

**The effectiveness of contracting bursary students to the Department of Health
(KwaZulu-Natal) as a specialist skills retention strategy**

By

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DECLARATION

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Abstract

Imbalance in the health workforce is a major challenge for health policy-makers, since human resources are the most important of the health systems input (Sanders & Lloyd). Several developed nations are increasingly relying on immigration as a means of coping with domestic shortages of health care professionals (Vujicic et al. 2004). The extent of migration and other losses of professional skills are difficult to quantify. However, the effects of these are multifaceted and have far reaching consequences for both the economy and the maintenance of health services in the country. The effects of this “brain drain” limit service delivery and limit the general population’s access to health services. The purpose of this study is to determine the effectiveness of contracting bursary students to the Department of Health (KwaZulu-Natal) as a specialist skills retention strategy.

Factors influencing migratory trends can generally be grouped into push and pull factors and endogenous and exogenous factors. Pull factors are those factors which attract workers to a country or health system (e.g. socio-economic conditions, common curricula and comparable scopes of practice, and labour market conditions) and push factors are those that encourage health workers to leave their country or health system (e.g. inadequate remuneration, lack of job satisfaction, work associated risks, a lack of educational and career development opportunities, inadequate staffing ratios and skills mix, as well as excessive workload). Both push and pull factors can further be broken down into endogenous factors (i.e. those which related directly to the health system) and exogenous factors (i.e. those factors which exist beyond the parameters of the health system).

Briggs’ (2002) sub-division of migration factors into exogenous and endogenous factors is important in the development of effective retention strategies. Policy makers need to recognize that whilst endogenous push and pull factors may be addressed by retention strategies, exogenous factors will continue to influence migratory trends and therefore

the impact of exogenous factors need to be accounted for in the evaluation of the efficacy of retention strategies.

A policy evaluation framework was utilised to assess the bursary policy content and context in order to assess the impact of both policy content and policy context on the implementation process and to assess the impact of exogenous factors on the efficacy of the bursary policy. This qualitative assessment was followed by a quantitative assessment in which data was interrogated to test the relationship between bursaries issued and the number of vacancies experienced by the KwaZulu-Natal, Department of Health (KZN DOH), for five identified specialist skills. These include the occupational categories of dentists, medical officers, pharmacists, medical specialists and professional nurses. Descriptive and inferential statistics were used to determine whether bursaries were granted where the greatest need was (i.e. where the highest vacancy rates were experienced), and whether a relationship existed between occupational category, area of placement, service commitment and propensity to breach contractual obligations.

The qualitative analysis revealed that many of the policy indicators analysed in terms of the policy framework, indicated inherent weakness in the area of monitoring and evaluation, and predicted that breaches would be difficult to monitor, control and recover, due to excess centralized control of the bursary process. The quantitative analysis revealed that a significant relationship existed between bursaries allocated and vacancies experienced. Thus it may be concluded that the department the Department of Health is awarding bursaries in line with departmental needs. However, the efficacy of the bursary policy as a retention strategy for the occupational category: medical officer was called into question. Approximately, one (1) in every (3) medical officers were likely to breach their contractual obligations. This is a relatively high rate of breach and is of concern, because it captures only those bursars who refused to be placed at a public institution on completion of their academic studies. Bursars who were placed at public health institutions, were not included in breaches as they could not be identified.

Recommendations to address short comings in the policy included devolvement of authority and responsibility to the districts to increase decentralisation and thus improve implementation, monitoring and evaluation. Additionally, it was recommended that the Department allocate bursaries for the Clinical Associate Programme (CAP) as oppose to the MBCHB programme. The turn around time for the former programme is only 3 years (i.e. half the time of a medical degree), whilst the limited scope of practice aligns with the primary health care (PHC) focus, and will enhance retention.

The provision bursaries to in-service personnel was also recommended as a method by which the department could leverage aspects of career development and training to enhance retention.

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CHAPTER 1 – INTRODUCTION AND OVERVIEW OF THE STUDY

1. Introduction

This chapter presents the background to the study and contextualizes the research problem, objectives and sub-objectives within the context of current literature. The research methodology is also defined and the justification for, and limitations of the study are clarified.

1.1 Background of the study

The extent of migration and other losses of professional skills are difficult to quantify. However, the effects of these are multifaceted and have far-reaching consequences for both the economy and the maintenance of health services in the country (Lloyd & Sanders, 2005). Furthermore, the effects of this 'brain drain', whether internal (i.e. to private hospitals or other economic sectors) or international (i.e. to other international destinations) limits service delivery and limits the general population's access to health services (Forcier, Simoens & Gluffrida, 2004). The remaining healthcare workers are subjected to increased workloads, which could lead to a decline in care (Subedar, 2004).

This situation is exacerbated by the impact of HIV/AIDS e.g. the Human Sciences Research Council (HSRC) claims that nearly half of all patients (46%) in State hospitals are HIV positive, and that nearly 29% of all deaths of health workers are attributable to AIDS (Denosa, Nursing Update, April 2004).

This trend is particularly evident where understaffing leads to personnel being utilised outside their scope of practice (Subedar, 2004). Concomitantly, ethics, professionalism, discipline and morale are also affected by the loss of skills and expertise (Sanders & Lloyd, 2004) creating a high-risk environment for the patient, employee and employer.

It is counterproductive to recruit and train people to assume a productive role within the organisational structure only to lose them, their services and their organizationally acquired knowledge, to a competitor (Bhorat, Meyer & Mlatsheni, 2002). This loss is particularly relevant where bursaries are used as a recruitment and retention tool, as the turn around time from selection to date of assumption of duty may be as long as seven years (Wyss, 2004).

Deutsch (1982) asserts that replacing a key person may take six months. Training the individual to be fully proficient may take a further eighteen to twenty four months. Retention, therefore, has a significant survival value to organisations, particularly in relation to “critical specialists in high demand” (Deutsch, 1982: 107).

Retention strategies need to be developed to ensure that the provincial health sector does not lose the skills and expertise of its health professionals (Paradath et al., 2004). Whilst effective retention strategies take numerous shapes and forms, Davidson (1997) regards the fundamental building block of retention as beginning at the point of selection and continuing through to the point at which an employee leaves the organisation. Merely developing

retention strategies will not suffice. The efficacy of the various retention strategies, and their impact need to be thoroughly researched, so that priority can be given to those strategies that have demonstrated their sustainability and return on investment (Meeus, 2003).

The literature suggests that effective retention needs to be prefaced by the formulation and implementation of policies supportive of such retention initiatives (Bloor & Maynard, 2003). To this end policies aimed at increasing retention require evaluation to determine the degree of congruence between the goals aimed at and whether these outcomes are realized in society (Grindle, 1980).

It is in this area that the Department of Health appears to have an exploitable weakness. This weakness manifests in the existence of situations where the department cannot quantify the progress of programmes derived from departmental policies. This situation can be attributed to a lack of departmental measures/initiatives to establish effectiveness.

1.2 The Research Problem

Current literature on retention strategies focuses largely on situations and premises adapted from organisations in developed countries (Sanders, 2003). The efficacy of these models within a developing country's public sector has yet to be demonstrated. Many retention strategies, which have been developed internationally, have been imported into the South African context. Such strategies may not be inherently compatible with the manner in which

the public sector functions. These challenges provide an opportunity to explore the possibility of evaluating bursary strategies, to ensure that they are financially viable and oriented to skills retention within the public sector.

This study examines the role of bursaries in the retention of health care professionals and discusses the impact of the use of bursaries in reducing migration flows in the Department of Health (DOH), KwaZulu-Natal. The study further highlights the policy challenges for bursaries as retention initiatives, and the data needed to inform future policy actions.

1.3 Objectives

The primary aim of this study is to determine if the KZN Department of Health's current bursary policy is fulfilling its intended objective of procuring and retaining human resources in order to address internal migration through granting academic bursaries.

Objective 1:

To undertake an evaluation of the bursary policy by measuring it against policy indicators as identified in a context relevant to policy evaluation framework.

Objective 2:

To determine the relationship between occupational vacancies in the KwaZulu-Natal Department of Health (KZN DOH), and the bursary allocation and placement procedures.

Objective 3:

To determine the relationship between length of service commitment and propensity to breach contractual obligations.

Objective 4:

To determine the relationship between occupational category and propensity to breach contractual obligations.

1.4 Research Methodology

This study is a documentary analysis and is both explanatory and evaluative in its orientation, and is both qualitative and quantitative (Howell, 1998). This is a non-empirical study, which focuses on the KZN DOH as a case study. This approach allows data to be viewed from a phenomenological as well as positivist perspective in order to optimise inferential clarity (Babbie & Mouton, 2003).

Method:

A qualitative evaluation of the bursary policy will be undertaken using a policy evaluation framework (Johnson, 2000). Analysis of policy indicators will allow provisional conclusions to be drawn regarding the strengths and weaknesses of the policy, as well as the probability of successful implementation. Quantitative analysis on existing data will then be undertaken to ascertain the degree of congruence between the goals and whether the outcomes have been realized. The data will be derived from the KwaZulu-Natal Department

of Health (KZN DOH) existing databases: Persal and the Bursary database. Hence, there is no direct field research in terms of data collection required for this study.

1.5 Justification of the study

- (i) Health care personnel may only represent a small proportion of highly skilled workers who migrate. However, the loss for developing countries of human resources in the health sector may mean that the capacity of the health system to deliver health care equitably is significantly compromised (Stilwell et al., 2004).
- (ii) The long lead-times required for training, to qualify for many specialized roles in health services, mean that the loss of even small numbers of health professionals cannot be compensated in the short- term (Wyss, 2004).
- (iii) A greater understanding of health personnel data can, therefore, define training needs and attrition rates, and influence deployment and retention policies to the benefit of the public health system.

1.6 Limitations of the study

- (i) The study is limited to five identified occupational classes, namely, Medical Officers and Specialists, Professional Nurses (i.e. Registered Nurses), Pharmacists and Dentists.

- (ii) The study is limited to the Province of KwaZulu-Natal. This geographical limitation was necessitated by the fact that the researcher has access to the Persal data (Personnel and Salaries data) for this region.
- (iii) The data utilised by the researcher is derived from the KwaZulu-Natal Department of Health, Persal database. However, the researcher could not ascertain the accuracy and integrity of the data inputted into the database.

1.7 Definition of terms

Staffing ratios: Staffing ratios refer to the concept of workload measurement and indicate the optimum number of patients per health professional.

Skills mix: The terminology used for medically related fields that define the various types of health professionals required to deliver a specific health service, taking into account the acuity levels of patients.

Skills imbalance: A shortage/surplus which occurs when a given quantity of skills supplied by the workforce and the quantity demanded by employers diverge.

Service Commitment:	The duration for which an official must serve the Department in order to reimburse state aided bursaries.
Scope of Practice:	Terminology used by licensing boards for various medically related fields that define the procedures, actions, and processes that are permitted for the licensed individual. The scope of practice is limited to that which the individual has received education and clinical experience, and in which he/she has demonstrated competency.
Divisible benefits:	Programmes, which deliver benefits to only certain sectors of the community.
Collective Goods:	Programmes, which deliver benefits to all community members.
Internal migration:	The movement of health workers within national borders, or between rural and urban areas.
International migration:	The movement of health workers who temporarily or permanently settle abroad.

Cross industry migration: A type of internal migration, which occurs when health personnel leave their respective health related fields for activities in non-health related fields.

Health care professionals: Professionals in health occupations, which require registration with the Health Professionals Council of South Africa (HSPCA) or the South African Nursing Council (SANC).

1.8 Overview

Chapter 1 introduces the study by contextualising the background of the study, the aims and objectives, justification, study limitations and methodology used to conduct research.

Chapter 2 reviews the literature on migration and examines endogenous and exogenous push and pull migration factors, as well as the impact of migration of health care provision.

Chapter 3 reviews the literature on policy evaluation and introduces policy indicators and a framework for the evaluation of the bursary policy.

Chapter 4 describes the research methodology used, the type of research, sampling methods, data collection and inferential statistics used.

Chapter 5 presents the analysis of the results.

Chapter 6 concludes the research. Possible recommendations are proposed to inform future policy initiatives.

1.9 Conclusion

This chapter has highlighted the background to the study, the research problem, objectives, research methodology, justification of the study, and a chapter summary of the dissertation. The following chapter will contextualise the study within the context of current literature.

Chapter 2 – LITERATURE REVIEW

2.1 Introduction

Imbalance in the health workforce is a major challenge for health policy-makers, since human resources are the most important of the health systems inputs (Sanders & Lloyd, 2004). This chapter introduces the concept of migration and migratory flows within the health sector. The chapter further delineates such concepts in terms of push/pull factors and endogenous/exogenous models of migration. This study aims to contribute to a better understanding of the issues surrounding migration and its impact on health retention strategies.

Several developed nations are increasingly relying on immigration as a means of coping with domestic shortages of health care professionals (Vujicic et al., 2004). These highly skilled professionals, in terms of the health care workforce, refer to physicians, nurses, dentists, and pharmacists (Stilwell et al., 2004). This trend has led to concerns – especially within Africa – that the outflow of healthcare professionals is adversely affecting the health care system (Reid, 2004).

2.2 Definitions

2.2.1 Migration

Three types of migration can be distinguished: Internal, international and cross-industry (Diallo, 2004). Internal migration describes the movements of health workers within national borders, or between rural and urban areas.

International migration describes the movements of health workers who temporarily or permanently settle abroad. Cross-industry migration refers to a type of internal migration, and occurs when health personnel leave their respective health related fields for activities in non-health-related fields (Diallo, 2004). All of these types of migration have an impact on service provision because they result in understaffing and vacancies.

It is also necessary to make a distinction between temporary and permanent migration. Temporary migration encompasses situations where health professionals temporarily settle abroad and then return to their source countries (Forcier, Simoens & Gluffrida, 2004). Permanent migration occurs when health professionals settle permanently abroad (Diallo, 2004).

Paradath et al. (2003) suggest that temporary migration may be beneficial to source countries as healthcare professionals return with more experience, skills and personal resources than when they left. However, permanent migration results in a loss of the resources spent to educate the physician as well as the health care services that the physician would have provided to their country (Forcier et al., 2004).

2.2.2 Push and pull factors

Factors influencing migration can be divided into push and pull factors (Forcier, Simoens & Gluffrida, 2004). Pull factors may be regarded as those factors which attract health workers to a particular health system or country. Push factors are those that encourage health workers to leave their country or location of work.

Briggs (2002) further sub-divides push and pull factors into those that are exogenous (outside the health system) and those that are endogenous (related directly to the health system).

2.2.3 Exogenous and endogenous factors

Endogenous factors are those factors, which relate directly to the health system, and include both push, and pull factors. Push factors that are directly related to the health system include inadequate remuneration and salary levels, a lack of job satisfaction, work associated risks and a lack of further education and career development opportunities (Mc Donald, & Ruiters, 2005).

Endogenous pull factors are generally polar opposites of identified push factors and thus include higher remuneration, safer working environments, and better educational and career development opportunities (World Health Organization, 2004).

Exogenous factors exist beyond the parameters of the health system itself. Exogenous push factors may include quality of life and crime rates, war, civil conflict or political repression. A lack of educational opportunities for children can also prove to be a compelling push factor (Meeus, 2003). The concomitant exogenous pull factors in destination countries include political freedom, higher quality of life and educational opportunities (Stilwell et al., 2004).

2.2.4 Importance of exogenous and endogenous factors

Briggs' (2002) sub-division of migration factors into exogenous and endogenous factors is important in the development of effective retention strategies. Retention strategies are typically formulated to address issues relating to endogenous push and pull factors (Semmpowski, 2004). Policy-makers need to recognise that whilst endogenous push and pull factors may be addressed by retention strategies, exogenous factors (i.e. those outside the health system) ensure that the migration of health care practitioners is likely to continue (Krausz et al., 1995). Therefore, attempts should be made to ensure that such migration is managed and regulated in a manner that confers benefits on both home and destination countries (Kihar et al., 2004).

2.3 Endogenous push factors

2.3.1 Inadequate remuneration

It is widely believed that inadequate remuneration is the most compelling factor influencing the decision to migrate from the public to the private sector, or abroad (Paradath et al., 2003). However, research is conflicting in this regard.

Research indicates that remuneration is an important factor influencing the decision to migrate; however, it is not always the most important factor (Bhorat et al., 2002). Fringe benefits such as housing and car allowances (Vujcic et al., 2004) are other influential pull factors, and concerns relating to work associated risks and quality of life are influential push factors (Paradath et al., 2003).

It cannot be denied that wage differences for health professionals between source and destination countries are large, even if differences in the cost of living are adjusted for (Vujcic et al. 2004). A physician's remuneration in the USA is about four times that of a physician in South Africa; whilst nurses can earn three or even five times their annual remuneration in the UK (Joint Learning Initiative, 2004).

Vujcic et al. (2004) conclude that wage differentials between source and destination countries are so large that increases in

health care wages, unless they are significant, will not decrease the readiness of healthcare professionals to emigrate to developed countries.

2.3.2 Lack of job satisfaction

Health professionals from developing countries generally report lower levels of job satisfaction than their counterparts in developed countries (Ramlall, 2004). Higher levels of frustration are experienced due to a lack of managerial support and availability of adequate facilities (Vujicic et al., 2004). Such frustrations are compounded by the psychosocial stress experienced by healthcare professionals, as well as a sense of hopelessness because of the enormity of the HIV crisis (McDonald & Ruiters, 2005). Concerns also exist regarding the high workload levels that are prevalent in South Africa (World Health Organisation, 2004). These factors all strongly influence migratory trends and their impact is exacerbated by the presence of work-associated risks.

2.3.3 Work associated risks

In South Africa, a number of poor occupational health and safety conditions have resulted in a high risk of occupational exposure to HIV and other communicable diseases (McDonald & Ruiters, 2004). Evidence suggests that fear of contracting HIV through inadequate protective measures at work; acts as a compelling

factor to migrate (Krausz et al., 1995) and may also deter individuals from entering the health professions (Harret & Coady, 2002). In this regard, a recent survey of South African nurses showed a national HIV incidence of 15.7% (Shinasa et al., 2002).

The risk of occupational exposure to HIV places additional pressure on health professionals in their public and private lives due to the stigma and fears associated with the disease (Sanders & Lloyd, 2004).

HIV/Aids has also changed the disease profile of the patient population. The level and intensity of care provided by healthcare professionals have increased dramatically, whilst in many cases the patient's prognosis has worsened (Kline, 2003).

Healthcare professionals, therefore, face intense physical, emotional and psychological demands, which when taken in conjunction with increased workloads, result in increased stress and burnout (Gupta et al., 2003).

2.3.4 Lack of educational and career development opportunities

A lack of educational and career development opportunities is frequently cited as influencing decisions to migrate (Martineau, Decker & Bundred, 2004). Healthcare professionals in developing countries, who wish to specialize, have limited

opportunities to do so within the public sector, as few opportunities exist for such specialization (Paradath et al., 2003). Thus, healthcare professionals leave in order to continue their studies in developed countries, where there are more opportunities.

Consistent with findings in other settings, training and career development has been cited as an extremely powerful mechanism to retain staff (Gillis, Jackson & Beiswanger, 2004). Opportunities to attend training programmes and to enhance career pathing strongly influence retention. One of the primary reasons cited by South Africans for leaving the country is the implementation of affirmative action policies, and lack of career progression, particularly within the public sector (Bhorat et al., 2002).

2.3.5 Staffing ratios and skills mix

Staffing ratios refer to the concept of workload measurement and indicate the optimum number of patients per healthcare professional. It has been argued that staffing ratios have an impact on staff retention (Sanders & Lloyd, 2004).

Presently, South Africa does not have legislated nurse-patient/doctor-patient ratios, and the determination of staff ratios is left to the discretion of management in both public and private

sector hospitals (Leon & Mabope, 2005). This legislative omission has created a vicious cycle i.e. as working conditions deteriorate; increasing numbers of healthcare professionals leave the profession.

This exodus exacerbates staffing shortages, which results in increased stress levels, low morale and burnout (McDonald & Ruiters, 2005). The net effect of such unsatisfactory working conditions results in further healthcare professionals leaving either the country, or the health profession (McDonald & Ruiters, 2005).

In the USA, California, was the first State to introduce a ratio law (Zondagh, 2004). Results indicate that this law has been the single most effective method in improving patient care, whilst, at the same time, reducing the nursing shortage.

These results have been mirrored by Australia in the State of Victoria, where in the year 2000, ratios relating to the staffing mix were introduced (Zondagh, 2004). "Staffing mix/skills mix" is terminology used for medically related fields that defines the various types of healthcare professionals required to deliver a specific health service, taking into account the acuity levels of the patients.

Since the introduction of the ratios, almost 4 000 nurses have returned to the public health system in Victoria (Zondagh, 2004). Such an outcome indicates that the implementation of ratios could improve the quality of patient care, whilst simultaneously empowering hospitals to recruit and retain healthcare professionals during a global shortage (Ioannidis, 2004).

2.3.6 Scope of practice

Migration often leads to the most skilled staff migrating first (Wibulpolprosert et al., 2003). This migration leads to an increase in the use of less skilled staff to meet health care needs (Zondagh, 2004), and results in personnel being used outside their “scope of practice” (Subedar, 2004).

Licensing boards for various medically related fields that define the procedures, actions, and processes that are permitted for the licensed individual uses the term “scope of practice”. The scope of practice is limited to that for which the individual has received education and clinical experience, and in which he/she has demonstrated competency (Subedar, 2004).

Utilising staff outside their scope of practice creates a high-risk environment for the patient, the healthcare professional and the health institution. It requires that healthcare professionals undertake procedures or actions for which they are not licensed.

Adverse incidents, which occur under those situations, are not covered by medico-legal insurance (Zondagh, 2004). These incidents create a stressful work environment, which is compounded by the high workload experienced in the public sector. All of these factors contribute to an increase in migration.

2.3.7 Workload

There is currently one healthcare worker per 1000 population in sub-Saharan Africa (SSA). In contrast, Europe has more than 10 healthcare workers per 1 000 population (Joint Learning Initiative, 2004). This constitutes 32 physicians per 100 000 population and 135 nurses per 100 000 population. Sub-Saharan ratios are regarded as being the worst in the world (Meeus, 2003). By comparison, the United Kingdom has 164 physicians per 100000 and the USA has over 279 physicians per 100 000 (Hagiopoian et al., 2004).

South Africa is estimated to have 69 physicians and 388 nurses per 100 000 population. However, 72.6% of General Practitioners and 75.2% of Medical Specialists work in the private sector serving the health needs of only 18% of the population (Sanders & Lloyd, 2004).

Investigations have revealed that between 2001 and 2004 the workload of the public sector in the RSA has increased. Concomitantly, over the period 1997 to 2002, the Medical Aid population has reduced from 17% to 15.2%. This reduction represents an increase in the public sector healthcare workload of 6.5 million patients (Zondagh, 2004). Workload stressors have also been exacerbated as healthier patients utilise private health services and those with greater health needs, who cannot pay for services, utilise the public health sector (Wilbulpolprasert et al., 2003).

The change in disease profile and prognosis associated with HIV/AIDS (see 2.3.3 “work associated risks”) has also increased workload. This increased workload, compounded by staff shortages and inadequate medical supplies is contributing to high absenteeism, stress, burnout, low-morale and demotivation on the part of healthcare professionals (Sanders & Lloyd, 2004). These factors play a critical role in the migration of healthcare professionals and create a vicious cycle. As increasing numbers of health professionals leave, those remaining work in increasingly understaffed facilities and are eventually unable to cope with the additional burdens, and exit the health arena.

2.4 Exogenous push factors

2.4.1 Crime rates

Concerns relating to personal safety, crime rates, civil conflict, and political oppression are all compelling push factors that influence the decision to migrate (Paradath et al., 2003). 98% of emigrants from South Africa cite crime as the reason for emigrating (Bhorat et al., 2002).

2.4.2 Quality of Life

Other reasons cited by émigrés include affirmative action policies (see 2.3.4 “lack of educational and career pathing opportunities”), high taxation levels, a decline in the standard of living and poor standards of public service (Sanders & Lloyd, 2004).

2.4.3 Infrastructural insufficiencies

Managers in the public health sector indicate that their inability to recruit and retain staff, particularly in rural and deep rural areas, is closely associated with lack of accommodation for staff (both office accommodation and housing) (Blumenthal, 1994).

This problem is often compounded where there is a shortage of essential community infrastructure such as roads and schools. and lack of job opportunities (Wilbulpolprasert et al., 2003). Healthcare professionals are also generally reluctant to relocate

to areas where their spouses are unlikely to find employment and their children cannot attend good schools (Hays et al., 2003).

2.5 Endogenous pull factors

2.5.1 Socio-economic conditions

Stilwel et al. (2004) emphasise that it is important to consider the overall economic and social context in which decisions to migrate are made e.g. wars, deprivation, and social unrest may all induce waves of migration. However, the migration of health workers appears to be primarily “demand led”, with workforce shortages in some destination countries generating active overseas recruitment strategies (World Health Organisation, 2004).

2.5.2 Inadequate human resource forecasting

Opinions vary as to whether the developed countries’ sustained demand for health professionals from developing countries originates from poor workforce planning or whether such recruitment is more economically viable than increasing domestic supply (Meeus, 2003).

Research by Bloor and Maynard (2003) reveal that the human resource forecasting techniques of many developed countries are flawed, because they assume that the current system of

health care delivery is adequate and that the historical supply of personnel accurately reflects demand.

Those techniques do not adequately account for demographic changes, including the ageing of the population, increases in chronic diseases and the ageing of the health workforce itself (Buchan & O'May, 1999). Those factors have changed the demand profile for health services and affected the ability of the health workforce to meet such demands (Sanders and Lloyd, 2004).

The capacity of destination countries to produce more health workers is also restricted. Population demographics are changing so that fewer young people in developed countries are entering the health worker profession (Vujcic, 2004). This change means that the pool of candidates for training in health related fields is decreasing.

Additionally, nursing is an occupation dominated by the female gender and young women today have more career options. As more enrol in the fields engineering, science and information technology, fewer enrol in nursing programmes (Meeus, 2003).

The previous discussion indicates that the continuing need for the international recruitment of healthcare professionals

(particularly nurses) is a symptom of a global shortage (Bloor & Maynard, 2003). From a global perspective, however, recruiting internationally instead of being a solution, only serves to redistribute the shortages (Ioannidis, 2004). Such accelerated levels of migration are indicative of deep-seated problems within the health arena of both source and destination countries (Bach, 2004).

2.5.3 Active recruitment strategies

The previous discussion has highlighted the factors underlying developed countries need to recruit health workers internationally. Vigorous recruitment strategies by developed countries strongly influence migration pull factors. Buchan & Sochalski (2004) hypothesize that these pull factors occur because developed countries are positioned to exploit factors that motivate migration, such as relatively low pay, poor career structures and a lack of professional development opportunities.

It is also argued by Vujicic et al., (2004) that even if destination countries were able to produce enough doctors and nurses to fill their domestic demand, migrant health professionals are often regarded as a less costly substitute.

2.6 Exogenous pull factors

2.6.1 Common curricula and comparable scopes of practice

The assumption that developing countries are facing a human resource crisis due to a combination of inadequate production and aggressive international recruitment is not necessarily correct. Increasing the production of healthcare professionals in developing countries would not necessarily curtail current migratory trends, due to pull factors within and outside of the health system that contribute to migration (Sanders & Lloyd, 2004).

The trend of using healthcare professionals from abroad is likely to continue, particularly due to the effect of common curricula and comparable scopes of practice (Paradath et al., 2004). The majority of curricula and teaching methods in developing countries (including South Africa) are based on curricula from the United Kingdom or USA and classes are held in English (Scott et al., 2004).

The training of health professionals in South Africa is also of an extended duration and focuses on the training of “specialists” (doctors and professional nurses). Such specialization is not always relevant to the needs of the country and the skills acquired through training may be more suited to developed countries (Wyss, 2004).

This focus on clinical medicine results in health professionals from developing countries being trained to function in a fully resourced, high technological environment. These environments are present in the private sector and in developed countries. Thus, curriculum design assists the emigration of health professionals (USAID, 2003).

