

**Retention of Public Sector Doctors in the Gauteng Metropolitan Area –
Implications for Health Strategy**

By

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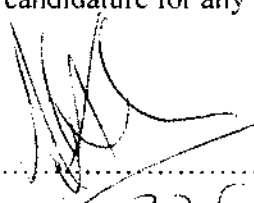
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DECLARATION

This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

Signed.....

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ABSTRACT

The South African public health sector is currently unable to effectively deliver an acceptable level of service to the population it serves. This is due, in part, to the continued attrition of medical doctors from the public service.

The aim of this study was to identify the extent to which the national strategy employed by the health ministry has contributed to doctor attrition in addition to assessing the relative importance of factors that public sector employed doctors deemed vital to addressing this problem. In this way, retention strategies could be identified to deal with the migration of these knowledge workers in a cost-effective manner.

A review of the available literature indicated that whilst governmental policy was largely well constructed, the failure to effectively implement these strategic objectives has negatively affected service delivery and resulted in doctor attrition. The thrust of this study involved surveying of public sector doctors to assess the relative weights of attrition factors identified.

This quantitative assessment highlighted the urgent need to revitalize hospitals and improve infection control within these institutions. Another vital issue identified involved implementing innovative remuneration schemes such as lower tax thresholds and preferential loans from the state. Whilst family opportunities, career development and new learning experiences was considered less important than the abovementioned factors, respondents still attributed fair importance to these addressing these latter dimensions as part of a comprehensive model for retention.

This study clarified the strategic initiatives that need to be implemented by the health ministry in order to stem the exodus of medical professionals from the public sector. Such intervention will go some way to realizing the strategic goals of this organization and leave it better placed to effectively deliver critical services that are required by the South African population.

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42.3% for general practitioners in the National Health Service (Leese, Young and Sibbald, 2002). This study underlined the general discontent among respondents, who expressed a willingness to pursue other career avenues due to intolerable working conditions in the British public health sector.

Thulare's (2003) study on retention strategies for South African doctors attempts to outline factors leading to the exodus of medical practitioners in this country. She cites numerous contributory factors such as poor remuneration, poor management techniques and lack of career advancement prospects, to name but a few. It is an insightful exploratory study that delves deep into the heart of problems that face public service doctors in the Johannesburg region.

1.3 Problem Statement

It is clear that current strategies employed by the state to provide an effective public health service are sub-optimal due, in part, to the exodus of doctors from the public health service. The loss of key personnel has left remaining doctors to contend with an increasing patient burden that they are ill equipped to serve. The net effect is a provision of a public health service that is unable to cope with changing health demands in the South African context.

In view of the above, it is important to determine the extent to which national health strategy contributes to doctor attrition. For this, a formal assessment of doctors' intention to leave in addition to a review of the respective factors they perceive as contributing to attrition is required in order to best align future strategy to address this issue.

1.3.1 Sub-Problems

An overview of the relevant sub-problems is presented below:

- To what extent does current national health strategy contribute to the attrition of medical doctors from the public health sector?
- How is strategic change best effected to alleviate this problem?

1.4 Motivation for the Study

For appropriate strategic intervention to be effected, several key issues deserve consideration as a framework for the understanding of the motivation of the study:

- An analysis of current national public health strategy must be undertaken. Such a review is alluded to in the Health Sector Strategic Framework 1999-2004 (Department of Health, 1999) which details the strategic direction government intends to pursue.
- Factors leading to doctor attrition in South Africa require appropriate investigation and clarification. These factors are tackled in Thulare's (2003) study of Johannesburg medical doctors, however given the qualitative nature of the data analysis, it is not possible to gauge the relative extent to which these individual factors influence attrition of doctors. A similar study by Reid (2000) focuses primarily on newly qualified graduates and, as such, is not representative. It is the purpose of this study to undertake such an analysis using a sample of public service doctors employed in the Gauteng Metropolitan area.
- The relative weights of, and the extent to which each these attrition factors are a function of national health strategy is a critical research component and has not been explicitly alluded to in previous studies. The reasoning behind the investigation of the relative 'weight' of an attrition factor and the 'linkage' between attrition factors and current health strategy may not be intuitively clear. It is argued that factors that are regarded by doctors as the greatest contributors to attrition, and those that exhibit strong 'links' with current health strategy, represent the factors most amenable to strategic intervention. Attrition factors such as globalization and increased labour flexibility, for example, are presumably less amenable to intervention than problems such as poor working conditions and inadequate remuneration systems. To try to tackle all possible problems inherent in the health service is not cost-effective nor practically feasible, thus scarce resources might be better concentrated on attrition factors that are amenable to intervention and, at the same time, most dissatisfying to doctors.

It is the view of the researcher that interventions recommended on the basis of results generated should have roots in previously tried and tested successful strategies. There is the argument that a potentially successful novel approach that might have been formulated de novo is not considered, however such a strategy might be perceived as risky given that strategic interventions in this case often involve substantial expenditure. Given the scarcity of resources available to the public health sector, potentially risky and untried strategies might not perform as planned resulting in wastage of valuable resources. Thus, this study attempted to select best practices from contemporary international health care models in order to derive a hybrid strategy that best serves the unique South African context.

The above argument underlines the implicit reason for the study. Essentially, current literature does not adequately address the problem of public service doctor attrition on a scale that justifies appropriate strategic intervention and consequently this study endeavoured to fill this void.

1.5 Focus of the Study

It is useful to construct a schematic, firstly, to highlight areas of this topic previously studied and secondly, in order to visualize the proposed design strategy for this study. In this way, it is possible to appreciate the respective dimensions that this study will encompass. The framework below (Figure 1.1) has therefore been developed by the researcher in order to summarise these dimensions of the research problem and highlight the respective areas for research accordingly.

understanding of attrition factors influencing medical practitioners in the public health sector.

The quantitative analysis identified these factors, quantified their relative weights and established linkages between existing health policy. A comprehensive description of this analysis is detailed in the remainder of this chapter.

The results of the quantitative survey render it possible to recommend appropriate intervention strategies (Stage 5a and 5b) upon which corrective action can be taken. As previously discussed, recommendations were based upon a qualitative review of theoretical health care models supported by empirical evidence of the success of these models in practice.

1.6 Value/Benefits of the Study

A summary of the value and expected benefits of this research is presented below:

- To serve as a framework for refining current national health strategy in a cost effective manner by defining attrition factors regarded as most urgent and those that are most amenable to corrective action through strategic change
- To improve general understanding of strategic deficiencies inherent in the public health system
- To add to the body of knowledge involving health care strategy issues

1.7 Objectives of the Study

The purpose of this study is summarised below:

- To identify factors leading to attrition of doctors in the public health sector for the Gauteng Metropolitan area
- To evaluate the extent to which these attrition factors are a function of current national health strategy

- To recommend appropriate strategic interventions, where necessary, as a basis for improved efficacy and value creation

This study thus hopes to serve as a valuable decision-making tool for policy makers in government to effect meaningful strategic change and improve service delivery within the public health service.

1.8 Limitations of Study

The following section underlines the limitations inherent in this research, which are presented below:

- The study was limited to doctors that were presently employed in the public sector and private practitioners' perceptions for doctor attrition were not considered
- The scope of this study was limited to the Gauteng Metropolitan area in view of cost and time constraints. Further research is required to clarify whether results obtained are consistent across geographic regions and also whether they hold for rural areas
- The limited sample size meant that findings could not necessarily be extrapolated to the sample population, even though sample adequacy for factor analysis was statistically proven
- Detailed evaluation of the underlying theories that relate to attrition factors (eg. analysis of theories of reward systems if poor remuneration is cited as an attrition factor) was not undertaken. Thulare (2003) comprehensively tackles these issues and re-examination is considered a duplication of existing research. The thrust of this study focused upon quantitative considerations of these factors and the strategic implications for government

1.9 Structure of the Research Study

1.9.1 Chapter 1: Introduction to the Research Topic

This chapter essentially defines the problem statement, explains the rationale for the research, considers the research objectives, provides an overview of the research methodology and states the limitations of the study.

It is intended to present the problem of public service doctor attrition and its possible linkages to national health strategy, and explain the process (and importance) of searching for a solution to this management dilemma.

1.9.2 Chapter 2: Literature Review

Chapter 2 details the current status of the topic and explored the relationship between current literature and the problem statement.

This section considers theories of contemporary strategy and professional migration, in addition to investigating the reasons for the exodus of South African service doctors within this context. This undertaking hopes to crystallise the research problem and defines the parameters for the study.

1.9.3 Chapter 3: Research Methodology

Issues that mandate deliberation in this chapter involve considerations relating to the quantitative elements of the research design, data requirements and data collection plans. The validity and reliability of the research instrument is discussed within the context of the inferential statistics that needed to be applied to the data that was collected.

1.9.4 Chapter 4: Presentation of Results

Data analysis is undertaken and the results of the study are reported in various forms, including tabulations and graphical representations for both descriptive and inferential statistics.

1.9.5 Chapter 5: Discussion of Results

Results are discussed in order to fully appreciate the findings and assess the consistency with already existing literature.

1.9.6 Chapter 6: Recommendations and Conclusions

The major study findings are discussed as a prelude to recommendations and conclusions being drawn based on the results obtained. Also, areas for further research are detailed at this juncture.

Based on modern, successful international health care strategic models, a South African strategic model for the retention of doctors is recommended as a premise for effective service delivery.

1.10 Conclusion

The exodus of medical practitioners from the public health service is a serious dilemma for policy makers within the South African government. Current strategies employed by the state to provide an effective public health service are ineffective due, in part, to this attrition. The public health sector is thus unable to respond changing health demands in the South African context.

Previous studies have clarified both the management dilemma and explored related attrition factors. It is the purpose of this discourse to employ statistical techniques to quantify the problem and the extent to which attrition can be curtailed through effective strategic intervention in the hope of effecting sustained improvement in service delivery to the population of South Africa that the public health sector serves.

Chapter 2

Literature Review

2.1 Introduction

Drücker (2002) describes the hospital as the most complex human organisation ever devised and notes that these institutions are also amongst the fastest growing type of organisation in developed countries. This author also observes that in today's environment, knowledge workers in developed economies (such as doctors and other health professionals) now make up 40% of the workforce and the value of this intellectual capital is being recognised more and more. Some management experts place the value of this intellectual capital at three to four times the book value of an organisation's tangible assets (Crowe, 1997). Yet the very specialised nature of the work undertaken creates a 'splintered' organisation and implies that a 'one-size-fits-all' business strategy in such organisations will not suffice (Drücker, 2002).

The history of corporate strategy is an important early consideration and this has been well documented by O'Shannassy (1999) as being broadly comprised of five phases, with the 1950's giving birth to the first phase that involved basic financial management with a planning horizon of 12 months, and the success of organisations resting squarely on the shoulders of their respective leaders.

This approach gave way to the 1960's 'forecast based planning' era and Gluck, Kaufman and Walleck (1980) note that this incorporated longer term time horizons, environmental analysis, multi-year forecasts and static resource allocation as businesses responded to the demands of growth. The same authors also highlight the emergence of prescriptive strategic techniques as part of phase three of the evolution of strategy which included situation analysis, competitor reviews and dynamic resource allocation, which featured prominently in 1970's.

O'Shannassy (1999) makes reference to the fourth phase of strategic evolution which encompassed 'strategic management', where the ability of the organisation to leverage its resources to achieve competitive advantage was regarded as paramount and many

techniques that included five forces and value chain analysis were significant contributors in this regard. Finally, the 1980s spawned the need for 'strategic thinking', a more intuitive and creative as opposed to a rational approach to strategy (Ohmae, 1982). These latter concepts are important to explore early in this chapter prior to relating these insights to the South African health sector context and the impact of medical practitioner migration in this respect.

2.2 Corporate Strategy – Creation of Value Added

2.2.1 Importance of an Organisational Strategy and the Strategic Process

Strategy refers to an integrated and co-ordinated set of commitments and actions designed to exploit core competencies and gain a competitive advantage (Hitt et al., 2003). Strategic competitiveness is typically achieved when an organisation formulates and implements a value creating strategy (Hitt et al., 2003). What is the importance of these concepts and how do they relate to the research question? The purpose of this stage of the review aims to explore and answer these questions.

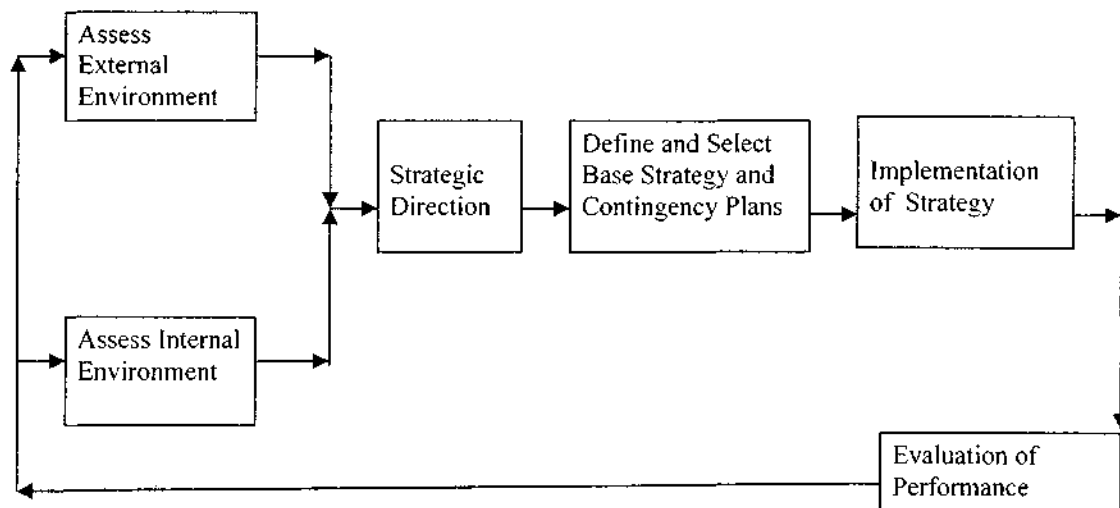
Surveys of top Chief Executive Officers found that a strong and well thought out strategy was the most important factor regarded as contributing to success of their businesses (Marsh, 1998). However, no matter how impressive the strategy, effective implementation of this strategy is imperative for organisational success (Nocera, 1999). It can thus be concluded that failure of an organisation to effectively function can broadly lie in at least two parameters ie. choice of the wrong strategy and/or poor implementation of a well-chosen strategy.

The development and implementation of such a strategy can be accomplished in two distinct and apparently conflicting ways (Fleisher and Bensoussan, 2003):

1) *The Strategic Planning Process:*

This is a disciplined and well-defined, deliberate effort aimed at completely specifying the strategy of the organisation and also assigning responsibilities for its successful execution.

Such a process would typically comprise the following steps:



← Analysis → ← Development → ← Implementation →
 ← Evaluation →

Figure 2.1 : Generic Strategic Planning Process

Source : Adapted from Fleisher and Bensoussan (2003)

2) *Strategic Thinking:*

Experts of corporate strategy have proposed that in today's increasingly globalized, fast-paced and competitive environment, the more prescriptive, deliberate and often rigid process above should possibly be replaced with capacity for strategic thinking, which is more emergent in nature (Mintzberg, 1994). Ohmae (1982) defines strategic thinking as a 'marriage of information and insight that allows a clear understanding of how to reorder elements to maximise results within an emerging and often discontinuous context.' These more flexible, continuously evolving arrangements intuitively sit well with in the context of the new 'white-water rapids' type business environments.

Deliberate strategies provide the organization with a sense of purposeful direction whilst emergent strategy approaches imply that an organization is learning what works in practice (Mintzberg, 1994).

Christensen (2000) notes that even the most outspoken scholars at the extremes of these two ‘opposing camps’ would concede that most strategies have both deliberate and emergent elements to them, and thus a hybrid of the two complementary systems can often be managed effectively ie. A broad strategic outline as an end-result of the strategic planning process that is continuously evolved and optimised by effective strategic thinkers within an organisation to achieve the mission, vision and goals of the organisation.

2.2.2 Structure as a basis for supporting Organisational Strategy

Organisational structure refers to ‘the system of arrangements, the pattern or network of relations, between the various positions and their holders’ (Buchanan and Huczynski, 1997). Drucker (1974) further emphasizes that structure is a means for attaining the objectives and goals of an organisation.

Bartlett and Ghoshal (1994) note that structure follows strategy and systems support structure ie. strategy is formulated first, then organisational structure is changed to support the strategy. These authors find that organisational structure is concerned with how the work of the organisation is divided and assigned to individuals, groups and departments, in addition to how the required co-ordination is achieved, and that the structure of an organisation signals the behaviour expected of its members.

