in Nkandla (R4.5m over 3 years)
- Action-Learning groups for health managers
- Maternal Health quality improvement projects
- Eastern Cape Saving Mothers, Saving Babies campaign

In addition to running the Centre, I strengthened the rural platform for the medical undergraduate curriculum, by raising funds and purchasing 5 parkhomes for student accommodation at rural district hospitals, which are used on a continuous basis by successive groups of final year medical students. I led the so-called "Selectives" Programme for and year medical undergraduates, through which they go out to various parts of the country and engage at a community level with the priority issues that they encounter. I continued teaching in Family Medicine and Public Health at a postgraduate level, including responsibility for a number of core and elective modules of the MMed(FamMed) and the MPH, in COPC and Health Measurement, as well as procedural care and rural health. I actively supported student initiatives such as the Happy Valley clinic and the Rural Development Club, and remain a Faculty Board elected member of the Undergraduate Medical Education Committee.

Finally, I enrolled for a PhD in 2005 in the UKZN Faculty of Education, with a proposal in 2006 for qualification by 7 publications, around the issues of "Medical Education for Rural Practice". The writing up of the project has taken me along a different path, in which I am currently engaged with the notion of a "rural pedagogy", indicating the educational advantages of the rural context. This has been stimulated by exploring alternative theoretical frameworks for rural health other than the biomedical perspective, including the use of "creative process" as a different way of seeing.

01/01/10- present Glaxo-Wellcome Chair of Primary Health Care, University of Cape Town

In this new position I have the responsibility to ensure that the lead theme of primary health care is implemented throughout the Faculty of Health Sciences, in teaching, research and service. Situated as a cross-faculty unit, the Directorate is involved in integrating primary health care into existing curricula, extending the teaching platform, deepening community engagement, and recruiting more students of rural origin.

RESEARCH PUBLICATIONS IN PAST 5 YEARS

1. **Reid S**, Prinsloo A. *The possible 'tsunami effect' of the 2-year internship - an early warning* (letter). SA Med J, 95 (7), 452-456, 2005.
2. Uys, L R, Minnaar, A, Simpson, B & **Reid, S** (2005) *The effect of two models of supervision on selected outcomes*. Journal of Nursing Scholarship 37(3): 282-288
3. **Reid SJ**, Ross SM, Ross M. *An Evaluation of the Impact of the Prevention of Mother-to-Child Transmission Programme in KwaZulu-Natal on Maternal Health.* Centre for Rural Health, 2005.
4. Lydall G, & **Reid S**. 2006. A year in South Africa - a home for the lost tribe? *British Medical Journal*, 332 (7548): 174.
5. **Reid S**. 2006. The short-staffed factor. (editorial). *South African Family Practice*, 48(6), July 2006
6. **Reid S**. 2006. Rural health and transformation in South Africa. *South African Medical Journal*, 96(8) 676-677.
7. **Reid S**, Mantanga L, Nkabinde C, Mhlongo N, & Mankahla N. 2006. The community involvement of nursing & medical practitioners in KwaZulu-Natal. *South African Family Practice*.
8. **Reid S**. 2006. Home Visits (Chapter 147) and Community-based interventions (Chapter 150) in: *South African Family Practice Manual*, Edition, Mash B, Blitz-Lindeque (eds): Van Schaik, Pretoria.
9. **Reid S**. 2007. New perspectives on an old problem - recruitment and retention of health professionals in rural areas. Plenary Address to the 11th Rural Doctors of Southern Africa conference, Badplaas, Mpumalanga. ://www.rudasa.org.za/conference/conf11/plenary.
10. **Reid S**. 2007. The African family physician. (editorial). *South African Family Practice*, 49(9). ://www.safpj.co.za/index.php/safpj/article/view/944/
11. **Reid S**. 2008. Music as a metaphor for the medical consultation. *South African Family Practice*, 50(1). ://www.safpj.co.za/index.php/safpj/article/view/1033/
12. Suleman F, Uys L, & Reid S. 2008. The African peer review mechanism: The South African experience of health academics. *Africa Insight*, 38(2): 36-49.
13. Vermaak K, **Reid S,** Horwood C. Factors Impacting on Organisational Learning in Three Rural Health Districts. *SA Family Practice*, 51 (2), March/April 2009.
14. Wilson N, Marais B, Couper I, **Reid S**, de Vries E. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas'. *Rural and Remote Health* 2009, ://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=
15. Ross A, **Reid S**."Why community service officers choose to remain in rural district hospitals". *SA Family Practice*, 51 (3) May/June 2009.
16. Mash R, **Reid S**. Statement of consensus on Family Medicine in Africa. *Afr J Prm Health Care Fam Med*. 2010;2(1), Art. #151, 4 pages. DOI: 10.4102/phcfm.v2i1.151
17. **Reid SJ.** The Path to OPD. *SA Family Practice* 2010; 52(6): 535
18. **Reid SJ**, Couper I D, Volmink J. Educational factors that influence the urban-rural distribution of health professionals in South Africa: A case-control study. *SA Med J*, 2011; 101(1): 29-33.
19. **Reid SJ**, Cakwe M, on behalf of the Collaboration for Health Equity through Education and Research (CHEER). The contribution of South African curricula to prepare health professionals for working in rural or under-served areas in South Africa: A peer review evaluation. *SA Med J*, 2011; 101(1):34-38.
20. **Reid SJ**, Burch V. (editorial). Fit for Purpose? The Appropriate Education of Health Professionals in South Africa. *SA Med J*, 2011; 101(1): 25-26.