For example, a registered nurse from South Africa who migrates to the United Kingdom instantly gains full registration status and does not need to complete further training or undergo a probationary period (Vujicic, et al., 2004)

2.6.2 Labour market conditions

The previous discussion clearly illustrates the “world systems framework theory” as postulated by Hagiopoian et al. (2004). This theory stresses that more permeable barriers between and among countries have been created. These barriers have been created by standardized curricula and English language being used in medical schools, as well as the use of common research methods and shared scientific knowledge.

The demand for healthcare professionals from destination countries depends on many factors including political factors, the state of the economy and birth rates. However, labour market conditions appear to have the greatest influence on the

number of migrant healthcare professionals allowed into a country (Paradath et al., 2003).

A major impact on labour markets internationally has been the introduction of the General Agreement on Trade in Services (GATS). This agreement aims to liberalise trade in services between nations and has consequently increased migration flows (Wibulpolprosert et al., 2004). In essence, GATS facilitates migration by reducing the restrictions placed on immigration.

These permeable barriers have enabled increased international migration, and the aforementioned shortage of health-care personnel in richer countries has a significant impact on the flow of health-care workers throughout the world (Stilwell et al., 2004).

2.7 Impact of migration

2.7.1 Migration outflows

Conflicting opinions exist regarding the impact of migration. Forcier et al. (2004) argue that home countries may benefit from remittances sent back to them and from an upgrading of skills in terms of skills transfer. However, Meeus (2003) contends that the skills acquired are often inappropriate for the home situation. He additionally argues that the costs associated with

professionals leaving the country outweigh the benefits of remittances.

Hagiopoian et al. (2004) investigated the costs associated with professionals leaving Africa. It emerged from this study that the estimated cost is 4 billion USD a year and constitutes one third of official development funds to Africa. The United Nations Conference on Trade and Development estimates that developed countries save US\$184 000 in training costs for each professional between the age of 25-35 years (cited in Meeus, 2003).

Those savings are substantial and continue to widen the gap between developed and developing nations. Developing countries are often already inadequately staffed; yet still have to bear the burden of training professionals for developed countries (Sanders & Lloyd, 2004).

The impact of migration outflows on source countries in the developing world is severe, in that those countries have very poor health outcomes and have the greatest need of the services that healthcare professionals provide (Bundred & Levitt, 2000).

2.7.2 Depletion of human capital

The loss of such specialized professionals also contributes to a general decline in average incomes, as healthcare professionals generate skilled health systems jobs beyond their own (Vujicic et al., 2004). The permanent departure of skilled labour depletes the human capital of home countries, thus reducing the possibility for economic growth and raising the level of inequalities and poverty in those countries (Dlovo, & Martineau, 2004). Lost tax revenues also represent significant losses. (UNECA, 2000).

In particular, the loss of 'institutional memory' from extensive resignations results in a duplication of work and wastage of resources (Ojo, 1990). This duplication and wastage is particularly relevant in the implementation of disease management strategies for malaria, AIDS, and TB where strategies are continually reinvented when key personnel leave and a gap in organizational continuity develops (Paradath et al., 2003).

This situation is exacerbated by the fact that developing countries already have very low supplies of healthcare professionals. As a result, "small" absolute losses might be very large relative to the size of the medical workforce (World Health Organisation, 2004). This is clearly illustrated by the closure of

a regional spinal injuries unit in South Africa due to the recruitment of the two anaesthetists by a Canadian spinal injury unit (Department of Health, 2003).

Due to the economic impact of migration on developing countries, some authors have suggested that an appropriate response by first world countries to the brain drain experienced by third world countries is for financial reimbursement to the health and educational systems for the cost of recruiting their healthcare professionals (Stilwell et al., 2004). However, such suggestions fail to take into account the practical difficulties of enforcing or implementing such an action and their feasibility appears limited. Additionally, financially remunerating source countries for their healthcare practitioners will not account for the loss of intellectual capital in terms of their knowledge base and experience (Farrag, 1997).

2.7.3 Inequitable distribution of personnel and public sector workload

Poor management of health services in developing and developed countries has resulted in geographical and skills imbalances in healthcare professionals (Joint Learning Initiative, 2004). These imbalances have resulted in an urban concentration of healthcare professionals, as well as a maldistribution between private and public health sectors (Wilbulpolprasert & Pengpaibon, 2003).

Healthcare professionals within South Africa are typically maldistributed along three different axes:

- Public and private health sectors;
- Urban and rural areas; and
- Tertiary and primary levels of the health system.

2.7.3.1 Public/private sector maldistribution

Health care expenditure in South Africa was approximately 8.5% of GDP in the year 2003/04. However, the country's health status indicators compare poorly to those of other middle-income countries (South Africa, National Department of Health, 2003). One of the main reasons for this poor comparison is the inequity associated with the division between public and private health sectors (Sanders & Lloyd, 2004).

In South Africa, the private sector consumes 58% of the total health expenditure, and private health services capture a higher proportion of all types of personnel (except nurses) than the public sector (Joint Learning Initiative, 2004). Goudge et al. (2001) estimated that in 1998, 57.7% of all general practitioners and 76% of all specialists worked in the South African private sector. By 1999, 73% of all general practitioners were estimated to be working in the private sector, despite the fact that this sector catered for less than 20% of the population.

The imbalance between the public and private health sector is exacerbated by the financial inequity in health spending. It is estimated that the private sector spends seven times more per capita than the public sector (Sanders & Lloyd, 2004). In contrast, the public sector serves in excess of 80% of the population, but receives only an estimated 41% of the total health funding (Blumenthal, 1994).

2.7.3.2 Rural/urban maldistribution

Rural/urban maldistribution may be categorised by the flow of healthcare professionals from rural to urban settings. In developed and developing countries, the distribution of healthcare professionals is skewed in favour of urban areas (Hays et al., 2003). Infrastructural insufficiencies, inclusive of a lack of schools, poor roads and a lack of job opportunities combined with the deterioration of public health institutions are compelling factors, which deter health professionals from rural settings (Felix, Shepherd & Stewart, 2003).

Buchanan et al. (2004) proposes that international migratory flows have the unintended consequence of increasing internal rural/urban misdistribution. Staff in the private sector and in urban areas is generally more exposed to technological advances and specialist techniques. The skills that they acquire are valuable to developed countries and facilitate an easier

transition upon migration (Zurn et al., 2004). The loss of those skilled health practitioners to international destinations increases internal migration flows to the private sector and to urban hospitals, leaving rural hospitals depleted of staff.

The previous discussion highlights the difficulty of attracting healthcare professionals to rural practice. To accomplish a more equitable distribution of doctors, a careful set of policies designed to provide incentives for rural service and rural retention needs to be developed (Rabinowitz et al., 1999).

2.7.3.3 Primary/tertiary maldistribution

In most countries, medical staff is concentrated around urban hospitals that offer tertiary care, even though more rational and cost effective service delivery systems might focus on a geographically decentralized system of primary and preventative care (Wilbulpolprasert et al., 2004). The issues raised previously (see 2.7.3.2 “Rural/urban Maldistribution”) are also relevant in explaining why human resources are skewed towards tertiary delivery, as opposed to primary health care delivery.

2.7.4 Loss of investment of training costs

A number of studies note that the migration of medical staff from sub-Saharan Africa signifies a loss of investment of substantial training costs. Hagopian et al. (2004) observe that graduates of medical schools in Africa have contributed financially to only a small portion of the costs of their medical education, due to State-aided educational subsidies.

Additionally, educational capacity in most developing countries is not large enough to support both increased international migration and limited domestic supply (Vujicic et al., 2004). The long-term effect of continued migration affects both the present and future supply of workers. The loss of academic health professionals also affects countries' abilities to train new healthcare professionals and to provide supervision and support in the workplace (Sanders & Lloyd, 2004).

Hagiopoian et al. (2004) estimate that sub-Saharan African medical schools (in 22 countries) have trained approximately 5 334 physicians currently practising in the USA. This figure represents 12% of all sub-Saharan African physicians and probably underestimates the true number of sub-Saharan physicians working abroad, as the study included only those physicians who arrived after 1992.

Approximately ten medical schools out of the 87 medical schools in the sub-Saharan African region i.e. in South Africa, Nigeria, Ghana and Ethiopia, produce 79.4% of the émigré physicians to the USA (Hagiopian et al., 2004). This finding suggests that strategies aimed at reducing the “brain drain” from Africa should be targeted at only these few countries or medical schools.

2.8 Inadequate data information systems

The ability to monitor migration flows out of and within a country is vital if any country is to integrate this information into its planning and policy development process (Buchan, 2000).

One factor that prevents effective monitoring of workflows is an inadequate data system. Without an accurate understanding of migratory flow patterns, an assessment of their impact on health service delivery is virtually impossible (Bundred & Levitt, 2000). Even sources such as professional registration data have their limitations, because registration data measure the intent to move and work in another country, not actual employment (Aiken et al., 2004).

Basic information, such as the annual number of healthcare professionals and current doctor and nurse-to-population ratios are not readily available, and other vital health system data is difficult to obtain. It is thus, difficult to assess the impact of migration (Diallo, 2003).

2.9 Conclusion

The conclusion drawn from the literature is that the evidence base on healthcare professionals' migration needs to be improved so that effective policy interventions can be developed. Imbalance in the health workforce is a major challenge for health policy-makers (Sanders & Lloyd, 2004). Several developed nations are also increasingly relying on immigration as a means of coping with domestic shortages of health care professionals (Vujicic et al., 2004).

Factors influencing migratory trends can generally be grouped into push and pull factors and endogenous and exogenous factors. Pull factors are those factors, which attract worker to a country or health system (e.g. socio-economic conditions, common curricula and comparable scopes of practice, and labour market conditions). Push factors are those that encourage health workers to leave their country or health system (e.g. inadequate remuneration, lack of job satisfaction, work associated risks, a lack of educational and career development opportunities, inadequate staffing ratios and skills mix, as well as excessive workload). Both push and pull factors can further be broken down into endogenous factors (i.e. those factors which related directly to the health system) and exogenous factors (i.e. those factors which exist beyond the parameters of the health system).

Briggs' (2002) sub-division of migration factors into exogenous and endogenous factors is important in the development of effective retention strategies. Policy makers need to recognize that whilst endogenous push and

pull factors may be addressed by retention strategies, exogenous factors will continue to influence migratory trends and, therefore, the impact of exogenous factors need to be accounted for in the evaluation of the efficacy of retention strategies.

The extent of migration and other losses of professional skills are difficult to quantify. However, the effects of these losses are multifaceted and have far-reaching consequences for both the economy and the maintenance of health services in the country. The effects of this “brain drain” limit service delivery and limit the general population’s access to health services. The literature also indicates that the driving forces of both internal and external migration of healthcare professionals suggest that migration is likely to continue and that developing countries need to manage migration proactively by developing comprehensive and cohesive recruitment and retention strategies (Stilwell et al., 2004). The following chapter provides an overview of a framework that will be used to evaluate the efficacy of a bursary policy intervention and retention strategy initiative.

Chapter 3 - RESEARCH METHODOLOGY

3.1 Introduction

Chapter 2 provided the background literature and studies on migratory issues and policy evaluation indicators. Terminologies utilised in the study have also been clarified. The current chapter provides a description of the research design and the methodology employed to collect data for the present study. The data collected was subjected to descriptive and inferential statistical analysis in order to provide the objectives formulated for the study. For the purposes of clarity, the aim and objectives of the study are re-iterated here.

3.2 Aim

The primary aim of this study is to determine if the KZN Department of Health's current bursary policy is fulfilling its intended objective of procuring and retaining healthcare professionals in order to address internal migration through the granting academic bursaries.

3.2.1 Objective 1:

To undertake an evaluation of the current bursary policy by measuring it against policy indicators as identified in a context-relevant policy evaluation framework.

3.2.2 Objective 2:

To determine the relationship between occupational vacancies, in the KwaZulu-Natal Department of Health (KZN DOH) and the bursary allocation and placement procedures.

3.2.3 Objective 3:

To determine the relationship between the length of service commitment and the propensity to breach contractual obligations.

3.2.4 Objective 4:

To determine the relationship between an occupational category and propensity to breach contractual obligations.

3.3 Research Design

This study is a documentary analysis and is both explanatory and evaluative in its orientation (Howell, 1998). This is a non-empirical study, which utilized the KZN DOH as a case study. This approach allows data to be viewed from a phenomenological, as well as positivist perspective in order to optimise inferential clarity.

3.3.1 Method:

A qualitative evaluation of the bursary policy was undertaken using a policy evaluation framework (Johnson, 2000). Analysis of policy indicators allowed provisional conclusions to be drawn regarding the

strengths and weaknesses of the policy, as well as the probability of successful implementation.

Quantitative analysis on existing data was then undertaken to ascertain whether those outcomes had been realized. The data was derived from the KZN DOH existing databases viz Persal (Personnel and Salary System) and Bursary database. Hence, there was no direct field research in terms of data collection required for this study. A quantitative analysis of the data was undertaken utilizing descriptive and inferential statistics.

Descriptive techniques will be utilized to reduce the data into a manageable form. Nominal scales of measurement would be the most appropriate measurement in order to explore the measures of association between different variables.

3.3.2 Data Analysis:

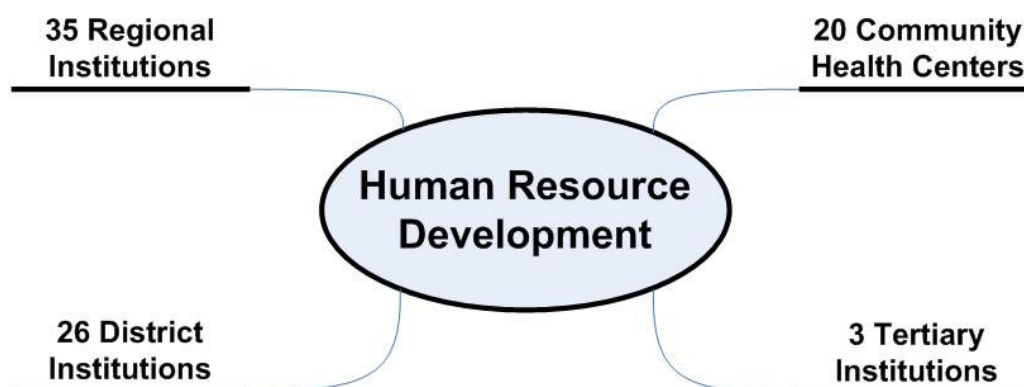
(i) Theoretical and Accessible Population:

The theoretical population is the National DOH; the accessible population is the KZN DOH. The census will include registered health care professionals in KZN DOH, as well as DOH bursary holders.

A census will be conducted from the DOH, Head Office Human Resource Development Directorate. Information will be analysed from all DOH institutions, which consists of 3 tertiary institutions, 26 district

institutions, 35 regional institutions and 20 fixed clinics located Province-wide within 11 districts in KZN. (See figure 1)

Figure 1: DOH institutions



The census consists of an organizational membership list and a bursary membership list. Since healthcare professionals already fall into clearly defined occupational categories, the census may be regarded as stratified.

3.3.3 Instruments:

The Persal database provided information regarding vacancies by occupational category, and by rural/urban placement. The bursary database provided information on the potential supply of human resources for occupational categories, as well as the rural/urban profile of current bursary holders, and the breach of bursary commitments.

An evaluation of policy content utilized a framework proposed by Grindle (1980) and adapted by Johnson (2000) to assess policy indicators, which affect the policy implementation. The type of policy and its benefits were assessed in terms of the site of decision-making,

the policy goals, resources committed, and the control and monitoring evidenced.

The numeric data was entered unchanged and did not undergo any codification. SPSS (Version 13) was utilized to tabulate the data by categorizing it under the following headings:

DOH healthcare practitioners:

- occupational category
- rural/urban placement
- vacancies
- vacancies by occupational category
- vacancies by rural/urban placement
- vacancies by occupational category and by rural/urban placement

DOH Bursary holders:

- occupational category
- rural/urban placement
- comparison with DOH vacancies
- breaches
- breaches by occupational category
- breaches by rural/urban placement
- breaches by duration of bursary provision

The aforementioned package was utilized to generate graphs and scatterplots to indicate distribution.

3.4 Data Collection Process

As mentioned previously (see 'method' for details) the data to be analysed for this project is existing/retrieved data. At present, the data exists in a database format and will be retrieved from relevant databases to enable descriptive statistics to be undertaken.

3.4.1 Persal

Personnel and Salary Administration (Persal) will provide information for the following group:

Group A (registered healthcare professionals in KZN, DOH)

The following terms are used to define the parameter of the search:

- Vacancies by occupational category;
- Vacancies by urban/rural placement; and
- Vacancy by rural/urban placement & by occupational category.

3.4.2 Bursary database

The bursary database provided information for the following group:

Group B (DOH bursary holders)

The following search terms were used to define the parameters of the search:

- Bursary breaches by occupational category;
- Bursary breaches by rural/urban placement; and

- Bursary breaches by duration of service commitment outstanding.

3.4.3 Bursary Database: Breach of service commitments

The Excel based database: Breach of bursary commitments provided information for Group C. The following search categories were used to define the parameters from which data was extracted:

- Breaches by field of study;
- Breaches by years of service commitment; and
- Breaches by urban/rural placement.

3.5 **Analysis and interpretation**

The data collected was entered into SPSS (Version 13) statistical programme under the following categories and was used to generate graphs to enable a visual comparison across and between the components mentioned and the appropriate statistical analyses were utilised.

- Group A (registered health care professionals in KZN, DOH)
- Group B (DOH bursary holders)

The data was entered under the following categories:

- Group A (registered health care professionals in KZN, DOH)
 - Vacancies
 - Occupational categories
 - Urban/rural placement

- Number of available posts
- Number of filled posts
- Sample B (DOH bursary holders)
 - Occupational vacancies
 - Rural/urban vacancies
 - Duration of funded studies
 - Breaches by type of study
 - Breaches by years funded by a bursary
 - Breaches by urban/rural placement

The SPSS package was used to generate graphs to enable a visual comparison across and between the components mentioned. t-tests were undertaken to determine if there was a significant difference between rural and urban vacancies in public institutions. t-tests were regarded as the appropriate statistical measure as they can be utilised to indicate a significant difference between means. In this regard, t-tests were also undertaken to determine if there was a significant difference in bursary allocation rates between rural and urban institutions. These analyses were undertaken to determine whether bursary allocation procedures were aligned with provincial public sector needs.

The analysis performed on Group A allowed one to ascertain the level of occupational vacancies profiled by rural and urban placement. An

analysis performed on Group B enabled one an extrapolation of available bursary holders by occupational category and urban/rural placement available to be deployed to those vacancies.

A linear regression analysis was undertaken in order to ascertain whether a statistically significant relationship exists between the vacancy rate and the bursary allocation (for the occupational categories Medical Officer, Specialist, Pharmacist, Dentist and Professional Nurse). In particular, the analysis determined whether the vacancy rate predicted the bursary allocation. This analysis enabled a conclusion to be drawn regarding whether the bursary allocation procedure was needs driven.

The analysis associated with this study aims at describing the relationship between the identified variables. In this regard, the linear regression correlation utilised will produce scatter diagrams and describe the relationship between the variables.

The interpretation of the above statistical analyses will be undertaken in relation to a theoretical framework for policy analysis adapted by Johnson (2000) that will be developed from the literature that informs this study. This framework will allow the results of the analysis to be generalised beyond the provincial context in which the study was undertaken.

3.6 Validity and Reliability

Validity is commonly defined as “the best approximation of the truth”.

In this study, validity will be addressed by providing a framework from which critical comment can be delivered on issues related to processes, as well as results (Babbie and Mouton, 2001: 276).

Issues related to reliability will be dealt with through establishing the trustworthiness or credibility of the data. Credibility will be achieved mainly through the efforts of the researcher, who endeavours to persistently observe the phenomenon, triangulate findings, engage in peer debriefing and establish interpretation through member checks (Babbie and Mouton, 2001).

3.7 Conclusion

This chapter provides a description of the data-collecting tools, the approach used for data analysis and the methods of interpretation used in the study. It further provides a detailed description of those tools, as well as the motives behind their selection.

____ The next chapter will focus on qualitative bursary policy analysis.

Chapter 4 - QUALITATIVE BURSARY POLICY ANALYSIS

4.1 Introduction

Throughout the developing world, nations grapple with the issue of migratory flows, both from rural to urban areas and from developing to developed nations (Wilbulpolprasert & Pengpaibon, 2004). The response from developing or third world governments to such migratory flows has been to develop strategies and policies to increase retention (Hay, Wynd, Veitch & Crossland, 2003). This response is congruent with general policy literature, which suggests that effective retention needs to be prefaced by the formulation and implementation of policies supportive of retention initiatives (Jeong, & Gunji, 1994). This chapter will introduce a framework of policy indicators that can be used to evaluate policy efficacy and implementation appropriateness.

This analysis is an evaluation of the content of the KwaZulu-Natal Department of Health Bursary Procedure, and the effect of this procedure on the implementation process. Section 4.2 deals with different aspects of policy content and how such content influences implementation. Section 4.3 discusses implementation and identifies the variety of contextual factors that may influence implementation. Finally, Section 4.4 assesses the feasibility of the bursary policy implementation strategies, given both the content and context implications.

4.2 Policy evaluation indicators

During the policy process, implementation plays a vital role in determining the degree of congruence between the goals and the outcomes (Johnson, 2000). Although the broad policy goal of government may be that of retention of skilled healthcare professionals, whether or not this outcome is attained in society is a function of the implementation process (Hill, 1997).

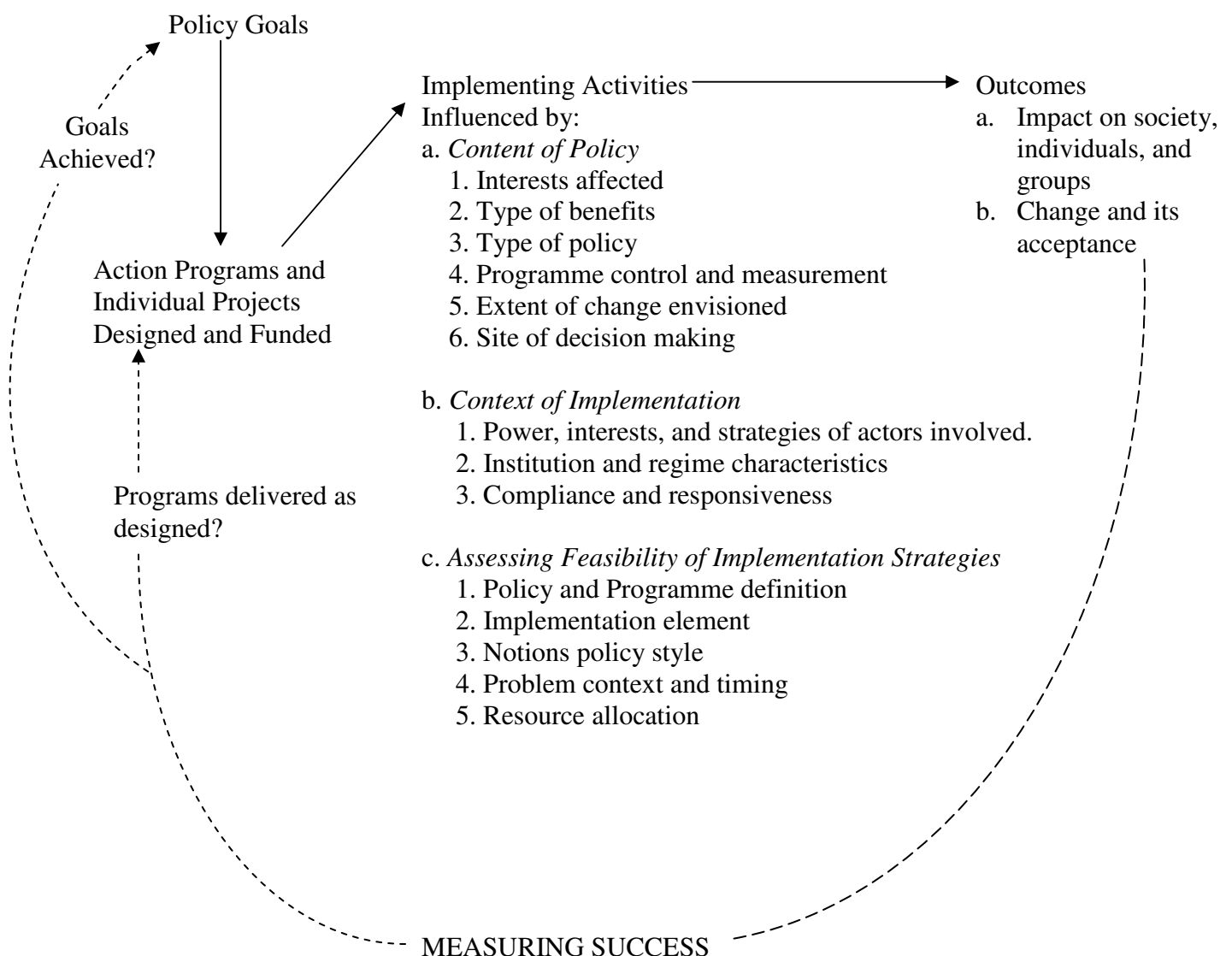
Literature on policy implementation in developing countries has, to date, endeavoured to explain the discrepancy between policy goals and tangible results by focussing on administrative and implementation procedures (Lipsky, 1980). Few attempts have been made to determine the impact of policy content on the implementation process or to assess the association between implementation and the context in which the policy is implemented.

The following framework emphasizes the importance of taking into account both policy content and policy context, when concerned with the implementation process. This stance recognizes that it is not only the content of a policy that determines its success or failure, but also the context in which it is implemented. The policy evaluation framework, as utilised below, also allows the complex implementation process to be evaluated in the light of the influence of both issues relating to policy content and contextual factors.

4.3 Policy evaluation framework

In evaluating the success or failure of policy initiatives, Johnson (2000) has adapted and developed a theoretical framework that draws from a number of theorists [inclusive of Grindle (1980) and Chase (1979)] to provide a structured approach to looking at implementation. This framework is intended to provide an in-depth analysis of the way the policy should function, provide information on various methods of action and what the consequences are for implementation.

Figure 2: POLICY EVALUATION FRAMEWORK (adapted from Grindle, 1980)



4.4 Policy indicators

4.4.1 Policy goals

The process of policy implementation can only begin once the policy's broad goals and objectives are stated (Minogue, 1997). Interventions then need to be designed to achieve those goals, and identify the resources needed to translate those goals into reality.

Whether goal statements are clear or ambiguous and the degrees to which officials agree on these goals, contribute to or detract from the implementation process (Parsons, 1995). It is also important not to ignore the process of policy formulation during implementation. Policy formulation is significant because determinations regarding aims, objectives and resources will influence how the implementation process proceeds (Cloete & Wissink, 2000). Theoretically, the process of policy formulation and the process of implementation are regarded as distinct. However, during the actual process of implementation, modifications may be made to the content of the policy in light of the feedback that occurs (Lukes, 1974).

Policy goals related to the bursary policy procedure are somewhat ambiguous. In fact, only a list of selection criteria exists to guide bursary allocations. Implicit in this process (as evidenced by the minutes of the Bursary Allocation Committee) is the goal that bursaries are intended to be allocated only to previously disadvantaged individuals; however, equity ratios are not explicit.

The Department of Health, KwaZulu-Natal, does not have a formal written policy document, which dictates the bursary procedure. Instead screening criteria (Study Loan Agreement, 6/7/7 (140), Clause 6.2) exist, which guide the selection of students, and the entry of contractual provisions (see Annexure A for contract). The criteria include:

- The student must be from the KZN Province;
- The student should be financially needy (i.e. the combined salary of both parents should not exceed R 120 000 per annum);
- A surety form must be signed by an employed person;
- The student must have good academic results;
- Matriculants should attach proof of registration;
- The student must not be in possession of another degree;
- The student must not be the recipient of other financial aid; and
- The student's studies must align with the training needs for the district.

The preceding criteria indicate that the policy aims at providing financial assistance to previously disadvantaged individuals, who are studying in health sciences fields (Study Loan Agreement, 6/7/7 (140), Clause 6.2). Additionally, bodies exist for bursary verification and recommendation i.e. this is contained in the District Verification and Recommendation Committees Constitutions, 2003. This lack of

formalized policies and procedures could result in miscommunication and the non-adoption of standardized procedures and could severely influence the success of implementation (Minogue, 1997).