Various organizational structures exist that encompass functional/bureaucratic, divisional, matrix, and network type structures, each with differing designs, advantages and disadvantages (Price, 2003).

Price (2003) further notes that the most prevalent organizational structure is the basic functional / hierarchical structure exemplified by the standard pyramid with top management at the top of the chart and middle and lower management spreading out down the pyramid. The organization is usually broken down into different functional units and was originally based on such management theories as specialization, line and staff relations, authority and responsibility, and span of control (Chandler, 1960).

The functional organization has a number of weaknesses. In this regard, Youker (2003) notes that conflicts can arise over the relative priorities of multiple projects in the competition for resources. Also, the functional department based on a technical specialty often places more emphasis on its own specialty than on the goals of the project. Lack of motivation and inertia are other problems (Youker, 2003). These mechanistic, 'top-down' command structures are commonly seen in traditional organizations and tend to support more prescriptive strategies and processes (Price, 2003).

Matrix and network structures focus on project teams, bringing skilled individuals together from different parts of the organization with individuals made responsible both to their line manager and the project manager involved. These organic, emergent structures allow development of organizations which are differentiated - allowing local flexibility and autonomy - but highly integrated at the same time, however before the advent of network technology however, many matrix organizations were dogged by duplication and confusion (Price, 2003).

2.2.3 The Learning Organisation

There has been a transition of economies from an era of competitive advantage based on information to one based on knowledge creation (Malhotra, 1998). Organisations need to put a premium on thinking beyond benchmarking and best practices, and develop innovative business models that self-obsolete marginal value propositions and processes before competition does so (Malhotra, 2003). Knowledge capital leverages the productivity of individual workers and results in maximized organisational productivity and organizational success (Thulare, 2003).

Senge (1990) conceptualised the learning organisation as 'organisations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.' In this regard, the above author notes that creation of learning organizations through effective knowledge management is vital to organizational success.

Knowledge management caters to issues of organizational adaptation, survival and competence in face of increasing change and essentially embodies “organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings” (Malhotra, 1998). Sveiby (1997) asserts that business managers need to realize that unlike information, knowledge is embedded in people and knowledge creation occurs in the process of social interaction. Therefore, strategy and structure must be appropriately ‘positioned’ to ensure that such interaction and knowledge creation occurs, with consequent competitive advantage being created for the organization.

2.2.4 Strategy and Structures in the Learning Organisation

The rationale for such organizations is that, in situations of rapid change only those that are flexible, adaptive and productive will excel, and whilst this clearly favours a more emergent approach to strategic formulation and implementation, some scholars would argue that ‘mixing’ the deliberate and the emergent strategies in some way will help the organization to control its course while encouraging the learning process (Mintzberg, 1994). Organizations ...[may] pursue ... umbrella strategies: the broad outlines are deliberate while the details are allowed to emerge within them” (Mintzberg, 1994; Hax and Majluf, 1996).

Senge (1990) also claimed that a learning organization would need to be structured such that:

- People can continuously expand their capacity to learn and be productive
- New patterns of thinking are nurtured
- Collective aspirations are encouraged
- People are encouraged to see the “whole picture” together

Maccoby (1996) echoes this view that the information age demands new thinking about organisational structure and highlights that functional / hierarchical structures of the past typically involved one-way communication, with top level management (strategists)

giving commands to operators and through speeches, trying to inspire the whole organization; in turn, operators gave direct orders to doers.

Maccoby (1996) also stresses that in information organizations, each level of the organization owns different kinds of knowledge due, at least in part, to the varied nature of work associated with multitudes of products and processes. This author finds that information is widely shared and teams may manage many of the leadership functions which in the past were done by bosses, typical of newer matrix and network structures. In some organizations, the doing and operational levels have begun to merge.

Some technology experts and academic scholars have observed that there is no direct correlation between IT investments and business performance or knowledge management. In this regard, it is noted that in the last 20 years, the US industry has invested more than \$1 trillion in technology but has realized little improvement in the efficiency or effectiveness of its knowledge workers (Malhotra, 1998). This failure is attributed to the ignorance of organizations in respect of the ways that knowledge workers communicate and operate through the social processes of collaborating, sharing knowledge and building on each others' ideas (Malhotra, 1998). It is evident that organisations, and their systems, should therefore serve knowledge workers (Drücker, 2002).

2.2.5 Strategy and the Resource Allocation Decision

Resources refer to the set of tangible and intangible assets accumulated over time by the corporation and when they are competitively superior, they become a source of competitive advantage (Collis and Montgomery, 1995).

Montgomery (1992) typically differentiates resources into:

- Physical capital, which includes physical technology, plant and equipment, geographic location etc
- Human capital, which includes the training, experience, judgement, intelligence, relationships and insight of managers and workers

- Organizational capital, that encompasses reporting structure, formal and informal planning, controlling and coordinating systems, as well as informal relationships among groups within a firm, and between a firm and its environment

Montgomery (1992) further elucidates six attributes that describe a resource (and make the resource valuable):

- Customer Demand
- Substitutability
- Appropriability
- Capacity
- Imitability
- Fungibility

Since fundamental resources are limited, and an organisation's strategy (and success) is dependent upon their properties, resource allocation is becomes a critical process (Montgomery, 1992). Strategic management is concerned with the long-term policy decisions affecting the entire organisation and involves major decisions on resource allocation, the overall objective being to position the organisation to deal effectively with its environment (Gunnigle, Heraty and Morley, 1997).

Resource allocation is a process through which proposals to invest capital, talent and other resources to develop new products, services and processes are evaluated. It is recognised as a key process that filters both deliberate and emergent factors during strategy formulation and implementation (Christenson and Dann, 1999).

Strategy formulation occurs at the beginning of the planning process and then continues as the resource allocation process defines what the organization actually does, hence strategy is not static; resource allocation continually shapes the actions of organization, creates new opportunities and generates new intended and emergent contributions into the strategic process (Christenson and Dann, 1999). Thus, not only is resource allocation an 'output' of this strategic process, it is can also be a determinant of competitive strategy.

In this regard, Porter's (1980) generic strategies characterize organizations in terms of their competitiveness, and are related to the performance of the organization. Since their impact on the resource allocation process can be profound, Porter (1980) suggested that certain generic strategic approaches can be used by firms to outperform other organizations in an industry.

Cost leadership can be attained by devoting considerable effort to cost control so that above average returns can be obtained even with low prices (Porter, 1980). Resource allocation is geared towards facilities that are built and maintained; labour is recruited and trained to deliver the lowest possible costs of production. Importantly, Porter (1980) notes that cost leadership does not pre-specify necessarily low price and subsequent strategy could be directed at competitive parity pricing, to exploit larger margins supported by appropriate branding and marketing efforts, whilst conversely, where resources are constrained, 'pure' cost leadership can prove to be the default competitive strategy.

Alternatively, an organization can differentiate its product or service offering to create something perceived industry-wide as being unique. The differentiating organization will incur additional costs in creating their competitive advantage and further strategy might be directed at continuous innovation and improvement (Porter, 1980). Finally, organizations can focus effort and resources on a narrow, defined segment of a market and competitive advantage is generated specifically for this niche.

Organizations with no coherent strategy are considered 'stuck in the middle', pursuing a muddling strategy and resources should be directed towards achieving one or other competitive advantage (Lamont, Marlin and Hoffman, 1993).

Irrespective of the chosen competitive strategy, organizations with a proper strategy-environment fit will outperform organizations without a proper fit; and organizations that do not have a proper strategy-environment fit, but are able to alter their strategy to achieve a proper fit, will exhibit an increase in performance (Lamont et al., 1993).

2.3 South African Public Health Sector Strategy

2.3.1 Historical Context

Benatar (1993) notes the disparities that were prevalent between the small white population and the larger marginalized population which encompassed disease profiles, and longevity, racially discriminatory access to land, education, healthcare and employment that formed the cornerstones of apartheid policies. Indeed, prior to 1994, healthcare changes evolved in a uniform direction that sustained structural inequalities encompassing race, gender and urban/rural distribution of medical practitioners; black/white bed-population ratios; and marked disparity between expenditure on preventive and curative services (Van Rensburg, 1991).

Buch (2000) finds that the new government inherited a health system fraught with inefficiency; this included wasteful duplication of resources stemming from multiple departments that were fragmented along racial lines, a grossly underdeveloped primary care system and backlogs in hospital maintenance with overspent budgets and maldistributed human resources.

He also warns that this “inheritance” will continue to pose enormous difficulties for health sector development and critiques of progress must recognize that deep-rooted structural and service elements that have existed for decades cannot be turned around overnight.

In this regard, the South African Department of Health’s overall strategic focus for the first five years of their tenure was on increasing access to health care, especially for those who did not have access (Department of Health, 1999).

Buch (2000) found that good progress had been made in achieving this objective with, inter alia, the establishment of a unitary health system, movement (albeit variable) towards a district health system (DHS) with upgrading of free primary health care (PHC) services such as clinics and health centres and construction of new facilities in previously under-serviced areas. Notably, the introduction of community service for graduating

doctors and the contracting of migrating Cuban doctors to service ‘under-doctored’ areas was cited by the author as a significant achievement.

Government however appeared to perform poorly in not sufficiently addressing the HIV/AIDS epidemic and for reductions in health budgets in real terms, which were largely attributed to declines in central hospital grants and inability to control health inflation, which remained well above that of general inflation (Buch, 2000).

2.3.2 Strategic Focus

After these first five years of transition, the strategic focus of the Department of Health shifted somewhat, with the overriding objective being on ‘accelerating quality health service delivery’ which was to be effected through strengthening the ‘implementation of efficient, effective and high quality health services’ as detailed in the Health Sector Strategic Framework 1999-2004 (Department of Health, 1999). The health ministry put forward a ten point plan to achieve their objective:

- Decreasing morbidity and mortality rates through strategic interventions
- Revitalization of public hospital services
- Accelerating delivery of an essential package of PHC services through the DHS
- Improving resource mobilization and management and equity in allocation
- Improving human resource development and management
- Improving quality of care
- Enhancing communication and consultation in the health system and with communities
- Legislative reform
- Re-organization of certain support services
- Strengthening co-operation with international partners

The performance of the Department of Health in respect of the above aspects of this plan are perhaps best reviewed in the context of the strategic ‘pillars’ alluded to in Section 2.2.

2.3.3 Strategic Process

A strategic review of the internal and external environment in which the public health sector operates has been conducted with culmination of strategic development in the evolved strategic focus of accelerating quality health service delivery and the subsequent ten-point plan detailing the approach in which this objective would be fulfilled.

It is significant that Buch (2000) finds that government is broadly 'on track' in supporting the strategic developmental objectives however concedes that strategic intervention is problematic, with work needed to be done to overcome the 'policy to implementation gap'. Also interesting is the 'deliberate' flavour to the strategic planning process employed by the health ministry, with fairly rigid timelines in place to achieve these objectives (Department of Health, 1999).

Infant (IMR) and Maternal Mortality Rates (MMR) are broadly used as measures to determine the impact of health policies and other policies that affect health (Andrews and Pillay, 2005).

In this regard, the Department of Health has implemented, amongst others, the Integration Management of Childhood Illnesses (IMCI) strategy and the Prevention of Mother to Child Transmission (PMTCT) programme to address these issues, with IMR decreasing from 45.4 per 1000 live births in 1998 to 42.5 per 1000 in 2002 and MMR decreasing from 150 per 100 000 deliveries to 123 per 100 000 over the same time period (Andrews and Pillay, 2005).

Whilst these results seem encouraging, the declines in these indices are seen as modest and are attributed to implementation issues such as achievement of only a partial rollout of the IMCI initiative and the 'dragging of feet' by the Department of Health in the rollout of the PMTCT programme (Andrews and Pillay, 2005). Ntuli and Day (2003) note that gains in child health made between 1975 and 1995 were reversed, as evidenced by long term infant and under five mortality data in addition to perinatal mortality rates which remain above the 30 per 1000 births target. These authors concede that these increases are largely a function of the HIV epidemic; however find evidence that children are still vulnerable to basic, common infectious diseases.

With respect to provision of hospital services, strategic analysis took the form of a facilities audit in 1996 that revealed a third of hospital facilities were in need of complete replacement (at a cost of R 12 billion) and a further third required upgrading (Department of Health, 1999). Strategy development took the form of a number of Department of Health initiatives that included the building of 18 new hospitals and upgrading of another 190 since 1999, a dedicated hospital revitalization programme to holistically improve the quality of 27 hospitals and development of an Integrated Health Planning Framework (IHPF) to shape the future health system (Andrews and Pillay, 2005).

The pace of such change is unfortunately rather slow, with Andrews and Pillay (2005) highlighting problems in public works departments and lack of capacity among contractors to complete work in the specified time period. Real reductions in health budgets, including that of the central hospital conditional grant (Buch, 2000) have raised concerns amongst the National Assembly Portfolio Committee on Health, who have criticized the lack of spending on vital programmes such as hospital rehabilitation and reconstruction, and underlined the ‘lack of synergy’ between the Department of Health’s policy and its implementation thereof (Sait, 2001).

Barron and Asia (2001) emphasizes that the District Health System (DHS) is the vehicle through which delivery of Primary Health Care (PHC) services are effected; a key strategic initiative of government. In this regard, the Department of Health has gone to great lengths to lay down policies to achieve these objectives. These include, inter alia, a health Ministerial Forum (MINMEC) meeting to address this issue (and their decision endorsed the vision of a municipality based DHS), and tabling of the National Health Act of 2003 which created the framework for the setting up of a DHS as the foundation for a national health system (Barron and Asia, 2001).

Progress towards a DHS has been found to be variable with areas of confusion specifically originating from lack of clarity between roles and responsibilities of provincial and municipal authorities, and schedules to ensure that these functions are completed (Barron and Asia, 2001).

Whilst structures and systems for a district health system have been established, the impact of these structures and systems on human resources has not always been

adequately considered, with staff feeling de-motivated by frequent changes and delays in finalizing services to be provided by each sphere of government (Hall, Ford-Ngomane and Barron, 2005). Hall et al. (2005) note that unless consideration is given to human resource management (the 'software') as well as structures, system and policies (the 'hardware'), a functional DHS may remain problematic in South Africa.

The above examples clearly illustrate the failure of the strategic planning process with seemingly adequate strategic analysis and development being conducted, only to be foiled by suboptimal strategic implementation, which is referred to as the 'policy-to-implementation gap' coined by Buch (2000).

This breakdown has resulted in general health worker perceptions of poor working infrastructure, lack of supervision and trust, a 'disconnect' between management and employees and subsequent poor service delivery (Hall et al., 2005).

2.3.4 Strategy and Organizational Structure

The primary function of a health system is to ensure effective service delivery with subsequent improvement in the health of the population. In this regard, the World Health Organization (WHO) finds that failure of service delivery is often due to dysfunctional organization of the health system, even when the needed inputs exist and financial support is adequate and fairly distributed (World Health Report, 2000). Importantly, the findings of this report state that these organizational failings can result from suboptimal arrangements among the various parties involved in service delivery.

Williamson and Stoops (2001) note the possible organization of health systems in three broadly distinct ways:

- Hierarchical bureaucracy
- Long-term contractual arrangements under some degree of non-market control
- Direct, short-term market-based interactions between patients and providers

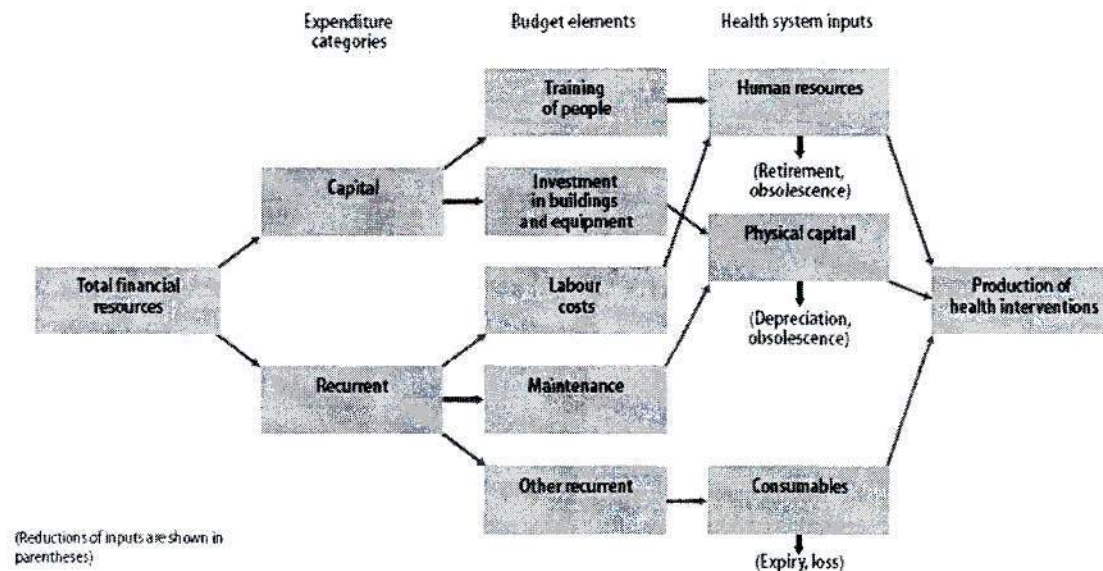


Figure 2.2: Health System Inputs: From Financial Resources to Health Interventions

Source: World Health Report, 2000

Ntuli and Day (2003) note an overall increase in health expenditure but find that wage increases, inflation and HIV/AIDS have undermined effective financing and resource allocation; and despite measures put in place to regulate the private sector, the insured population has shrunk from just under 17% of the population in 1997 to only 15.2% of the population in 2002 resulting in an increased burden on the public service.

The health ministry identified “Improving resource mobilization and management and equity in allocation” as a key strategic initiative in its Health Sector Strategic Framework 1999-2004 (Department of Health, 1999); appropriate allocation in terms of the three health system inputs (physical capital, human resources and consumables) alluded to above, is vital to the success of their strategic plan.

In this regard, Ntuli (2001) reports increases in out-of-pocket spending (the most regressive form of health care financing); is disappointed by the experience with public-private partnerships, which have really served to highlight the imbalance between these two sectors; and notes that the decentralization of health care, intended to contribute to achieving equity, can have the opposite effect.

This author importantly finds that current arrangements for the funding of these local government health services, which rely heavily on historical budgeting, do not appear to

take equity considerations sufficiently into account. This is in part due to the fact that they do not allow for adequate monitoring from a provincial perspective, while local governments are concerned about the cash flow problems resulting from payments that are paid quarterly in arrears. Finally, Ntuli (2001) finds that budgeting systems are not flexible enough to address changing circumstances or the realities on the ground.

With respect to the ‘mix’ of spending on health inputs, the World Health Organization (2000) finds that South Africa devotes maximum resources towards nurses, beds and MRI scanners whilst resources are most poorly allocated to drug and physician expenditure for all compared middle-income countries.

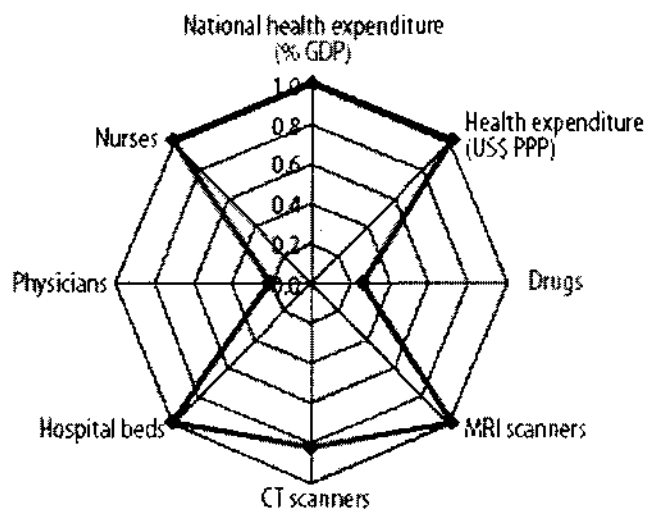


Figure 2.3: Health Systems Input Mix : South Africa

Source: World Health Report (2000)

It is accepted that efficient mixes of resources will vary across countries depending upon the priorities set by respective health authorities, however it is questionable as to whether this mix is optimal for the South African situation given the strategic imperatives laid out in their strategic framework. The World Health Organization (2000) notes that symptoms of imbalances between resources include poor performance, deteriorating facilities, and low working morale among staff; and given that these symptoms are evident locally, it is contended that the mix of resources allocated to the different inputs currently, deserve closer scrutiny.

2.4 Migration

2.4.1 Theories of Migration

The movement of skilled and educated individuals from one nation to another is as much a response to the lack of opportunity in their home country as it is to the availability of opportunity and the deliberate and selective promotion of immigration in another (Saravia and Miranda, 2004). The concept of migration is not a new phenomenon.

Ravenstein's Laws of Migration (1885) first described the movement of labour from rural to urban centres in search of economic gains.

Stouffer (1960) explored the underlying reasons for the migratory process and notes that the level of movement between two places is dependent on the number of intervening opportunities between them; intervening opportunities represent the nature and number of possible alternative migration destinations which may exist between origin and migration destination.

Stouffer's model contends that the nature of places, rather than distance, is more important in determining where migrants go, an important observation that has relevance in an increasingly globalised world. Movement would occur based on the real, or the perceived, opportunity at the destination (eg. work). According to this model, the number of people therefore moving over a given distance is directly proportional to the number of opportunities at the destination, and inversely proportional to the number of intervening opportunities.

Lee's (1966) approach to the factors of migration is similar to that of Stouffer, explaining them in terms of positive and negative characteristics of both origin and destination, where migrants would expect to receive some added advantage in moving from one place to another. Importantly, this author notes that potential moves will be influenced by obstacles (eg. family pressures, misinformation, national policy, travel costs, lack of capital, illiteracy, military service and language) at either origin, destination, or en route. A final observation that Lee (1966) makes is that the same feature might be perceived

differently by different individuals; for example, some might enjoy living in a large city whilst others might find it cramped and depressing.

Stalker (2005) notes that contemporary theories of migration revolve around two broad approaches:

- The individual approach is also known as the human capital approach and considers each person as the product of a series of investments — in their education, skills, health etc. The prospective migrant assesses the available destinations and chooses the optimum combination — of wage rates, job security, and cost of travel
- The structural perspective sees people's fate determined ultimately by structures — social, economic and political, that shape their lives. Structural factors such as unemployment, media influence or population pressure can be seen as 'pushing' emigrants from their origins and 'pulling' them to their destinations. It is interesting to note that a WHO study commented that no matter how strong the pull factors are of the recipient countries, migration only seems to result if there are also strong push factors from the donor country (Mejia, 1978). These push and pull factors that will form the basis for further discussion

2.4.2 Migration in the Health Sector—The Global and South African Context

Human mobility is a fact of modern life and migration will continue as long as economic imbalances and conflicts exist (Grondin, 2004). The movement of health professionals around the globe is not a new phenomenon however the effects of recent migratory trends seem to be most severe for the English speaking countries of sub-Saharan Africa (Eastwood, Conroy, Naicker, West, Tutt and Plange-Rhule, 2005). Exploration of these trends will thus be related to the South African situation.

Thulare (2003) asserts that migration is not necessarily international and cites three prominent forms of professional migration within the healthcare context:

- Rural to Urban Migration

- Public Sector to Private Sector Migration
- International Migration

2.4.2.1 The South African Health Sector in the context of Migration

A Bird's Eye View

Buch (2000) recognizes that the health service inherited a system focused on primarily supporting the apartheid state, rather than on improving health or providing an efficient and effective health service. As such, he cautions that deep rooted structural and service elements that have existed for decades cannot be turned around overnight.

Health sectors in Africa face considerable shortfalls in human resources as seen in Table 2.1 below:

Table 2.1- Estimates of health personnel per 100 000 population

Country	Year	Physicians	Nurses	Midwives	Dentists
Angola	1997	7.7	114.5	4.3	0
Democratic Republic Of Congo	1996	6.9	44.2	n.a	1.1
Ghana	1996	6.2	72.0	53.2	0.2
Lesotho	1995	5.4	60.1	47.0	0.5
Namibia	1997	29.5	168.0	116.5	4.0
South Africa	1996	56.3	471.8	n.a	17.8
Tanzania	1995	4.1	85.2	44.8	0.7
Zimbabwe	1995	13.9	128.7	28.1	1.3

Source: Adapted from Padarath et al. (2003)

Whilst South Africa compares favourably amongst its African counterparts, significant progress still needs to be made. For example, the doctor-population ratio for South Africa is almost 1:1800, whilst this figure is 1:1400 for all developing countries and 1:300 in industrialized countries; and even though South Africa seems to meet the minimum WHO standard for one doctor per 5000 patients, some poorer districts may only have 1 doctor for a population of 30 000 (Huddart and Picazo, 2003).

Equality measures

The Gini index is a measure of income inequality, where an index of 0 represents perfect equality and an index of 100 implies perfect inequality. South Africa has a particularly high Gini index with the highest 10 per cent of income earners receiving 45.9 percent of total income (Hilsenrath, Trevino, Singh and Levey, 2003).

The health sector displays similar levels of inequality with the private sector consuming greater than 50 percent of total health care expenditure, whilst servicing less than 20 percent of the population (Benatar, 1993). The importance of this disparity is evident in the fact that 84 percent of the South African population not covered by medical aid or insurance, thus underlining the vital role that the public sector plays in health care delivery (Thom, 2001).

Distribution of Services

It is noted that in 1998, 52.7 percent of general practitioners and 76 percent of specialists worked in the private sector in South Africa (McIntyre, Bloom, Doherty and Brijlal, 1995) and, in the following year, it was expected that the general practitioner percentage would rise to 76 percent, despite the fact that the private sector services less than a fifth of the population (Goudge, Cornell, McIntyre and Mabatsha, 2001).

Table 2.2 - Public-Sector Doctors % of Total Active Doctor Workforce

Year	1998	1999	2000	2001
Total Active Doctors	27551	29369	N/A	29927
Number in Public-Sector	7616	8587	N/A	10898
Community-Service Placements	Nil	1088	1115	1169
Public less Community-Service	7616	7499	N/A	9729

Source: Adapted from Thulare (2003)

Although there appears to be a trend towards an increasing percentage of public sector employed doctors in Table 2.2, this coincides with the introduction of mandatory

community service medical practitioners in 1999; it is observed that less than a third of voluntary active medical practitioners were servicing the bulk of the public sector population.

Padarath, Chamberlain, McCoy, Ntuli, Rowson and Loewenson (2003) observe that rural – urban inequalities tend to be worse for doctors compared to nurses and for specialist doctors compared to generalist doctors; in part because secondary and tertiary institutions are mainly found in cities and large towns. They find that the urban location of most hospitals, where the majority of health workers are concentrated, makes it inevitable that health workers are mostly in the cities.

Table 2.3 - Population by province; 2001
(compared to nurses, medical practitioners and pharmacists in
the public health facilities March 2005)

Province	Population	Professional Nurses	Medical Practitioners (excl. Specialists)	Pharmacists	Doctor to Population Ratio
KwaZulu-Natal	9 426 017	9380	1916	374	1:4920
Gauteng	8 837 178	6997	1582	240	1:5586
Eastern Cape	6 436 763	6370	866	201	1:7433
Limpopo	5 273 642	5612	657	142	1:8027
Western Cape	4 524 335	3824	1139	246	1:3972
North West	3 669 349	3040	403	105	1:9105
Mpumalanga	3 122 990	2725	536	115	1:5826
Free State	2 706 775	3475	445	102	1:6083
Northern Cape	822 727	950	240	36	1:3428
South Africa	44 819 778	42373	7784	1561	1:5758

Source: Department of Health (2005)

Table 2.3 details the breakdown of, inter alia, primary care medical practitioners by region in South Africa. It is evident that provinces such as the Western Cape, Gauteng and KwaZulu-Natal have greater numbers of public service doctors to service their respective patient populations and it is the contention of the researcher that this can be ascribed to the fact that these are 'richer', more urbanised regions and are likely to be favoured provinces in which health professionals prefer to ply their trade.

The Department of Health (2005) acknowledges this rural to urban shift noting that the majority of provinces (eg. Limpopo and the North West Province) are more rural in nature and there remain challenges to staffing health facilities in these areas.

While this rural-urban migratory trend is cause for concern, it is logical that skilled personnel (like doctors) concentrate at higher levels of the health system; of potentially greater concern is the extent to which inequalities in resource allocation to different districts lead to differences in distribution of health personnel between the same level of care (Padarath et al., 2003).

Supply and Demand and International Migration

Macroeconomic theory views geographic differences in the supply and demand for labour in origin and destination countries as major factors driving individual migration decisions (Russell, 2002).

Russell (2002) observes that this neoclassical model pre-specifies that international migration will not occur in the absence of these differentials, that their elimination will bring an end to international movements, and that labour markets are the primary mechanisms inducing movements. This author also notes that government policy interventions affect migration by regulating or influencing labour markets in origin and destination countries.

In this regard, the production (and mix) of health workers within South Africa is a critical factor determining the appropriate availability of personnel in the public service (Padarath et al., 2003). In 2002, South African health science universities enrolled 8 474 students to undergo training in the art of medicine whilst 1 212 graduates qualified as doctors in the same year (Department of Health, 2005).

Table 2.2 shows a small but steady rise in the number of active doctors in South Africa. However, when contrasted against a vacancy rate of 17.3% for general practitioners and a 33.4% vacancy rate for medical specialists in the public sector (Thulare, 2003), it is clear that current retention strategies are inadequate. In the last twenty years, South Africa has

lost around 6 500 doctors through attrition (Thulare, 2003) and at least 26% of medical doctors that qualified between 1990 and 1997 have emigrated (Bateman, 2001).

In addition, newly qualified graduates interviewed in a recent survey found that at least 43 percent were planning to leave South Africa upon completion of internship and community service; and only 38 percent were committed to practice within the public sector (Horner, 2002). More than half of South Africa's junior white doctors intended to work overseas compared to 10% of African doctors and 40% of Coloured and Indian doctors (Reid, 2000).

Stilwell et al., (2004) voice key concerns regarding the evolution of demand in the health care labour market:

- New communication technologies making education, job and visa applications easier
- Certain skills within health are very specialized and in short supply globally, spurring global recruitment
- Targeted and aggressive recruitment from resource-poor to resource-rich countries to fill existing vacancies

It is evident from the above observations that distorted market dynamics have created an imbalance between supply and demand, with consequent shortage and maldistribution of health personnel in South Africa.

Padarath et al. (2003) describe these migratory flows as following a 'hierarchy of wealth', which result in a global conveyor belt of health personnel moving from bottom to top, increasing inequity. They further note that international migration exacerbates inequities that already exist between public and private sectors and between urban and rural areas; and discuss factors for migration in terms of the push and pull factors alluded to earlier.

2.4.2.2 Push Factors in the Health Sector

Remuneration

Dovlo (2002) regards remuneration as potentially the most influential factor influencing a health professional's decision to migrate. Indeed, microeconomic theory supports this view with decisions to migrate typically being based upon a cost-benefit calculation that indicates a positive net return (Russell, 2002).

With respect to the South African situation, Naude (1999) outlines poor salaries, restrictions on commuted overtime remuneration and poor progress in the development of a comprehensive salary package as factors contributing to staff turnover and shortages. Strong's (2000) market research survey of South African doctors' views of the public sector reinforces this view with respondents identifying remuneration as a significant problem.

Limited private practice (LPP) for public sector practitioners facilitated increased experience and professional scope, enhancement of performance and increased the prestige of institutions by attracting outstanding academic staff (Thulare, 2003).

Importantly, whilst this represented a novel way in which public sector practitioners could augment their existing incomes, abuse of this system led to its abolition in view of compromised quality of care to public sector patients and teaching to under- and postgraduates (Adno, 1999).

Naude (1999) notes that regulation of limited private practice, effected by the remuneration work outside public sector (RWOPS) scheme, is a cause for attrition.

Job Satisfaction

Frommel (2002) observes that health professionals can become dissatisfied for non-financial reasons such as poor infrastructure and management.

In this regard, South African public and private practitioners identified workload and lack of resources as significant problems in the public sector and cited these two factors, together with remuneration, as driving their private colleagues out of the public service (Strong, 2000).

The situation in rural hospitals is even more dire with Strong (2000) finding doctors at breaking point with respect to lack of resources and noting this has led to a destructive cycle that has distracted doctors from effective healthcare delivery. Thulare (2003) finds that shortages in human and financial resources, inappropriate and inadequate facilities, staffing crises and patient overload contribute toward poor local conditions of service; and together with the lack of supervision for more junior doctors, is an important cause of doctor attrition.

Quality of Life and Crime

Padarath et al. (2003) note that crime, political instability, safety concerns and lack of education opportunities for children are strong exogenous push factors for migration of health professionals.

Bateman (2001) cites rampant crime, the threat to personal safety, violence and uncertainty regarding the future of children as aggravating factors for migration of South African health professionals.