What emerges from studies is that contexts and demands that were not anticipated by the policy formulators are often experienced, necessitating on-site policy-making and the exercising of a considerable amount of discretion (Lipsky, 1980). The result of this emergence is that policies are often implemented in a manner that is quite different to the original plan envisaged by policy formulators.

The previous discussions demonstrate the need to take policy context into account because of the unintended effects that it can have on implementation. It also allows for the exercising of a considerable amount of discretion and may allow for discrepancies in implementation.

4.4.2 Policy content

Policy content also has a considerable effect on the process of policy implementation because of the variety of factors that can influence content and implementation (Parsons, 1995).

4.4.2.1 Interests affected

Policies, when implemented, have the effect of introducing changes in the political, social, economic and technological arenas of a country

(Gordon, Lewis & Young, (1997). All policies thus affect the people who are intended to benefit from the implementation of the policy, and whose interests will be affected by the policy implementation (Johnson, 2000). Those groups will contribute to the success or failure of the policy depending on whether it receives their support or not (Jenkins, 1997).

The bursary procedure identifies a number of individuals whose interests are affected by the implementation process. Those individuals fall into three categories viz. the target group, members outside the target group and stakeholders (Gordon et al., 1997). The bursary procedure identifies the members of the target group as students residing within the Province of KwaZulu-Natal (Study Loan Agreement, 6/7/7 (140), Clause 9.1), who are academically able (Study Loan Agreement, 6/7/7 (140), Clause 6.2), and whose parents' cumulative salaries do not exceed one hundred and twenty thousand rand (R120 000) per annum.

Jenkins (1997) has argued that members of the target group may facilitate or hinder the process of implementation. It would appear reasonable that the implementation of a bursary procedure would not arouse resistance from members of the target group, as it would provide them the opportunity for academic advancement and subsequent employment. However, the success of such an

intervention is dependent on the active participation of target members in terms of academic commitment and performance.

Members outside the target group may be categorized in terms of the advantages they will receive in terms of improved health status and improved service delivery (Grindle, 1980). Members of this group consist of KZN communities, which utilize the public health system and would gain benefit from the improved service delivery. However, it should be noted that community members might resist this process if they feel that the process of allocation of bursaries and subsequent employment was not transparent (Johnson, 2000).

The third group of individuals whose interests are affected are the stakeholders (this includes members of the target group and non-target group, as well as employees of the Department Of Health) (Gordon et al., 1997). As mentioned previously, both members of the target and non-target groups stand to gain from the bursary procedure. However, employees and employee organization interests are affected, since the monitoring, evaluation and control of the bursary process places certain demands on employees (Study Loan Agreement, 6/7/7 (140), Clause 9.1.10.1).

The bursary procedure and its associated responsibilities could be perceived negatively by employees, as additional responsibilities, which are not critically related to their core line function. It is essential

that an understanding of the benefits that will accrue to them be developed (Jenkins, 1997). Opposition from non-target group members in the community could also occur (Study Loan Agreement, 6/7/7 (140), Clause 6.3). For example, successful bursary applicants could face intimidation or threats from unsuccessful bursary applicants. It is important that community involvement and support be elicited during the bursary process.

4.4.2.2 Type of benefit

The type of benefits that the programme provides also affects the process of implementation. Programmes that provide collective goods generally elicit compliance of the target groups with a minimal amount of conflict (Grindle, 1980). However, programs with divisible benefits may result in conflict and competition from within the target group who will benefit from them and, in this case, may prove more difficult to implement (Johnson, 2000).

As regards the bursary process, the nature of the benefits provided may be regarded as divisible (Grindle, 1980) as the nature of these benefits is associated with processes such as training, skills development and employment (Study Loan Agreement, 6/7/7 (140), Clauses 8.1 & 8.2, and Clauses 9.1- 9.5) (Grindle, 1980).

However, if the programme is implemented successfully all individuals involved should benefit:

- Provincially: More qualified healthcare professionals would become available to work in the KZN public health sector.
- Departmentally: Critical vacancies would be filled and succession planning implemented, thereby improving service delivery.
- Individually: Skills gained where there would otherwise be no opportunity (i.e. financially impoverished students). Additionally, benefits also accrue to the population of the rural community in terms of health services delivered and employment opportunities created.

4.4.2.3 Type of policy

It is theorised that the type of policy chosen is linked to the interests affected and the type of benefits being distributed (McCool, 1995). In this regard, three different categories of policies exist i.e. distributive, regulatory, and redistributive. Different categories of policies are best implemented with different measures of control and the type of policy will determine choice of instruments used for control (Johnson, 2000).

(i) Distributive policies

Distributive policies are those where Government can make decisions without regard to limitation, and implementation agencies are centralised to primary functional units (Anderson, 1997). Instruments that are used to maintain control, generally involve the remote use of coercion aimed at individual conduct (McCool, 1995). Such policies would include land and/resource policies.

(ii) Regulatory policies

Regulatory policies usually have a common impact on areas such as the economy, and involve direct decisions concerning who loses and who benefits (e.g. employment equity quotas and black economic empowerment requirements). Implementation is decentralised and involves the delegation of authority and control (McCool, 1995). Control is maintained by instruments where the likelihood of coercion is immediate.

(iii) Redistributive policies

Redistributive policies are those that have a broad scope of impact on social classes, and the agencies involved in implementation, are usually centralized (Anderson, 1997). Land reclamation policies would fall into this category.

It is important to determine the category of a policy as different categories require different methods of control for successful implementation. Thus, the identification of the type of policy will help determine the most appropriate instruments for control (Mc Cool, 1995).

An analysis of the current bursary procedure reveals that it involves both regulatory and redistributive aspects. The bursary procedure may be regarded as regulatory in its orientation, due to the contractual obligations, which are entered into between the Department and the

student (McCool, 1995) (Study Loan Agreement, 6/7/7 (140)). Additionally, its regulatory nature is evidenced by the fact that priority is given to target groups (aligned with the Employment Equity Act) when concerned with the distribution of bursaries. Given the preceding information, the appropriate decision-making structure would be decentralized and there would be a need for mixed control on the part of organizational units (Anderson, 1997).

The bursary procedure may, however, be regarded as redistributive in nature as it is revising a previously unequal process (McCool, 1995). The KZN DOH bursary procedure is redistributive in the sense that it targets rural vacancies, which are difficult to fill, as well as previously disadvantaged individuals. The appropriate decision-making structure in this instance would be centralized with elaborate standards (Anderson, 1997).

In classifying the KZN DOH bursary procedure as both regulatory and redistributive in nature, an inherent conflict emerges in terms of the appropriate decision-making structures. Regulatory policies require decentralized decision-making structures; however, in contrast, redistributive policies rely mainly on centralized decision-making structures.

4.4.2.4 Programme control and measurability

When evaluating a policy, it is important to ascertain whether the programme is controllable and whether it can be measured (Crewe, 2005). The more aspects a programme has which are uncontrollable or cannot be fully measured, the greater the likelihood that problems will arise during implementation, and the policy goals will not be attained (Meltzer, 1992). While authority and funding are necessary for implementation, officials and organisations must also have the necessary mechanisms to ensure control (Parson, 1995).

The current bursary procedure focuses on the following aspects of control viz. the individual's behaviour and organizational behaviour. Individuals' behaviour is controlled in terms of the contractual provisions, which all students are required to sign annually prior to the disbursement of bursary funding (Study Loan Agreement, 6/7/7 (140)).

The organizational behaviour is also controlled via the same contractual obligations, as well as by various agencies that perform a monitoring and evaluation function (Study Loan Agreement, 6/7/7 (140), Clause 6.6). The problem arises in that parts of the current bursary procedure are not controllable (Parson, 1995). The geographic dispersion of personnel with bursaries in various institutions within the KZN DOH makes the monitoring of the service commitments and breaches difficult (Study Loan Agreement, 6/7/7 (140), Clause 9.1.10).

An absence of formalized policies and procedures related to the bursary procedures may also see internal controls overridden (Meltzer, 1992). No written policy currently requires registers to be maintained at a district or institutional level and, therefore, no reconciliation occurs between application forms requested and bursary applications received (Auditor-General query, September 2004). This omission may create the impression of a lack of transparency and is a significant omission in terms of control. It indicates that from the inception point, geographic dispersion demands control measures.

4.4.2.5. Techniques of control

(i) Non-coercive Instruments

Non-coercive forms of control generally depend on voluntary collaboration and include voluntary standards, publicity, educational, and demonstrational programs (Anderson, 1984). To a large extent, the instruments associated with such control have limited direct government involvement. Instead, family, community and the market play a significant role in implementation and goal achievement (Howlett et al., 1995).

(ii) Coercive instruments

Coercive instruments are also known as compulsory or directive instruments. Such methods of control are more coercive in nature and may include inspection, licensing, loans or subsidies, contractual obligations and sanctions. Those methods of control evidence greater

government involvement in terms of the instruments used to ensure compliance, as in the case of regulatory administration (Anderson, 1984). These methods are regarded as highly coercive in nature, as a lack of compliance exacts a penalty. In some instances, regulations may occur through the administration of the judicial system.

(iii) Mixed Instruments

Mixed instruments combine aspects of both voluntary and compulsory instruments. Their defining feature is that they allow government discretion in terms of the degree of directive influence over Non-Governmental Organizations (Anderson, 1984). The use of exhortation and information may be regarded as mixed instruments. The former involves a concerted effort to change behaviour, whilst the latter involves disseminating knowledge to the population so that informed choices can be made (Johnson, 2000).

In this instance, the policy has been classified as both regulatory and re-distributive and, therefore, two types of instrument choices are anticipated. Regulatory policies suggest that coercive instruments aimed at individual conduct should be utilised, whilst re-distributive policies suggest the use of coercive instruments aimed at the environment of conduct (Anderson, 1984).

The KZN DOH bursary procedure currently makes use of mixed instruments, for example, inspection, as an instrument of control (Study

Loan Agreement, 6/7/7 (140), Clause 7.1.3 – 7.1.5). Inspection is coercive in its orientation and is directed at the environment of conduct. It relies on monitoring and evaluation to evaluate the bursary process and non-compliance can result in punitive measures (Study Loan Agreement, 6/7/7 (140), Clause 7.1.6 & 7.1.8).

The KZN DOH also controls the implementation of the bursary procedure via contracted loans and subsidies (Anderson, 1984). Contracts are coercive instruments, which are used to advance public purpose. They generally involve financial transfers from Government to targeted individuals to encourage desired activity (Johnson, 2000). They are aimed at both individual conduct and the environment of conduct, and there are severe regulatory mechanisms to ensure compliance (Study Loan Agreement, 6/7/7 (140), Clause 7.1.8.3). Contracts are, therefore, regarded as an appropriate instrument of control as they cater to the dichotomous nature of the bursary procedure (i.e. both its regulatory and redistributive characteristics).

4.4.2.6 Extent of change envisioned

The degree to which the programme requires a change in behaviour from the participants can also influence the extent to which the implementation process is affected (Friedman, 1998). Programmes that require a significant behaviour change on the part of the participants are often more difficult to implement than those that require an insignificant change in behaviour patterns (Jenkins, 1997).

The degree to which a programme requires a change in behaviour from participants can also affect the implementation process (Friedman, 1989). The current bursary programme requires extensive change in the bursary holders' behaviour in terms of the completion of a service commitment of equal duration to the period of State-aided studies (Study Loan Agreement, 6/7/7 (140), Clause 9.1). Control is achieved via a study loan (Study Loan Agreement, 6/7/7 (140), (Clause 6.1)), which provides financial assistance in return for compliance from recipients, as well as stringent regulatory mechanisms in the form of contractual obligations and directive power (McCool, 1995).

Programmes designed to achieve long-range objectives can be more difficult than those designed to achieve short-range objectives. This difficulty arises because the advantages of the latter are more apparent and, consequently, receive the initial needed support and behaviour change (Johnson, 2002).

Evaluating the success of the implementation of the bursary policy is complicated by the fact that the programme is designed to achieve long-range objectives. The long lead times required to train healthcare professionals makes it difficult to assess efficacy.

4.4.2.7 Site of decision making

The content of the policy also determines where the site of implementation will be, both organizationally and geographically and, therefore, where decision-making takes place (Gordon et al., 1997). The content can determine whether the policy depends on key decision units, or whether it depends on a network of geographically dispersed decision units (Blowers, 1997).

As the site of implementation becomes more geographically and organizationally dispersed, the number of decision units increase and the execution of specific programmes becomes more difficult (John, 1998). This situation also increases the importance of control mechanisms and instruments.

In this instance, the site of decision-making is dependent on a network of geographically dispersed decision units for the bursary process. Occupational requirements are determined at an institutional level and consolidated into a list of critical occupations at each district. Bursaries granted per district are aligned to the critical occupational needs and, therefore, differ per district. Once training needs have been determined, posters are developed advertising the bursaries available for various occupational classes in each District (see Annexure B). The District and institutions within that District make recommendations regarding selection and placement, and the final decision is taken at Head Office.

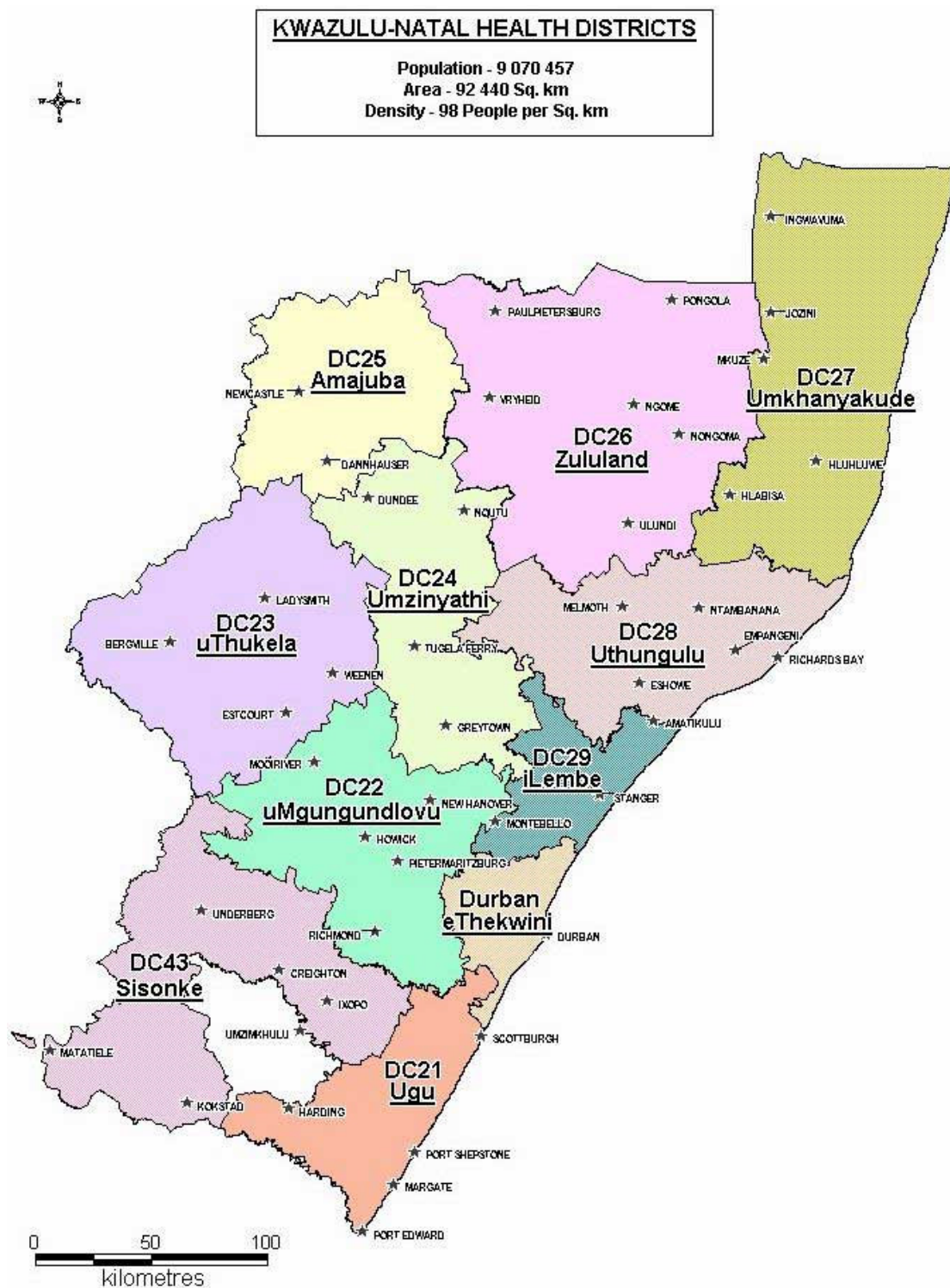
The previous discussion illustrates that there is a large degree of centralization involved in the decision-making structure, both in terms of the allocation and monitoring of bursaries, as well as with regard to the enforcement of contractual obligations in the event of breaches of contracts (Study Loan Agreement, 6/7/7 (140), Clause 9.3). There is, however, limited delegated authority to a district level to determine the training requirements per district and make recommendations regarding suitable bursary candidates.

The degree of centralization in the decision-making structure affects implementation because institutional managers do not have the authority to enforce compliance with the bursary contractual provisions. Instead, the authority is vested centrally with Head Office. This authority could result in serious delays in breaches of contract being identified and acted upon.

The preceding discussion also highlights the effect of the number of bursary candidates. In summary, an increase in the number of participants increases the number of perspectives and decision points involved in implementation and decreases the possibility of successful implementation (Pressman & Wildavsky, 1987). In particular, it the Department's ability decreases to respond quickly to changing local staffing needs and to detect breaches.

Figure 3 illustrates the health districts in KwaZulu;Natal

Figure 3



4.4.2.8 Resources committed

The amount and the range of resources that are allocated for implementation of the policy also play a considerable role in determining its success or failure (John, 1998). Resources can vary from financial and political support, to capacity and expertise of key personnel or organizations involved, and the amount of support and dedication provided by the personnel involved (Johnson, 2000).

Chase (1979) outlines relevant questions that need to be asked pertaining to the nature of resources:

- **What are the financial and monetary limitations and the prospects for receiving more?**

Financial limitations also exist, in that current funding only allows for approximately ten (10) new bursary holders per district per annum (a total of approximately 110 per annum), which is woefully short of the needs. This situation creates frustration and a lack of commitment to the Bursary Programme (Annual Report 2003/04). Additionally, such limitations mean that critical occupational needs per district cannot be met (Study Loan Agreement, 6/7/7 (140), Clause 6.3).

- **Are the necessary personnel in place? Do they possess the correct qualifications and are there enough of them?**

Certain resource difficulties are evident with the Bursary Programme. In particular, the necessary personnel at an institutional level responsible for monitoring service commitments are not readily identifiable. Additionally, this function is often added onto the official's job description and, hence, does not always get the priority it deserves (Auditor-General query, September 2004).

▪ **Is technology important and, if so, are the right supplies and technical equipment available and usable?**

In terms of technology, the bursary component has a database at their disposal (Chase, 1979). However, that database is only able to provide limited information, which often has limited practical value. These difficulties are compounded by the fact that personnel in the bursary component are not well versed in the functions, and management of this programme and tend not to make full or effective use of the technology available to them (Auditor-General query, September 2004). Additionally, the different databases within the Department (for example Basic Accounting System and Persal) are not integrated and this difficulty complicates the process of monitoring and enforcement (Auditor-General query, September 2004).

4.5 Context of implementation

The preceding discussion focused on policy content as a determining factor affecting the outcomes of the policy implementation process. However, Johnson (2000) argues that many policies and programmes fail to give due consideration to the contextual setting in which implementation takes place. The context of implementation has a considerable impact on policy implementation. When addressing the issue of context, there are a number of factors that deserve consideration. These include:

4.5.1 Powers, interests and strategies of actors involved

Implementation is an ongoing process of decision making, which may occur at national, regional, provincial or local levels (Grindle, 1980). Each decision node allows officials to make determining choices about resource allocation or attempt to influence those decisions (Lipsky, 1980). In assessing the efficacy of the resources required for policy implementation and sustainability, the following questions need to be addressed:

- **How many agencies are involved?**

The Bursary Component at Head Office is intensely involved in the bursary policy implementation process and has prescriptive, monitoring and enforcement powers, and also plays a central part in the execution of strategies (Study Loan Agreement, 6/7/7 (140), Clauses 6.1-6.8). It serves as a recipient of information regarding the bursary process and

assumes responsibility for implementers, puts mechanisms in place for implementation, assigns responsibilities and resources, disseminates information and ensures that the DOH KZN bursary programme is integrated into all strategic and operational plans, as well as set objectives and targets.

The information received allows the Bursary Component to perform in a monitoring capacity and utilize its powers of enforcement to ensure that there is no deviation from the required procedures (Study Loan Agreement, 6/7/7 (140), Clause 7.1.3).

An inherent problem however, exists in that there is no separation of functions between implementation and control (Auditor-General query, September 2004). Ideally, the bursary component should report to a separate body that could advise the implementers on how the process should be approached and controlled, as well as what remedial interventions are required. Being both implementer and controller introduces a bias into the process, as members may fail to identify problems at a strategic level, due to their intense immersion at an operational level (Lipsky, 1980).

- **What levels of Government are involved?**

Involvement at a District and Institutional Level

At a district level, institutional and programme management are involved in the bursary process. Their responsibility is mainly that of a

supervisory and monitoring role in that they ensure that service commitments are served by bursary holders (Study Loan Agreement, 6/7/7 (140), Clause 9.1.10). However, they are also actively involved in determining critical occupational needs per district (to ensure that bursaries are granted according to that district's needs), and providing guidance regarding where students should be placed to fulfil their contractual obligations (Study Loan Agreement, 6/7/7 (140), Clause 9.1.5).

- **Can the personnel work together? Are different responsibilities clearly outlined?**

Resistance may be encountered because the aforementioned functions are additional to their current job descriptions. They may be unwilling or even unable to assume this responsibility (Grindle, 1980). This situation may also lead to the bursary process being given a low priority at this level, and may also introduce the concept of a 'silo mentality' when it comes to roles and responsibilities.

Another manner in which the interest at a district level may conflict with those at a Head Office level is the decision to retain enforcement capacity at a central level. This decision may hamper implementation because it does not enable immediate compliance with contractual provisions due to a lack of authority (Study Loan Agreement, 6/7/7 (140), Clause 9.1.7 & 9.3).

Additionally, the different responsibilities between the aforementioned officials are not clearly defined and hand-over points can be confusing, resulting in unnecessary delays in the bursary process and losses to the Department (John, 1998).

- **Does the programme elicit support?**

Theoretically, since the bursary procedure will improve the efficiency of the organization and reduce current workloads, it should be in the best interests of the non-target employees to support this process. However, resistance may be experienced as in-service personnel currently have no access to bursaries and this impedes their career-pathing and professional development (Personnel Circular 21 of 1998).

In essence, some employees may regard the bursary procedure as preferential recruitment, thereby leading to competition over scarce resources. This situation is aggravated by the fact that a student completing studies, who is contracted to the Department, might be placed in a higher post in preference to in-service staff members who have funded their own part-time studies due to their contractual service obligation.

Further complications arise from the contractual obligations in that the contract allows for a bursary holder to be placed anywhere within the Province, at the discretion of the Head of Department (Study Loan Agreement, 6/7/7 (140), Clause 9.1). This contractual provision is in

direct conflict with the district allocation procedure, which strives to ensure that each district allocates bursaries according to its needs (Verification and Recommendation Committee Constitutions, 2003). This situation undermines the legitimacy of the bursary procedure and creates further resentment of the lack of enforcement implementation at district level (Crewe, 2005).

- **What is the level of political influence?**

Implementation is an ongoing process of decision-making and due to the resource intensiveness of the programme both administratively and operationally, as well as the numbers of officials involved; attempts may be made to influence resource allocation (Lipsky, 1980). For example, at a sub-district level, the members of the Verification Committees (for example, the traditional leaders or Ward Councillors) have the requisite authority to influence resource allocation.

The bursary procedure attempts to counteract this influence by ensuring that at this level of interface members are only called on to verify the authenticity of the information on the bursary application form (Verification Committee Constitution, 2003). For example, applicants may provide incorrect information on their bursary application forms i.e. addresses from within the Province may be given, although the students themselves actually live outside the Province.

The support of elected politicians should improve the implementation of the programme, if leadership is provided at higher levels (Chase, 1979). However, at times, political pressure is exerted in order to secure bursaries for students, who may or may not meet the required selection criteria. Such involvement impedes implementation processes and may result in precedents being created, which directly contravene the bursary policy.

- **What degree of “visibility” does the programme have?**

Currently, the KZN DOH bursary procedure is not highly visible to the public. Contact with the media in general is limited to advertisements, which are placed in community newspapers advertising the different bursaries available per district. However, press attention could facilitate the implementation of the programme via the introduction of donor funding (Chase, 1979).

4.5.2 Institution and regime characteristics

Officials of the Department function within a particular context. In particular, the organizational culture of the Department may influence the activities of officials and the manner in which the programme is implemented (Grindle, 1980).

It has been noted that within the context of the bursary programme, there appears to be a culture of a lack of commitment. This culture is evident at all levels of the programme. A high percentage of bursary

breaches evidence a lack of commitment on the part of bursary holders (either through academic failure or refusal to serve at a public institution) (Department of Health Annual Report, 2004/05). This breach rate may be as a result of the perception that the coercive methods used by the Department to ensure compliance, conflict with the democratic culture of the new South African society.

The manner of policy implementation is thus also a function of where the institution falls on a continuum of authoritarianism versus democracy. For example, the inherent characteristics associated with a democratic institutional context limit the ability for imposing solutions (Smith & May, 1997).

Grindle (1980) also emphasises that policies are not pursued in isolation to one another and that one policy's success or failure might affect outcomes in other policies or programmes. This view is evident in terms of an aspiring applicant's matric results. Many students in deep rural areas, who are most afflicted by economic hardship, cannot be assisted via the bursary process as their Matric results are so poor that they cannot gain access to a tertiary institution, regardless of whether or not they receive funding. The poor economic conditions in which the bursary programme is being implemented, therefore, has the greatest potential to subvert the policy's goals.

4.5.3 Compliance and responsiveness

As evidenced in previous discussions, the successful implementation of the bursary procedure faces the difficulty of gaining compliance with the terms and provisions associated with the key objectives of the policy (Study Loan Agreement, 6/7/7 (140), Clauses 2.1 - 2.5). Compliance issues raised relate to the compliance of officials in performing monitoring and supervisory roles in terms of bursary holders, as well as compliance of the bursary holder themselves to the contractual provisions.

Liaison with tertiary institutions needs to occur to ensure that academic progress is monitored and that payments are timeously processed (Study Loan Agreement, 6/7/7 (140), Clauses 7.1.3 – 7.1.8.3). Mechanisms for control exist, in that contracts are renewed annually, based on the student's promotion to the next year of academic studies and the necessary information is captured on the database (Study Loan Agreement, 6/7/7 (140), Clause 2.1). However, a provisional report from the Auditor-General's Office has identified inconsistencies and flaws with this system (Auditor-General query, September 2004). Some breaches occur due to inadequate monitoring, indicating a lack of commitment at an institutional level.

Additionally, clear identification of employees who have bursary commitments may be difficult, as bursary component officials do not always make use of the Persal system, which allows bursary

commitments to be flagged and hence, easily identifiable. This difficulty again evidences a lack of commitment to the bursary process (Auditor-General Query, September 2004).

Responsiveness also plays a vital role in achieving the success of a policy or programme in a given context (Johnson, 2000). Responsiveness is the ability of officials to respond to ensure the successful implementation of the policy. This ability is crucial for the adequate provision of a good service. In addition, responsiveness is a vital necessity for achieving flexibility and the support required for successful implementation, as well as for developing feedback mechanisms (Smith & May, 1997). In this regard, the geographical dispersion of key role players in the process, as well as a lack of delineation of roles and responsibilities, impact negatively in terms of responsiveness (John, 1998). Time delays and centralized authority have the concomitant impact of reducing compliance.