Occupational Hazards

Dovlo (2002) states that high levels of occupational risk contribute to health worker insecurity and can encourage migration to a safer work environment.

In the South African context, Parkhurst and Lush (2004) describe both the explosive rate of spread of HIV/AIDS and also note the controversy and difficulty that government has had in implementing an AIDS control programme, with contestation and even, at times, denial of the HIV and AIDS link.

This, together with the threat of needle-stick injury while on duty, is a factor leading to migration of health professionals (Bateman, 2001). The added burden of this disease places a strain on the capacity of the public sector doctor, who already cites workload as a fundamental problem in the public service (Strong, 2000).

Career Development Opportunities

Branch (1998) finds that workers prefer challenging and interesting work over high salary perks especially there is potential for career development. In the health sector context, The Commission on Macroeconomics and Health (2001) finds that high attrition amongst health professionals is a consequence of inadequate career prospects. Dovlo (2002) further affirms that migration of health professionals occurs in the pursuit of career opportunities.

Barnard and Tong (2000) find that doctors in developed countries are increasingly leaving clinical practice to pursue other opportunities, out of frustration with circumstances in the health environment.

Indeed, the South African situation is not much different with specialists citing lack of future prospects as a factor contributing to public sector attrition (Strong, 2000).

Regulatory Framework

Thulare (2003) cites regulatory changes as a possible factor leading to migration of health personnel. In this regard, community service and the imposition of a two year internship for young doctors are cited as contributory factors for attrition.

The objective of programs such as community service aims to provide young professionals with an opportunity to develop skills, acquire knowledge and behaviour patterns and critical thinking that will help with professional development (Reid, 2000).

However, the introduction of such a program proved to be highly controversial and divided junior doctor opinion as many junior doctors believed that such service should not be compulsory, but voluntary and incentive driven (Strong, 2000). Indeed, some

found the allocation process unfair and the environments and working conditions demoralizing.

More importantly, community service had no effect on the career plans of these doctors, but merely delayed them by a year, with just over a third of doctors planning to work overseas the following year (Reid, 2000). Reid (2000) further remarks that there are a number of other strategies that have been shown to be more successful than 'coercion' in recruiting and retaining doctors in areas of need and the community service plan may even be exacerbating rather than lessening the tendency of young doctors to leave the country as they feel that they have "paid their dues" by completing their year, and feel no obligation to contribute their skills any longer than this.

2.4.2.3 Pull Factors in the Health Sector

It is observed that most pull factors are essentially the opposite of push factors and include attractive remuneration, favourable working conditions, and opportunities for career progression (Mercer et al., 2002).

However, Padarath et al. (2003) state that aggressive recruitment strategies employed by recipient countries increase the probability that health professionals will migrate.

2.4.2.4 Stick and Stay Factors

Briggs (2000) asserts that migration is also affected by 'stick' and 'stay' factors; with stick factors referring to reasons that keep people where they are spite of compelling push and pull factors to migrate and stay factors referring to reasons preventing workers returning to places of origin after migration has occurred. Dovlo and Martineau (2004) find that these factors serve to moderate the impact of a worker's decision to migrate and therefore deserve consideration.

Padarath et al. (2003) identify a multitude of stick factors such as high levels of morale, a recommendation also emphasized by Strong (2000) in respect of local public sector doctors. Other stick factors include reward and incentive schemes such as endowment

programmes in universities that have been adopted in Canada, and social schemes designed to increase kinship and patriotism (Padarath et al., 2003).

Stay factors include reluctance to disrupt family life and schooling, lack of good professional employment opportunities in the host country and a higher standard of living in the recipient country (Dovlo and Martineau, 2004).

2.5 Summary of Literature Review

The importance of strategy in leveraging competitive advantage was highlighted; in particular, how strategy and organizational structure are contextualised within a learning organization. In this regard, the South African public health sector appears to be on track with respect to elements of strategic development however the slow pace of strategic implementation has hindered progress in realising the vision of an efficient, effective and high quality health service. This ‘policy to implementation’ gap has implications for retention of medical practitioners as issues such as limited career development/learning opportunities, inadequate remuneration, poor working conditions and occupational hazards tip the balance in favour of push factors over pull factors. The end result is further exacerbation of an already existing human resource crisis in the South African public health service.

This research seeks to quantify the extent to which public sector doctors in metropolitan Gauteng intend to migrate, assess the factors/dimensions responsible for this and their relative weights as a means to align future strategic interventions so that scarce resources are then effectively allocated to resolve this problem.

2.6 Conclusion

It is clear that, since 1994, great strides have been made in putting the ‘architecture’ of the health system into place with an impressive display of guidelines, policies and frameworks available to effect service delivery, however the stumbling block has been putting these into practice, and while a variety of factors underlie the slow pace of implementation, the difficulty of recruiting and retaining skilled personnel is perhaps the most intractable problem that has compromised implementation (Ntuli and Day, 2003).

Andrews and Pillay (2005) further underline the fact that the most critical resource constraining government's ability to deliver on its stated targets for the health sector is the availability and capacity of skilled personnel and concede that the targets outlined in the strategic plan are hopelessly inadequate given the gravity of the human resource problem in the health sector. While developments in human resource planning are welcomed, these authors argue that this might be too little, too late. Since human resources are the backbone of the health system, this issue needs to be treated with far more urgency.

Chapter 3

Research Methodology

3.1 Introduction

A comprehensive review of relevant literature was conducted in the initial chapters of this dissertation which crystallised the problem statement, however the thrust of this study was to seek and quantify attrition factors for public sector doctors in order to recommend the most effective strategic interventions. As such, doctors were surveyed in order to assess their intention to migrate from the public sector in addition to quantifying the relative weights of these factors.

The research questions under consideration are detailed below:

- What was the propensity of medical practitioners to migrate from the public sector
- To what extent would each of the retention dimensions/factors identified, retain public sector doctors
- What correlations amongst retention dimensions existed and also, whether biographic variations amongst practitioners influenced the relative importance of these retention dimensions

The research design for this study was cross sectional and correlational in nature and utilised a structured questionnaire as the research instrument. This chapter is concerned with issues relating to the manner in which the research was conducted and encompassed a review of the survey instrument, sampling technique, sample size and relevant data analysis techniques.

3.2 Survey Research Measures / Instrumentation

This research project employed the use of a structured research questionnaire as the relevant survey instrument.

The structured questionnaire is an effective option in that it is:

- cost effective and requires minimal staff in order to conduct
- perceived as more anonymous and facilitates wider geographic access than other survey methods
- allows respondents time to think about questions
- allows more complex methodology to be used (Cooper and Schindler, 2003).

The primary disadvantages associated with the use of the questionnaire as a research instrument relate to low response rates and often there is no interviewer available for probing or explanation therefore responses are often based on the respondents' individual understanding of questions (Cooper and Schindler, 2003).

The above advantages made the structured questionnaire the most appropriate research instrument for this study whilst the disadvantages listed above were largely overcome by the researcher being present at the time of data collection to optimize response rates and elaborate on potentially problematic questions.

The survey instrument comprised a subject information sheet, informed consent document and structured questionnaire (Appendix A). The subject information sheet served to highlight the nature of research, provided the assurance of confidentiality (unless legal reasons dictated otherwise) and underlined the voluntary nature of participation. The contact details of the researcher were also supplied on this information sheet for any additional questions that participants might have had later. Informed consent was collected for participants in line with good research practice.

The questionnaire was divided into two major sections and comprised primarily closed ended questions to ensure ease of response for participants.

General/demographic information was collected in first section relating to:

- Demographic parameters
- Rank/department within the hospital

- Length of time spent in the public sector
- Intention to leave (if any) and the next sector in which employment would be sought

The second section was used to collect information relating to attrition factors and potential retention strategies to overcome these factors. Responses were elicited via a five point Likert scale to ensure interval level data was collected as this was a necessary requirement for inferential statistical analysis to be undertaken.

Thus the likelihood of the participant leaving the public sector was first assessed before a review of factors that would encourage doctors to migrate from the public service. These '*retention dimensions*' were comprised of issues that included remuneration, working conditions, career advancement, occupational health and safety, learning opportunities and family considerations.

Respondents were asked to grade the level of importance attributed to each dimension where a minimum score of one indicated that that the dimension was not perceived to be important to attrition whilst a maximum score of five indicated that respondents found this factor to be extremely important. Intermediate ratings of two, three and four meant that survey participants found the respective dimension to be of limited importance, fair importance or very important respectively.

3.3 Study Population and Sample

The study was confined to the Gauteng Metropolitan Region and, as such, the sampling frame represented all employed public sector doctors within this area. Day and Gray (2005) place the number of public sector employed medical practitioners in Gauteng at 1 841 based on their PERSAL 2005 data. Padarath et al., (2003) highlight the rural /urban divide and estimate that up to 75% of doctors are employed in metropolitan areas nationally. By deduction, it can be concluded that up to 1 350 public sector doctors, which represents the sampling frame, seem to exist in the Gauteng Metropolitan area.

In view of the above sampling frame, a sample size of 300 was considered large enough to be generalise-able to the study population (Krejcie and Morgan, 1970). Probability sampling may have been a preferred alternative in view of its technical superiority (Cooper and Schindler, 2003); however would demand the following:

- Compilation of a randomisation schema or alternative
- Access to otherwise confidential personnel records at hospitals upon which the randomisation schema will be applied
- Contact with those randomly selected to assess potential participation and follow up of these participants for completed surveys

In view of limited access to information, restricted field resources and the unavailability of medical personnel due to their unpredictable working hours, it was decided that non-probability, convenience sampling would be a more appropriate sampling method.

This technique is an unrestricted, non-probability based sampling technique where the researcher has the freedom to choose whomever they find and, whilst there are no controls to ensure precision, it is still considered a useful procedure (Cooper and Schindler, 2003). Also, the observation that frequent breakdowns in the practical application of probability sampling discount its technical superiority, in addition to the fact that carefully controlled non-probability sampling often yields acceptable results (Cooper and Schindler, 2003), reinforced the approach adopted by the researcher.

3.4 Data Collection Procedures

Ethical clearance was granted by the University of KwaZulu-Natal however, in view of the fact that the surveying would take place on the property of the University of the Witwatersrand, ethical clearance was required and granted in this respect (Appendix B). Notably, the latter clearance necessitated that the researcher make the contact details of the University of the Witwatersrand available to research participants in the event of problems or complaints regarding the conduct of the research. As such, these details were included on the subject information sheet that accompanied the research questionnaire

(Appendix A). In addition, permission was granted by respective hospital managers prior to data collection (Appendix C).

Doctor surveys were conducted at 2 large hospitals in the Gauteng Metropolitan area ie. Chris Hani Baragwanath and Helen Joseph hospitals. Plans to conduct the survey at other hospitals such as the Johannesburg General Hospital were undone in view of insurmountable administrative problems related to securing hospital permission. In this regard, there was a requirement to obtain approval from the Gauteng Department of Health prior to permission being granted by hospital managers at certain institutions (as was the case at Johannesburg General Hospital).

Whilst every effort was made to obtain such approval, no response was received by the relevant authorities. In addition, plans to conduct the survey at Pretoria based hospitals were also shelved in view of the necessity to obtain ethical approval from a third academic institution. In view of the impact of the above factors on the existing time and cost constraints of the researcher, the size and scope of the study was somewhat curtailed. Initial data collection strategies were aimed at distribution of questionnaires within departments and then leveraging departmental secretaries / drop boxes within these departments to facilitate collection of surveys so that completion of questionnaires could be done at the convenience of doctors. Distribution of surveys in this manner resulted in a 10% return rate necessitating personal surveying of participants by the researcher thereafter. In total, fifty one completed surveys were obtained from participants and as such, it is conceded that the results obtained may not be generalised to the population at large.

Research participants were briefed on the nature of the research prior to being requested to indicate their willingness to be surveyed. Informed consent was taken and subjects were assured that their anonymity would be preserved, unless legal requirements dictated otherwise. Surveys were collected and processed before being securely housed at the Graduate School of Business (University of KwaZulu-Natal) for five years post submission.

3.5 Data Analysis

All surveys were analysed and data was collated, cleaned and coded for analysis. SPSS version 13.5 for Windows was utilized to analyse data, which was conducted in group format and no personal subject identifiers were used. Descriptive statistics were applied to the data with frequency tabulations and measures of central tendency and dispersion explored. Relevant techniques in this regard employed arithmetic mean, range (maximum and minimum ratings) and standard deviation respectively, the latter parameter which summarizes how far away from the mean that data values typically are (Cooper and Schindler, 2003).

Inferential statistical analysis was conducted in the form of both parametric and non parametric tests in order to identify the relative correlational 'weights' of each retention dimension, or lack thereof, in accounting for the likelihood of leaving the public service.

Significant relationships between these retention factors were assessed using the Pearson correlation coefficient; a statistical measure which identifies the magnitude and direction of relationships (Cooper and Schindler, 2003).

Other parametric and non parametric tests were employed to assess the influence of biographic variables of participants upon the perceived importance of retention dimensions and these included:

- Parametric measures such as the t-test, which is used to determine the statistical significance between a sample distribution mean and a parameter (Cooper and Schindler, 2003). In the context of this study, this test was used to determine if the parameter of gender significantly influenced mean retention dimension values.
- The Mann-Whitney test, which is a non parametric measure that is an alternative to the t-test without the latter's limiting assumptions (Cooper and Schindler, 2003). This test assessed whether the two employment history variables ie. whether duration of service of practitioners was uninterrupted in addition to whether doctors were exposed to non-state practice, significantly influenced retention factor values obtained.

- The Kruskal-Wallis test is a more powerful assessment than the chi-square test and is effectively a generalised version of the Mann-Whitney test (Cooper and Schindler, 2003). In respect of this study, this measure was used to gauge whether age, race, rank, duration of public sector employment and the intention to leave of study participants had a significant impact on mean values obtained for the various retention dimensions.

3.6 Limitations

Surveys were conducted by the researcher at respective hospitals and every effort was made to ensure that disruptions were minimised while completing the survey. Also, the researcher undertook to try and ensure a representative, balanced sample was achieved to minimise potential bias introduced by non-probability sampling methods, which were adopted in the interests of time and cost constraints. The small sample size meant that findings could not necessarily be extrapolated to the sample population, even though sample adequacy for factor analysis was statistically proven.

Another limitation to consider was the fact that only metropolitan areas were surveyed and as such, relative weights of attrition factors might differ in non-metropolitan areas and could be the subject of further research.

Primarily closed ended questions were used to gather responses so detailed evaluation of the underlying reasons for why attrition factors had been given importance by subjects was not undertaken. This has been the subject of previous research undertaken and, as such, was not tackled in this study (Thulare, 2003).

3.7 Validity and Reliability

Validity and reliability refer to the 'trustworthiness' of the research, with validity being concerned with a measure in fact measuring what it purports to do so and reliability indicating the ability of a measure to produce consistent results (Rudestam and Newton, 2001). These parameters were reviewed in the context of the research methodology and instrument.

3.7.1 Validity

Internal validity is concerned with the ability of a research instrument to measure what it is purported to measure whilst external validity refers to the ability of data to be generalised across persons, settings and times (Cooper and Schindler, 2003).

In respect of internal validity, the questionnaire derived by the researcher was based very closely upon two previously conducted research questionnaires (Strong, 2000; Thulare 2003). Essentially, the demographic and employment data mirror that which was captured in the Thulare study, and the generation of the retention dimensions in the current exposition was derived primarily from the questionnaires and responses obtained from both research datasets alluded to above.

Formal assessment of survey validity was undertaken by means of factor analysis and, as a first step, the Kaiser – Meyer – Olkin (KMO) Measure of Sampling Adequacy in addition to Bartlett's Test of Sphericity were undertaken to assess whether the sample was adequate for factor analysis.

Factor analysis was undertaken to assess the structure of retention dimensions. This test involves reducing many variables that belong together and that have overlapping characteristics, to a manageable number (Cooper and Schindler, 2003). As part of this process, a Principal Component Analysis is undertaken to transform variables into a new set of composite variables that are not correlated with one another; these are called factors and account for the variance in the data as a whole (Cooper and Schindler, 2003). In addition, a Varimax Rotation was conducted to confirm the factor structure. The results of these analyses are presented in Chapter 4.

With respect to external validity, the relative strength of the survey was attributed to the fact that the study was conducted in a real-life setting at two of the largest Gauteng Metropolitan hospital and reinforce the conclusions of previous studies and, as such, are potentially generaliseable to the population under review. Nonetheless, it must be noted that the sample size was eventually achieved was largely a consequence of logistical, financial and pragmatic restrictions. In view of this limited sample size, it is advised that

future research be conducted on a larger scale to definitively validate the generalisability of the findings of this study.

3.7.2 Reliability

Reliability is concerned with the consistency of data and is a necessary contributor to validity (Cooper and Schindler, 2003).

Reliability of data was strengthened by the systematic manner in which the survey was designed (ie. based on similar research instruments from prior studies) and executed (ie. majority of questionnaires were personally administered by the researcher within a narrow timeframe, so that a cross sectional study design was achieved) and the results are in line with those previously reported in similar studies (Thulare, 2003; Strong, 2000). As such, the criteria of equivalence and internal consistency that Cooper and Schindler (2003) require in order to verify the reliability parameter, have been satisfied.

A Cronbach's Alpha test is typically used to confirm internal consistency and reflects the degree to which instrument items are homogenous and reflect the same underlying construct (Cooper and Schindler, 2003). This test was performed to confirm the reliability of the data and these results are presented in Chapter 4.

3.8 Conclusion

This chapter has served to explore the relative merits of the structured questionnaire as the survey research instrument employed in addition to highlighting the utility of the non-probability sampling technique employed.

The relevant data collection procedures were discussed before an exposition of the analytical techniques (both descriptive and inferential) was presented to provide an insight into the reasoning behind the choice of different statistical tests. Finally the limitations of the present study were conceded before giving due consideration to issues of validity and reliability; the formal results of which are presented in Chapter 4.

Chapter 4

Presentation of Results

4.1 Introduction

This chapter details the results of the data that was collected from a total of 51 completed structured questionnaires. Descriptive and inferential statistical methods were applied to the data in order to derive meaningful information and these results are presented below.

Biographic information of the respondents was first presented in the form of frequency and graphical tabulations including the propensity of respondents to migrate from the public sector. Subsequent to this, each retention dimension was assessed in terms of the ability to retain public sector doctors based upon average scores obtained for each factor. Measures of dispersion were also assessed in order to assess the uniformity of responses.

These retention factors were then tested to assess if biographic variations across sampled respondents influenced the relative importance of these dimensions and correlations amongst dimensions were also explored to explore any meaningful relationships. Finally, an assessment of validity and reliability was undertaken in respect of the survey.

4.2 Frequency Distributions

4.2.1 Demographic Analysis of Respondents

The demographic characteristics of respondents are summarised in Table 4.1.

Table 4.1 – Demographic Profile

Respondents (n =51)		Frequency	Percent
Age	<30	28	54.9
	30-35	16	31.4
	35-45	5	9.8
	45-55	2	3.9
Gender	Male	29	56.9
	Female	22	43.1
Race	Black	7	13.7
	White	13	25.5
	Indian / Asian	29	56.9
	Other	2	3.9

It is evident from the information presented above, that survey participants were from different age groups with more than half of doctors surveyed found to be below the age of 30 whilst the minority of respondents were in the 45-55 year age group.

In respect of gender, participants were roughly equally split between male and female sexes and representation from different race groups was obtained, with an Indian / Asian preponderance of subjects (56.9% of the sample) observed, followed by Caucasian and Black subjects respectively.

4.2.2 Professional Profile of Respondents

The professional profile of respondents is illustrated in Table 4.2, and includes an assessment of the highest professional qualification achieved in addition to the university at which this qualification was achieved.

Table 4.2 – Professional Profile

Respondents (n =51)		Frequency	Percent
Highest Qualification	MBChB / MBBCh	35	68.6
	Post Graduate Diploma	2	3.9
	Masters Degree	2	3.9
	Specialist - Fellowship	8	15.7
	Super Specialist Qualification	3	5.9
	PhD	1	2
University	Wits	31	60.8
	Pretoria	3	5.9
	MEDUNSA	5	9.8
	UCT	6	11.8
	Natal	4	7.8
	Other	1	2
	Missing Data	1	2

The majority of doctors sampled were general practitioners, as evidenced by 68.6% of this group listing the Bachelor of Medicine and Surgery degree (MBChB / MBBCh) as their highest qualification. This was followed by specialists and super-specialists in particular fields who comprised 21.6% of the sample with the remainder of respondents possessing other types of post graduate qualifications (Post Graduate Diplomas, Masters Degrees and a PhD).

The geographic ‘clustering’ of the survey was apparent in that over three quarters of participants obtained this qualification at Gauteng based institutions including the University of the Witwatersrand, Medical University of South Africa (MEDUNSA) and the University of Pretoria. Coastal and other universities such as the Universities of Cape Town and Natal made up the remaining minority of academic institutions attended.

4.2.3 Employment of Respondents

Employment variables relate to the current employment status of respondents, their total duration of service within the public sector, whether this service had been interrupted and finally whether respondents had worked in the private sector or abroad in the past.

4.2.3.1 Current Employment Status

Table 4.3 highlights both the rank of surveyed public sector doctors, in addition to the department in which these doctors were employed in.

Table 4.3 – Current Employment Status

Respondents (n =51)			Frequency	Percent
Position	Junior	Intern	9	17.6
		Community Service	4	7.8
		Medical Officer	2	3.9
	Intermediate	Registrar	27	52.9
	Senior	Specialist	7	13.7
		Head of Department	1	2
		Other	1	2
Department	Internal Medicine or related		33	64.7
	Paediatrics		6	11.8
	Surgery or related discipline		6	11.8
	Other		6	11.8

Just over half of participants (52.9%) were found to be in intermediate Registrar (trainee specialist) positions, followed by 29.3 % of doctors in junior positions whilst 17.7 % of medical practitioners occupied senior positions within the public health sector.

With respect to the departments in which respondents were currently employed, 64.7 % of these doctors were assigned to internal medicine, with remaining respondents equally split amongst surgical, paediatric and other disciplines.

4.2.3.2 Employment History

In addition to the current employment status of participants, the employment history of the sample was an important consideration. In this regard, Table 4.4 illustrates the duration of service that the medical practitioners provided to the state sector. The greatest number of doctors (20) interviewed had rendered their services between two and five years, whilst 16 respondents had been employed for greater than five years; 13 and 3 of these respondents had served this sector between five and ten, and greater than ten years respectively.

Junior practitioners constituted a total of 15 respondents; 10 of these participants had been employed for less than a year and the remainder (5) had served between one and two years.

Table 4.4: Duration of Employment

Respondents (n =51)				Frequency	Percent
Total	Length	of	Public Service		
Employment			< 1 year	10	19.6
			1-2 years	5	9.8
			2-5 years	20	39.2
			5-10 years	13	25.5
			10 + years	3	5.9

In respect of exposure of respondents to other sectors of employment, Figure 4.1 underlines the fact that the majority of practitioners under review have enjoyed uninterrupted employment in the public service since graduation, with only 20% apparently re-entering the public sector after practising elsewhere. Also notable, is that 35% of respondents have at one or other time rendered their services outside the state sector, be it in the private sector or working abroad.

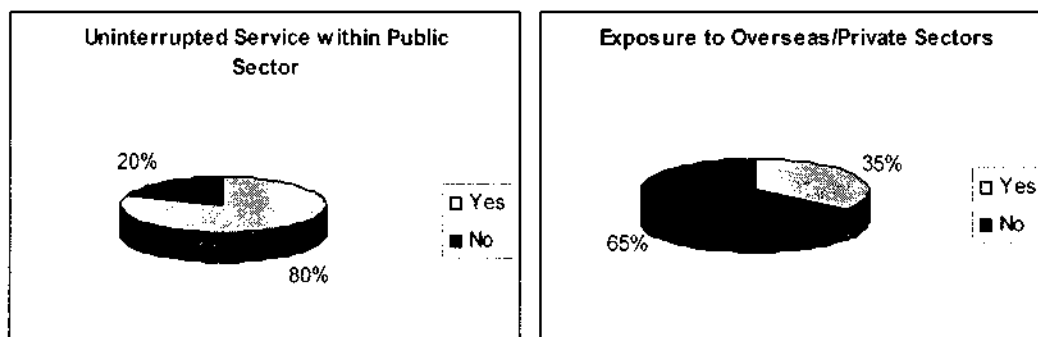


Figure 4.1 : Employment Profile of Respondents

4.2.4 Intention to Leave

The likelihood of respondents leaving the public sector in favour of other career opportunities is given by Table 4.5.

Table 4.5: Intention to Leave

Respondents (n =51)			Frequency	Percent
Intention to Leave Public Service	Total	< 6 months	2	3.9
		6 months-1 year	1	2
		1-2 years	3	5.9
		2-5 years	22	43.1
		5-10 years	15	29.4
		10+ years	8	15.7

For the total sample of doctors surveyed, 43.1% felt that they would leave between two and five years thereafter whilst 45.1% of participants indicated that they would be content to remain longer than five years. Notably, 11.8% of these health workers felt compelled to seek employment outside of the public service within a 2 year period.

It is noteworthy that differences in frequency distributions were observed when the total cohort was stratified by employment rank within the public health system. These subgroups encompassed 'junior practitioners', which comprised medical interns, community service officers and medical officers; 'intermediate practitioners' made up of registrars and finally 'senior practitioners' which included specialists, heads of department and above.

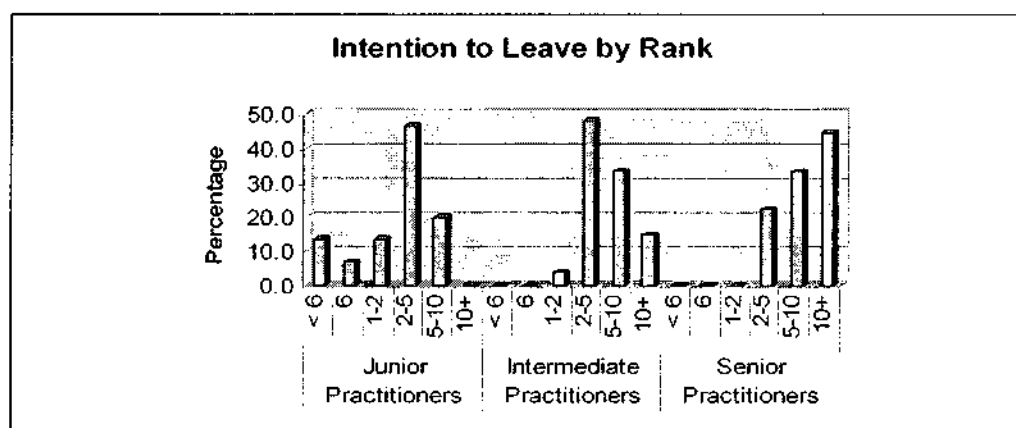


Figure 4.2 – Respondents' Intention to Leave stratified by Rank

In this regard, Figure 4.2 shows a distinct difference in frequencies across these subgroups with the senior health professional cohort exhibiting greater willingness to remain in the public sector versus others groups; 78% of senior practitioners were happy to remain employed by the state for more than 5 years.

By contrast, one third of junior doctors intended to seek alternative employment within two years as compared to 3.7 % of intermediate practitioners whilst no senior practitioners intended to leave within this timeframe. Registrars, in the intermediate subgroup, displayed the highest tendency to practise medicine within state hospitals between two and five years.

It was also worth exploring the sectors that medical practitioners would most likely migrate to after practise in the public service. The findings in respect of this are illustrated in Figure 4.3.

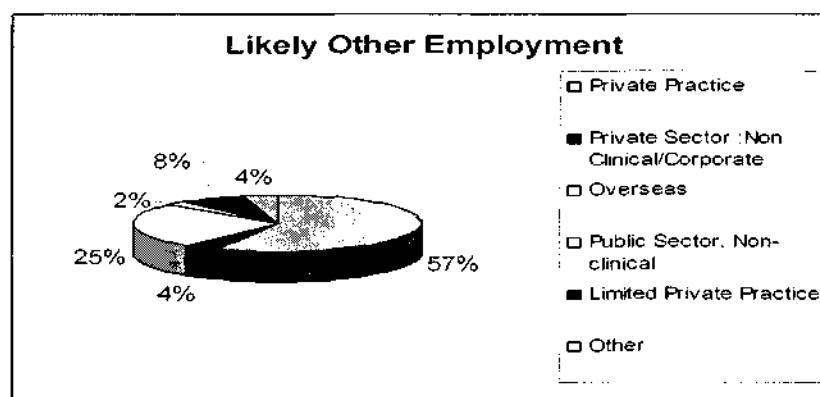


Figure 4.3: Sector Migratory Trends of Public Sector Medical Practitioners

As shown above, 57% of medical practitioners in this cohort believed that they would migrate to private practice with a further quarter preferring to migrate abroad in search of career opportunities. The remaining respondents indicated that limited private practice, non-clinical/corporate work and other opportunities would be likely considerations for them.

4.3 Descriptive Statistics

Descriptive statistical analysis was applied to collected data to present preliminary findings in a clear, understandable manner. Table 4.6 summarises key measures of central tendency and dispersion for each 'dimension' presented across the six tabulated columns below. These six dimensions are a representation of the attrition factors that respondents identified as important to influencing the retention of public sector medical practitioners.

Table 4.6 Measures of Central Tendency and Dispersion

	Career Advancement Opportunities	New Learning Experiences	Remuneration	Working Conditions	OHS Hazards	Family
Mean	3.461	3.299	4.359	4.574	4.064	3.721
Std. Deviation	0.786	0.771	0.587	0.381	0.896	0.816
Minimum	1.50	1.00	2.67	3.29	1.00	1.50
Maximum	5.00	5.00	5.00	5.00	5.00	5.00
Alpha Values	0.890	0.893	0.891	0.893	0.893	0.891

With respect to the significance of career advancement opportunities, the mean score of 3.461 (out of a potential maximum of 5) observed indicates that participants perceived the lack of these opportunities as being fairly important in contributing to public sector doctor attrition. The standard deviation ($sd=0.786$) shows a variation in perceptions which is confirmed by examining the minimum and maximum scores recorded. The minimum score (1.50) indicates that some subjects regard the lack of career advancement opportunities as not an important consideration with respect to attrition however the maximum score (5.00) shows that other subjects regard this as an extremely important factor.

Although participants on average seemed to indicate that the paucity of new learning experiences was the least important dimension, as evidenced by the mean score of 3.299, the dimension was still regarded as a fairly important reason upon which doctors might leave the public service. Again, variability in responses was apparent in the range of maximum and minimum scores and the standard deviation ($sd=0.771$) recorded, with some participants considering the lack of new learning experiences as extremely important in contrast to others who did not think this influenced a doctor's decision to leave whatsoever.

It is clear that inadequate remuneration was considered a very important factor ($M=4.359$) in the migration decision with greater uniformity in respondent perceptions ($sd=0.587$). This parameter was eclipsed however by subjects rating poor working conditions as an extremely important attrition factor ($M=4.574$) with only a small degree of variability ($sd=0.381$) noted across practitioners.

An appraisal of the maximum (5.00) and minimum scores (3.29) in this respect revealed that subjects perceived poor working conditions as at least fair to extremely important, thus emphasising the relative unanimity amongst participants when viewed in the context of other variables.

Occupational health and safety hazards in addition to limited opportunities for family members were perceived to be very important contributors to attrition with mean scores of 4.064 and 3.721 noted respectively. These scores were tempered by the wide standard deviation scores across respondents of 0.802 and 0.667 respectively, reflecting a fair degree of variability in this respect.

The maximum and minimum scores observed on these dimensions indicates that certain respondents viewed these factors as either not important or of limited importance whilst other respondents regarded these parameters as extremely important.

Notably, Cronbach's Alpha values for all dimensions ranged between 0.890 and 0.893 indicating a high degree of internal reliability for the parameters under review.

4.4 Inferential Statistics

4.4.1 Intercorrelations

The six 'retention dimensions' referred to above were not only explored to assess their influence on public sector doctor attrition, but were also assessed in terms of their relationships with one another.

In this regard, Table 4.7 summarises the results of the Pearson correlation analysis.

Table 4.7 Intercorrelations among Retention Dimensions

		Career Advancement Opportunities	New Learning Experiences	Remuneration	Working Conditions	OHS Hazards	Family
Career Advancement Opportunities	Pearson Correlation p N						
New Learning Experiences	Pearson Correlation p N	.500** .000 51					
Remuneration	Pearson Correlation p N	.565** .000 51	.337* .015 51				
Working Conditions	Pearson Correlation p N	.272 .053 51	.216 .128 51	.311* .026 51			
OHS Hazards	Pearson Correlation p N	.257 .068 51	.249 .078 51	.208 .144 51	.490** .000 51		
Family	Pearson Correlation p N	.331* .018 51	.423** .002 51	.460** .001 51	.320* .022 51	.339* .015 51	

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

In respect of career advancement opportunities, it is noted that there was significant correlation between the importance of career advancement opportunities and new learning experiences at the 1% level. The same level of significance was achieved when career advancement was correlated with remuneration whilst the relationship of this parameter with opportunities for family members was significant at the 5% level. The lack of career advancement opportunities was not significantly correlated with the need to improve working conditions or occupational health and safety measures respectively.