4.6 Assessing the feasibility of project implementation strategies

Implementation choices are made and affected by the specific political and administrative context in which they occur. An evaluation of the environment in which policy implementation occurs is important, as it takes cognisance of factors external to policy content, which may affect policy implementation (Grindle, 1980).

4.6.1 Policy and programme definition

This argument looks at how environmental context (e.g. political environment) influences choices made regarding the general goals of public policies and how this context affects the implementation of particular programmes. In this instance, within the new democracy of South Africa, political focus addresses issues of redress, and the overarching goals of assisting previously disadvantaged individuals. This focus is evident in the bursary policy (see aforementioned bursary screening criteria).

More complicit in the policy, is the goal of stemming internal migration flows of scarce skills from rural to urban areas. This restriction can be seen in the trend towards granting priority to bursary applicants from rural areas. This strategy also operationalises issues of improving service delivery in outlying areas. Indirectly, this policy will allow the Department to realize its employment equity targets in “specialist” occupational categories.

The consequences for policies that emerge under such conditions are that they are often underpinned by utopian mindsets that belie the actual problems and costs involved in executing them (Johnson, 2000).

The problem that emerges with the KZN DOH bursary procedure is that whilst its processes for enforcement are fairly well defined, no

forethought has been given to the fact that those procedures could also complicate issues (Anderson, 1984). Enforcement over the behaviour of individuals is administered in terms of contractual compliance and breach of contract results in a debt being raised and recovered (Study Loan Agreement, 6/7/7 (140), Clause 9.2). The problem here is that, in most instances, the recovery of monies spent on training healthcare professionals, who have breached their contracts by not working in the public sector, fails to resolve the root problem, which is acquiring “specialist” skills for areas and occupational categories where recruitment drives are proving ineffective.

The above arrangements are by default both impersonal and inflexible and seem to reinforce the culture of a lack of commitment, which was discussed previously (Smith & May 1997). The long lead times associated with training healthcare professionals also result in the organization losing valuable skills that are needed to deliver crucial services to underserved areas. The identification of those deficiencies indicates that a more flexible and personal approach may elicit more commitment and, hence, the retention of the developed skills (Anderson, 1984).

An additional problem associated with enforcement is that the mechanism and process used (i.e. monitoring of contractual compliance) is slow and cumbersome. This process impedes implementation, where quick results are necessary and implies that

reporting procedures should be strengthened in order to obtain quicker results (McCool, 1995).

The preceding discussion illustrates how the nature of political regimes may affect the content of the policy and, hence, the subsequent impact on the implementation phase.

4.6.2 Implementation elements

There are a number of critical features that influence the type of implementation tool used (Anderson, 1980). The instruments used for implementation vary across four categories:

(i) Targeting

Targeting refers to the precision and selectivity with which the target population identified by the policy can be identified. Any ambiguity in terms of the definition of the target population may lead to policy goals being subverted (Anderson, 1980). The bursary policy targets previously disadvantaged individuals. However, because the policy goals are not clearly defined and the target group is large, policy goals could be subverted.

(ii) Political risk

Political risk refers to the nature of support or opposition that policy implementation is expected to stimulate, as well as the

public visibility of the policy and chances of failure (Crewe, 2005). The bursary policy has been classified as both redistributive and regulatory in nature. Any policy that is redistributive in nature and involves divisible goods may encourage conflict (Johnson, 2000). Thus, conflict may arise regarding the limited number of bursaries that may be allocated per district given financial constraints.

(iii) Resource intensiveness

Resource intensiveness refers to both administrative cost and operational efficiency. As resource intensiveness increases, so does the difficulty of successful policy implementation (Meltsner, 1992). The bursary policy may be regarded as highly resource intensive. The decentralised process of bursary allocation, in conjunction with the centrally vested authority and the diverse number of role players involved, as well as a lack of role delineation increases the difficulty of successful policy implementation.

(iv) Constraint on State activity

Constraint on State activity refers to issues, which arise with coerciveness, or ideological principles that limit Government activities (John, 1998). This constraint is particularly relevant where policies introduce issues which redefine ideological

norms; for example policies which address issues of land reform.

4.6.3 Instrument choices

Instrument choices and preferences are invariably a function of State capacity (i.e. its organisational ability to implement) and the complexity of the policy sub-systems (i.e. the number of organisations involved in implementation) (Howlett et al., 1995). Howlett and Ramesh (1995) examine how context affects strategy or the compliance instrument. Two major poles of differentiation are drawn: context is evaluated in terms of State capacity (i.e. organizational capacity), and complexity of the policy sub-systems (i.e. the number and type of sub-systems dealt with during implementation).

The figure below can be used to determine appropriate instruments of control.

Figure 4: Instrument Choices (Howlett et al., 1995)

	Policy Subsystem Complexity	
	High	Low
High	Market Instruments	Regulatory Public Enterprise or Direct Provision Instruments
Low	Voluntary, Community or Family Based Instruments	Mixed Instruments

At present the KZN Department of Health is experiencing capacity constraints. The vacancy rate for the Department is 27.6%, and in certain scarce skills categories may reach 56.8% (Department of Health: Annual Report, 2004). The Department may, therefore, be regarded as underdeveloped in terms of the skills and resources needed for health programme initiatives and these impact negatively on service delivery. Johnson (2000) argues that the government, as a whole, is faced with a variety of problems that the former government ignored and it now has to extend already strained resources to deal with the problems of a whole population and not just a privileged few.

The second pole differentiation involves the degree of policy sub-system complexity (Howlett et al., 1995). The policy sub-system that needs to be dealt with in terms of the bursary procedure has many decision points and a number of role players; however, its complexity level is not regarded as highly complex.

The preceding discussion indicates that the KZN Department of Health functions within a context of low State capacity, combined with medium policy sub-system complexity. According to the model postulated by Howlett et al. (1995) the appropriate instruments for use in this situation would be mixed. Mixed instruments would include regulatory instruments (e.g. the contractual provisions), as well as voluntary instruments (e.g. voluntary, community or family based instruments). The current policy makes use of mainly regulatory interventions and it

is postulated that its efficacy could be increased if more voluntary instruments were utilised.

4.7 Outcomes

At the outcome stage of the implementation process, it becomes possible to evaluate whether or not the process has succeeded or failed. It is important to note here that although the process of implementation may take place fairly quickly, the desired outcomes and changes in the environment may take longer to manifest (Grindle, 1980). Lack of immediate, apparent change, therefore, is not indicative of a failed policy (Johnson, 2000). However, Pressman et al. (1973) emphasize that policies have a greater chance of succeeding if they are implemented quickly and produce immediate results that are apparent to the intended beneficiaries, since their support is required for the implementation to succeed.

Grindle (1980) focuses on two areas that can be used as partial measures to determine whether or not policies have succeeded in their objectives. They are:

(i) *Impact on society, individuals, and groups*

One measure of determining whether or not a policy has succeeded is to determine whether or not programmes have delivered required services or had the intended impact. The benefit of making the above

comparison is that it allows the initial implementation guidelines to be revised to take into account any unintended consequences.

Previously, bursary resources were allocated to predominantly urban areas. Currently, the bursary procedure allocates bursaries on a district basis and allows for the recognition of more rural applicants. However, in terms of resources, there is a lack both in labour and monetary resources, which affect implementation and, indirectly, service delivery to the populace. Additionally, the long lead times in terms of training mean that immediate results are difficult to assess.

(ii) *Change and its acceptance*

The second category looks at change in behaviour, whether there has been a change and whether or not it is the desired change (Johnson, 2000). For change to occur, the change needs to have been accepted and those affected by the change need to be receptive to it. The redistributive nature of bursary policy results in varying degrees of resistance to change. This resistance ranges from resentment and resistance from staff (who cannot qualify for bursaries and regard the bursary monitoring function placed on them as a burden), to resistance from bursary holders themselves (who resist being placed at a public health institution for their service commitment).

4.8 Conclusion

The preceding discussions emphasize that it is not enough just to evaluate a policy in terms of what is present or absent in its content. One needs to contextualize policy to try to understand the implications that this evaluation has for implementation. There are thus, different implications attached to the use of different types of instruments, not only because of the type of control they allow, but also because of the response that using them generates. The policy evaluation indicators enumerated in this discussion and their illustration within a health related policy framework provide the background and understanding for the qualitative evaluation of the Bursary Policy.

Provisional conclusions emanating from the aforementioned evaluation of the policy indicators imply that the policy in its current format is likely to suffer diverse implementation problems.

In assessing the type of policy, it has been determined that the policy is both regulatory and redistributive in nature. This classification implies an inherent conflict in terms of appropriate decision-making structures. Regulatory policies require decentralized decision-making structures; whereas, redistributive policies rely mainly on centralized decision-making structures (Anderson, 1984).

This classification, in turn, means that the policy needs to utilise mixed instruments as a measure of control (McCool, 1995). This control

introduces further conflict, as regulatory policies are best served by coercive instruments aimed at individual conduct, whilst re-distributive contracts suggest the use of coercive instruments aimed at the environment of control.

The ripple effect implies that monitoring and control will be difficult, and taken in conjunction with the limited resources identified to implement the bursary programme, predicts that bursary breaches will be difficult to identify, control and recover, and that bursaries allocated may not reflect the true needs of each district in terms of the healthcare professionals required.

Chapter 5 - QUANTITATIVE BURSARY POLICY ANALYSIS

5.1 Introduction

In the previous chapter, a qualitative evaluation of the content and context of the bursary policy was undertaken. Certain inconsistencies and inherent weaknesses in the policy were discussed and their influence on implementation and policy efficacy was debated. In Chapter 3, the research methodology that was used to generate the quantitative data was discussed. In this chapter, the results obtained are discussed, and the results of the analysis of the relationships between the variables under scrutiny are examined according to the specific aim and objectives outlined in chapter 4. For the purposes of clarity, the aim and objectives are reiterated below.

5.2 Aim

The primary aim of this study is to determine if the KZN Department of Health's current bursary policy is fulfilling its intended objective of procuring and retaining human resources in order to address internal migration through the granting of academic bursaries.

5.2.1 Objective 1:

To undertake an evaluation of the bursary policy process by measuring it against policy indicators as identified in a context relevant policy evaluation framework.

5.2.2 Objective 2:

To determine the relationship between the occupational vacancies in the KwaZulu-Natal Department of Health (KZN DOH) and the bursary allocation and placement procedures.

5.2.3 Objective 3:

To determine the relationship between the length of service commitment and the propensity to breach contractual obligations.

5.2.4 Objective 4:

To determine the relationship between the occupational category and the propensity to breach contractual obligations.

5.3 **Data Analysis**

Data regarding vacancy rates for rural and urban institutions was gathered for each of the identified occupational categories (i.e. doctors, professional nurses, pharmacists, dentists and medical specialists).

In order to determine whether rural institutions experienced significantly more vacancies than their urban counterparts, each institution was classified as either rural or urban. This classification was achieved by determining if the health institution qualified for a Rural Allowance (PSCBC Resolution 2 of 2004). It should be noted that the Rural Allowance is also provided to “rural” institutions in traditionally urban districts. A t-test for independent samples was then undertaken to

determine whether there was a significant difference between the average vacancy rate for rural institutions and the average vacancy rate for urban institutions. This t-test was performed for the occupational categories of doctors, professional nurses, pharmacists, dentists and specialists. For details of the t-test results, see Table 1 in Annexure D.

The results indicate that there is a significant difference in the vacancy rates across all categories, between urban and rural institutions ($t=.013$; $df=84$; $P<0.05$). In particular, the vacancy rate is significantly higher in urban institutions than it is in rural institutions.

In order to assess the efficacy of the bursary allocation procedure, data was gathered on the number of bursaries granted per occupational category per institution. Once again, a t-test for two independent samples was undertaken to determine whether there was a significant difference between the average rates of bursaries allocated to rural institutions and the average rates of bursaries allocated to urban institutions.

The results indicate that there is no significant difference (across all occupations) between the bursaries allocated to rural and urban institutions ($t=.170$; $df=84$; $P>0.05$). For details of the t-test results, see Table 2 in Annexure D.

To ascertain whether a relationship existed between the number of vacancies and the number of bursaries allocated (per occupational category and per institution), a regression analysis was undertaken. In this statistical analysis, the vacancy rate experienced was regarded as the independent variable and the bursaries allocated as the dependent variable. Scatterplots indicating the regression line and the relationship for each occupational category were utilised to display the relationships graphically.

The efficacy of the bursary placement procedure and retention ability was then assessed. Data was gathered on the number of bursary breaches per occupational category per institution, as well as the number of years owed in terms of service commitment. The relatively small number of bursary holders and, concomitantly, the relatively low number of breaches limited the possibility of the use of inferential statistics; therefore, basic descriptive statistics were used.

5.3.1 Analysis of Data for the Occupational Category: Dentists

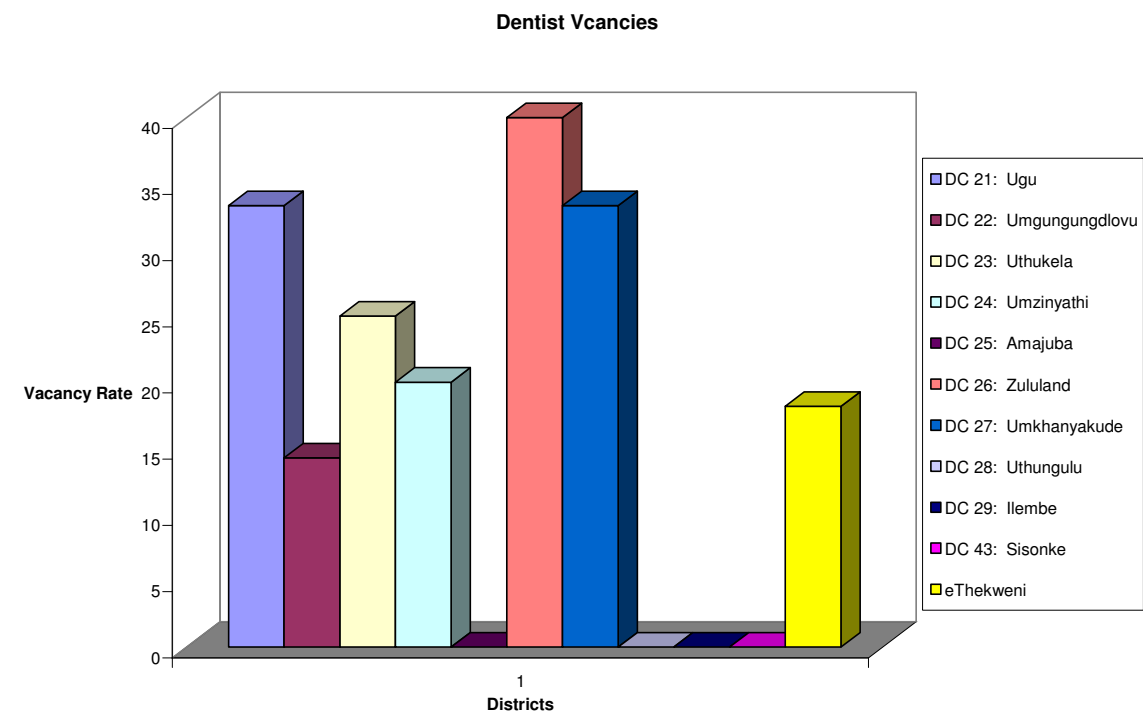
Table 5.3.1: Vacancies per District for the Occupational Class: Dentists

DISTRICT	BURSARY HOLDERS	VACANT POSTS	TOTAL POSTS	VACANCY RATE
DC 21: Ugu	6	2	6	33.3%
DC 22: Umgungundlovu	4	2	14	14.3%
DC 23: Uthukela	4	1	4	25.0%
DC 24: Umzinyathi	4	1	5	20.0%
Dc 25: Amajuba	1	0	2	0.0%
DC 26: Zululand	2	2	5	40.0%
DC 27: Umkhanyakude	8	1	3	33.0%
DC 28: Uthungulu	1	0	5	0.0%
DC 29: Ilembe	0	0	6	0.0%
DC 43: Sisonke	3	0	3	0.0%
eThekwini	6	4	22	18.2%
Grand Total	39	13	75	17.3%

The preceding table provides information on the vacancy rates and the number of bursary holders for dentists within the various Districts of the KZN DOH. A percentage in terms of vacancy rates and bursary holders was used in order to take account of the different numbers of personnel in each District. Vacancy rates for dentists range from 0% (in the districts of Uthungulu, Ilembe, Sisonke and Amajuba) to 40% (at Zululand), and the average

vacancy rate for dentists in the province is 18%. This information is illustrated graphically in Chart 5.3.1(a).

Chart 5.3.1(a): Dentist Vacancies by District



A t-test was undertaken to compare the average vacancy rate for dentist posts in rural and urban institutions. This analysis was undertaken to determine if there was a significant difference in average vacancy rates between urban and rural institutions for the occupational category: dentist.

The results indicate that for the occupational category: dentist, there is no significant difference in vacancy rates between rural and urban vacancy rates

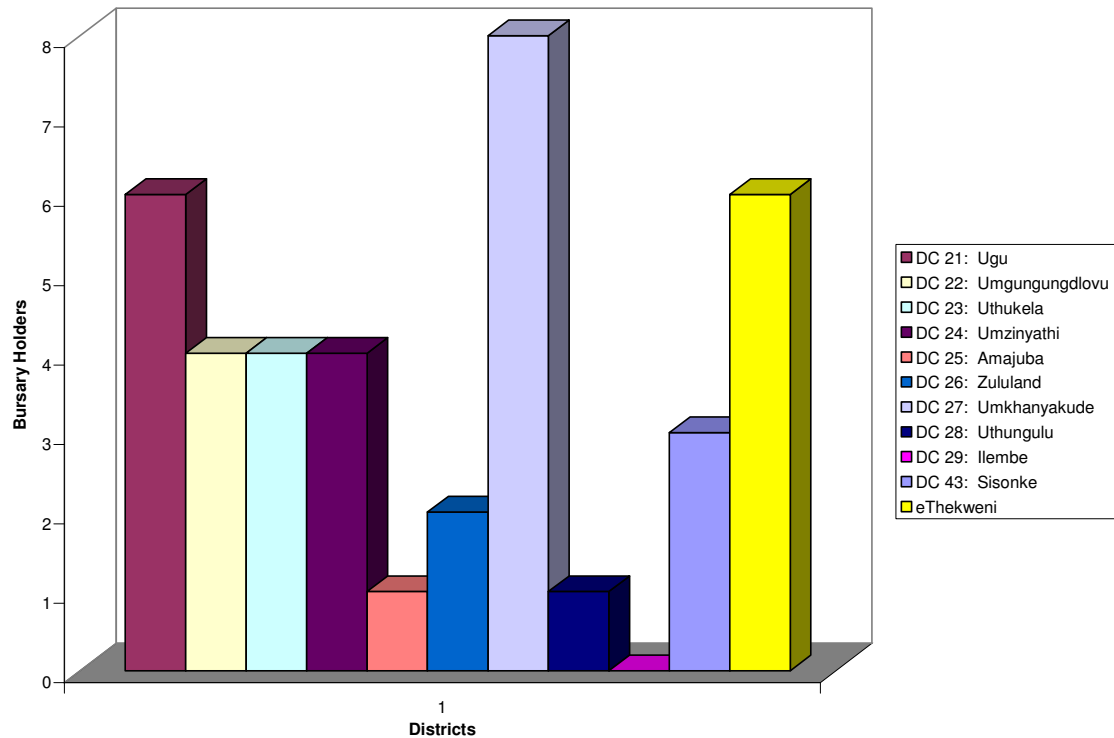
($t = -.724$; $df = 84$; $P > 0.05$). For details of the t-test results, see Table 3 in Annexure D.

A second t-test was undertaken to determine if there was a significant difference in the number of bursaries granted between rural and urban areas. This test was undertaken to determine if bursary allocation rates reflected the profile of vacancies for dentists.

Table 5.3.1 and Chart 5.3.1(c) provide information on the number of bursaries allocated to study dentistry within the various Districts of the KZN DOH. A percentage in terms of allocation rate has been used in order to take account of the different numbers of bursaries allocated per district.

Allocation rates vary from 0% (in Ilembe), to 21% (at Umkhanyakude). The number of bursaries allocated per district is illustrated graphically in Chart 5.3.1(c).

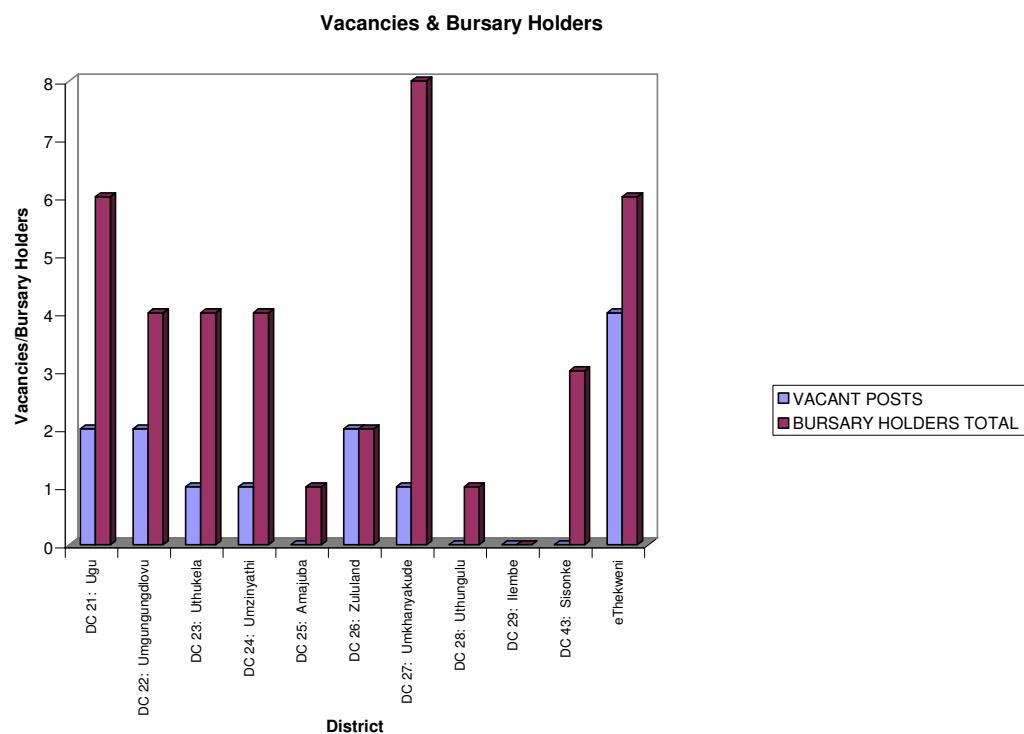
Chart 5.3.1(b): Dentist Bursary Holders per District



The t-test results indicate that for the occupational category of dentist there is no significant difference in bursary allocations between rural and urban areas ($t=-.399$; $df=84$; $P>0.05$). For details of the t-test results, see Table 4 in Annexure D.

The following graph provides a comparison of vacant dentist posts per District, and dentist bursaries allocated per District.

Chart 5.3.1(c): Comparison Dentist Vacancies and Bursary Holders



In order to determine whether a relationship existed between the number of dentist vacancies per district and the number of dentist bursary holders per district, the data for vacancy rate and percentage of bursary holders was utilised in a regression analysis.

Regression analysis revealed a statistically significant relationship between the number of dentist vacancies and the number of dentist bursaries. Thus, it may be concluded that the number of dentist bursaries is dependent on the

number of vacant Dentist posts. (F = 30.011; r = .513 ; df = 85; P <0.01).
For details see Table 5 of Annexure D.

Chart 5.3.1(d): Dentist Regression Scatterplot



5.3.2 Analysis of Data for the Occupational Category: Medical Officer

Table 5.3.2: Vacancies for the Occupational Category: Medical Officer

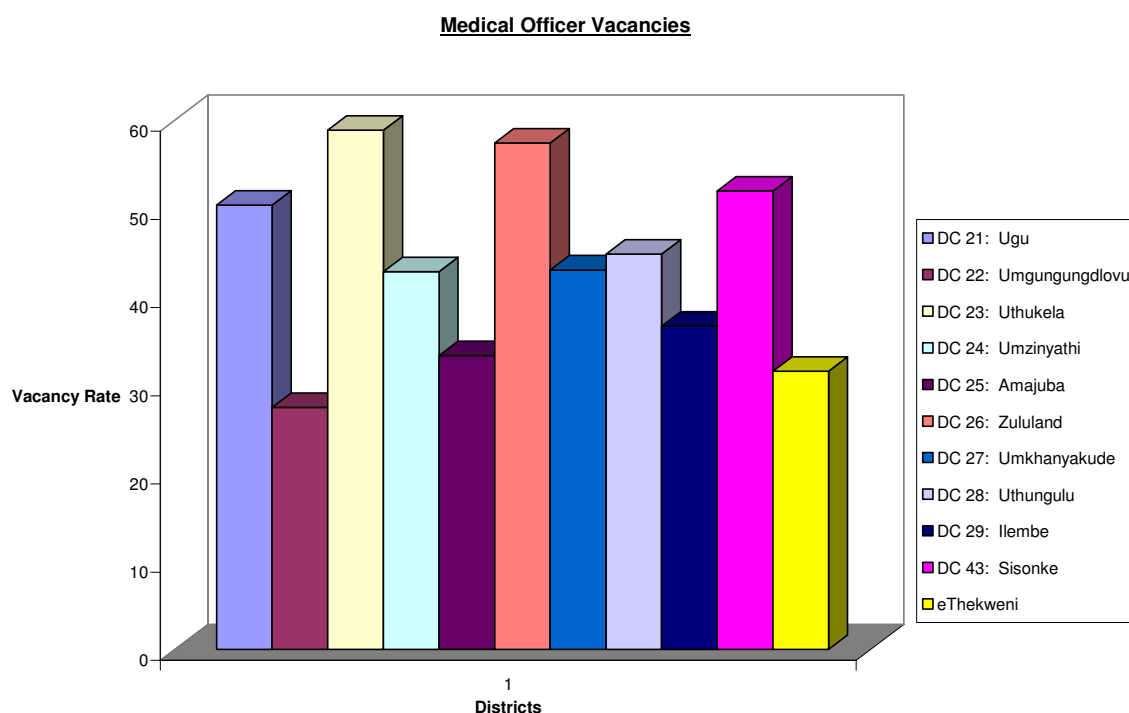
DISTRICT	BURSARY HOLDERS	VACANT POSTS	TOTAL POSTS	VACANCY RATE
DC 21: Ugu	21	64	127	50.4%
DC 22: Umgungundlovu	29	89	324	27.5%
DC 23: Uthukela	28	53	90	58.9%
DC 24: Umzinyathi	24	30	70	42.9%
Dc 25: Amajuba	9	24	72	33.3%
DC 26: Zululand	21	58	101	57.8%
DC 27: Umkhanyakude	35	31	72	43.1%
DC 28: Uthungulu	8	91	203	44.8%
DC 29: Ilembe	26	33	90	36.7%
DC 43: Sisonke	22	26	50	52.0%
eThekwini	103	177	561	31.6%
Grand Total	326	676	1760	38.41%

The preceding table provides information on the vacancy rates for medical officers (i.e. general practitioners) within the various Districts of the KZN DOH. A percentage in terms of vacancy rates and bursary holders has been used in order to take account of the different numbers of personnel in each district.

Vacancy rates for medical officers range from 27.5% (in the district of Umgungundlovu) to 58.8% (at Uthukela), and the average vacancy rate for

medical officers is 38.41%. This information is illustrated graphically in Chart 5.3.2(a).

Chart 5.3.2(a): Medical Officer Vacancies per District



A t-test was undertaken to compare the average vacancy rate for medical officer posts in rural and urban institutions to determine if there is a significant difference in vacancy rates. The results indicate that for the occupational category of medical officer there is no significant difference in vacancy rates between rural and urban vacancy rates ($t = -.896$; $df = 84$; $P = .373$). For details of the t-test results, see Table 6 in Annexure D.

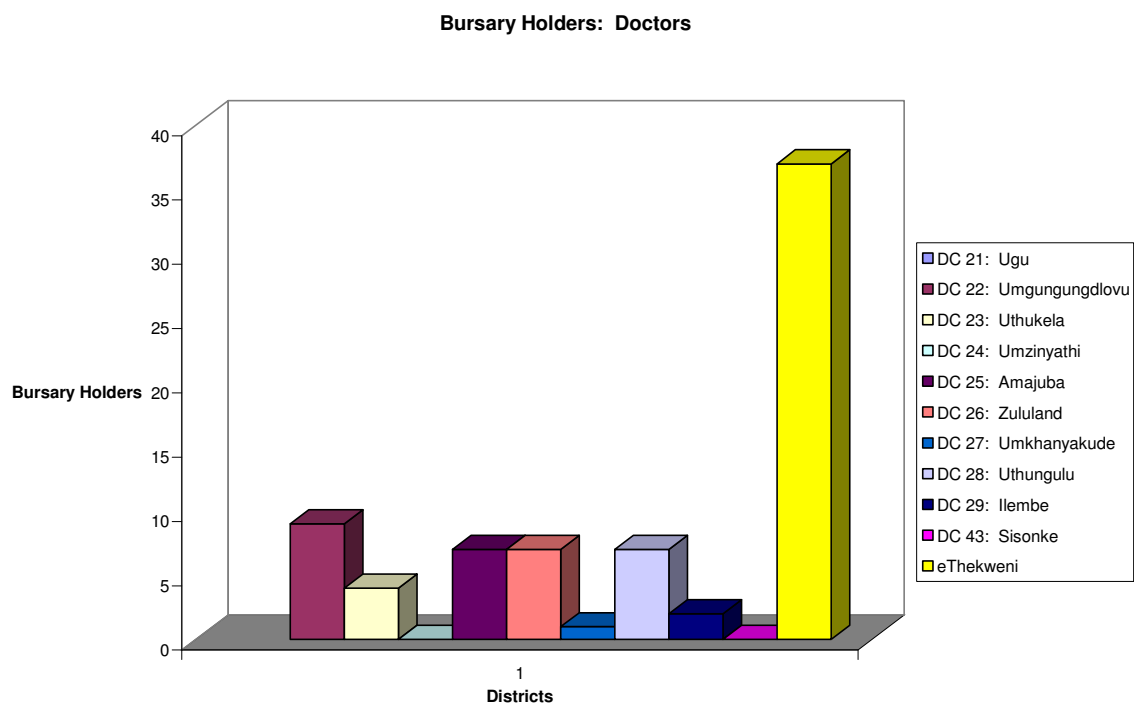
A second t-test was undertaken to determine if there was a significant difference in the number of bursaries granted between rural and urban areas.

This test was undertaken to determine if bursary allocation rates reflected the profile of vacancies for medical officers.

Table 5.3.2 and Chart 5.3.2(b) provide information on the number of bursaries allocated to study for a MBCHB within the various Districts of the KZN DOH. A percentage allocation rate has been used in order to take account of the different number of bursaries allocated in each District.

Allocation rates vary from 2% in Uthungulu to 32% in eThekweni. This information on the number of bursaries allocated is illustrated graphically in Chart 5.3.2(b).

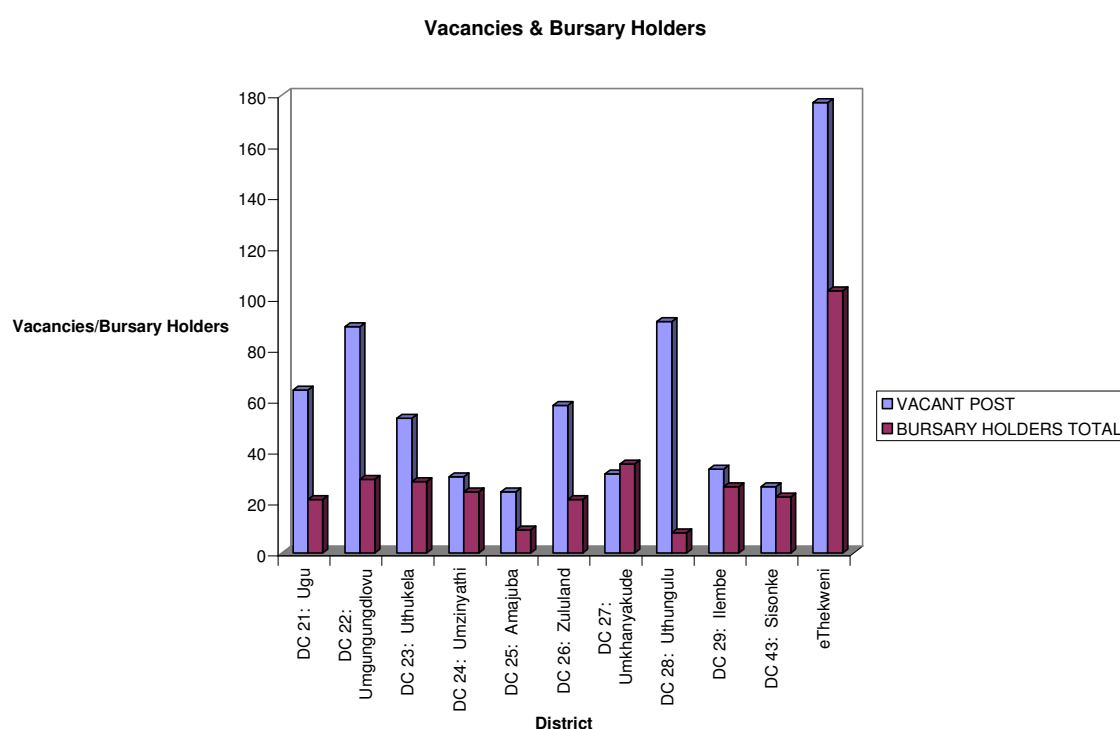
Chart 5.3.2(b): Medical Officer Bursary Holders per District



The results indicate that for the occupational category: Medical Officer there is no significant difference in the bursary allocation rate between rural and urban institutions ($t=-.115$; $df=84$; $P= 0.909$). For details of the t-test results, see Table 7 in Annexure D.

The following graph provides a comparison of vacant medical officer posts per district and the MBCHB bursaries allocated per district.

Chart 5.3.2(c): Comparison of vacancy rates to bursary holders: Medical Officer

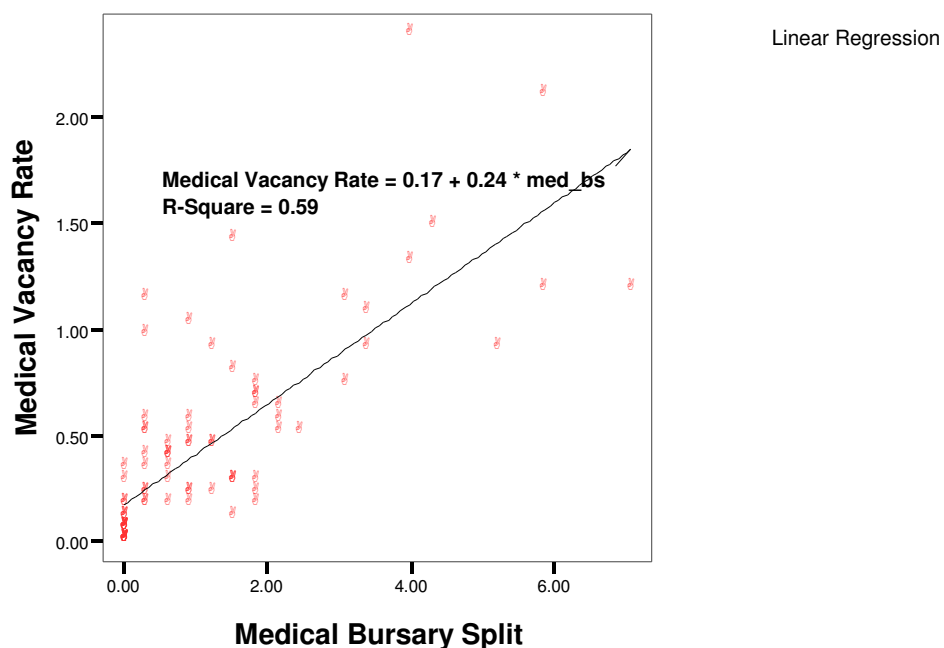


In order to determine whether a relationship existed between the number of medical officer vacancies per District and the number of medical officer

bursary holders per District, the data for vacancy rates and the percentage of bursary holders was utilised in a regression analysis.

Regression analysis revealed a statistically significant relationship between the number of medical officer vacancies and the number of MBCHB bursaries. Thus, it may be concluded that the number of MBCHB bursaries is dependent on the number of vacant Medical Officer posts. ($F = 119.571$; $r = .766$; $df = 85$; $P < 0.01$). For details of the t-test results, see Table 8 in Annexure D.

Chart 5.3.2(d): Medical Officer Regression Scatterplot



5.3.3` Analysis of Data for the Occupational Category: Pharmacist

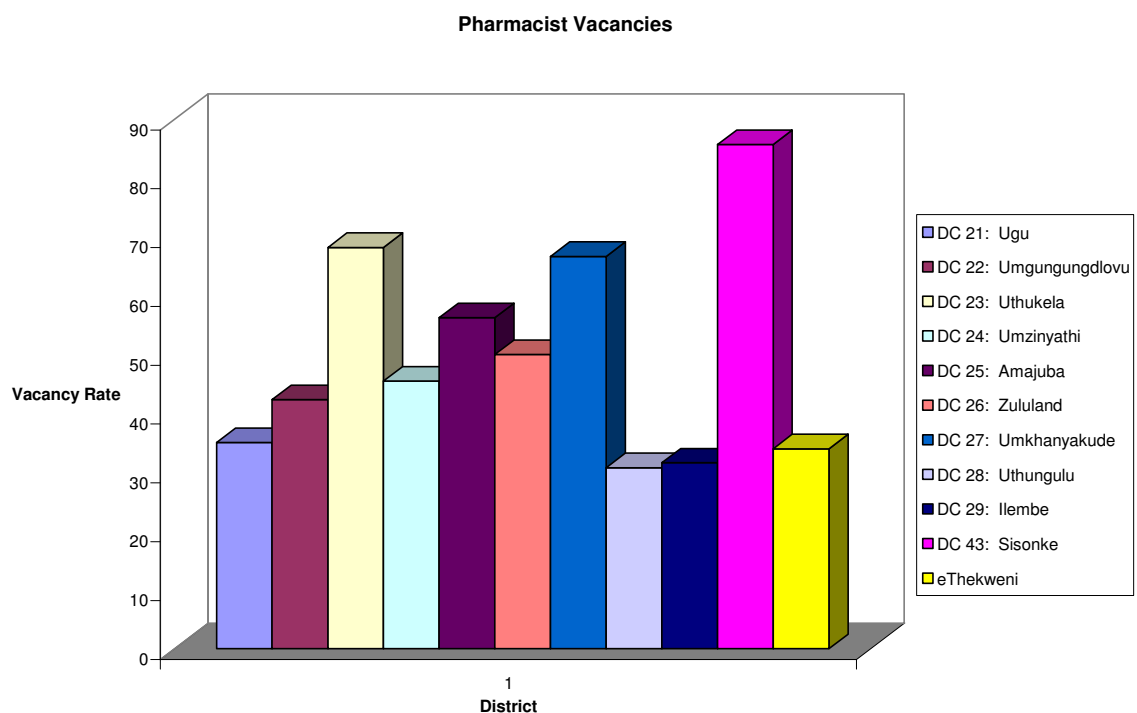
Table 5.3.3: Vacancies for the Occupational Category: Pharmacists

DISTRICT	BURSARY HOLDERS	VACANT POSTS	TOTAL POSTS	VACANCY RATE
DC 21: Ugu	5	7	20	35.0%
DC 22: Umgungundlovu	4	22	52	42.3%
DC 23: Uthukela	6	15	22	68.2%
DC 24: Umzinyathi	3	5	11	45.5%
Dc 25: Amajuba	2	9	16	56.3%
DC 26: Zululand	5	8	16	50%
DC 27: Umkhanyakude	3	8	12	66.7%
DC 28: Uthungulu	0	8	26	30.8%
DC 29: Ilembe	1	6	19	31.6%
DC 43: Sisonke	2	6	7	85.7%
EThekwini	7	54	159	34.0%
Grand Total	38	148	360	41.0%

The preceding table provides information on the vacancy rates for pharmacists within the various Districts of the KZN DOH. A percentage in terms of vacancy rates and bursary holders has been used in order to take account of the different numbers of personnel in each District.

Vacancy rates for pharmacists range from 30.8% (in the District of Uthungulu) to 85.7% (at Uthukela), and the average vacancy rate for pharmacists in the Department is 41%. This information is illustrated graphically in Chart 5.3.3(a).

Chart 5.3.3(a): Pharmacist Vacancies per District



A t-test was undertaken to compare the average vacancy rate for pharmacist posts in rural and urban institutions. This analysis aimed to determine whether there was a significant difference in vacancy rates between rural and urban institutions.

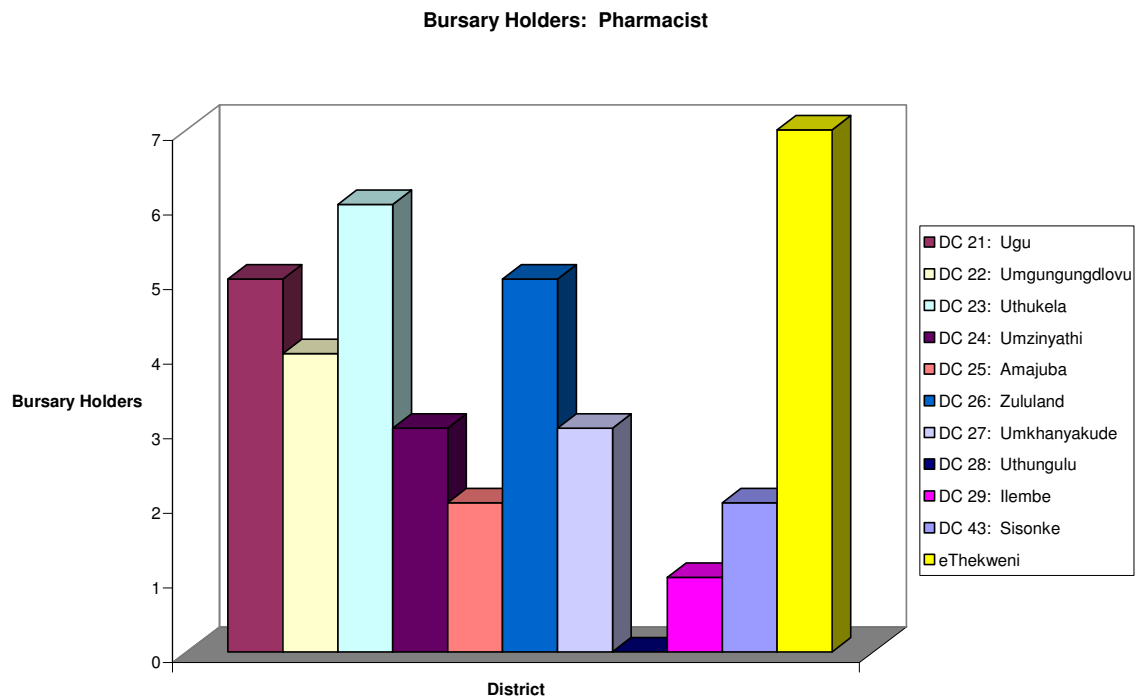
The results indicate that for the occupational category: Pharmacist there is a significant difference in vacancy rates between rural and urban institutions ($t =$

-3.986; df = 84; P =.000). In this regard, there is a significantly higher level of pharmacist vacancies in urban areas, as opposed to rural areas. For details of the t-test results, see Table 9 in Annexure D.

A second t-test was undertaken to determine if there was a significant difference in the number of bursaries granted between rural and urban areas. This test was undertaken to determine if bursary allocation rates reflected the profile of pharmacist vacancies.

In order to assess the efficacy of the bursary allocation procedure, data was gathered on the number of pharmacy bursary holders per institution. This information is summarised to a District level and illustrated graphically in Chart 5.3.3(b).

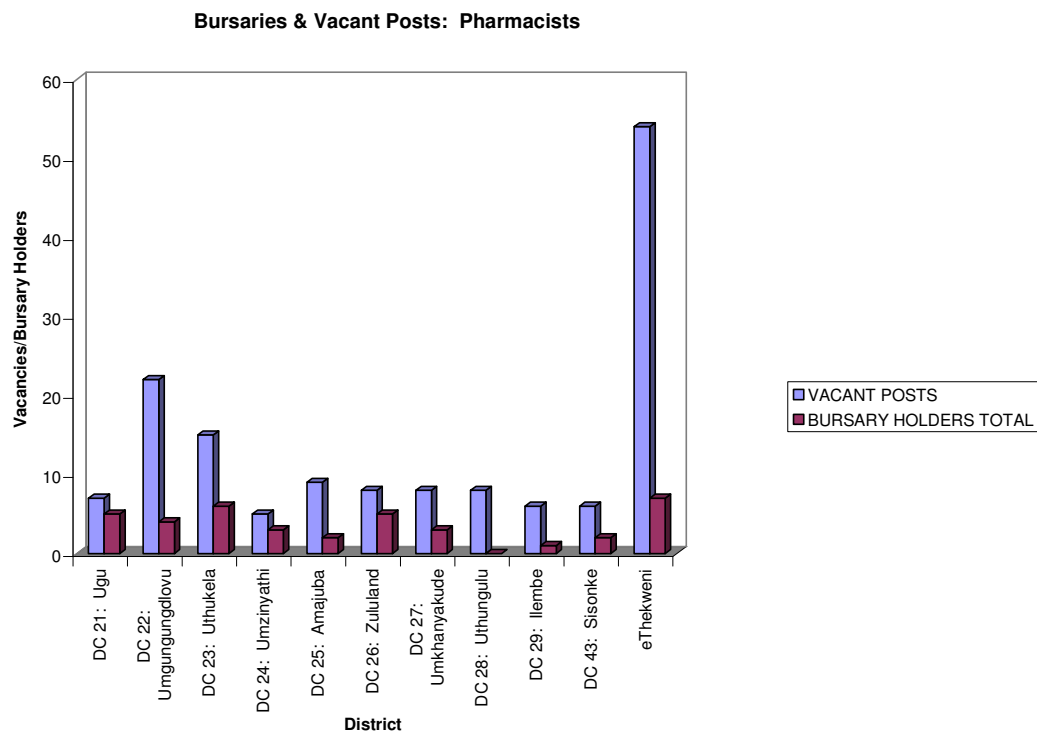
Chart 5.3.3(b): Pharmacist Bursary Holders per District



The results indicate that for the occupational category: Pharmacist there is no significant difference in bursary allocation rates between rural and urban institutions ($t=1.539$; $df=84$; $P=.128$). This result is concerning as it implies that bursaries for pharmacists are not being granted according to the greatest need. For details of the t-test results, see Table 10 in Annexure D.

The graph provides a comparison of vacant pharmacy posts per District and pharmacy bursaries allocated per District. This comparison is illustrated graphically in Chart 5.3.3(c)

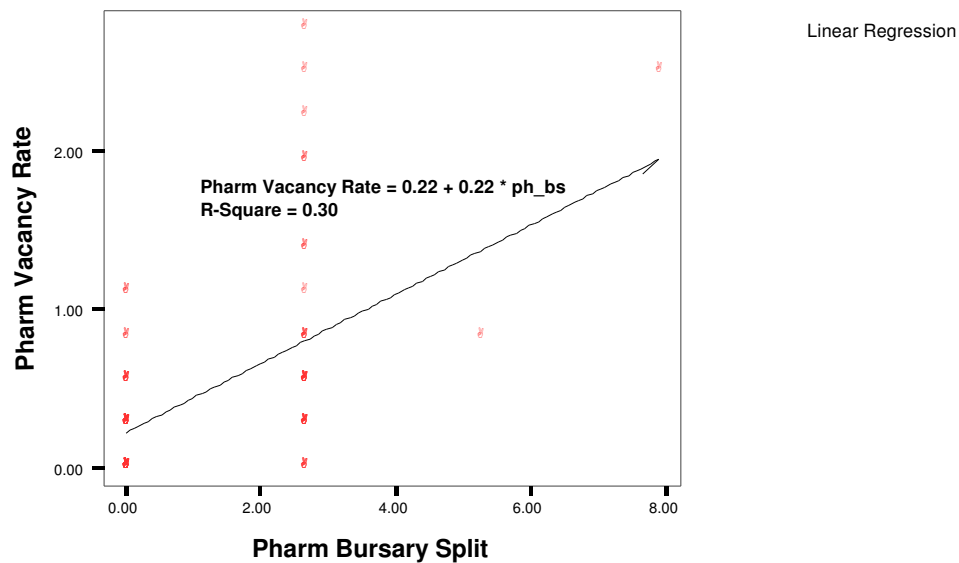
Chart 5.3.3(c): Comparison of vacancy rates to bursary holders: Pharmacists



In order to determine whether a relationship existed between the number of pharmacist vacancies per District and the number of pharmacist bursary holders per District, the data for the vacancy rate and the number of bursary holders was utilized in a regression analysis.

Regression analysis revealed a statistically significant relationship between the number of pharmacy vacancies and the number of pharmacy bursaries. Thus, it may be concluded that the number of pharmacy bursary holders is dependent on the number of pharmacy posts. ($F = 36.4$; $r = 0.550$; $df = 85$; $P < 0.01$). For details of the t-test results, see Table11 in Annexure D.

Chart 5.3.3: Pharmacist Regression Scatterplot



It is important to note that this scatter plot indicates potential problems with this regression. In particular, notice how “grouped” the data points are. In light of the above, the significant result obtained is suspect, particularly in light of the previous t-test results, which indicate that there is no significant difference in bursary allocation rates between rural and urban institutions. The small number of pharmacists that the department has and that therefore formed part of the statistical analysis may explain this unusual result.

5.3.4 Analysis of Data for the Occupational Category: Medical Specialists

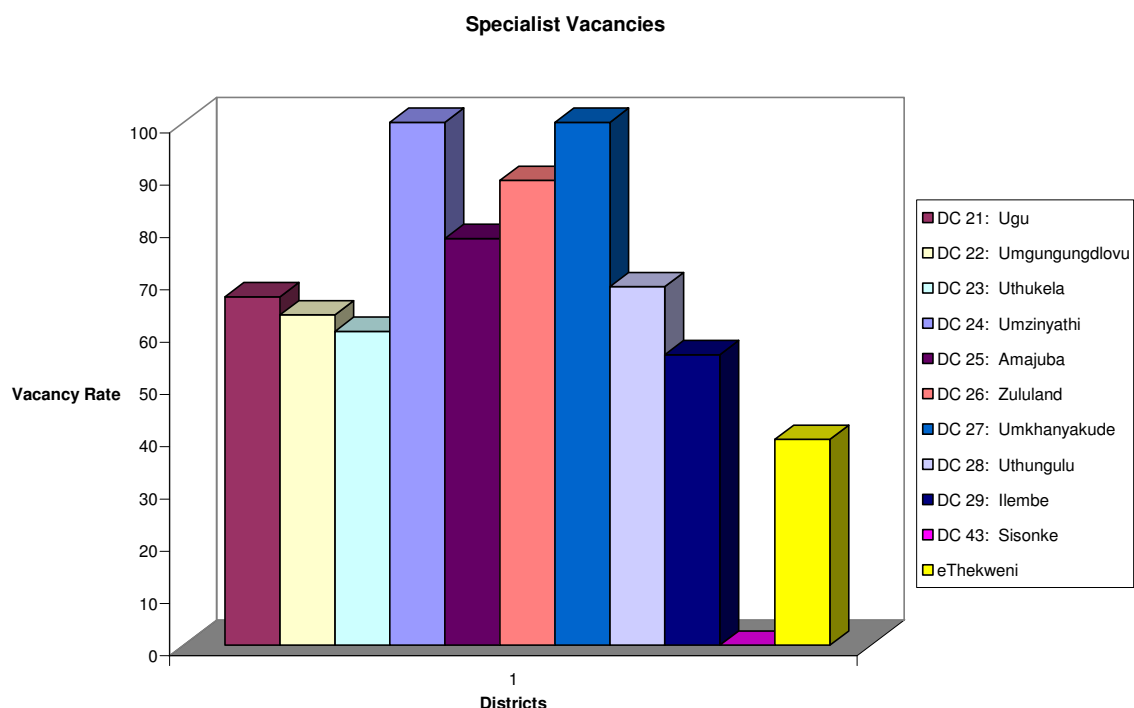
Table 5.3.4: Vacancy rates for the Occupational Category: Medical Specialists

DISTRICT	BURSARY HOLDERS	VACANT POSTS	TOTAL POSTS	VACANCY RATE
DC 21: Ugu	0	10	15	66.7%
DC 22: Umgungundlovu	0	60	95	63.2%
DC 23: Uthukela	0	6	10	60.0%
DC 24: Umzinyathi	0	2	2	100.0%
Dc 25: Amajuba	0	7	9	77.8%
DC 26: Zululand	0	8	9	88.9%
DC 27: Umkhanyakude	0	1	1	100%
DC 28: Uthungulu	0	24	35	68.6%
DC 29: Ilembe	0	5	9	55.6%
DC 43: Sisonke	0	-	-	-
EThekwini	0	98	249	39.4%
Grand Total	0	221	434	50.92

The preceding table provides information on the vacancy rates for medical specialists within the various Districts of the KZN DOH. A percentage in terms of vacancy rates and bursary holders has been used in order to take account of the different numbers of personnel in each District.

Vacancy rates for medical specialists range from 39.4% (in the district of eThekweni) to 100% (at Umzinyathi), and the average vacancy rate for medical specialists in the Department is 50.92%. This information is illustrated graphically in Chart 5.3.4(a).

Chart 5.3.4(a): Medical Specialist Vacancies per District



The results indicate that for the occupational category: Medical Specialist there is a significant difference in vacancy rates between rural and urban areas ($t=-2.141$; $df=84$; $P<.035$). Contrary to expectations, a higher percentage of medical specialist vacancies were experienced in rural institutions, as opposed to urban institutions. For details of the t-test results, see Table 12 in Annexure D.

It was not possible to determine whether a relationship existed between the number of medical specialist vacancies per institution and the number of medical specialist bursary holders per institution. This difficulty arose because it is contrary to the policy of the Department to fund post -graduate studies of full-time students. Additionally, the Department currently has a moratorium on the granting of bursaries to in-service personnel, (Personnel Circular 21 of 1998) thereby prohibiting in-service medical officers from specializing at state expense.

5.3.5 Analysis of Data for the Occupational Category: Professional Nurse

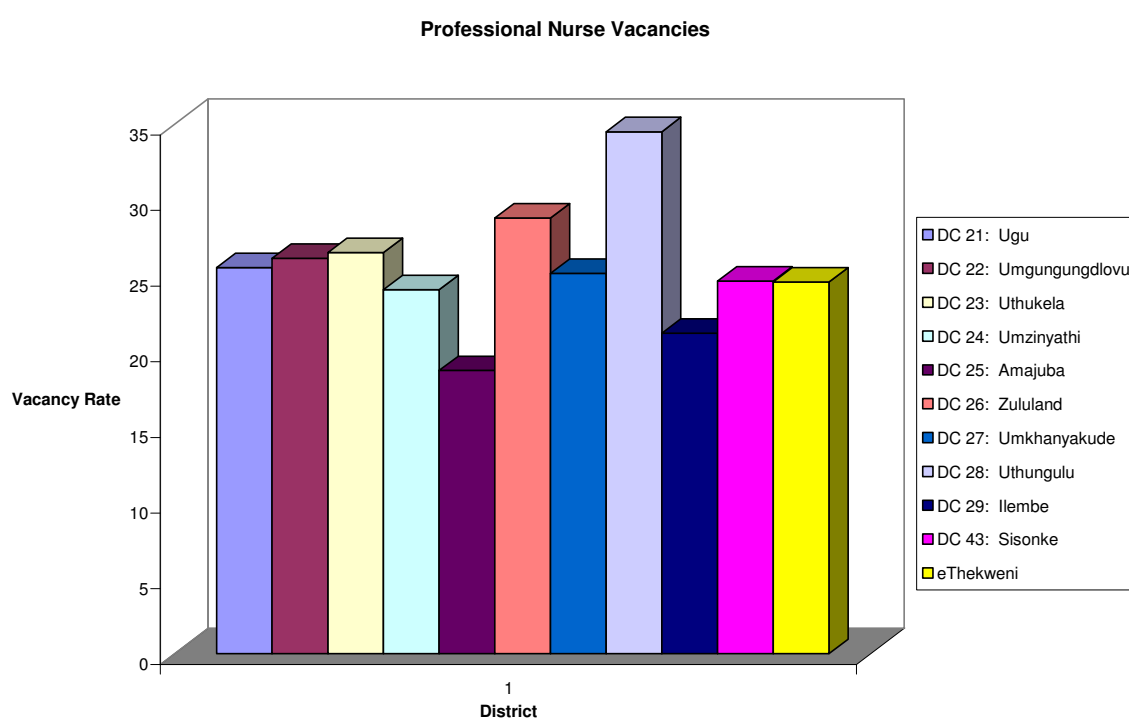
Table 5.3.5: Vacancy rates for the Occupational Category: Professional Nurse

DISTRICT	BURSARY HOLDERS	VACANT POSTS	TOTAL POSTS	VACANCY RATE
DC 21: Ugu	26	184	721	25.5%
DC 22: Umgungundlovu	656	485	1857	26.1%
DC 23: Uthukela	3	145	547	26.5%
DC 24: Umzinyathi	172	135	561	24.1%
Dc 25: Amajuba	25	110	588	18.7%
DC 26: Zululand	136	254	822	28.8%
DC 27: Umkhanyakude	8	137	545	25.1%
DC 28: Uthungulu	370	434	1258	34.5%
DC 29: Ilembe	4	86	406	21.2%
DC 43: Sisonke	4	82	333	24.6%
eThekwini	349	981	3994	24.6%
Grand Total	1753	3033	11692	26%

The preceding table provides information on the vacancy rates for professional nurses within the various Districts of the KZN DOH. A percentage in terms of vacancy rates has been used in order to take account of the different numbers of personnel in each district.

Vacancy rates for professional nurses range from 18.7% (in the District of Amajuba) to 34.5% (at Uthungulu), and the average vacancy rate for professional nurses in the Department is 26%. This information is illustrated graphically in Chart 5.3.5(a).

Chart 5.3.5(a): Professional Nurse Vacancies per District



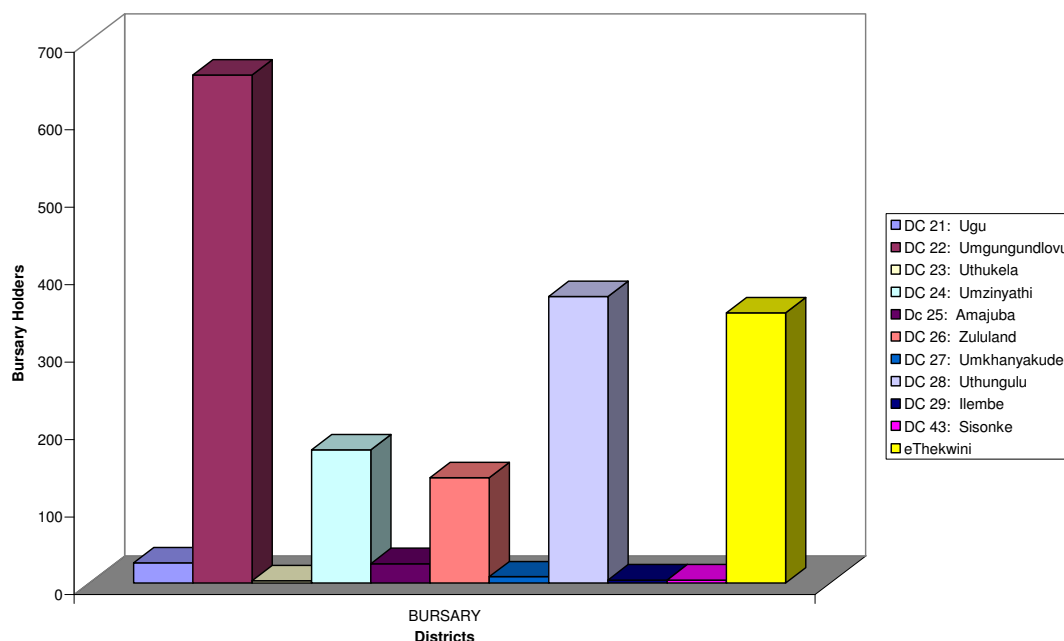
The results indicate that for the occupational category: Professional Nurse there is no significant difference in vacancy rates between rural and urban areas ($t = .157$; $df = 84$; $P = .157$). For details of the t-test results, see Table 13 in Annexure D.

In order to assess the efficacy of the bursary allocation and the placement procedures, data was gathered on the number of professional nurse bursary holders per District and a second t-test was undertaken.

Table 5.3.5 provides information on the number of bursaries allocated to study nursing within the various Districts of the KZN DOH. A percentage in terms of allocation rate has been used in order to take account of the different number of bursaries in each District.

Allocation rates range from 0.17%% (in Uthukela) to 37.4% in (eThekweni). This information is illustrated pictorially in Chart 5.3.5(b).

Chart 5.3.5(b): Professional Nurse Bursary Holders per District

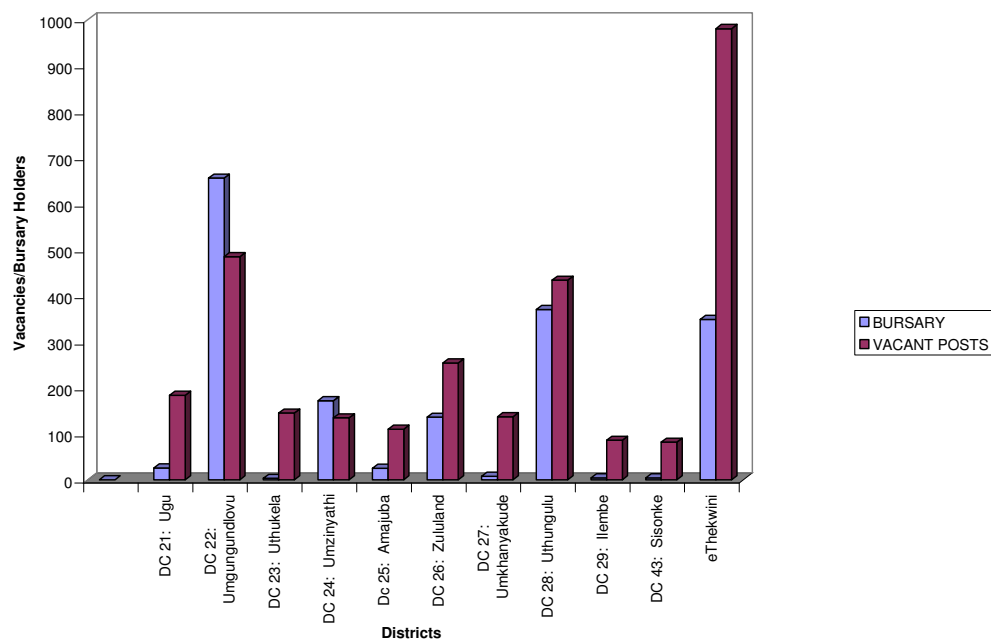


The t-test results indicate that for the occupational category: Professional Nurse there is no significant difference in allocation rates between rural and

urban areas ($t=.181$; $df=84$; $P=.857$). For details of the t-test results, see Table 14 in Annexure D.

The following graph provides a comparison of filled professional nurse posts per District and professional nurse bursaries allocated per District. This comparison is graphically illustrated in Chart 5.3.5(c).

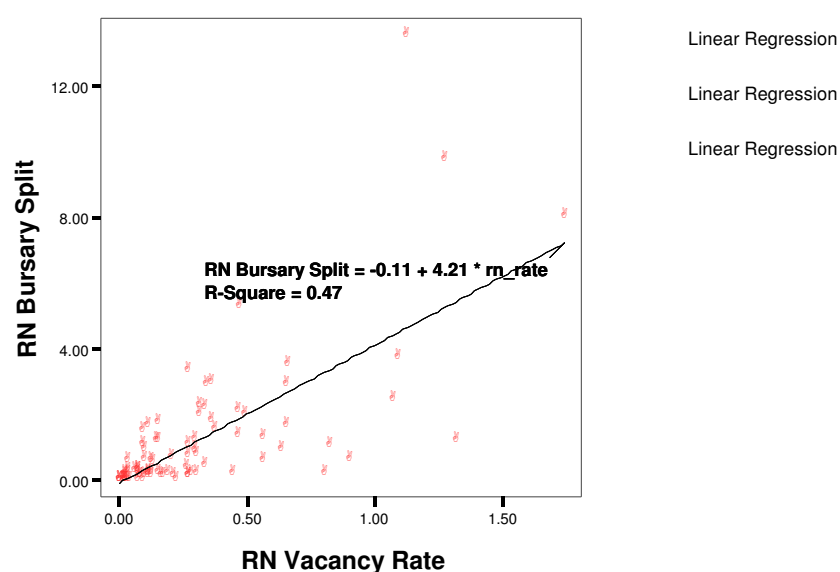
Chart 5.3.5(c): Comparison vacancies to bursaries allocated



In order to determine whether a relationship existed between the number of Professional Nurse vacancies per institution and the number of nursing bursary holders per institution. The vacancy rate and the number of bursary holders were utilized in a regression analysis.

Regression analysis revealed a statistically significant relationship between the number of Professional Nurse vacancies and the number of Registered Nurse bursaries. Thus, it may be concluded that the number of Registered Nurse bursaries is dependent on the number of vacant Registered nurse posts. (F=74.987; r=0.687; df=85; P,0.01). For details of the t-test results, see Table 15 in Annexure D.

Chart 5.3.5(d): Professional Nurse Regression Scatterplot



5.4 Comments on the statistical analysis

The preceding statistics indicate that the KZN Department of Health is awarding bursaries in line with the need (as indicated by the vacancy rates and substantiated by significant regression analysis results for all

occupational categories). The t-tests indicate there are significant differences between rural and urban institutions for the occupational categories: Pharmacists and Specialists. Contrary to intuitive expectations, urban areas have more vacancies than rural areas for those occupational categories.

However, the statistics do indicate that the occupational group: pharmacists may prove problematic in the future. The regression analysis for pharmacists, although significant, is the “weakest” relationship ($r=0.55$). In part, this relationship may be accounted for by the fact that there are few people studying to be pharmacists. This finding highlights this occupational group as an area of future attention for the KZN Department of Health. This finding is particularly significant in light of the t-test result ($t=1.539$; $df=84$; $P<.128$) for that occupational category, indicating that there are significantly more pharmacist vacancies in urban than in rural areas. Additionally, the t-test for bursaries indicates that there is no significant difference in allocation rates between rural and urban areas.

It is important to note that the regression analysis scatter plot indicates potential problems with this regression. It is significant to note how “grouped” the data points are. In the light of the above, the significant result obtained is suspect, and may be misleading, particularly in view of the previous t-test results, which indicate that there is no significant difference in bursary allocation rates between rural and urban institutions.

The significant t-test result for medical specialists also indicates an area of concern for the Department. Analysis reveals that the mean vacancy rates are significantly higher in urban institutions ($t=-2.141$; $df=84$; $P<.035$). The highest overall vacancy rate is also experienced by this occupational group (i.e. 50.9%). However, the Department have no mechanisms in place to cater for the training and retention of this occupational group.

The previous discussion and statistical analyses indicate that there are differences between rural and urban institutions in terms of vacancies and the awarding of bursaries. The discussion also confirms that the current strategy for awarding bursaries is in line with the actual need on the ground. However, the discussion does not answer the question “Is the bursary strategy actually helping to fill vacancies where they are needed?”

Whilst the Department may be awarding or allocating bursaries in line with Departmental needs, whether or not this actually has the desired effect of retaining those bursary holders in terms of their service commitments, is less clear.

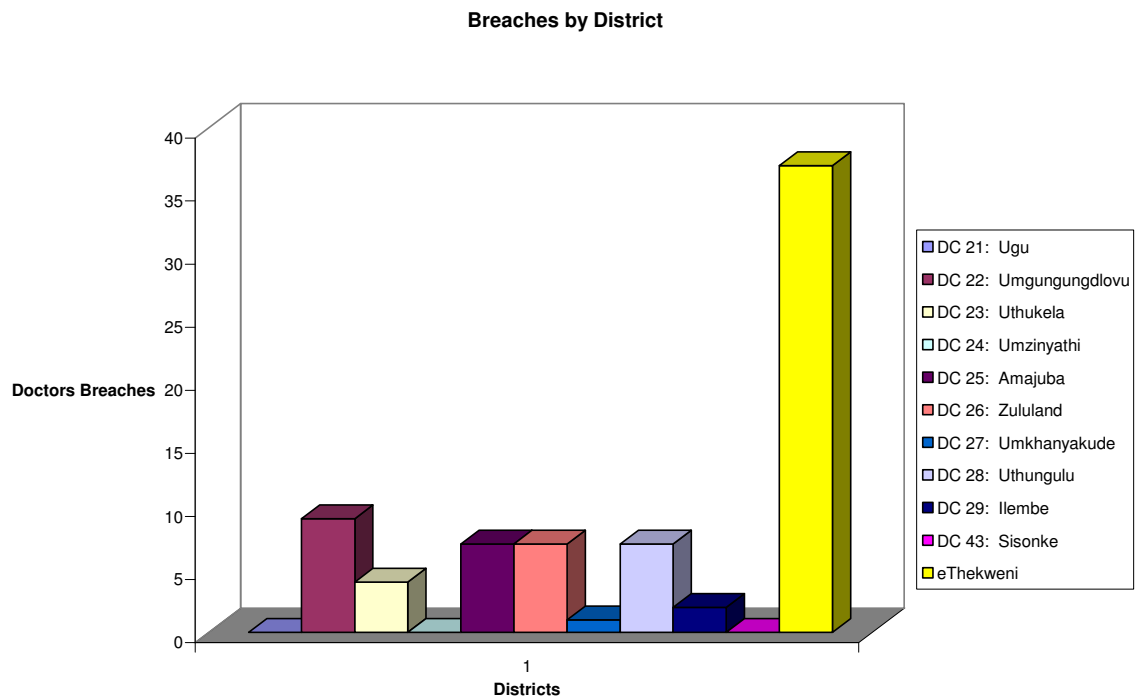
5.5 Analysis of the data for bursary breaches

Table 5.5: Medical Officer Bursary Breaches per District

BREACHES BY YEARS OWED							
DISTRICT	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	6 YEARS	TOTAL
DC 21: Ugu	0	0	0	0	0	0	0
DC 22: Umgungundlovu		1	4	2	1	1	9
DC 23: Uthukela			2	2			4
DC 24: Umzinyathi							0
DC 25: Amajuba		1		2	2	2	7
DC 26: Zululand	1		1	1		4	7
DC 27: Umkhanyakude					1		1
DC 28: Uthungulu			1	1		5	7
DC 29: Ilembe		1				1	2
DC 43: Sisonke							0
eThekwini	2	8	12	9	2	4	37
Grand Total	3	11	20	17	6	17	74

In order to determine the relationship between the occupational category and the propensity to breach contractual obligations, the breach rate for bursary holders in terms of occupational category and years owed was utilised. The data is contained in the preceding table. It should be noted that of all bursary holders in the identified occupational categories (i.e. dentists, doctors, medical specialists, professional nurses and pharmacists), breaches were only experienced in the occupational category general practitioner (doctor). This information is illustrated pictorially in Chart 5.3.6

Chart 5.3.6: Medical Officer Bursary Breaches per District



It is significant to note that all breaches identified are for the occupational category: medical officer. It is also significant to note that most of the breaches are for the eThekweni district. The data indicates that there is no relationship between propensity to breach and the number of years owing.

Therefore, although bursaries are being granted in areas with a need for those occupational categories, the bursary strategy is not able to retain those services by filling vacancies where they are needed for the occupational category: Medical Officer.

All bursary holders function in terms of the same bursary procedure and it is difficult to determine from the above data why bursary skills are retained for all occupational groups except for Medical Officers. Further research and investigation is needed in this regard.

Chapter 6 – CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The previous chapters have provided descriptions of the methods used to collect data, the results obtained, and the statistical inferences made from using different statistical methods to test the objectives of the study. This chapter offers conclusions about the research questions, implications for the bursary programme and results of the study. It further makes recommendations regarding the study in general and offers recommendations to enhance the bursary policy, allocation of bursaries, as well as the retention and placement of bursary holders.

6.2 Conclusion about research questions/objectives/propositions

For the purposes of clarity, the research questions and objectives are reiterated below.

6.2.1 Aim

The primary aim of this study is to determine if the KZN Department of Health's current bursary policy is fulfilling its intended objective of procuring and retaining human resources in order to address internal migration through the granting of academic bursaries.

6.2.2 Objective 1:

To undertake an evaluation of the bursary policy process by measuring it against policy indicators, as identified in a context relevant policy evaluation framework.

6.2.3 Objective 2:

To determine the relationship between occupational vacancies in the KwaZulu-Natal Department of Health (KZN DOH), and bursary allocation and placement procedures.

6.2.4 Objective 3:

To determine the relationship between the length of the service commitment and the propensity to breach contractual obligations.

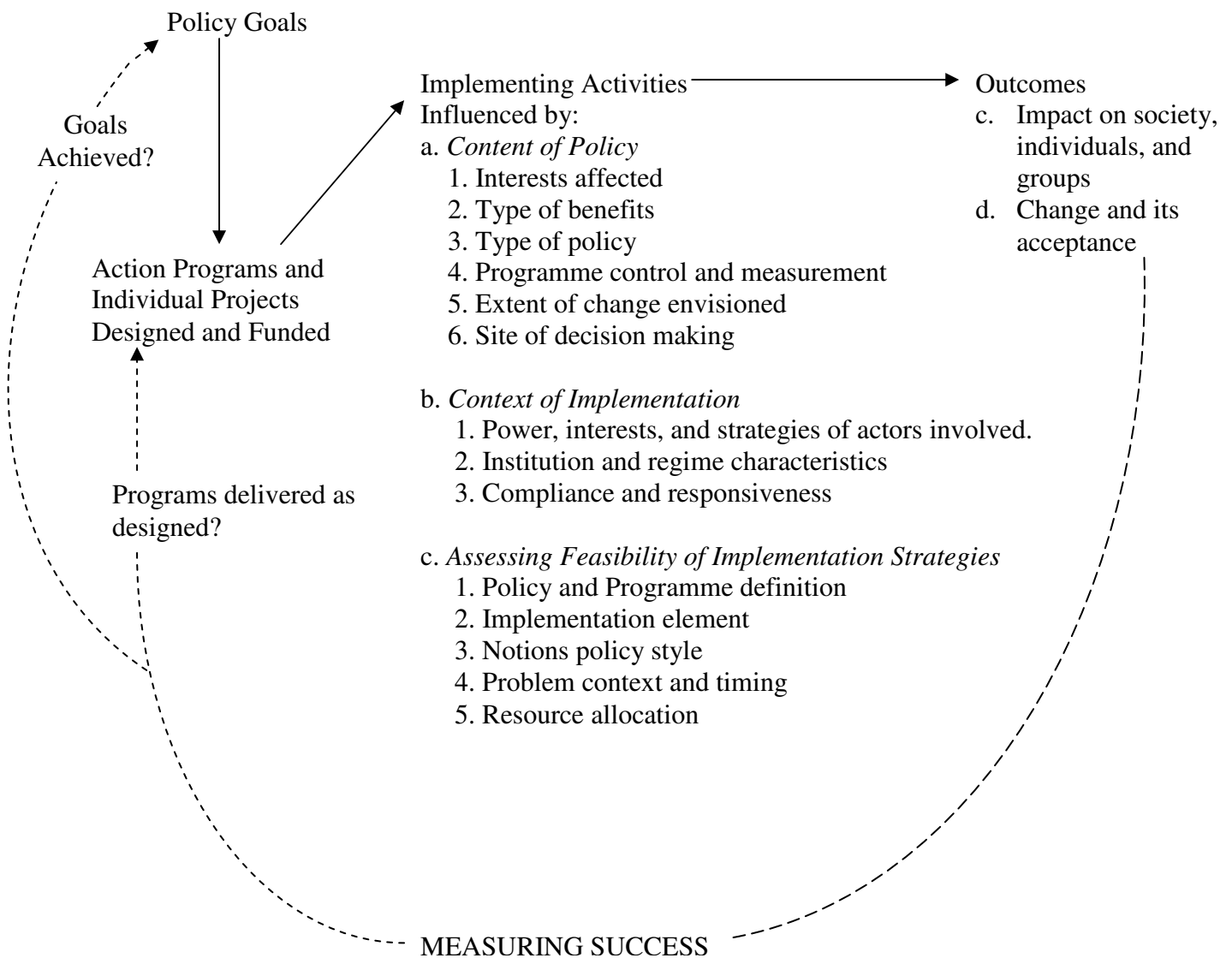
6.2.5 Objective 4:

To determine the relationship between the occupational category and the propensity to breach contractual obligations.

6.3 Conclusion regarding the qualitative analysis

The results of the qualitative review of the bursary policy were undertaken within the context of the policy evaluation framework (Johnson, 2000). This framework assessed policy content and policy context in order to determine the impact of policy content on the implementation process and to assess the association between implementation and the context in which the policy is implemented.

Figure 2: POLICY EVALUATION FRAMEWORK (Adapted from Grindle, 1980)



6.3.1 Policy content

In terms of issues of policy content, concerns were raised regarding the ambiguity surrounding the goals of the policy. Such ambiguity could result in a lack of clear procedures and impact on the control and monitoring of the programme (Parsons, 1995).

This finding was echoed when the type of policy was interrogated. It was found that the bursary policy was both regulatory and re-distributive in its orientation (McCool, 1995). This finding introduced an inherent conflict surrounding how the policy should be implemented, as regulatory policies require decentralized decision-making structures, and redistributive structures require centralized decision-making structures (Anderson, 1997).

Issues of control and measurement were again highlighted in terms of issues of geographic dispersion (Gordon et al., 1997). In particular, it was determined that the KZN Department of Health Bursary programme was geographically dispersed throughout the province, but that control of the programme was vested centrally with Head Office. The timely identification of service commitments and breach of contracts in the Districts was therefore, regarded as a possible weakness of the current bursary system.

Credence was lent to this assertion by the finding that, in terms of the site of decision-making, the degree of centralization affects implementation because institutional managers do not have the requisite authority to enforce

compliance with bursary contractual provisions, as this authority is vested with Head Office.

The strengths of the bursary policy content were that in terms of interests affected, the bursary policy would not arouse resistance, as it would provide members of communities with an opportunity for academic advancement and subsequent employment (Jenkins, 1997). Some issues of concern were raised, as the policy was regarded as redistributive in nature, and conflict could occur when limited resources were being distributed (Grindle, 1980). However, it was felt that the use of District Verification and Recommendation Committees would ensure community involvement and commitment to a process that was fair and transparent (Verification & Recommendation Committee Constitution, 2003). The use of those committees was also felt to be a strength in determining the need for resources per District and would assist in ensuring that bursaries were allocated according to the health needs of the Districts.

6.3.2 Policy context

The context of implementation assessed bursary policy implementation within its contextual setting. A number of concerns were flagged during this process. An assessment of the powers, interests and strategies of role-players indicated that there was no separation of functions between implementation and control within the Bursary Component designated with the responsibility for the programme.

Thus, the functions of monitoring and control continued to be a significant weakness evident in both policy content and policy context (Grindle, 1980). Ambiguity surrounding the different responsibilities between officials at Head Office and institutions was also identified. Such role diffusion resulted in confusion surrounding hand-over points and resulted in unnecessary delays in the bursary process and possible financial and personnel losses to the Department (Lipsky, 1980).

An analysis of the bursary policy concerning target and non-target employees also highlighted a significant weakness of the policy i.e. the fact that in-service personnel currently have no access to bursaries. This weakness impedes their career-pathing and professional development, and was highlighted previously as a significant reason for migration out of the public sector (Martineau et al., 2004).

Issues of compliance and responsiveness were also identified as possible weaknesses in the contextual setting of the bursary policy. Compliance refers to the compliance of officials in the monitoring of bursary holders, as well as compliance of the bursary holders themselves to the terms of the contractual provisions. Responsiveness refers to the ability to respond meaningfully and in a timely manner (Johnson, 2000).

The geographical dispersion of the bursary system, along with the centrally vested power, placed the Department in a weakened position when it came to responding to issues. In essence, the contextual setting means that a

problem identified in a District will be required to follow channels of communication to Head Office, prior to it being resolved. In particular, this delay may mean that bursary breaches are not detected and acted on in a timely fashion, due to the bureaucratic communication process and centralized authorization. Weaknesses in the area of compliance and responsiveness again point to the recurring trend that the bursary policy content and context do not deal effectively with the issue of monitoring and control (Smith & May, 1997).

6.3.3 Assessing the feasibility of project implementation strategies

The analysis of policy feasibility was concerned with the degree of congruence between the bursary policy and the socio-political and economic spheres in which it was implemented (Grindle, 1980).

In this area, the bursary policy and programme definitions may be said to align overall with the culture and context of a democratic South Africa (Crewe, 2005). The policy's overarching goals focus on assisting the previously disadvantaged. The new trend of granting bursaries to applicants from rural areas also addresses issues of improving services in outlying areas and aligns to the national priorities of government. Additionally, indirectly this policy will allow the Department to realize its employment equity targets in certain "specialist" occupational categories.

In assessing the efficacy of the bursary policy's implementation elements, it is important to recognize that the policy requires both centralized and

decentralized elements to function effectively (as it is classified as both regulatory and redistributive). The implementation elements, therefore, suffer from monitoring and reporting inflexibilities (Howlett et al., 1995). In this regard, it is recommended that responsibility and authority for bursaries be devolved to a District level, thereby increasing the level of decentralisation, whilst still maintaining a limited form of central control required by a redistributive policy (McCool, 1995).

Constraints on State capacity in terms of human resources also affect the feasibility of programme implementation (Howlett et al., 1995). In particular, high vacancy rates experienced by the Department, in conjunction with role diffusion, could result in the bursary policy not being implemented and controlled in the manner for which it was designed (Lipsky, 1980).

6.3.4 Summation of qualitative analysis

In summary, many of the policy indicators analysed in terms of the policy framework, indicate inherent weakness in the area of monitoring and evaluation. This weakness implies that monitoring and control will be difficult, and that when taken in conjunction with the limited resources identified to implement the bursary programme, it predicts that bursary breaches will be difficult to monitor, control and recover.

The policy does, however, have certain inherent strengths. In this regard, the policy indicators imply that the programme reflects the values of a democratic society and should have the support of the community and target group.

The results of the quantitative analysis of the data associated with the bursary programme will be discussed in the next section, to determine whether the identified policy weaknesses are evident in the implementation of the policy.

6.4 Conclusion regarding the quantitative analysis

Although health care is a very personnel intensive sector, the South African literature on health sector human resources is surprisingly sparse (Sanders & Lloyd, 2004). There are also large gaps and weaknesses in the work produced. The country does not have a standardized health sector-staffing model and is unable to define its human resource needs quantitatively (Leon et al., 2001). It was difficult to determine the true need, or demand, for the occupational categories under analysis. In this regard, vacancy rates were utilised in order to determine skill scarcity.

6.4.1 Relationship between: occupational vacancies and bursary allocation

The relationship between occupational vacancies and bursary allocation procedures was assessed by determining firstly, whether there was a significant difference between urban and rural vacancies, and secondly by whether the bursary allocation procedure aligned to this distribution of vacancies.

The results indicated that a significant difference existed between rural and urban vacancies for the occupational categories of medical specialist and pharmacist. However, the bursary allocation for all categories sampled shows

no significant difference in the number of bursaries allocated to rural and urban institutions for those occupational categories.

The results indicate that the determination of bursary needs at a District level may not reflect the District needs completely, and points to certain inefficiencies in the bursary allocation procedure. However, this finding needs to be taken in conjunction with the results from the regression analyses.

Regression analysis was undertaken to determine whether a relationship existed between the number of vacant posts per District and the number of bursary holders. Regression analysis revealed that a statistically significant relationship existed between the number of vacancies and the number of bursaries allocated. Thus, it may be concluded that the number of bursaries allocated is dependent on the number of vacancies experienced.

The discrepancy between those two findings could be attributed to the limited number of bursaries that could be funded, and the need to provide bursaries in both urban and rural areas. An interesting finding in this regard is that, for the occupational categories medical specialist and pharmacist, there were significantly more vacancies in the urban areas than there were in the rural areas.

This finding is somewhat contrary to expectation, as it is generally believed that the more rural areas are under-resourced. However, this finding also needs to be interpreted within a particular context. It is important note that all

the occupational categories sampled had higher vacancies in the urban areas (although this difference was not significant for the occupational categories of dentist, medical officer and professional nurses).

That anomaly could be explained by the implementation of the Scarce Skills and Rural Allowance. The allowance was implemented with effect from 2002. In terms of the provisions of the allowance, identified employees working in designated rural institutions qualify for a non-pensionable increase in their basic salary (Resolutions 1 & 2 of 2002). The allowance was introduced as a means of correcting the rural/urban maldistribution, and, to date, no studies on the efficacy of this intervention have been undertaken (Reid, 2002). It is beyond the scope of this study to determine whether the implementation of the allowance accounted for the urban skewness in terms of vacancy rates; however, this is an avenue of future research, which the Department should investigate.

6.4.1(a) Medical specialist vacancies

The significant t-test for medical specialists indicates an area of concern for the Department. The highest overall vacancy rate is experienced by this occupational group (i.e. 50.9%). This finding compares to vacancy rates of 17.3% for dentists, 38.41% for medical officers, 41% for pharmacists and 26% for professional nurses.

This finding concurs with research conducted in the area of staff retention (Paradath et al., 2003). Medical specialist skills are, by their nature, scarce

and, consequently, difficult to retain because they are in high demand across the board (Wibulpolprosert et al., 2003). Retaining medical specialist skills in the KZN Department of Health is no exception. The fact that over 50% of all medical specialist posts are vacant, indicates that those medical specialists working within the Department are a highly over-utilised resource (Mc Donald & Ruiters, 2005).

The literature has clearly stated that a lack of job satisfaction, work associated risks and high workload are all strong motivators for healthcare professionals to exit the public health sector, and they also influence international migration (Ramlall, 2004). Additionally, staff working in such conditions is likely to suffer from stress and work related burnout (Mc Donald & Ruiters, 2005). These factors may well explain the high vacancy level experienced in the occupational group: Medical Specialists.

Additionally, the high vacancy rate may be attributed to inadequate levels of remuneration. Research undertaken by the National Department of Health in conjunction with the Department of Public Service and Administration and the Treasury, has revealed that a medical specialist working in the private sector can expect to be remunerated approximately 20% higher than one in the public sector (Joint Health, Treasury, DPSA Technical Team, 2003).

The situation within the KwaZulu-Natal Department of Health is aggravated by the fact that the Department currently has no mechanism in place to cater for the training and retention of this category, because the Department has a

moratorium on the provision of bursaries to in-service staff (Personnel Circular 21 of 1998). The ability to continue to train and develop within an area of specialty is a strong retention mechanism (Gillis et al., 2004). Training and development, in turn, relate to career development and impacts strongly on job satisfaction (Ramlall, 2004), which, in turn, is a strong determinant of the intention to migrate (Vujicic et al., 2004).

The lack of the provision of bursaries to in-service staff has the further detrimental effect of effectively preventing the Department from upgrading currently employed medical officers and career pathing them to the variously required specialties. This shortage places the Department in the unenviable position of being in constant competition with the private sector, and indeed overseas facilities, for provision of this occupational category. Additionally, the limited supply of medical specialists, as produced by our medical schools, increases the difficulty of recruiting and training this occupational category (Wyss, 2004).

The above discussion indicates the necessity to review the moratorium on the provision of in-service bursaries to KZN Department of Health staff, particularly in the area of scarce skills, where recruitment may not prove to be viable.

6.4.2 The relationship between occupational category and propensity to breach contractual obligations

It is significant to note that of the occupational categories sampled that received bursaries (i.e. medical officers, dentists, pharmacists and professional nurses), breaches were only noted for the occupational category: medical officers. The statistical analyses revealed that one (1) in every three (3) medical officer bursary holders were likely to breach their contractual provisions.

This finding is a relatively high rate of breach and is of concern, because it captures only those bursary holders who refused to be placed in any public institution on completion of their academic studies. Bursary holders who were placed at public health institutions within the province, but who later breached, are not included in these breaches. This exclusion occurs because bursary holders (and their concomitant service and financial commitments) are currently not coded onto Persal (Auditor-General Query, 2004). The geographical dispersion of bursary holders throughout the province, and the lack of an integrated data management tool, makes it impossible at Head Office to identify those students who breach, after placement in a public institution (Blumenthal, 1994).

On average, most medical officers study for six (6) years prior to the completion of their degree, at an approximate cost of fifty (50) thousand rand per annum. It is anticipated that due to under-reporting and the lengthy

duration of medical officer service commitments, the recorded rate of breach is severely under-reflected.

It is beyond the scope of this exercise to determine why medical officers breach their contractual obligations more readily than the other occupational categories in question. However, a recent report by the NDOH and DPSA indicates that a qualified doctor working in the private sector can expect to earn 20% higher than a doctor working in the public sector (Joint Health, Treasury, DPSA Technical Team, 2003). It is also important to note that bursary holders are regarded as new recruits and are placed on an entry grade salary of R135 000 per annum. It may well be that newly qualified doctors prefer to work in the private sector once qualified, and that they comply with their contractual provision by making a financial reimbursement for their studies, rather than performing their service commitment in the public sector.

The current medical officer breach rate could also be explained by the fact that many of the bursary holders currently completing their studies were not selected on a decentralized basis. Many may, therefore, come from urbanized environments and may find the requirement of being placed at rural institutions de-motivating, preferring instead to breach their commitments. Additionally, the vacancy rates of the Department for medical officers should be taken into account when interpreting the breach rates of medical officers.

The vacancy rate for medical officers in the Department is currently 38.41%. This vacancy rate is superseded only by those for medical specialists (50.9%) and pharmacists (41%). This finding implies a high workload and raises issues related to job satisfaction, stress and burnout that were previously discussed in connection with the high vacancy rate experienced for medical specialists (Sanders & Lloyd, 2004).

The preceding discussion does not serve to provide a definitive explanation as to why medical officers breach their bursary commitments. Instead, the discussion highlights future areas of research and investigation that need to be undertaken by the Department in order to improve the return on investment for this occupational category.

Taken at face value, the research indicates that the Department should re-think its strategy of providing bursaries to study for MBCHB's. It would appear that the effects of common curricula and comparable scopes of practice make that qualification highly fluid (Paradath et al., 2003) and, therefore, susceptible to migration (Wyss, 2004). It is recommended that the Department assess the feasibility instead of providing bursaries for study in the field of the Clinical Associate Programme (CAP). The duration of this programme is three (3) years and reduces the long lead-time in terms of training. At the expiration of study, the practitioner has a limited registration and scope of practice. That limited registration would prevent migration to both the private sector and international destinations, enhancing retention of an essentially scarce skill.

6.5 Shortcomings of the research

6.5.1 Inadequate HR forecasting

As mentioned previously, the country does not have a standardized health sector-staffing model and is, thus, unable to define its human resource needs quantitatively (Leon & Mabope, 2005). It was difficult to determine the true need or demand for the occupational categories under analysis. In this study, vacancy rates were utilised in order to determine skill scarcity.

The ability to establish a true demand for health resources is integral to determining an effective bursary allocation process. Research indicates that the correct staffing norms and skills mix have a strong impact on retention (Ioannidis, 2004), and that inadequate forecasting both here and abroad has increased the skills shortages experienced within the health sector. The allocation of bursaries may be regarded as part of the human resource forecasting process. However, if there are no health-related staffing norms or ratios, or guide as to skills mix, the human resource forecasting process will prove inefficient or even defunct, and, by default, so will the bursary allocation function.

The use of vacancy rates, as a determinant of scarcity, suffers from many methodological drawbacks. These drawbacks can be clearly illustrated by using the vacancy rates of medical specialists as a case in point. The vacancy rate for medical specialists is currently 50.9%, indicating that more than half of the posts remain unfilled. This finding indicates a skills shortage, which is indicative of either an inability to recruit, or retain, that occupational

category. However, this finding does not interrogate why those posts are, in fact, vacant.

The public healthcare sector in KwaZulu-Natal has shifted its focus to primary health care, in response to changing disease profiles and requirements for community access to health care (Annual Performance Plan, 2006). The high vacancy rates experienced for the medical specialists could, in fact, indicate a reduced need for those services, given the shift in orientation to primary health care. It could be argued that timely primary health care intervention has reduced the escalation of health problems to a medical specialist level.

This argument is supported by Wyss (2004) who argues that many developing nations continue to train specialist categories of healthcare professionals, even though the disease profiles and infrastructural facilities of such nations indicate that this training may not be necessary, not even the most effective method of intervention.

As a point of departure, it is, therefore, imperative that the Department establishes norms in respect of population ratios. These norms will allow adequate human resource supply demand and analysis to be undertaken, which, in turn, will allow the true skills shortage or 'gap' to be identified (Bloor & Maynard, 2003). The efficacy of bursary allocation could then be properly determined in respect of the gap identified.

6.5.2 Veracity of Persal data

The previous discussion indicates that the data on Persal may be flawed. Yet, another argument for the high vacancy rate of medical specialist posts could be attributed to the fact that the posts are not funded. Such a situation does not necessarily imply a recruitment or retention problem. Instead, the situation implies that the posts that reflect on Persal are not indicative of the actual, funded, structure of institutions. Unfunded posts should be abolished, as they erroneously increase the vacancy rates for certain occupational categories, without indicating an actual need for the posts. The Department needs to verify and update the data on Persal to reflect approved and funded structures and posts, so that correct human resource forecasting can occur.

6.6 Recommendations

In light of the preceding discussion, the following recommendations are put forward as specific interventions for the Department of Health KwaZulu-Natal.

6.6.1 Devolvement of Authority and Responsibility to the Districts

Based on the outcome of the qualitative analysis in Chapter 5, the current bursary policy needs to be revised. In particular, the issues surrounding monitoring and control of the bursary processes need to be improved. The bursary policy suffers from an inherent weakness, because it may be classified as both regulatory and redistributive. This dichotomy arises because regulatory policies are best implemented using a decentralized structure, and redistributive policies are best implemented using a centralized structure (Anderson, 1997) and this is central to the weakness currently

experienced in terms of the monitoring and control of bursary holders. It is not possible to resolve this issue fully given the opposing principles involved.

It is recommended that the budget and responsibility for allocating bursaries be devolved to a District level. This devolution would allow for far greater decentralisation (as required by a redistributive policy), whilst still maintaining centralized control in terms of monitoring (as required by a regulatory policy) (McCool, 1995). The determination of training needs is currently undertaken at a District level, as is the placement of bursars at the completion of their studies, and it is a logical extension that the budget and authority to initiate breach of contract proceedings, be devolved to a District level.

6.6.2 Separate implementation and control in the bursary component

Aligned to recommendations from the Auditor-General's Office, it is recommended that the implementation and control of bursaries be separated (Auditor-General query, September 2004). This separation could be achieved if more power (as recommended previously) was devolved to the Districts, allowing Head Office to perform monitoring and evaluation functions. This separation of function would also be enhanced if the service and concomitant financial commitments could be coded onto Persal. Buchan (2000) notes that weak or under-utilized data management systems reduce the efficacy of strategies aimed at retention. It, is therefore, pivotal for the Department to strengthen and make full use of the data systems at their disposal.

6.6.3 Provision of bursaries to in-service personnel

The quantitative analysis undertaken in Chapter 5, as well as the qualitative analysis in Chapter 4, indicated that there was a need to lift the moratorium on the provision of bursaries to in-service personnel (Personnel Circular 21 of 1998). The recommendation is particularly relevant to scarce skill occupational categories, where there is competition for external supply.

Career-pathing of current in-service medical officers via training and development, may prove a more effective retention and recruitment strategy for acquiring medical specialists, particularly if the criteria to qualify for a bursary included previous Public Sector service or service in an under-served area (Wilbulpolprasert et al., 2003). Several authors have noted the importance of training and development, as well as career-pathing, as strong retentive strategies (Gillis et al., 2004).

6.6.4 Provide bursaries for the Clinical Associate Programme

The return on investment for the occupational category medical officer has been shown to be questionable. It is, therefore, recommended that MBCHB bursaries be limited, and that bursaries be provided for students studying for the Clinical Associate Programme (CAP). The more limited scope of practice of that health professional, aligns with the primary health care focus of the Department, and will enhance retention (Wilbulpolprasert et al., 2004).

6.7 Recommendations for Further Research

It is imperative that the Department undertake research with the aim of developing staffing norms and ratios, as well as a skills mix database (Zondagh, 2005). These norms need to be determined in the light of the package of services that each level of health care is delivering, and with due regard to the scope of practice of various health professionals (Subedar, 2004). This intervention needs to be prioritized as compelling research indicates that the implementation of ratios and staffing norms can stem the tide of migration (Ioannidis, 2004). In fact, early indications are that health professionals, who have left the health arena, are likely to return with the introduction of such strategies (California Nurses Association, 2003 & Australian Nursing Federation, 2003).

Such results may be attributed to the fact that the introduction of appropriate staffing mixes ensure that health professionals are not utilised outside their scope of practice (Subedar, 2004); whilst staffing ratios allow for proactive management of the workload (Hagiopian et al., 2004). The net results of such interventions include greater job satisfaction, fewer medico-legal situations, and less stress and burnout (Gupta et al., 2003). Additionally, determination of appropriate staffing norms allows for more effective human resource forecasting to occur.

It is also recommended that further research be conducted into the reasons for breaches of contract by medical officers. In particular, exit interviews

could provide valuable information, which could then be used to enhance retention of this group of bursary holders.

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Annexure A: Study Loan Agreement 6/7/7 (140)

PROVINCE OF KWAZULU-NATAL
HEALTH SERVICES

ISIFUNDAZWE SAKWAZULU-NATALI
EZEMPILO

PROVINSIE KWAZULU-N.
GESONDHEIDSDIE

PRIVATE BAG X 9051
PIETERMARITZBURG
3200

TELEPHONE : (033) 3952015
UCINGO : (033) 3952015
TELEFOON : (033) 3952015



330 LONGMARKET :
PIETERMARIT

ISIKHAWA SEPOSI : (033) :

6/7/7 (140)

STUDY LOAN AGREEMENT ENTERED INTO BY AND BETWEEN

THE KWAZULU-NATAL DEPARTMENT OF HEALTH
for and on behalf of the
KWAZULU-NATAL PROVINCIAL GOVERNMENT
and

(Full Name of Student)

(South African Identity Number)

This Agreement is entered into on the ____ day of _____ (month) 200__ at
(place) by the KwaZulu-Natal Department of Health, acting for and on
behalf of the KwaZulu-Natal Provincial Government, and _____ (full
name of Student).

1.0 Parties to the Agreement.—

The parties to this Agreement are:

- 1.1 the KwaZulu-Natal Department of Health ("the Department"),
represented herein by Dr R W Green-Thompson, Head of Department,
acting for and on behalf of the KwaZulu-Natal Provincial Government;
- 1.2 _____ (full name of student),
(South African identity number), born on the _____ (date) of
(month) _____ (year) ("Student"); and
- 1.3 where Student is under 21 (twenty-one) years of age, Student's parent or
legal guardian _____ (full name of parent or
legal guardian), _____ (South African identity number),
located at _____ (residential
address or description) and postal address located at
_____ (postal address)

2.0 Statement of Purpose of Agreement between the Department and Student.

- 2.1 The purpose of this Agreement is to formalise the relationship by and between the Department and Student and to establish the terms and conditions on which the Department will provide government funds for a loan for Student to pursue a course of study in a medical or other health care discipline and to provide for funding for 1 (one) academic year to Student, who is responsible for repayment of the loan in terms of this Agreement.
- 2.2 The Department, in its sole discretion, may provide loan funds to students in terms of this Agreement to provide an opportunity for students to obtain a formally structured education in a medical or other health care discipline at a tertiary institution approved by the Department.
- 2.3 The Department has developed and applied objective criteria to its selection of eligible students to receive loans to obtain an education in a medical or other health care discipline at an approved tertiary institution.
- 2.4 Any medical or other health care discipline student who is the recipient of a loan under this Agreement shall be responsible for public service as required in terms of section 9.1 of this Agreement or the immediate repayment of all loan funds in terms of section 9.2 of this Agreement.
- 2.5 This Agreement provides for Student, who has qualified for the Department's tertiary institution medical or other health care discipline course of study, to receive a loan in terms of this Agreement.

3.0 Definitions. For the purpose of this Agreement, unless the context indicates otherwise, the following definitions are set out for the terms indicated:

"Certificate of Completion" means the certificate issued by the head of the provincial health care establishment to which he or she was assigned by the Head of Department certifying that Student has completed his or her 1 (one) year of service in terms of this Agreement.

"Certificate of enrollment and good standing" means the certificate signed by the bursar of the tertiary institution in which Student is enrolled and stating that Student is enrolled and in good standing, with such certificate to include Student's name, student number, South African identity number, status of enrollment and latest progress report.

"Course of study" means a course of study approved by the Head of Department, offered by a tertiary institution and leading to a degree or recognised qualification, including but not limited to membership in a professional health body recognised in terms of legislation.

"Department" means the KwaZulu-Natal Department of Health.

"Head of Department" means the administrative head of the Department and accounting officer in terms of the Public Service Management Act, 1999 (Act No. 1 of 1999).

"Health care discipline" means a discipline approved by the Head of Department for a course of study in terms of this Agreement.

"Loan" means any funds or financial assistance granted by the Department in terms of this Agreement to Student or on behalf of the Student, including but not limited to fees and any other payments disbursed by the Department on behalf of Student directly to the tertiary institution for Student to pursue and complete the course of study.

"Party" means the parties to this Agreement.

"Professional health body" means professional health organisation recognised in terms of legislation.

"Province" means the KwaZulu-Natal Province.

"Provincial health care establishment" means any health care establishment within the Province funded in whole or part by the Department or the National Department of Health.

"Public Finance Management Act" means the Public Finance Management Act, 1999 (Act No. 1 of 1999), as amended by the Public Finance Management Amendment Act, 1999 (Act No. 29 of 1999).

"Public service" means the period of public service employment that the Student is required to render in terms of this Agreement in lieu of repaying loan funds granted to the Student.

"Student" means the duly enrolled student who is a party to this Agreement.

"Tertiary institution" means a tertiary institution, including South African universities and technikons, approved by the Head of Department in terms of this Agreement.

4.0 Interpretation of Agreement. In this Agreement, unless the context otherwise indicates:

- 4.1 All words and expressions to any 1 (one) gender shall be capable of being construed as a reference to the other gender.
- 4.2 The words signifying the singular should include the plural and vice versa.
- 4.3 A reference to a natural person shall be capable of being construed as a reference to a juristic person and vice versa.
- 4.4 Words and phrases defined in this Agreement shall bear the meaning assigned to

them throughout this Agreement.

- 4.5 Words and phrases used in this Agreement which are defined or used in any statute which applies to the subject matter, professional person, goods or services provided for in this Agreement shall be construed in accordance with the applicable statute or regulations.
- 4.6 Headings of clauses are for convenience only and shall not aid in the interpretation or modification of clauses within the Agreement.
- 4.7 Prior drafts of this Agreement or oral agreements shall not be taken into account in the interpretation of the contents of this Agreement.

5.0 Duration of Agreement.

This Agreement shall commence on the ____ day of _____ (month) 200__ and shall remain in full force and effect until the completion of public service required in terms of section 9.1 or until repayment of the debt in terms of sections 9.2 and section 10.3.

6.0 Department's Obligations under this Agreement.

- 6.1 The Head of Department has determined objective criteria and requirements for students applying for study loan funds in a medical or other health care discipline to study at tertiary institutions and has determined student's eligibility to participate in the Department's medical or other health care discipline loan programme.
- 6.2 The Head of Department shall apply objective criteria and requirements in terms of section 6.1 and shall, subject to available funds, make funds available to qualified students to undertake a course of study at tertiary institutions in terms of this Agreement.
- 6.3 The Head of Department shall be under no obligation to provide loan funds to Student where he or she has not fulfilled the terms of this Agreement or where the Department does not have funds available for loans.
- 6.4 The Head of Department may, in his or her sole discretion, establish rules, regulations, protocols and codes of conduct to be followed by Student at tertiary institutions or any provincial health care establishment and Student hereby undertakes to abide by same in terms of section 9.1.6.
- 6.5 The Department shall, after signing of this Agreement by the Head of Department and Student, disburse funds for 1 (one) year of study by Student to the tertiary institution where Student is registered and such tertiary institution shall apply the funds firstly to Student's tuition and fees and shall disburse remaining funds in a manner to be determined by the Head of Department.

- 6.6 The Head of Department shall, within 60 (sixty) days of Student completing his or her course of study, assign Student to provide specified services at a provincial health care establishment for 1 (one) year for each year of funding received by Student under the Department's tertiary institution study loan programme.
- 6.7 The Head of Department shall be entitled, in the event Student fails to comply with any term of this Agreement, to demand repayment of all funds disbursed under this Agreement in terms of sections 9.2-9.5, inclusive, and 10.2-10.7, inclusive.
- 6.8 The Head of Department shall, in the event Student fails to comply with any term of this Agreement, not grant or pay out any outstanding or additional loan funds to Student or provide any other benefit under this or any other Agreement.

7.0 Student's Obligations under this Agreement.

7.1 Student shall comply with the following conditions:

- 7.1.1 At the time of signing this Agreement, Student shall be enrolled as a full-time student at _____ (name of tertiary institution) and shall submit a certificate of enrollment and good standing from such tertiary institution, which shall be attached to this Agreement as Annexure A.
- 7.1.2 Student's course of study at such tertiary institution during the 1 (one) year period which is the subject of this Agreement shall include:
- 7.1.2.1 major subjects, which consist of: _____

(list major subjects); and
- 7.1.2.2 minor subjects, which consist of: _____

(list minor subjects).
- 7.1.3 Student shall not change his or her course of study or major subjects or minor subjects at such tertiary institution except with the prior written approval of the Head of Department.
- 7.1.4 Student shall attend all classes in his or her course of study at the tertiary institution and complete all clinical practice required in his or her course of study.
- 7.1.5 Student shall during the term of this Agreement successfully

complete all major subjects and minor subjects specified in section 7.1.2 and must at the end of the course of study be entitled to advance to the next course level.

- 7.1.6 Student shall not be entitled to utilise any loan funds in terms of this Agreement for supplementary examinations or to repeat any major subjects in terms of section 7.1.2.1 or minor subjects in terms of section 7.1.2.2.
- 7.1.7 Student shall, no later than 14 (fourteen) days after publication and notice of examination results submit such results to the Head of Department and this shall include any supplementary examinations, in the major and minor subjects specified in section 7.1.2.1 and 7.1.2.2, respectively.
- 7.1.8 In the event Student fails 1 (one) or more of his or her major subjects specified in section 7.1.2.1 or fails more than 1 (one) of his or her minor subjects specified in terms of section 7.1.2.2, Student shall be in breach of this Agreement and:
- 7.1.8.1 any remaining funds to be disbursed under this Agreement shall not be disbursed, with immediate effect in terms of section 10.2 of this Agreement;
- 7.1.8.2 Student shall be required to repay all funds disbursed in terms of sections 10.3-10.7, inclusive, of this Agreement; and
- 7.1.8.3 if Student wishes to be considered for any new or additional loan from the Department, Student must, at his or her expense and on his or her own time, successfully repeat any course or courses which he or she failed, submit proof of successful completion of any and all courses failed to the Head of Department and apply to the Head of Department for any new or additional loan, and the Head of Department may then, in his or her sole discretion, consider granting Student another loan.
- 7.1.9 After completion of the course of study for which Student has received loan funds in terms of this Agreement, Student shall not enroll or register in an advanced or different course of study except with the prior written approval of the Head of Department.
- 7.1.10 In the event the Head of Department grants written approval in terms of section 7.1.9 for Student to enroll or register in an advanced or different course of study, the Head of Department's

approval of any advanced or different course of study shall not alter Student's obligations in terms of this Agreement.

7.1.11 Within 10 (ten) working days of changing his or her physical and/or mailing address, Student shall notify the Head of Department in writing of his or her change of address and any changed telephone and fax numbers.

7.2 In the event Student fails to comply with any term of this Agreement, the Department shall not disburse any outstanding or additional loan funds to Student or provide any other benefit under this Agreement.

8.0 Consideration.

8.1 In consideration of this Agreement, the Department hereby grants Student a loan in the sum of _____ (amount of funds to be granted) for 1 (one) year of Student's course of study, with such funds to be paid to the tertiary institution and allocated by the tertiary institution for:

8.1.1 tuition and fees to be paid to the tertiary institution;

8.1.2 books and, where appropriate, laboratory manuals and other study materials; and

8.1.3 any other purpose within the intent of this Agreement and deemed a legitimate expense by the Head of Department.

8.2 In consideration of the loan granted in terms of section 8.1, Student shall, in terms of section 9.1 complete 1 (one) year of public service or shall, in terms of sections 9.2-9.5, inclusive, repay all funds due in terms of this Agreement.

9.0 Conditions of Repayment of Loan.

9.1 Student hereby agrees that in consideration of the loan granted in terms of sections 8.1-8.2, inclusive, Student shall, upon completion of his or her course of study and as assigned by the Head of Department, enter the public service to serve 1 (one) year of public service for each year of funding received by Student under the Department's tertiary institution study loan programme at a provincial health care establishment as assigned by the Head of Department and on terms and conditions determined by the Head of Department and Student shall comply with the following requirements:

9.1.1 Student shall, no later than 60 (sixty) days prior to completion of his or her course of study in his or her final year of study, notify the Head of Department in writing of the possible completion of his or her course of study and availability for public service or non-availability, as the case may be.

9.1.2 In the event Student is required to complete an internship to meet

registration requirements of a professional body recognised in terms of legislation, Student shall upon completion of his or her course of study register no later than 31 January of each year during his or her internship and submit the following information to the Head of Department:

- 9.1.2.1 name and South African identity number;
 - 9.1.2.2 current home physical and postal addresses;
 - 9.1.2.3 the name and address of the institution where Student is completing his or her internship;
 - 9.1.2.4 name of student's supervisor; and
 - 9.1.2.5 a letter from Student's supervisor indicating the term of his or her internship, years served and date of completion of internship.
- 9.1.3 Student shall, within 30 (thirty) days of the date of completion of his or her course of study, comply with all requirements to register with the relevant professional health body recognised in terms of legislation within 60 (sixty) days of the date of completion of his or her course of study and any required internship.
- 9.1.4 Student shall, within 90 (ninety) days of completion of his or her course of study and/or any required internship, report to the head of the provincial health care establishment to which he or she is assigned by the Head of Department to provide 1 (one) year of public service for each year of funding received by Student under the Department's tertiary institution study loan programme and enter the public service.
- 9.1.5 While the Head of Department will take personal preferences and considerations into account in assigning Student to a particular health care establishment, Student hereby acknowledges that such preferences and circumstances can not always be accommodated and it is agreed and understood that Departmental needs will enjoy priority in this regard.
- 9.1.6 Student shall, at all times during the term of this Agreement, comply with the regulations, protocols and codes of conduct at his or her tertiary institution and any provincial health care establishment to which he or she is assigned by the Head of Department.
- 9.1.7 In the event Student is absent without approval from the

provincial health care establishment to which he or she is assigned by the Head of Department, Student must report and explain his or her unauthorised absence in writing to the Head of Department.

- 9.1.8** **The calculation of Student's required 1 (one) year of public service of service for each year of funding received by Student under the Department's tertiary institution study loan programme shall commence on the day Student reports for duty to the provincial health care establishment to which he or she is assigned by the Head of Department in terms of section 6.7 and shall include authorised:**
- 9.1.8.1 vacation leave to which all public service employees are entitled;
- 9.1.8.2 sick leave to which all public service employees are entitled; and
- 9.1.8.3 study leave in terms of public service conditions of employment.
- 9.1.9** **Any unauthorised or unpaid vacation, sick or study leave taken by Student during his or her term of duty at the public health care establishment to which he or she is assigned shall not be taken into account in making the calculations referred to in section 9.1.8,**
- 9.1.10** **Upon Student's successful completion of 1 (one) year of public service for each year of funding received by Student under the Department's tertiary institution study loan programme at a provincial health care establishment as assigned by the Head of Department, Student shall be required to:**
- 9.1.10.1 obtain a Certificate of Completion from the provincial health care establishment to which he or she was assigned by the Head of Department; and
- 9.1.10.2 submit such Certificate of Completion to the Head of Department.
- 9.1.11** **Student's successful completion of 1 (one) year of public service at a provincial health care establishment for each year of funding received by Student under the Department's tertiary institution study loan programme as assigned by the Head of Department shall be applicable only to this Agreement and shall be in addition to public service required in terms of any other agreement which Student may have entered into with the Department or any other**

government department, institution or person.

- 9.2 Student shall immediately become liable for and shall be required to repay all funds disbursed in terms of this Agreement, from the date of the disbursement of funds and including interest thereon calculated at the rate specified in terms of the Public Finance Management Act or other applicable legislation, within 60 (sixty) days of his or her failure to comply with any requirements specified in terms of section 9.1.
- 9.3 Student shall be entitled to defer the requirement to serve 1 (one) year of public service at a provincial health care establishment for each year of funding received by Student in terms of section 9.1 or to defer repaying all funds disbursed in terms of section 8.1 of this Agreement where:
- 9.3.1 the Head of Department has granted prior written approval for Student to pursue an advanced degree, different course of study or authorised research in terms of section 7.1.9 of this Agreement; or
- 9.3.2 Student is temporarily physically or emotionally disabled, as evidenced by an initial and any required periodic certificate from a medical practitioner appointed by the Head of Department.
- 9.4 Where a Student is entitled in terms of section 9.3.1 of this Agreement to defer his or her public service requirement or to repay in terms of section 8.1-8.2, inclusive, of this Agreement, the Student's obligation to:
- 9.4.1 serve 1 (one) year of public service for each year of funding received by Student under the Department's tertiary institution study loan programme at a provincial health care establishment section in terms of section 9.1; or
- 9.4.2 repay all funds disbursed in terms of this Agreement in terms of section 9.2 of this Agreement,
- shall commence 60 (sixty) days after completion of his or her advanced degree or different course of study.
- 9.5 Where a Student is entitled to defer his or her public service requirement or to repay all funds disbursed in terms of section 9.3.2 of this Agreement, the Student's obligation to:
- 9.5.1 serve 1 (one) year at a provincial health care establishment section in terms of section 9.1; or
- 9.5.2 to repay all funds disbursed in terms of this Agreement in terms of section 9.2 of this Agreement,
- shall commence 60 (sixty) days after recovery from his or her physical or emotional disability.

10.0 Breach of Agreement.

10.1 Student shall be deemed to be in breach of this Agreement where:

- 10.1.1** Student fails to meet any of his or her obligations in terms of this Agreement;
- 10.1.2** Student withdraws from his or her course of study in terms of this Agreement;
- 10.1.3** Student fails to successfully complete his or her course of study in terms of this Agreement;
- 10.1.4** Student fails to notify the Head of Department in terms of section 9.1.1 of this Agreement of the completion of his or her course of study and availability to commence his or her public service requirement.
- 10.1.5** Student fails to comply with all requirements in terms of :
 - 10.1.5.1** section 9.1.2 of this Agreement to submit required information to the Head of Department; or
 - 10.1.5.2** section 9.1.3 of this Agreement to register with the relevant professional health body recognised in terms of legislation;
- 10.1.6** Student fails to enter the public service and/or to report to the head of the provincial health care establishment in terms of section 9.1.4 of this Agreement;
- 10.1.7** Student fails to comply with the regulations, protocols and codes of conduct at his or her tertiary institution and any provincial health care establishment in terms of section 9.1.6 of this Agreement;
- 10.1.8** Student fails to report for duty to the provincial health care establishment to which he or she is assigned by the Head of Department in terms of section 9.1.4 of this Agreement;
- 10.1.9** Student is absent without approval for more than three days from the provincial health care establishment to which he or she is assigned in terms of section 9.1.7 of this Agreement;
- 10.1.10** Student fails to report his or her unauthorised absence within 3 (three) working days to the Head of Department in terms of section 9.1.7;

- 10.1.11 Student fails to obtain a Certificate of Completion from the provincial health care establishment in terms of section 9.1.10.1 of this Agreement;
 - 10.1.12 Student fails to submit such Certificate of Completion to the Head of Department in terms of section 9.1.10.2 of this Agreement; or
 - 10.1.13 Student is guilty of any dishonesty, including but not limited to omissions, regarding this Agreement and any obligations required of him or her under this Agreement.
 - 10.1.14 Student fails to abide by any other term of this Agreement.
- 10.2 In the event Student is in breach of this Agreement during the period he or she is enrolled at an approved tertiary institution, the Head of Department may order the tertiary institution in which Student is enrolled to suspend payment of loan funds under this Agreement.
- 10.3 In the event Student fails to complete 1 (one) year of public service at a provincial health care establishment for each year of funding at a provincial health care establishment in terms of section 9.1, the Head of Department shall be entitled to recover any debt due to it in terms of section 9.2 from any pension or other fund to which Student may be entitled as a consequence of his or her public service membership and this clause shall be deemed to serve as Student's written consent to any such recovery or deduction required in terms of any law or regulations pertaining to such pension funds.
- 10.4 In the event Student is in breach of this Agreement in terms of sections 10.1.1-10.1.14, inclusive, or otherwise fails to satisfy his or her loan repayment requirements in terms of this Agreement, Student shall be required to repay all funds disbursed in terms of this Agreement, including interest calculated at the rate specified in terms of the Public Finance Management Act or any other applicable legislation, within 60 (sixty) days of the date of breach or failure to satisfy his or her loan repayment requirements.
- 10.5 In the event Student can not meet his or her obligations in terms of section 10.3-10.4, inclusive, of this Agreement and Student was a minor at the time of signing this Agreement, Student's parent or legal guardian, who shall have countersigned this Agreement, shall become liable for repayment of all funds disbursed in terms of this Agreement, including interest calculated at the rate specified in terms of Public Finance Management Act or any other applicable legislation, within 60 (sixty) days of the date of breach or failure of Student to satisfy his or her loan repayment requirements in accordance with any relevant suretyship signed by them.
- 10.6 In the event of Student's death, the Head of Department shall be entitled to recover all funds due to it in terms of this Agreement from Student's estate.

- 10.7 In the event of breach of this Agreement, Student agrees that he or she shall be liable for attorneys fees and costs on an attorney-client scale, including tracing charges incurred to trace the relevant parties to this Agreement.

11.0 Termination of Agreement.

This Agreement shall terminate upon completion of public service required in terms of section 9.1 of this Agreement or upon repayment of the debt in full in terms of section 9.2 of this Agreement.

12.0 Indemnity.

- 12.1 Student hereby indemnifies and holds the Department harmless against any claim of whatever nature and however arising out of the wilful or negligent action or omission of Student.
- 12.2 In the event any legal action, based on the wilful or negligent action or omission of Student, is brought against the Department, the Head of Department shall be entitled to recover from Student any:
- 12.2.1 and all attorney fees and costs on an attorney-client scale to oppose or defend any action based on any wilful or negligent actions or omissions by Student; and
 - 12.2.2 other amount, including but not limited to damages incurred as a consequence of opposing or defending an action.

13.0 General.

- 13.1 This Agreement replaces any previous written or verbal agreement or contracts entered into by the Department or Student.
- 13.2 The Agreement constitutes the entire contract between the parties and may only be altered or varied in writing.
- 13.3 No party may be bound by any express or implied term, representation, warranty, promise or the like not recorded herein or otherwise created by operation of law.
- 13.4 No alteration of, variation of or amendment to this Agreement shall be of any force and effect unless it is reduced to writing and signed by the parties.
- 13.5 No indulgence or leniency which either party may grant or show the other shall in any way prejudice the granting party or preclude the granting party from exercising any of its rights in the future.

- 13.6 The parties hereby consent to the jurisdiction of the Magistrate Court or High Court at a location in the Province to be determined by the Department:

14.0 Domicilium Citandi et Executandi.

- 14.1 Any notice in terms of this Agreement may be hand delivered to the physical addresses of the parties, in which event proof of acknowledgement shall be endorsed upon a copy of the notice together with the name of the recipient and date of receipt, or may be sent by registered post to the nominated postal addresses of the parties, in which event a proof of postage issued by the relevant postal authority will serve as proof.
- 14.2 Student, and where Student is a minor at the time of signing this Agreement and his or her parents or legal guardian, choose for the purpose of this Agreement his, her or their domicilium citandi et executandi as follows:

Student Street Address:

Student Postal Address:

Parent or Legal Guardian
Street Address:

Parent or Legal Guardian
Postal Address:

- 14.3 The Department chooses for the purpose of this Agreement its domicilium citandi et executandi as follows:

Department Street Address:

KwaZulu-Natal Department of Health
Natalia Building
330 Longmarket Street
Pietermaritzburg
3201

Department Postal Address:

KwaZulu-Natal Department of Health
Private Bag X9051
Pietermaritzburg
3200

15.0 Costs

Each party shall bear its own costs in the negotiation, preparation and finalisation of this Agreement.

SIGNED AT _____ on the _____ (date) of _____ (month) 200 ____.

AS WITNESSES

**KWAZULU-NATAL DEPARTMENT
OF HEALTH**

1. _____

(print name)

By _____
Head of Department for and on behalf
of the KwaZulu-Natal Department of
Health

2. _____

(print name)

SIGNED AT _____ on the _____ (date) of _____ (month) 200 ____.

AS WITNESSES

STUDENT

1. _____

(print name)

By _____

(print name)

2. _____

**TO BE SIGNED BY STUDENT'S PARENT OR LEGAL GUARDIAN
AND MOTHER IN THE EVENT STUDENT IS UNDER 21 YEARS OF AGE**

SIGNED AT _____ on the _____ (date) of _____ (month) 200____.

AS WITNESSES

PARENT OR LEGAL GUARDIAN

1. _____

(print name)

By _____

(print
name of parent or legal guardian
below signature)

2. _____

(print name)

DEED OF SURETY

(to be completed in all cases by Student's parent or legal guardian
where Student is under the age of 21 years)

TO: Province of KwaZulu-Natal
Head of Department
KwaZulu-Natal Department of Health
Natalia Building, 11th Floor
Pietermaritzburg 3201

I, the undersigned, _____ (name of parent or legal guardian), do hereby bind myself, my heirs, executors, administrator and/or assigns as surety and co-principal debtor in solidum with _____ (full name of Student) (hereinafter referred to as Student) in favour of the Province of KwaZulu-Natal, for the due fulfilment of the Agreement signed by Student with the Province of KwaZulu-Natal on (date of signature of Agreement) for a loan and for the payment for any monies which may become due and payable by the Student to the Province of the KwaZulu-Natal in terms thereof.

SIGNED AT _____ on the _____ (date) of _____ (month) 200_____.

AS WITNESSES

PARENT OR LEGAL GUARDIAN

1. _____

(print name)

By _____

(print
name of parent or legal guardian
below signature)

2. _____

(print name)

Annexure B: Bursary Verification Committee Constitution



KWAZULU - NATAL DEPARTMENT OF HEALTH INTER-OFFICE MEMORANDUM

To: Prof R.W Green-Thompson
Head of Department of Health KZN

From: Mr Eugene Brooks
Assistant Director / Bursary Administrator
Bursary Section

Date: 18/08/03

RE- POLICY REGARDING THE CONSTITUTION OF THE "BURSARY INFORMATION AND VERIFICATION COMMITTEE" (AT SUB DISTRICT LEVEL) AND THE "BURSARY RECOMMENDATION COMMITTEE" (AT DISTRICT LEVEL).

It is the objective of the KZN, DOH - HRD, Bursary Section, to establish a well co-ordinated, uniform and controlled bursary allocation programme throughout KZN to ensure that Health Professionals, representing all districts, be trained, to serve the people of KZN based on the needs in order of priority at all the districts in this province. The respective District Managers will be co-ordinating the programme in their respective Districts. The decentralisation of the selection of students pertaining to the Cuban Medical Training Programme was successfully implemented in 2001. The decentralisation process was a great success because of the fact that the relevant roll players firstly bought into and participating in the programme and secondly believed and knew in their hearts that it will work. The students selected for the Cuban Medical training programme from 2001 to date proved to be very successful and are progressing well in the programme.

Background

In the past bursaries were allocated to applicants by the HRD Directorate Bursary Committee based at Head Office. Prospective students applied for a KZN DOH bursary by requesting for bursary application forms to be posted to them. The applicants then returned the application forms to the DOH KZN Bursary Section at Natalia. There the application forms were assessed against set criteria. Bursaries were then allocated to applicants based on; the training needs for Health Professionals in the department, on the Equity act and on the information submitted on the application form by the applicant. The Bursary Administrator noted that some information submitted by some applicants were not correct. The following examples will explain some of the problems encountered.

- The applicant is from Mpumalanga and not from KZN. They have a relative residing in KZN. On their application form they record the relative's address as their permanent residential address. Having adhered to all other criteria the applicant then receive a bursary from KZN Department of Health. On completion of their studies they request to rejoin with their family in Mpumalanga. KZN

looses a fully trained unit to Mpumalanga. Mpumalanga on the other hand receive a fully trained Health Professional at no cost, paid for by KZN. This directorate is aware of the concept that it is "one Health Department" after all but the KZN province needs are a priority.

- Applicant is not financially needy. It is impossible for the staff at Head Office to determine the true financial status of the applicant's family based only on the information submitted on the application form. The above examples are two of many situations that could hamper the goals and processes of HRD to train, develop and sustain a Health Professional system for the KZN Department of Health to render essential services to the people of KZN.

1. BURSARY INFORMATION VERIFICATION COMMITTEE

By selecting the BURSARY INFORMATION VERIFICATION COMMITTEE at sub district level will ensure the following

- ✓ That the applicant is from KZN, from a specific District and from a particular sub district (Municipal area)
- ✓ That the applicant is financially needy
- ✓ And that the applicant has the academic ability to complete the relevant programme.

The Bursary Information Verification Committee will consist of the following roll players:

- ✦ Institutional Manager DOH as Chairperson or an official from the Department of Health KZN. District Manager to decide.
- ✦ Municipal Mayor / Manager
- ✦ Ward Councillors
- ✦ Traditional Leaders
- ✦ Headmasters of the High Schools in the municipal area / Circuit Inspector

The above team will ensure that the applicant meets the criteria mentioned. Mr E Brooks used a team like the above mentioned in the Mkhanyakude District (DC27) as part of a pilot project during October/November 2002 for the 2003 intake. The team worked well together and proved to be a great success. Team members bought into the process and felt that as members of the public they knew, understood and supported the bursary allocation process. The team understood the channels of communication and accepted the fact that the District Manager will make recommendations to Head Office based on the vacancies in their relevant District after receiving the verified applications forms from the sub districts.

By doing so the members of the sub committee who are also members of the community, will assist the Department of Health in ensuring that the successful applicants, after completion of their studies, serve the people of the community that had a hand in recommending them for a bursary and that the applicant complete their bursary obligation at the relevant district or sub district. The Department of Health enters into a contract with every student who was granted a bursary and binds the student legally to ensure that

the students serve their bursary obligation at places in KZN where services are needed. Having the Bursary Information Verification Committee and the Bursary Recommendation Committee creates two additional tools to ensure that the student completes the obligation at places in KZN where it is most needed.

Refer to Annexure A and please approve the constitution of the Bursary Information Verification Committee.

The HRD Bursary Section will improve communication between the student and the hospital/clinic, via the District Office, where the students will complete their bursary obligations.

2. District Bursary Recommendation Committee

The Pilot Project in District 27 proved that a District Bursary Recommendation Committee must be selected to take the process to the next level. The District Bursary Recommendation Committee will ensure that: -

- ✓ No nepotism takes place (New roll players, New Chairperson and Members)
- ✓ The student has no other bursary
- ✓ The student has no other Diploma \ Degree
- ✓ The District determine the needs for Health Professionals in order of priority
- ✓ The person standing Surety be employed
- ✓ The student applied to study at a recognised Tertiary Institution and confirm acceptance and registration

The District Bursary Recommendation Committee will consist of the following roll players:

- ✦ District Manager DOH as Chairperson
- ✦ The District HRD committee

The above team will ensure that the applicant meets the above remaining criteria mentioned. The District Manager and the District HRD Committee will determine the needs for Health Professionals for the entire district and not just for a particular sub district. The District Bursary Recommendation Committee will liaise with Mr E Brooks (Bursary Administrator) to establish how many students from the respective districts were granted a bursary previously and who are already in the system.

The District Bursary Recommendation Committee will then submit their recommendations to Head Office where the Bursary Administrator will run a final check on all procedures followed. The check will include comparing recommendations made against vacant posts on PERSAL per district. The Bursary Administrator must determine where recourses are most needed in the province and support the recommendations for the more needy districts in order of priority and to remain within the financial framework. The final recommendations will be submitted to the Head of Department for approval. Could authority be granted for the various committees to be established at the respective districts and sub districts?

Refer to Annexure B and please approve the constitution of the District Bursary Recommendation Committee.

Mr E Brooks would like to have the above Committees in place by the end of August 2003 to ensure that all relevant procedures are followed as soon as possible after the closing date of 31 August 2003. The District Bursary Recommendation Committee must commence with the second level of the process 30 days after the closing date, giving the Bursary Information Verification Committee 30 days to screen all applications and submit the verified applications to the District Bursary Recommendation Committee.

All District Managers have been informed about the decentralisation process and noted their support at the PHHRDC meetings at Head Office.

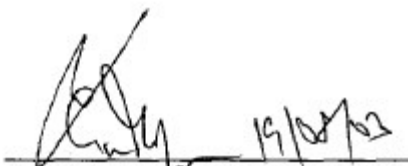
All applications are for the 2004 academic year.

Thanking you in anticipation



MR E BROOKS
BURSARY ADMINISTRATOR/ASSISTANT MANAGER

SUPPORTED / NOT SUPPORTED



19/08/02
Professor R.W Green-Thompson
Head of Department, DOH KZN

PROVINCE OF KWAZULU-NATAL
HEALTH SERVICES

PRIVATE BAG X 9051

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BURSARY INFORMATION VERIFICATION COMMITTEE

Constitution

1. Name

The Committee shall be known as the Bursary Information Verification Committee. (at sub - district level)

2. Objectives

- a) The committee shall ensure that applicants applying for a KZN Department of Health bursary
 1. are from the Province KwaZulu Natal
 2. are within your respective KZN Health District.
 3. identify the sub-district within the district where the applicant resides.
- b) The committee shall ensure that all applicants for KZN Department of Health bursary are financially needy .
- c) The committee shall ensure that the applicants possess the academic ability to successfully complete a course of study and become a health professional.

3. The Committee

3.1 The committee shall consist of the following individuals :-

- a) Chairperson Shall be an official from the Department of Health KwaZulu Natal / District Manager / Institutional Manager / Member of district human resource committee (District Manager to decide)

Members From all Health Institutions within the Sub District

- b) Hospital Manager
- c) Medical Manager
- d) Nurse Manager
- e) Human Resource Manager

f) Secretary

Shall be nominated by the district manager and shall be responsible for all correspondence of the meeting, and shall keep the minutes of the meeting.

3.2 Community Representatives

The Bursary Information Verification Committee Chairperson can at his/her discretion approach community representatives to aid in the verification of information submitted by the applicant on the bursary application form.

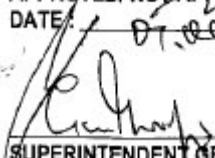
- 3.3 The Committee shall convene within 30 days of the bursary application closing date, at a venue that has no financial implications on the part of the Department of Health KwaZulu Natal.
- 3.4 The Committee shall submit all recommendations to the District Office within 30 days of verification.
- 3.5 The committee shall record the proceeding and submit a report to the District office.
- 3.6 The committee shall remain fair and unbiased at all times.
- 3.7 The committee shall abide by the constitution to ensure uniformity.

4. Quorum

There must be a minimum of four members present at all times, off which at least one must be an official from the Department of Health, during the verification process.

THE CONSTITUTION IS BINDING AS FROM THE DATE OF APPROVAL BY THE HEAD OF DEPARTMENT.

APPROVED/ NOT APPROVED
DATE: 01.08.03


SUPERINTENDENT GENERAL
HEAD DEPARTMENT OF HEALTH
KWAZULU NATAL

Annexure C: Bursary Recommendation Committee Constitution

ANNEX B

PROVINCE OF KWAZULU-NATAL
HEALTH SERVICES

ISIFUNDAZWESAKWAZULU-NATALI
EZEMPILO

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DISTRICT BURSARY RECOMMENDATION COMMITTEE

Constitution

1. Name

The Committee shall be known as the DISTRICT BURSARY RECOMMENDATION COMMITTEE.
(at district level)

2. Objectives

- a) The committee shall determine the needs per occupational class within the district
- b) The committee shall ensure that the applicant does not have any other bursary.
- c) The committee shall ensure that the applicant does not possess any other qualification, degree / diploma.
- * d) The committee shall ensure that the applicant is registered or has applied for registration at a recognized tertiary institution.
- e) The committee shall ensure that the surety details are correct, the surety should be employed / if self-employed banking details must be submitted / IRP5 / pension slip must be furnished.

3. The Committee

3.1 The committee shall consist of the following individuals: -

- a) Chairperson **shall be the District Manager**

Members

- b) District Human Resource Development Committee
- c) District Health Science Officials and Programme Managers
- d) Secretary **Shall be nominated by the district manager and shall be responsible for all correspondence of the meeting, and shall keep the minutes of the meeting.**

- 3.2 The Committee shall convene within 30 days of receiving all application forms from the Sub- District Bursary Information Verification Committee
- 3.3 The Committee shall submit all their recommendations to Head Office within 14 days of recommendation.
- 3.4 The committee shall record the proceeding and submit a report to Head Office.
- 3.5 The committee shall remain fair and unbiased at all times.
- 3.6 The committee shall abide by the constitution to ensure uniformity.
- 7. **Quorum**

There must be a minimum of four members present at all times during the recommendation process.

THE CONSTITUTION IS BINDING AS FROM THE DATE OF APPROVAL BY THE HEAD OF DEPARTMENT.

APPROVED/ ~~NOT APPROVED~~
DATE: 29.08.03


SUPERINTENDENT GENERAL
HEAD DEPARTMENT OF HEALTH
KWAZULU NATAL

Annexure D:**Statistical Tables**Table 1: Independent Samples Test for all occupational categories

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error
Total Vacancy Rate					
	.00 *	50	38.6528	20.12440	2.84602
	1.00 *	36	29.2992	14.02212	2.33702

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Vacancy Rate	Equal variances assumed	2.399	84	.019	9.35363	3.89891
	Equal variances not assumed	2.540	83.933	.013	9.35363	3.68259

Table 2: Independent Samples Test for all Bursaries Allocated

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Total Bursaries	.00	50	25.6600	35.97086	5.08705
	1.00	36	24.1667	43.06772	7.17795

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Bursaries	Equal variances assumed	.175	84	.862	1.49333	8.54321
	Equal variances not assumed	.170	66.928	.866	1.49333	8.79779

Table 3: Independent Samples Test: Dentist vacancy rate

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Dentist Vacancy Rate	1.00	36	.1478	.42391	.07065
	.00	50	.2398	.74682	.10562

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Dentist Vacancy Rate	Equal variances assumed	-.665	84	.508	-.09202
	Equal variances not assumed	-.724	80.186	.471	-.09202

Table 4: Independent Samples test: Dentist Bursary Allocation

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Dentists Bursary Split	.00	50	1.0762	2.01167	.28449
	1.00	36	1.2808	2.56329	.42721

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Dentists Bursary Split	Equal variances assumed	-.415	84	.679	-.20463
	Equal variances not assumed	-.399	63.943	.691	-.20463

Tables 5: Regression Analysis: Dentists

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.513(a)	.263	.254	1.94010

a Predictors: (Constant), Dentist Vacancy Rate

ANOVA(b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	112.960	1	112.960	30.011	.000(a)
Residual	316.177	84	3.764		
Total	429.137	85			

a Predictors: (Constant), Dentist Vacancy Rate

b Dependent Variable: Dentists Bursary Split

Table 6: Independent Samples Test: Medical Officers

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Medical Vacancy Rate	1.00	36	.3978	.30437	.05073
	.00	50	.4820	.55975	.07916

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Medical Vacancy Rate	Equal variances assumed	-.819	84	.415	-.08422
	Equal variances not assumed	-.896	78.884	.373	-.08422

Table 7: Independent Samples Test: Medical Officer Bursary Allocation

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Medical Bursaries	Total .00	50	3.7400	5.30233	.74986
	1.00	36	3.8611	4.44106	.74018

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Medical Bursaries	Total				
	Equal variances assumed	-.112	84	.911	-.12111
	Equal variances not assumed	-.115	82.008	.909	-.12111

Tables 8: Regression Analysis: Medical Officer

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.766(a)	.586	.582	.97874

a Predictors: (Constant), Medical Vacancy Rate

ANOVA(b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	114.127	1	114.127	119.138	.000(a)
Residual	80.467	84	.958		
Total	194.594	85			

a Predictors: (Constant), Medical Vacancy Rate

b Dependent Variable: Medical Bursary Split

Table 9: Independent Samples Test: Pharmacist

Percentage of Rural Hospitals			N	Mean	Std. Deviation	Std. Error Mean
Pharm Vacancy Rate	1.00		36	.2256	.19877	.03313
	.00		50	.6616	.73721	.10426

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means						
			t	df	Sig. (2-tailed)	Mean Difference
Pharm Vacancy Rate		Equal variances assumed	-3.454	84	.001	-.43604
		Equal variances not assumed	-3.986	58.559	.000	-.43604

Tables 10: Independent Samples Test: Pharmacist Bursary Allocation

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Pharm Total Bursaries	.00	50	.5200	.64650	.09143
	1.00	36	.3333	.47809	.07968

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Pharm Total Bursaries	Equal variances assumed	1.467	84	.146	.18667
	Equal variances not assumed	1.539	83.922	.128	.18667

Tables 11: Regression Analysis results: Pharmacists

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.550(a)	.303	.295	1.29483

a Predictors: (Constant), Pharm Vacancy Rate

ANOVA(b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	61.204	1	61.204	36.505	.000(a)
Residual	140.833	84	1.677		
Total	202.038	85			

a Predictors: (Constant), Pharm Vacancy Rate

b Dependent Variable: Pharm Bursary Split

Table 12: Independent Samples Test: Specialist vacancies

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
Spec Vacancy Rate	1.00	36	.2689	.92144	.15357
	.00	50	.8244	1.47860	.20911

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
Spec Vacancy Rate	Equal variances assumed	-1.991	84	.050	-.55551
	Equal variances not assumed	-2.141	82.509	.035	-.55551

Table 13: Independent Samples Test: Professional Nurses vacancy rate

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
RN Vacancy Rate	1.00	36	.2447	.24348	.04058
	.00	50	.3434	.39500	.05586

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
RN Vacancy Rate	Equal variances assumed	-1.327	84	.188	-.09868
	Equal variances not assumed	-1.429	82.282	.157	-.09868

Table 14: Independent Samples Test: Registered Nurse Bursary Allocation

Percentage of Rural Hospitals		N	Mean	Std. Deviation	Std. Error Mean
RN Bursary Split	.00	50	1.1986	1.93430	.27355
	1.00	36	1.1125	2.33735	.38956

0 = represents urban hospitals

1 = represents rural hospitals

t-test for Equality of Means					
		t	df	Sig. (2-tailed)	Mean Difference
RN Bursary Split	Equal variances assumed	.187	84	.852	.08610
	Equal variances not assumed	.181	66.481	.857	.08610

Tables 15: Regression Analysis results: Professional Nurses

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687(a)	.472	.465	26.86804

a Predictors: (Constant), RN Vacant

ANOVA(b)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	54132.663	1	54132.663	74.987	.000(a)
Residual	60638.872	84	721.891		
Total	114771.535	85			

a Predictors: (Constant), RN Vacant

b Dependent Variable: RN Total Bursaries