The need for new learning experiences was significantly correlated with opportunities for family members at the 1% level in addition to being associated with remuneration at the 5% level. This dimension however, was not significantly related to deficiencies in working conditions or occupational health and safety policies and procedures.

On the dimension of remuneration, Table 4.7 also indicates significant associations with working conditions and opportunities for family members at the 5% and 1% levels respectively. However, respondents did not seem to link remuneration to occupational health and safety as evidenced by the fact that no significant correlation was achieved.

Participants associated the importance of improved working conditions with occupational health and safety improvements in addition to opportunities for family members. This is given by the significant correlations seen at the 1% level for the former and at the 5% level for the latter dimension. Finally, participants seemed to couple the need to improve workplace health and safety with opportunities for family members, as evidenced by the significant correlation ($p=0.015$) in this regard.

4.4.2 Hypothesis Testing

The following research proposition is a potentially important factor that is amenable to testing:

“ There is a significant difference in the perception of the importance of the retention dimensions (Career Advancement Opportunities; New Learning Experiences; Remuneration; Working Conditions; Occupational Health and Safety Hazards; Opportunities for Family Members) among the biographic variables (Gender; Race; Age; Uninterrupted Service of Employee in Public Sector; Exposure to Private Sector/Overseas Practice; Employment Rank; Total Duration of Public Service; Intention to Leave the Public Service). ”

In this respect, both parametric and non-parametric statistical methods were employed to assess if these differences in retention factor dimensions were present, given the known variations in biographical information amongst survey participants; this was explored below.

4.4.2.1 Influence of Demographic Variables on Retention Dimensions

The demographic variables alluded to above include gender, race and age and the influence of each is assessed respectively.

The t-test was utilized to gauge differences that each sex attributed to the relative importance of retention dimensions. This test is used to assess whether the means of two groups are statistically different from each other (Cooper and Schindler, 2003). The t-value is positive if the first mean is larger than the second and negative if it is smaller. The results are presented in Table 4.8.

Table 4.8 : Influence of Gender on Retention Dimensions

	t-test for Equality of Means	
	t	P
Career Advancement Opportunities	0.765	0.448
New Learning Experiences	-0.335	0.739
Remuneration	1.584	0.120
Working Conditions	0.572	0.570
OHS Hazards	-0.659	0.513
Family	-0.050	0.960

Values obtained in inferential statistical analysis (such as the t-test) are tested for significance to assess whether the difference between groups is not likely to have been a chance finding (Cooper and Schindler, 2003). To test significance, a risk or 'alpha level' is typically set at 0.05 (implying that five times out of a hundred, one would find a statistically significant difference between the means even if there was none i.e. by "chance"). P values, or significance levels, measure the strength of the evidence against the null hypothesis; the smaller the p value, the stronger the evidence against the null hypothesis (Sterne and Smith, 2001).

The results shown in Table 4.8 confirm no significant differences between males and females (as evidenced by p values that are all greater than 0.05) on any retention dimension indicating no significant variation in importance that the different sexes attributed to any of the dimensions above.

Similarly, the age variable also played no role in influencing the perceived importance of retention factors. This is evidenced in the results of the Kruskal-Wallis test shown in Table 4.9 that show no significant differences in the importance of retention factors amongst the different age groups.

Table 4.9 : Influence of Age on Retention Dimensions

	Chi-Square	P
Career Advancement Opportunities	1.319	0.725
New Learning Experiences	1.295	0.730
Remuneration	1.584	0.120
Working Conditions	0.572	0.570
OHS Hazards	-0.659	0.513
Family	-0.050	0.960

The Kruskal-Wallis test was also employed to determine any variation in retention dimensions across different race groups. The results, illustrated in Table 4.10, again indicate no significant difference in retention factors, regardless of racial variation in respondents.

Table 4.10 : Influence of Race on Retention Dimensions

	Chi-Square	P
Career Advancement Opportunities	3.020	0.389
New Learning Experiences	6.908	0.075
Remuneration	3.844	0.279
Working Conditions	2.814	0.421
OHS Hazards	1.766	0.622
Family	2.158	0.540

In summary, survey respondents appeared to exhibit relative uniformity in allocating importance to the six retention factors across demographic parameters such as age, gender and race.

4.4.2.2 Influence of Employment History on Retention Dimensions

The variables considered representative of the employment history of respondents included the total duration of public sector practice, whether this service was uninterrupted or not and finally whether these medical practitioners had been exposed to the private sector or had worked overseas for any time period.

The Kruskal Wallis test was conducted to determine if duration of public sector employment affected doctors' perceptions of retention factors and these results are presented in Table 4.11.

**Table 4.11 : Contribution of Duration of Public Sector Practice
to variation in Retention Dimensions**

	Chi-Square	P
Career Advancement Opportunities	1.027	0.906
New Learning Experiences	0.629	0.960
Remuneration	4.137	0.388
Working Conditions	2.836	0.586
OHS Hazards	10.865	0.028*
Family	4.369	0.358

The results shown in Table 4.11 indicate that duration of public sector practice significantly influenced their perceptions of the importance of occupational health and safety hazards in contributing to doctor attrition ($p=0.028$). Doctors serving between two and five years in the public sector appeared to attribute great importance to occupational health and safety hazards as a potential attrition factor (Mean=4.400), followed by junior doctors who had been employed for less than a year (Mean=4.125), and then doctors employed beyond five years. By contrast, public sector practitioners employed for between one and two years felt that this dimension was only a fairly important consideration (Mean= 3.25) in influencing a doctor's decision to migrate from the state service.

No other retention elements were significantly influenced by the duration of public service amongst respondents.

Another consideration related to employment history focused upon whether respondents' duration of public service was interrupted or not and the Mann-Whitney Test assessed the impact of this parameter upon the retention dimensions.

Table 4.12 : Impact of Uninterrupted Service on Retention Dimensions

	Z	p
Career Advancement Opportunities	-1.815	0.070
New Learning Experiences	-2.168	0.030*
Remuneration	-1.460	0.144
Working Conditions	-1.060	0.289
OHS Hazards	-0.887	0.375
Family	-0.334	0.738

Standard scores or Z scores were calculated and these scores are listed in Table 4.12. The Z score for an item, indicates how far and in what direction, that item deviates from its distribution's mean, expressed in units of its distribution's standard deviation (Cooper and Schindler, 2003).

In this regard, Table 4.12 illustrates a significant difference in perceptions between doctors who had served in the public service since graduation and those who had not, in respect of limited new learning experiences being seen as a factor for doctor migration ($p=0.030$). Medical practitioners with uninterrupted service felt that limited learning opportunities was a significantly greater contributor to public sector attrition (Mean=3.4268) when compared to doctors who had returned to the state service (Mean=2.7750). These perceptual differences were not seen across other retention dimensions.

The Mann-Whitney test also evaluated the impact of a related employment history variable on these retention elements; this being exposure of respondents to private or overseas practice.

Interestingly enough, the results of this test indicate no significant difference in the perception of the retention factors among those who had been exposed to 'non-state practice' versus those practitioner that were not (see Table 4.13).

**Table 4.13 Exposure to Non-State Practice in
Influencing Perceptions of Retention Dimensions**

	Z	p
Career Advancement Opportunities	-1.468	0.142
New Learning Experiences	-0.448	0.654
Remuneration	-0.438	0.662
Working Conditions	-0.890	0.373
OHS Hazards	-1.155	0.248
Family	-1.607	0.108

In summary, a review of the employment history variables thus concludes that whilst exposure to non-state practice did not influence retention dimensions, there were significant perceptual differences observed amongst longer serving public sector practitioners who felt more strongly about the role of occupational health and safety in

contributing to doctor attrition. Significant differences were also observed amongst doctors who were employed in the state service since graduation versus those who had returned from other employment, where the former felt that limited learning experiences within the public service was a significantly greater impediment to doctor retention when compared to those with non-continuous public service experience.

4.4.2.3 Influence of Employment Rank on Retention Dimensions

Kruskal Wallis testing to determine the contribution of practitioners' rank in accounting for variation in retention dimensions yielded the following results, shown in Table 4.14.

Table 4.14 : Influence of Rank on Retention Dimensions

	Chi-Square	p
Career Advancement Opportunities	5.794	0.447
New Learning Experiences	4.188	0.651
Remuneration	4.469	0.613
Working Conditions	4.661	0.588
OHS Hazards	16.172	0.013*
Family	10.420	0.108

It is apparent that the position of medical practitioners within the public sector influenced their perceptions of workplace health and safety as a contributor to doctor migration ($p=0.013$). The Heads of Department surveyed felt that occupational safety was an extremely important consideration for retention of medical practitioners (Mean=4.75) followed by Registrars and Interns who felt this parameter was very important (Mean=4.3519 and 4.2778 respectively). Community Service Officers, on the other hand, felt that this dimension was only of fair importance in this regard (Mean=3.3125).

These results reinforce the previous conclusions made in respect of duration of service as an influencer of retention dimensions, with very similar results observed in this regard.

4.4.2.4 Influence of Practitioners' Intention to Leave on Retention Dimensions

Earlier results observed in Table 4.5 confirmed variability amongst practitioners in expressing the duration of time they would spend before leaving public health sector practice. Kruskal Wallis testing was undertaken to assess whether this heterogeneity

translated into perceived differences in retention dimensions amongst these different groups, with results presented in Table 4.15.

Table 4.15: Intention to Leave as an Influencer of Retention Dimensions

	Chi-Square	p
Career Advancement Opportunities	2.389	0.793
New Learning Experiences	7.770	0.169
Remuneration	2.477	0.780
Working Conditions	2.414	0.789
OHS Hazards	4.019	0.547
Family	2.422	0.788

The results shown indicate that while practitioners expressed widely different views as to when they would leave the public service, this decision did not significantly influence the perceptions of the relative importance of any of the retention factors specified above.

4.5 Validity and Reliability Testing

As alluded to in Chapter 3, formal validity and reliability tested was conducted as the results are presented below.

4.5.1 Validity Testing

Factor analysis was undertaken to assess the structure of retention dimensions. However, prior to this, the Kaiser – Meyer – Olkin (KMO) Measure of Sampling Adequacy in addition to Bartlett's Test of Sphericity were undertaken to assess whether the sample was adequate for factor analysis. The results presented in Table 4.16 were significant and therefore confirmed sample adequacy.

Table 4.16 KMO and Bartlett's Test

KMO Measure of Sample Adequacy		0.616
Bartlett's Test of Sphericity	Approx Chi Square	1021.206
	Sig.	0.000*

With respect to the factor analysis shown in Table 4.17, as a first step, Principal Component Analysis was undertaken to extract relevant factors and six dimensions were yielded in this regard.

In addition, a Varimax Rotation was conducted which confirmed the factor structure.

Table 4.17 Factor Analysis – Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Remun1	0.828					
Remun4	0.779					
Remun5	0.765					
Remun2	0.724					
Remun3	0.547					
OHS2		0.914				
OHS1		0.899				
OHS		0.810				
OHS3		0.754				
Cond1			0.795			
Cond2			0.759			
Conditions			0.700			
Cond4			0.654			
Cond5			0.637			
Family				0.877		
Fam1				0.767		
Fam2				0.725		
Fam3				0.478		
Learn1					0.828	
Learn3					0.741	
Learn2					0.570	
Career opp						0.757
Car opp2						0.634
Car opp1						0.479

4.5.2 Reliability Testing

A Cronbach's Alpha test was performed to assess reliability of the data.

Table 4.18 Cronbach's Alpha Measure of Reliability

Cronbach's Alpha	0.895
Dimensions	Alpha items
Career opp	0.890
Learning	0.083
Remun	0.891
Conditions	0.893
OHS	0.893
Family	0.891

Cronbach's Alpha is a measure of how well each individual item in a scale correlates with the sum of the remaining items and measures consistency among individual items in a scale (Cooper and Schindler, 2003). Streiner and Norman (1989) state that the Cronbach's Alpha score should be greater than 0.7 but not much higher than 0.9.

The results of the reliability assessment are presented in Table 4.18 and confirm a high degree of reliability for the survey and the respective dimensions in this regard.

4.6 Conclusion

The results presented in this chapter have presented the demographic and professional profile of surveyed participants in terms of frequency tabulations in addition to their highlighting their employment background and intention to leave the public service.

Descriptive statistical analysis also identified the relative importance of each retention factor that could be utilized in encouraging doctors to remain in the state sector. Intercorrelation analysis also allowed for the 'clustering' of retention dimensions based on their relationships with each other. In addition, a variety of parametric and non-parametric tests were employed to distinguish biographic variables that contributed to variations in importance of the respective retention dimensions.

Finally, validity and reliability testing of the research instrument confirmed the sample adequacy and structure of the factors in the survey in addition to the high degree in reliability that the survey offered.

Chapter 5

Discussion of Results

5.1 Introduction

Whilst the previous chapter has presented the results of the fieldwork undertaken, the following section of this discourse serves to build upon the previous chapter with the intention of discussing the findings that were presented.

Implicit in this review, is the recognition that the results explained are assessed within the context of literature already reviewed, both in Chapter 2 and in other relevant readings. Important similarities and differences in this regard are explored in greater depth as a means to developing substantial recommendations thereafter.

5.2 Intention to Leave

The intention of medical practitioners to leave the public service was illustrated in Table 4.5 and indicated that a significant percentage of respondents would leave the public sector within five years. In this regard, the 55% of respondents observed in this study is not unexpected and is comparable to the 43% attrition rate observed amongst junior doctors by Horner (2002) and the 47% of public sector practitioners that intended to leave within the same time period, noted by Thulare (2003).

The remaining 45% of respondents who were content to stay in the public service found in the current study, falls between the 53% that Thulare (2003) reports, and the 38% observed by Deane (2003).

Interestingly, it is also noted that, when respondents interviewed were stratified by rank, distinct differences in doctors' willingness to remain in the state sector were observed. Table 4.2 highlights that while 78 % of senior practitioners would continue public practise beyond five years, this number fell to just 20% for junior doctors. This is consistent with findings from other studies where this phenomenon was attributed, at least

in part, to financial responsibilities of young professionals that could not adequately be covered by public sector remuneration packages (Thulare, 2003).

Another intriguing result observed in this regard, was the fact that registrars (in training to become fully fledged specialists) displayed the greatest tendency to remain the public service for between two and five years. This finding cannot be corroborated by other research in this area which has either not been undertaken or is of too small a sample size to make any conclusions. Possible explanations in this regard are also potentially contradictory - one reason could be the fact that doctors in this subgroup perhaps feel some sense of loyalty to the state for the specialist training they are receiving and consequently they are happy to provide their services for a defined time period before pursuing other career options. More ominous however is the likelihood that these practitioners could only be waiting for the two to five years of mandatory training to be complete upon which these doctors plan then to exit the public service thereafter.

The results show that the majority of respondents who intended to migrate from the public service, resolved to enter private practice and given that Thulare (2003) observes that around 70 % of doctors currently service the private sector, the findings of the current study are not surprising. The present study also found that 25% of doctors would go abroad in search of opportunities (Figure 4.3). Reid (2000) similarly echoes these findings showing that equally high numbers of young medical professionals intended pursuing their careers overseas.

5.3 Retention Dimensions

5.3.1 Descriptive Measures

The six dimensions identified by doctors as important to retaining public sector medical practitioners were collated and allowed rank ordering to assess the preliminary importance of dimensions based upon mean scores obtained for respective factors.

The results of these average scores shown in Table 4.6 indicate that public sector doctors interviewed regarded working conditions as the most vital issue that needed to be addressed in order to retain key personnel. This was followed in importance by

remuneration and occupational health and safety issues respectively; with opportunities for family members and career advancement regarded as considerations thereafter. New learning experiences was considered the least important dimension under review amongst respondents.

5.3.1.1 Working Conditions

As alluded to above, improved working conditions was cited as an extremely important retention factor with a mean score of 4.574 out of 5. This dimension included a broad range of issues and, in this regard, respondents felt that revitalisation of hospital equipment and surroundings in addition to implementation of systems to manage excessive patient loads, were the most pressing needs. Other imperatives such as overtime structures, junior doctor support and more consultative, flexible hospital management were also deemed to be vital in addressing this dimension effectively.

The importance of this retention factor above other elements is fairly consistent with findings from other studies. Stilwell et al. (2004) note that continuing disparities in working conditions and pay between richer and poorer countries offer a great deal of ‘pull’ towards the former. Saravia and Miranda (2004) similarly finds that, inter alia, poor compensation and inadequate working conditions tended to promote health worker migration.

Whilst a survey of six developing countries found that the desire of physicians to work in better health facilities came second only to the desire for increased income (Astor, Akhtar, Matallana, Muthaswamy, Olowu, Tallo and Lie, 2005), Thulare’s (2003) review finds that poor resource allocation leading to inequitable distribution of equipment, staff and facilities was a key retention issue. Other literature also notes that generous remuneration will not keep employees in their jobs should the work environment be unpleasant (Branch, 1998; Barney, 2002).

5.3.1.2. Remuneration

Improved remuneration was cited as the second most important factor with a mean score of 4.359. Practitioners regarded this factor as a very important issue that needed to be

addressed and included interventions such as improved take-home pay and benefits, tax breaks and financial support schemes for public sector employed doctors.

In this regard, there is ample literature available to corroborate this observation. Astor et al., (2005) found that over 90% of physicians sampled rated increased earnings as a highly significant motivator for migration. Diallo (2004) reinforces these findings by noting that the main factors influencing migration are salaries and benefits, working environment and quality of life for families. In Samoa, only 60% of graduates were locals and 68 % of these Samoans were either newly qualified or of retirement age and Brown and Connell (2004) argue that this is a consequence of uncompetitive remuneration.

5.3.1.3 Occupational Health and Safety

An important component to occupational health and safety relates to the HIV/AIDS epidemic and its sequelae. Parkhurst and Lush (2004) present their review of two developing countries in this regard, South Africa and Uganda. The success of the Ugandan programme is manifest in a substantially lower antenatal HIV prevalence rate whilst the South African urban prevalence rate is an alarming 24%.

Not only is the threat of HIV ‘needlestick’ injuries a significant ‘push’ factor for doctors (Thulare, 2003) in view of the potential transmission risks, it also exacerbates pre-existing staffing problems as health workers die, contributing to increased workloads and low morale (Bach, 2003). In view of the above (and the ‘spillover’ effect into other dimensions, it is not surprising that respondents of the current survey rated this dimension as very important, in view of the risk of transmissible disease, whether via needlestick or otherwise.

5.3.1.4 Family Opportunities

Respondents ranked family opportunities as a very important factor in retaining doctors, with this dimension exhibiting a mean score of 3.721, behind working conditions, remuneration and occupational health and safety. Survey respondents felt that rural and other support, on-site family centres (such as crèches) and employment assistance for spouses were respective considerations in this respect.

Work-life balance has become an increasingly important consideration for employees, and family interaction with the community is a critical hurdle for doctors servicing rural areas (Walpert, 2001). Astor et al (2005) also underlines the importance of family opportunities in that 78% of doctors surveyed felt that better prospects for their children would influence their decision to migrate. Further, Liki (2001) and Lee (2003) show that social variables such as family and kinship ties are central to the migration decision. There is thus considerable literature to support the findings of the current research.

5.3.1.5 Career Advancement and Learning Opportunities

Although these dimensions scored lowest in respect of this study, the mean scores for these parameters were 3.461 and 3.299 indicating that respondents still regarded these retention factors as fairly important.

For highly skilled workers, continuous professional development is an integral component of individual career planning and progression (Bach, 2003). Eastwood et al., (2005) find that the lack of opportunities for postgraduate training in addition to the absence of established posts and career opportunities is a push factor for health professionals, resulting in attrition from sub-Saharan Africa to the United Kingdom where good prospects are available. Compounding this problem is the fact that medical specialists, who represent key vehicles for learning, are often primarily involved in administrative functions and access to these special skills are severely restricted (Huddart and Picazo, 2003). In view of these findings, the remarks of survey respondents, who perceive this to be a key retention issue, are validated.

5.3.2 Intercorrelations

After rank ordering of dimensions by mean scores was completed, relationships between these retention factors were explored by way of a Pearson's correlation analysis with results presented earlier in Section 4.4.1.

These results indicated that career advancement, need for new learning and remuneration tended to be 'clustered together'. The relationship between career advancement and

learning experiences is intuitively clear in that career advancement within the public sector context usually involves specialising in a particular discipline and involves a great deal of learning in order to achieve this goal; this goal also brings with it increased income. As such, the perceived importance of these retention dimensions might necessarily tend to overlap.

By the same token, working conditions and occupational safety were most significantly correlated with one another. Again, the relationship between these dimensions is seemingly apparent. Gibson (2004) summarizes the poor working conditions as evidenced by unmanageable patient loads, understaffing and poor equipment as prevalent at many South African hospitals and Bradshaw and Steyn (2002) note that these circumstances mean that often, chronically ill patients end up competing with patients that have acute, potentially curable conditions. The resulting overcrowding into already under-resourced institutions means that occupational health and safety will be inevitably be compromised.

All dimensions were, to a greater or lesser extent correlated with opportunities for family members reinforcing existing literature conclusions indicating that migration is associated with quality of life issues including employment contexts (such as limited career opportunities), remuneration and social factors that include family opportunities (Macpherson, 1999). Decisions regarding career opportunities and remuneration have a are often made within the context of social factors such as family; it is not unexpected that Astor et al., (2005) found that the majority of physicians considered family opportunities for their children, a highly significant factor in the migration decision and Brown and Connell (2004) note that next of kin had a critical influence on migration.

5.3.3 Biographical Influences

Upon confirming the validity of retention factors and notable correlations in this regard, these dimensions were then tested to assess if biographic variations across participants influenced their perceived importance of these dimensions.

The results of this analysis are presented in Section 4.4.2 and an assessment of these findings is discussed below; however, it is difficult to corroborate these findings. Whilst there is evidence that highlights the impact of biographical data on doctors' overall

intention to leave, there is no literature that assesses the impact of these variables on the significance of individual retention factors.

Another difficulty was the fact that there was no significant variability in retention dimensions found amongst participants who expressed different views as to when they would leave the public service (Table 4.15); in other words, doctors who intended to leave within six months had similar perceptions of what was important in order to retain public sector practitioners.

Nevertheless, discussion of these biographical influences is an important consideration.

5.3.3.1 Demographic Variables

The results of the t-test and Kruskal-Wallis tests shown in Tables 4.8 to 4.10 indicated that gender, age and race did not have any effect on doctors' perceptions of the relative importance of retention factors. However, it is perhaps worth highlighting some notable trends in this regard.

Regarding the biographical variable of gender, although the results were not significantly different, there was a trend towards males regarding career advancement, remuneration as more important, whilst females tended to attach greater credence to occupational health and safety, as evidenced by the marginally higher mean scores shown in Table 5.1.

Table 5.1: Mean Retention Dimension Scores by Gender

Group Statistics				
	Gender	N	Mean	Std. Deviation
Career advancement Opportunities	Male	29	3.5345	.76975
	Female	22	3.3636	.81550
New learning experiences	Male	29	3.2672	.35024
	Female	22	3.3409	.67058
Remuneration	Male	29	4.4713	.58089
	Female	22	4.2121	.57547
Working Conditions	Male	29	4.6010	.35690
	Female	22	4.5390	.41575
OHS Hazards	Male	29	3.9914	.97395
	Female	22	4.1591	.79262
Family	Male	29	3.7155	.86789
	Female	22	3.7273	.75041

Also of note were subtleties found with respect to race. Table 5.2 explores these tendencies, however it is acknowledged that differences did not approach statistical significance. Black respondents were more inclined to regard career advancement and new learning opportunities as important versus White doctors; in addition Black and Indian / Asian practitioners also felt that remuneration was more important as a retention strategy when compared to their Caucasian counterparts. This perhaps reflects the fact that these groups were historically disadvantaged and is also validated by Thulare's (2003) findings that black doctors were likely to leave to public sector in view of non-competitive salaries. White and Indian / Asian doctors were most likely to cite working conditions as their most important consideration in contrast to Black practitioners who saw remuneration as the key priority.

Table 5.2 Mean Retention Dimension Scores by Race

		Descriptives		
		N	Mean	Std. Deviation
Career advancement Opportunities	Black	7	3.8214	.70289
	White	13	3.4231	.86232
	Asian	29	3.4310	.78745
	Other	2	2.8750	.17678
	Total	51	3.4608	.78640
New learning experiences	Black	7	3.7857	.72785
	White	13	3.2115	.96202
	Asian	29	3.2500	.68139
	Other	2	2.8750	.53033
	Total	51	3.2990	.77139
Remuneration	Black	7	4.6429	.26227
	White	13	4.1282	.69440
	Asian	29	4.4023	.58844
	Other	2	4.2500	.11785
	Total	51	4.3595	.58725
Working Conditions	Black	7	4.4286	.55940
	White	13	4.6703	.37062
	Asian	29	4.5764	.34039
	Other	2	4.4286	.40406
	Total	51	4.5742	.38064
OHS Hazards	Black	7	3.9286	.99702
	White	13	3.8462	1.06819
	Asian	29	4.1466	.81426
	Other	2	4.7500	.00000
	Total	51	4.0637	.89560
Family	Black	7	3.9286	.76830
	White	13	3.5962	.86325
	Asian	29	3.7500	.84251
	Other	2	3.3750	.17678
	Total	51	3.7206	.81647

5.3.3.2 Employment Variables

The Kruskal Wallis and Mann Whitney tests were employed to assess variation in retention dimensions across practitioners of different employment rank and work backgrounds; these results were shown in Tables 4.11 to 4.14.

The first consideration in this regard relates to the dimension of occupational health and safety; as Table 4.11 shows that there were significant differences in the perception of this dimension based on the length of time doctors were employed in the public service. However, as alluded to in Section 4.4.2.2, interpretation is not readily made as a distinct trend is not observed.

As duration of service and employment rank are necessarily related biographic variables, and both significantly influence perceptions of the importance of occupational health and safety as a retention factor, when interpreted together the significance becomes clear.

Table 5.3 Mean Retention Dimension Scores by Rank

Descriptives				
		N	Mean	Std. Deviation
Career advancement Opportunities	Intern	9	3.5000	.58630
	Community Service	4	3.2500	.67700
	Medical Officer	2	3.7500	.00000
	Registrar	27	3.4537	.84363
	Specialist	7	3.4643	.88476
	Head of Dept	1	4.7500	.
	Other	1	2.2500	.
	Total	51	3.4608	.78640
New learning experiences	Intern	9	3.3889	.65085
	Community Service	4	3.2500	.86603
	Medical Officer	2	3.2500	.35355
	Registrar	27	3.3426	.82377
	Specialist	7	3.3214	.34503
	Head of Dept	1	3.7500	.
	Other	1	1.0000	.
	Total	51	3.2990	.77139
Remuneration	Intern	9	4.3519	.35789
	Community Service	4	4.1250	.45896
	Medical Officer	2	4.4167	.82496
	Registrar	27	4.4198	.63443
	Specialist	7	4.2381	.78089
	Head of Dept	1	4.8333	.
	Other	1	4.0000	.
	Total	51	4.3595	.58725
Working Conditions	Intern	9	4.7619	.18898
	Community Service	4	4.5357	.37571
	Medical Officer	2	4.5714	.40406
	Registrar	27	4.5873	.35733
	Specialist	7	4.3673	.58819
	Head of Dept	1	4.7143	.
	Other	1	4.0000	.
	Total	51	4.5742	.38064
OHS Hazards	Intern	9	4.2778	.64280
	Community Service	4	3.3125	.89849
	Medical Officer	2	4.1250	.53033
	Registrar	27	4.3519	.77292
	Specialist	7	3.4286	.40089
	Head of Dept	1	4.7500	.
	Other	1	1.0000	.
	Total	51	4.0637	.89560
Family	Intern	9	3.5556	.70465
	Community Service	4	3.6875	.31458
	Medical Officer	2	4.7500	.00000
	Registrar	27	3.8056	.85859
	Specialist	7	3.2500	.77728
	Head of Dept	1	5.0000	.
	Other	1	3.0000	.
	Total	51	3.7206	.81647

Table 5.3 shows that more senior, longer serving practitioners that are entrenched within the public sector (such as Heads of Department and Registrars) felt that this dimension was significantly more important than that perceived by junior practitioners (such as Community Service Officers and Interns).

A potential reason postulated for this perceived importance with more senior practitioners, although not validated by other literature, might be on the basis of ‘cumulative duration of exposure’, as the longer they remain in the public service, the greater potential exposure to infectious disease and risk of needlestick injuries over time.

Another significant difference in retention dimensions (illustrated in Table 4.12) perceived by the sample relates to the observation that doctors who had been continuously employed in the public sector since graduation perceived learning experiences to be significantly more important than doctors who were at one or other time, employed elsewhere prior to rejoining the state service. In this respect, the mean score of 3.2468 for these ‘continuously employed doctors’ is significantly higher than the average score of 2.775 for those who were not (Table 5.4).

Similar findings (Table 5.4) were noted for the related dimension of career advancement opportunities in addition to remuneration and occupational health and safety considerations, although these latter dimensions did not achieve statistical significance.

This ‘clustering’ of dimensions is hardly surprising considering the results of the Pearson’s correlational analysis in Section 5.3.2 and in view of Macpherson’s (1999) observation that migration occurs primarily in relation to quality of life issues that include poor working conditions, limited career development, income and social factors.

Table 5.4: Mean Retention Dimension Scores by Continuous State Service

Group Statistics				
	Uninterrupted service	N	Mean	Std. Deviation
Career advancement Opportunities	Yes	41	3.5732	.74424
	No	10	3.0000	.82496
New learning experiences	Yes	41	3.4268	.68749
	No	10	2.7750	.90668
Remuneration	Yes	41	4.4187	.56657
	No	10	4.1167	.63853
Working Conditions	Yes	41	4.5958	.38849
	No	10	4.4857	.35122
OHS Hazards	Yes	41	4.1646	.74500
	No	10	3.6500	1.32393
Family	Yes	41	3.7256	.85295
	No	10	3.7000	.68516

5.4 Conclusion

The interpretation of these results essentially highlights the fact that a significant proportion of medical practitioners intended to leave the public sector within a five year period, with a distinct trend indicating that junior doctors had the greater propensity to migrate. The bulk of these doctors would seek employment in the private sector or abroad respectively.

These practitioners indicated that addressing poor working conditions was paramount in addressing the attrition of public sector doctors and this was followed by remuneration and occupational health and safety issues. Family, career development and new learning experiences were also perceived by respondents as at least fairly important considerations. Interestingly, these latter dimensions together with remuneration were closely correlated as were factors of working conditions and workplace safety. The overriding importance of family meant that this dimension was significantly correlated across all other dimensions. Also, it was shown that biographical variables did influence the perceived importance of certain retention dimensions.

The results obtained were shown to be robust and were broadly consistent with findings from a variety of other studies and underlines the need for a comprehensive retention plan to be put in to place in order to address this research problem.

Chapter 6

Recommendations and Conclusions

6.1 Introduction

Strategy is concerned with an integrated set of activities intended to give an organisation a competitive advantage and add value. It can involve an appraisal of the external and internal environments in order to establish strategic direction with subsequent implementation of the relevant tactics to achieve this goal. Organisational structure is a necessary consideration as structure and relevant systems support the strategy and evolve accordingly; as such organisational structure is a key determinant of competitive advantage. Finally, evaluation and optimisation of the plan by strategic thinkers within the organisation is a critical step in the strategic planning process in order to ensure that execution and evolution of the strategy is effectively completed.

Knowledge management within learning organisations such as hospitals is vital to competitive success and strategy, structure and resources need to be positioned to best leverage the assets that knowledge workers possess. In this regard, the approach of the South African Department of Health to strategic development and policy is sound whilst the implementation of strategic initiatives falls short of optimal based on parameters that include strategic process, knowledge management, organisational structure and resource allocation.

The South African public health sector is a knowledge based organisation and is subject to migratory factors; indeed, the health ministry recognises that the migration of medical practitioners from both from rural to urban areas in addition to attrition from the public to the private sector or to the international arena, is a challenge to service delivery. The continued existence of a variety of push factors within the public sector together with observation that strong pull factors are present in other working environments underlines the fact that strategic change is required in order to retain knowledge workers and thereby deliver upon the strategic initiatives that this organisation strives to achieve.

6.2 Summary of Major Findings

This study attempted to quantify the extent to which public sector doctors in metropolitan Gauteng intended to migrate, assess the factors responsible for this and their relative weights as a means to align future strategic interventions so that scarce resources are effectively allocated.

The findings of this research emphasise the gravity of the attrition dilemma with over half of doctors surveyed overall intending to leave the public sector in under five years. The South African private sector seemed to entice the majority of these public service practitioners most with migration abroad being cited as the second most attractive alternative of choice for doctors. Perhaps even more disturbing though is the fact junior doctors exhibited a far greater propensity to migrate as compared to their more senior counterparts, potentially creating succession planning issues with key skills and knowledge being lost permanently from the public service upon the retirement of these senior professionals.

A final concern relates to the intention of a large number of registrars to remain in the state sector for between two and five years only, as this could potentially signify loss of these highly trained personnel upon, or shortly after, their graduation as specialists in their respective fields. In view of the above findings, it is argued that urgent attention is directed to addressing attrition factors in order to reverse the above trends.

This study demonstrated that the relative importance of attrition factors was independent of age, gender and race although rank of practitioners (and the related variable, duration of service) did influence their perceptions of workplace safety importance. Further, learning experiences were considered more important to doctors who were continuously employed in the public service versus those who were not. Although these latter observations should be kept in mind when proposing a retention model, it is encouraging to note that the high degree of homogeneity in responses across the cohort means that broad, generic interventions to address attrition factors could potentially yield high returns in a short space of time versus tailored approaches to different subpopulations of public sector practitioners which are more difficult and also more time consuming to implement.

An important consideration was the fact that all retention dimensions explored in the study were rated at least fairly important, indicating that a retention model would require at least some resource allocation towards all dimensions identified, albeit to a greater or lesser degree for individual factors. Improvement in working conditions was regarded as extremely important followed by better remuneration and occupational safety processes respectively which were regarded as very important to doctor retention. This was followed by opportunities for family members, career advancement and learning opportunities, the latter two were regarded as of fair importance to doctors in the context of practitioner retention.

Finally, it is significant that statistical analysis revealed that the research instrument was found to have a high degree of internal reliability and factor analysis confirmed that the structure of the retention dimensions thus validating the findings of this research.

6.3 Recommendations

This research has highlighted a number of areas that need to be addressed as a means to building an effective model for retention of public sector doctors. It must be noted that migration cannot be stopped given the globalisation of labour markets; rather co-ordinated, comprehensive retention strategies represent the most effective way of managing migration in order to build 'critical mass' with the South African public health sector.

6.3.1 Working Conditions and Occupational Health and Safety

This research has shown that working conditions are regarded as the most important factor in retaining public sector doctors, and as such is logically the factor that the greatest time and resources should potentially be directed at. Whilst occupational health and safety was regarded as the third most important factor, the strong correlation between this dimension and working conditions noted means that cleverly crafted strategic intervention can simultaneously address both factors together.

Surveyed doctors indicated that top priorities in this regard included the need to revitalise equipment and facilities and ensure systems were put in place to manage patient load. The

World Health Report (2000) finds that the absence of functioning facilities, equipment and medicines will mean poor service delivery, regardless of high levels of knowledge, skills and staff levels. This means that greater impetus needs to be placed behind the hospital revitalisation programme and optimising the way in which services are rendered via the district health system discussed in Chapter 2; the failure to effectively implement these initiatives noted by Andrews and Pillay (2005) and Sait (2001) reinforces the need for a monitoring system to be put into place to closely track the progress of such schemes where deviations can be corrected timeously.

As part of the hospital revitalisation process, must come an epidemiological assessment of disease burden so that adequate capacity is built, both in respect of provision of hospital beds and redirection of doctors to man these beds. Dedicated wards to manage highly transmissible infectious diseases means less general exposure to conditions and a lower propensity for practitioners to sustain needlestick injuries due to accidents resulting from being overworked. This, together with introduction of dedicated infection control departments at hospitals, not only addresses issues related to working conditions but also ensures that workplace safety issues are addressed.

Up-skilling of hospital management is also necessary so that these managers are better placed to conduct needs assessments and analyse information received. Williamson and Stoops (2001) note that such training has been previously very positively received however managers felt that these programmes were few and far between. Training on importance of job satisfaction surveys, formalised assessments of monthly patient loads and on how to implement proper internal controls can facilitate better provision of scarce resources in response to changing circumstances at institutions. Thulare (2003) also notes the importance of employee satisfaction surveys as a means to understand employee expectations and also to evaluate the effectiveness of retention strategies that are implemented.

Such training also allows managers to better support junior doctors (such as community service doctors), a factor recognised in this study as contributing to attrition. The researcher contends that the introduction of community service is a reactive strategy; it does not address the underlying retention issue and is analogous to plugging a washbasin in order to retain water from a leaky tap, sooner or later the basin overflows yet the tap is

never fixed. However, as this initiative is unlikely to disappear, greater flexibility and understanding from management in approaching these often poorly supervised junior practitioners is an essential first step given that this study has shown that junior practitioners exhibited the greatest intention to leave.

Whilst the International Organization for Migration (2004) listed the importance of fixed term rotation schemes in retaining health workers, this was found to be the least important consideration in this study. The cost and administrative burden associated with such a scheme relegates this alternative to a longer term consideration.

6.3.2 Remuneration

Whilst improved remuneration was cited in this research as a very important retention factor, it is not surprising that this found to be second in importance working conditions. The World Health Organization (2000) finds that poor working conditions in addition to inadequate pay and benefits to be among the most pressing issues for healthcare workers in less developed countries.

Even though respondents felt that after an improved after-tax salary was the most important intervention, and such a scheme was implemented in Uganda where pay was increased 900% over a decade (World Health Report, 2000), it is argued that a simple increase in remuneration is not the answer to this problem and a more all-encompassing approach should be considered. The International Organization for Migration (2004) note that pure salary increases are unlikely to be anything but a very temporary solution and that broader incentive packages that address living conditions should be considered.

In this regard, increased benefits such as housing allowances and improved state subsidies of medical and pension contributions as well as more creative techniques to improve take-home pay such lowered tax thresholds for public sector doctors are contended to be more appropriate interventions; interestingly, these were favourably regarded by survey respondents in the current study. In addition, it is postulated that the guaranteed 13th cheque received by public sector medical professionals be replaced by a more substantial performance incentive, based on measurable, objective criteria to link increased pay to higher performance.

Financial support schemes such as preferential loans were also regarded as very important to surveyed doctors. This is not surprising in view of the costs incurred by trainee doctors at medical schools and is a recommended intervention in view of the success of WHO bursaries given to Lesotho recipients, where 30% returned to their homeland to practise.

The issue of limited private practice is a complex one for public sector practitioners. Whilst respondents rated this the least important intervention on the remuneration dimension, international case studies suggest that the experience in various regions has been mixed. Whilst Bahrain has successfully implemented such a system to neutralise the brain drain, this system has had unintended consequences in both Ghana and Nepal where professionals were induced to commence full-time private practice (World Health Report, 2000). In addition, previous attempts to rollout this initiative in South Africa were associated with significant problems that have been discussed in Chapter 2.

This intervention represents an important way in which public sector practitioners can supplement their income by seeing private sector patients but in view of the above, implementation of such a programme needs to be conducted carefully in order for the strategic goals of the South African health ministry to be achieved.

6.3.3 Career Advancement, New Learning and Family Opportunities

In view of the significant correlations amongst the above dimensions presented in the preceding chapters, recommendations in this regard will be discussed together. Whilst these final three factors were considered less important than those discussed already, participants still found these to be fair to very important.

With respect to career development and learning, this research clearly highlighted the need for greater creation of registrar and specialist positions in order for doctors to progress. Whilst the International Organization for Migration (2004) finds that health professionals with high levels of training are most likely to migrate, they do concede that not of those intending to migrate upon graduation actually do.

Padarath et al., (2003) notes that training of physicians is a sizeable investment; as such Botswana and Nepal have focused their training spend on nurses/pharmacists and new

cadres of health professionals respectively to complement the skills of medical practitioners (World Health Report, 2000). In light of these observations, it is contended that short term resources are directed towards the latter interventions with expansion of specialist training positions in the medium term to address this dimension.

6.4 Suggestions for Further Research

In light of these findings and recommendations, it is helpful to expand upon further areas for exploration that are potentially the subject of future research.

- The current study was limited to the Gauteng metropolitan area and further research should be conducted to assess whether these findings are translatable to rural medical professionals in addition to public sector practitioners in other provinces across South Africa.
- In view of time, logistical and cost constraints, this study utilized a non-probability design with a limited sample size and whilst sample adequacy was statistically proven, these findings cannot necessarily be extrapolated to the study population. It is the suggestion of the researcher that further research be conducted by the health ministry, using a larger sample size and employing stratified probability sampling techniques, to conclusively validate the current study findings.
- Critically, should interventions be borne out of this or future research, additional studies must be undertaken to evaluate the effectiveness of all interventions that are implemented where parameters such as intention to leave in addition to individual retention dimensions should be reassessed in this regard.
- Finally, a cost-benefit analysis should be undertaken to ensure that resource allocation is aligned with factor weights that emerge from large scale research based upon this study.

6.5 Conclusion

Attrition of public sector doctors is a recognised phenomenon in the South African context and the result is an organisation that is unable to meet the goal of effective service delivery. Whilst the Department of Health has to some extent ensured that a strategic framework and direction is in place to realise the needs of the population that it serves, the failure to efficiently implement policies has contributed in part to medical practitioner attrition.

This discourse has highlighted the intention of public sector practitioners in general to leave with a disturbing trend underlining a greater propensity of younger professionals intending to migrate to private practice or abroad in search of other opportunities.

It is clear that urgent steps need to be taken to revitalise hospitals, establish effective infection control procedures and ensure management is adequately trained to deal with the demands placed upon them as a result of an increasing disease burden driven largely by the HIV/AIDS pandemic. Innovative approaches to remuneration in addition to the prioritisation of learning, career development and family opportunities are also factors that deserve consideration as part of comprehensive retention model for public sector doctors. As part of these actions, tracking of these activities is a necessary measure in order to ensure that all dimensions are adequately addressed.

This study has helped quantify the relative importance of each of these retention dimensions in order to ensure resources are appropriately allocated to strategic initiatives so that the ultimate goal of provision of an effective public health system is achieved.

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List of Appendices

Appendix A

Subject Information Sheet, Informed Consent and Questionnaire

Information Sheet

Research Title:

Retention of Public Sector Doctors in the Gauteng Metropolitan Region - Implications for Health Strategy

Hello Doctor

I, Mahomed Kadwa, am a medical doctor conducting research on factors causing public sector doctors to leave and hopes to find ways in which to retain them. This research is a process identified in order to learn the answer to this important dilemma. In this study we hope to learn to identify the most important factors that need to be addressed in order to retain the valuable skills that our doctors possess.

As you are a medical doctor, you are kindly invited to participate in this study and your contribution and views are greatly valued.

This survey will be conducted across selected hospitals in central Gauteng and involves a 'once off' completion of a simple questionnaire which will take approximately 15 minutes to complete. Your participation is voluntary and you are free to withdraw from the study at any stage and for any reason without recourse.

There are no anticipated risks or benefits to your participation and all efforts will made to keep personal information confidential (unless required by law).

Data will not be analysed individually; only group data will be collected for statistical analysis. Organisations such as Research

Ethics Committees may inspect research records for quality assurance purposes.

Should you require more information either during the study or after results are available, please do not hesitate to contact me:

DR Mahomed Kadwa
MBBCH (Wits)
PDM (Natal)
Contact No: 083 677 8491
E-Mail: mahomed.kadwa@novartis.com

For complaints or problems, please do not hesitate to contact the Wits Research Ethics Committee:

Prof Ames Dhai
c/o: Anisa Keshav
Wits Human Research Ethics Committee
Tel: 011 717 1234
Fax: 011 339 5708
E-mail: keshava@research.wits.ac.za

Thank you for your valuable time in assisting me in this regard.

b) In general, Doctors are leaving the public sector as there is limited opportunity for new learning experiences

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

i. More medical programs (eg. CMEs) need to be offered to increase doctors' knowledge for more effective functioning in their current positions

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

ii. More non-clinical programs (eg. management / leadership courses) should be offered to doctors to broaden their horizons

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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iii. More registrar positions must be available to facilitate progression to specialist fields of interest

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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c) Doctors are leaving the public sector as remuneration is inadequate

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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i. The after-tax salary ie. take-home pay, that is provided by state needs to be increased

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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ii. The benefits (pension, medical aid, scarce skills/housing allowances) offered need to be increased

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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iii. Limited Private Practice requirements are too restrictive and should be relaxed

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- iv. The government needs to decrease income tax levels for doctors as a way of increasing take home pay

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- v. Financial support schemes for doctors eg. preferential loans should be considered by government as an added benefit

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- d) In general, Doctors are leaving the public sector as working conditions are poor

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- i. Hospital equipment and surroundings need to be upgraded to retain doctors

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- ii. Management needs to be more supportive, consultative and flexible in their approach to doctors

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- iii. Systems to decrease patient load need to be implemented

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- iv. Improved support for junior doctors needs to be available

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- v. Fixed term International Rotation schemes should be considered to broaden doctors' horizons

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- vi. Overtime hours and payment structures need to be revised by government

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
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- e) In general, Doctors are leaving the public sector due to occupational health and safety hazards

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- i. Hospitals need to have effective infection control measures to minimise risk of contracting diseases like TB, pneumonia

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- ii. Hospitals need to have effective infection control measures to minimise risk of contracting diseases via needlestick injury, like HIV / Hepatitis

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- iii. Hospitals need to have adequate counselling and treatment facilities for needlestick injury or infectious disease affected doctors

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- f) In general, Doctors are leaving the public sector in view of limited opportunities for family members

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- i. Family support systems such as employment assistance for spouses should be addressed

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

- ii. On site crèches should be created to encourage doctors to remain/return to the public sector

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

iii. Improved rural allowances and support should be given to public sector doctors in view of the family sacrifices they make

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

g) Other reasons (not specified above) need to be devised to encourage doctors to remain/return to the public sector

1 Not Impt	2 Limited Importance	3 Fair Importance	4 Very Important	5 Extremely Important
------------	----------------------	-------------------	------------------	-----------------------

Please briefly expand on any of these other reasons not captured in the space provided below

Thank you again for your participation!

Please hand this questionnaire to the relevant attendant or deposit it in the box provided...

Appendix B

Letters of Permission from Research

Sites

Wits Human Research Ethics Committee
Suite 189, Private Bag x2600,
Houghton 2041,
South Africa

Dr MY Kadwa
108 Brackenhurst
14 Corlett Drive
Illovo
2196

10 September 2006

Re: Permission to conduct study for part-fulfilment of Masters in Business Administration

Protocol Title- Retention of Public Sector Doctors in the Gauteng Metropolitan Area –
Implications for Health Strategy

I, Dr Mahomed Yusuf Kadwa, hereby confirm that I will personally conduct the above study. I confirm that sufficient funds have are available to complete the study, and no additional costs will be incurred by the Chris Hani Baragwanath Hospital.

I confirm that provisional approval has been granted by the Wits Human Research Ethics Committee, subject to permission being granted by the Hospital (see attached). Please also find attached the research proposal listing the purpose and objectives of the study.

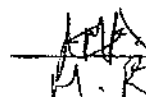
Please do not hesitate to contact me should you require any further information in this regard.

Your Faithfully



Dr MY Kadwa
MBA Research Student
Tel No: 011 – 929 2413
Fax No: 011 – 929 2479
Mobile: 083 677 8491

Chris Hani Baragwanath Hospital

 (Signature)
P. R. Bunt (Print name)
Hospital Superintendent

Appendix C

Ethical Clearances



RESEARCH OFFICE (GOVAN MBEXI CENTRE)
WESTVILLE CAMPUS
TELEPHONE NO.: 031 - 2603587
EMAIL : ximbap@ukzn.ac.za

06 NOVEMBER 2006

DR. MY KADWA (202523604)
GRADUATE SCHOOL OF BUSINESS

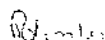
Dear Dr. Kadwa

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/06400A

I wish to confirm that ethical clearance has been granted for the following project:

"Retention of Public Sector Doctors in the Gauteng Metropolitan Region - implications for health Strategy"

Yours faithfully


.....
MS. PHUMELELE XIMBA
RESEARCH OFFICE

cc. Faculty Office (Christel Haddon)
cc. Supervisor (Mr. H Evens)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

R14/49 Kadwa

CLEARANCE CERTIFICATE

PROTOCOL NUMBER M060819

PROJECT

Retention of Public Sector Doctors
in the Gauteng Metropolitan Region
Implications for Health Strategies

INVESTIGATORS

Dr MY Kadwa

DEPARTMENT

Graduate School of Business

DATE CONSIDERED

06.08.25

DECISION OF THE COMMITTEE*

APPROVED UNCONDITIONALLY

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 06.08.30

CHAIRPERSON



(Professor A Dhai)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : KZN

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and ONE COPY returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. I agree to a completion of a yearly progress report.

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES