Northern Cape Provincial Health Accounts, the capacity issues and assessment of the feasibility to institutionalise.

By:

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Declaration

While acknowledging information from other sources. I hereby declare that, this research paper is my own original work and has not been submitted for any academic and/or examination purposes at any University.

Signed by candidate

Luvuyo Lumkile Baba

This research paper has been submitted for examination with my approval as the University Supervisor

Signed by candidate

Stephen Thomas

Dedication

With Great love and appreciation, I dedicate this work first and foremost to the Almighty God for the very life and sustenance and secondly to my loving daughter Nelisa Julia Baba.

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Glossary

CHC	Community Health Centre
ESA	Eastern and Southern Africa
ESAC	Eastern and Southern Africa Countries
FMS	Financial Management System
HER	Health Expenditure
LA	Local Authorities
MTEF	Medium Term Expenditure Framework
NDoF	National Department of Finance
NDoH	National Department of Health
NGO	Non- Governmental-Organisations
NHA	National Health Accounts
OECD	Organisation for Economic Co-operation and Development
PDoH	Provincial Department of Health
PDoW	Provincial Department of Works
PERSAL	Personnel / Salary Information System
PHA	Provincial Health Accounts
PHC	Primary Health Care
RDP	Reconstruction and Development Programme

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Above all, to the almighty and merciful God, I am most grateful for your continuous guidance, protection and immense blessings. " I can do all things through Christ who strengthens me." Philippians 4:13

Abstract

Provincial Health Accounts describe the sources, uses, and channels for all funds utilized in the health sector and are a basic requirement for optimal management of the allocation and mobilization of health sector resources.

This study emphasises the concept of National Health Accounts at provincial level in order to get a full picture of the financial organization of the health care system in the selected province, Northern Cape, and assesses its achievement of efficiency and equity objectives.

The report focuses on the public sector, its use of resources and progress toward policy objectives, particularly in relation to health financing. It produces the analyses of health expenditure collected from primary data over a number of consecutive years in Northern Cape (1996/97-1998/99).

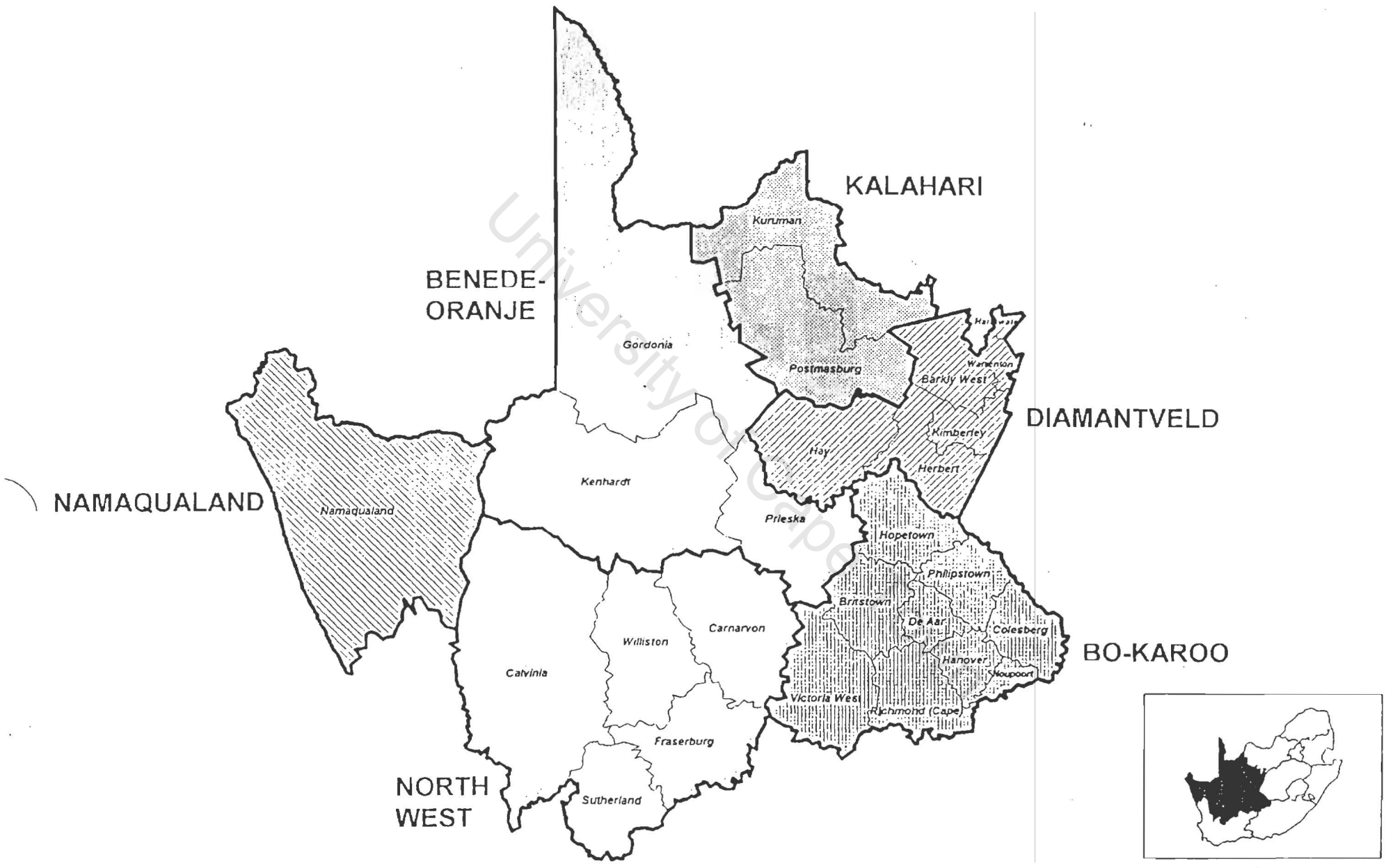
As expressly stated in the main objectives of this study the results will help inter-alia the Health Authorities in making decisions. Once the capacity issues have been identified the feasibility to institutionalise the PHA will be known.

The main current source of financial information for provinces remains in various budgeted figures, as audited and actual expenditure figures usually appear later. The Financial Management System (FMS) and other financial systems operational have the potential to provide much information on expenditure flows but there are obstacles to using this information on expenditure. Thus, data are often less reliable than they could be.

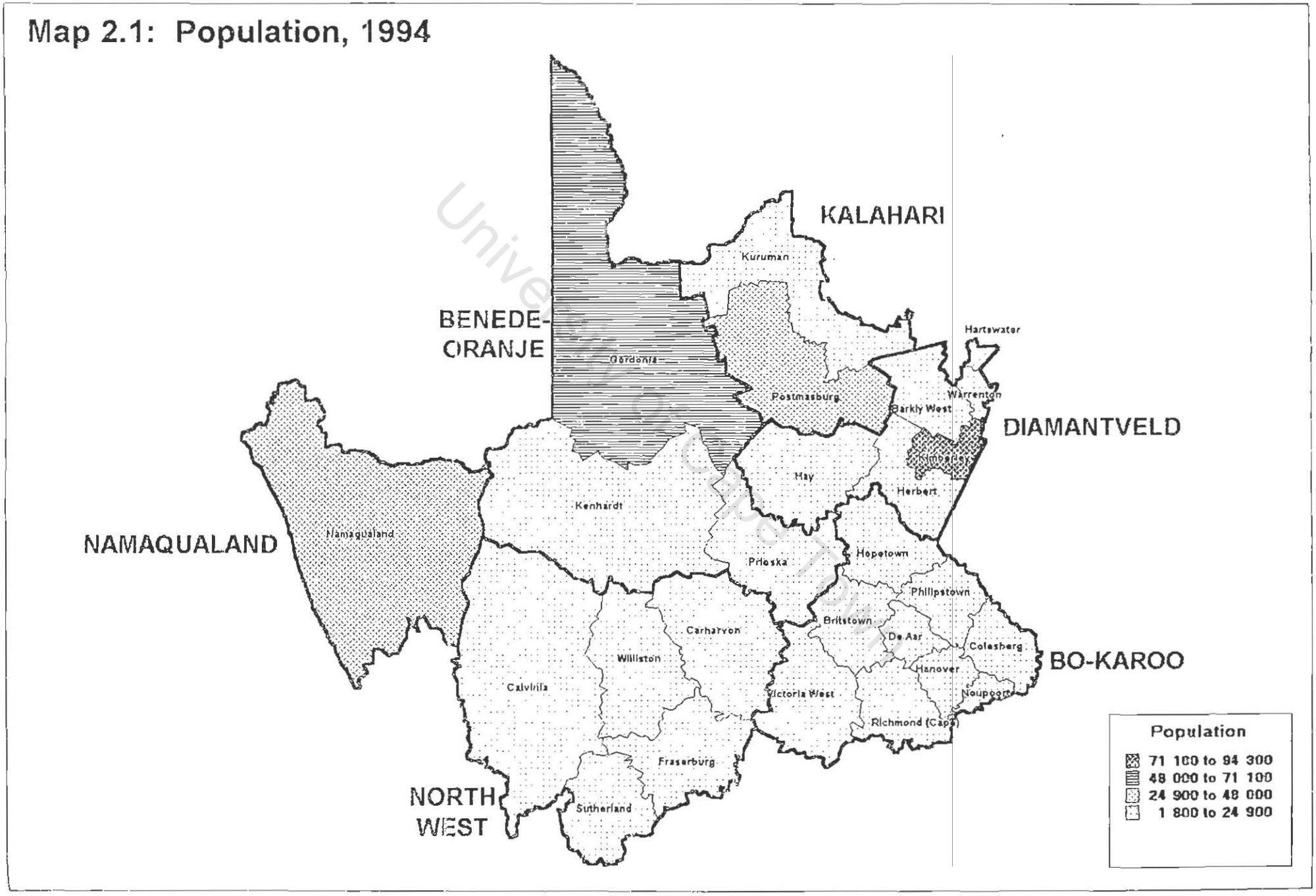
These problems can, no doubt, be reduced with training and system development but this will need to be tackled for the production of useful Provincial Health Accounts (PHA).

Further, expenditure information resides in a few different systems, and there has not been enough work on making the systems compatible. Local governments, who provide health promotion and environmental health services, generally record related information on system that differ from one another's, and from the provinces. Other information, such as the number of health staff and quantities of pharmacueticals ordered, also resides in different information systems. Much needs to be done to make PHA sustainable in the Northern Cape.

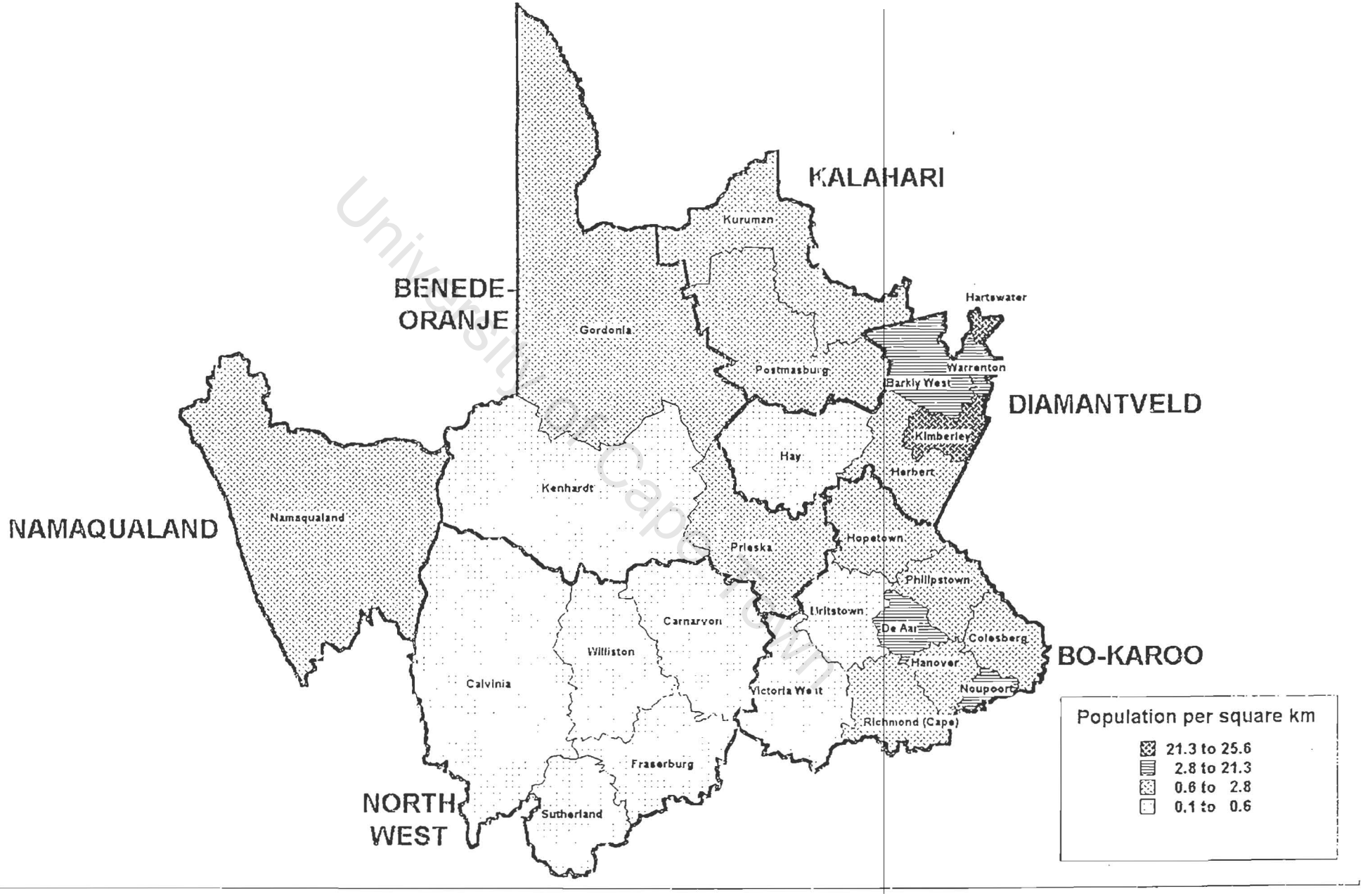
NORTHERN CAPE SUBREGIONS



Map 2.1: Population, 1994



Map 2.2: Population density, 1994



Chapter: 1

Introduction

1.1 Background to the study

National Health Accounts (NHA), sometimes termed Health Expenditure Reviews, compile comprehensive information on health care financing and expenditure within a particular country. NHA contribute to health system policies in some important ways:

- They provide a comprehensive picture of the financial organization of a health care system in a way that is easy to understand and relevant for policy analysis.
- They help national analysts compare their health care system with those of other countries.

The first comprehensive Health Expenditure Review (HER) for South Africa was completed in early 1995 and presented data on health care financing and expenditure for the 1992/93 financial year. The information provided in the HER has been extensively used to inform health sector restructuring in South Africa over the past few years.

Overall, the broad goal of the latest NHA project in South Africa is to provide information that can be used to:

- contribute to the Medium Term Expenditure Framework (MTEF);
- evaluate health sector efficiency;
- monitor the impact of recently introduced health policies; and
- inform the development of new health policies.

This provides valuable input on what can be achieved and helps in setting objectives and benchmarks for performance.

Provincial Health Accounts (PHA) is a regional form of NHA and indicates the flow of funds from the sources to financing intermediaries and to users in a particular province.

The PHA like the NHA is a valuable tool that can be used to help assess health system performance and improve the capacity of provincial decision-makers to identify health sector problems and opportunities for change. It can also help in the development of reform strategies and in the monitoring of the effects of reforms on health expenditure and financing (Berman, 1996), and in comparing the performance of the systems across the provinces in the country. This dissertation records and assesses the development of PHA for the Northern Cape Province.

1.2 The structure of the Public Health Service

The general structure of public health sector services in South Africa is summarised in Table 1 below, which indicates the activities at different tiers of government. While the National Department of Health is mainly involved in overall co-ordination, support and policy formulation, the Provincial Departments of health are heavily involved in organisation, provision and monitoring of health care services and support and supervision to local authorities in health service provision. The local authorities are mainly involved in provision of primary health care services and preventive and promotive health services.

From Table 1 our focus in developing PHA for Northern Cape public sector health service is at provincial and local levels of government.

Table 1: Structure of public sector health services in South Africa

Level of government	Department(s)	Responsibilities/Activities
Central	Department of Health	- health policy formulation - allocation and monitoring of conditional grants - determination of norms and standards - co-ordination of services - line functions such as dental, forensic, national laboratory and so forth. - other support functions
Provincial	Provincial health departments	- determination of local authority subsidies - hospital-based services and mental health - primary level curative and rehabilitation services - comprehensive primary care services in former homelands - ambulance services in conjunction with local authorities
Local (including municipalities and Regional Services Councils)	Local authority health departments	- preventive, promotive and rehabilitative primary care services with particular emphasis on communicable disease control and environmental health - ambulance services
Other (non-health) departments	Departments of Defence, Police and Correctional Services	- provision of health services for staff, their dependants and prisoners

Source: Thomas and Muirhead (2000)

1.3 A brief background to the Northern Cape Province

The Northern Cape Province contains the largest proportion of the land of South Africa of any province, however it has the smallest population. The Population Census, (1996) lists population as 840 321, this represents 2.1% of the total population of the country. The landmass represents 29.7% of the total and is equal to 361 830 km^2. Currently there are 112 councils in the Province, of which 64 are listed as Urban and 48 as Rural in the White Paper on Local Government. (Development Bank of Southern Africa, 1998) (see: Maps from page *xiii* in front of the report)

Table 2: Selected Demographic and socio – economic indicators

INDICATORS	Northern Cape	National Average
Area (square km)	361,830	1,219,090
Population density	2.3	33.3
Population	840,321	40,583,573
Rural as % population	29.9	46.3
African as % population	33.2	76.7
Poverty rate	57.0	53.0
% Population over 20 years with no schooling	21.7	19.3
% Population over 20 years with matric or higher qualification	17.7	22.6
% economically active population unemployed	28.5	33.9
% households living in 2 or less rooms	35.1	32.6
% households living in 1 or less rooms	16.2	17.2
% using electricity for cooking	52.7	47.4
% with tap water in house	50.0	44.7
% with water tap in house or yard	83.2	61.4
% with flush or chemical toilet	59.7	50.5
Disabled as % of population	5.6	6.5

Sources: All data (except poverty rates) Statistics South Africa (1998). The people of South Africa, Population census 1996: Census in brief.Pretoria: Statistics South Africa. Poverty Rate data from: Reconstruction and Development Programme (1995). Key indicators of poverty in South Africa. Pretoria: RDP.

Table 2 shows that about a 1/3 of the population mainly live in rural areas. Approximately 22 % of the population who are 20 years and over are illiterate compared to the national average of 19.3 %, resulting in high unemployment rates.

Also Table 2 shows that the economically active population which is unemployed, is 28.5 % compared with a 33.9 % national average. Generally more than half of the population live in poverty.

Gilbert et.al (1998) stated that generally poverty is the main reason why babies are not vaccinated, why clean water and sanitation are not provided, why treatment is unavailable and why mothers die in childbirth. It is the underlying cause of reduced life expectancy handicap, disability and starvation. It is a major contributor of mental illness, stress, suicide, family disintegration and substance abuse.

The apartheid era left an appalling legacy of inequity in accessing services and inefficiency through the misallocation of resources to inappropriate activities. Northern Cape, with a relatively small population, is amongst the neglected in terms of resource allocation, as manifested by the high poverty and unemployment rates. There has been a commitment on the part of the national government to the equitable provision of primary health care (PHC) to improve the health status of the previously disadvantaged population as clearly stated in the White Paper for the Transformation of the Health System in South Africa. (Republic of South Africa, 1997)

By conducting the Provincial Health Accounts (PHA), I will help in identifying the inequities and inefficiencies in terms of public health sector resource allocation in the province and recommend what can be done to redress the situation.

1.4 Motivation for the study

The motivation for the study is twofold:

- Need to know PHA data to understand the problems and propose solutions.
- Need to assess prospects for institutionalisation of PHA to make on going impact to policy matters.

A comprehensive NHA project was undertaken by a consortium comprising the Health Economics Unit (University of Cape Town), the Centre for Health Policy (University of the Witwatersrand), the Department of Economics (University of Durban-Westville), the National Department of Health (NDoH) and an independent consultant. The NHA project reviewed expenditure flows for three financial years, 1996/97,1997/98 and 1998/99 and prepared the ground for more regular collation of such information. (Thomas and Muirhead 2000)

This dissertation emphasises the concept of the NHA at a provincial level in order to get a full picture of the financial organization of the health care system in the Northern Cape and to assess achievement of efficiency and equity objectives.

The PHA produces the analyses of health expenditure collected from primary data over a number of consecutive years in Northern Cape (1996/97-1998/99). It focuses on the public sector, its use of resources and progress toward policy objectives, particularly in relation to health financing.

The main current source of financial information for provinces remains the budget as audited and actual expenditure figures usually appear later.

The Financial Management System (FMS) and other financial systems operational in various provinces have the potential to provide much information on expenditure flows but there are obstacles to using this information. Thus, data are often less reliable than it could be.

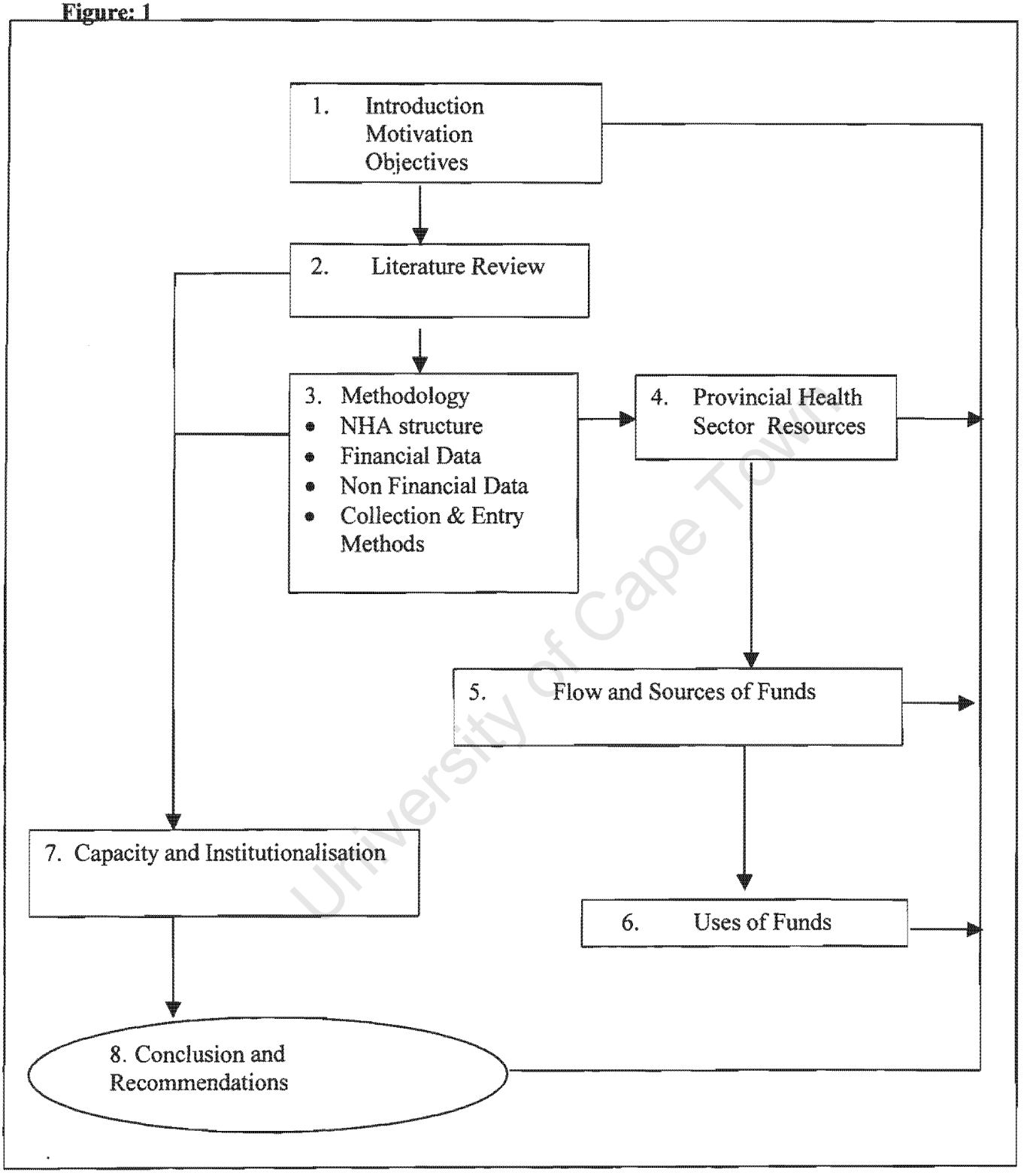
Other information, such as the number of health staff and quantities of pharmaceuticals ordered, reside on different information systems. There is a need to assess current shortcomings in the existing system.

1.5 The main objectives of this study are:

- To produce the Provincial Health Accounts for the Northern Cape.
- To analyse the results for decision making.
- To determine the capacity issues to be addressed that will facilitate or constrain the undertaking of the PHA in future.
- To assess the feasibility of institutionalising the PHA.

1.6 Structure of the report

Figure: 1



Note: Numbers refer to chapters of the report.

Figure 1 describes the structure of the report, which has mainly two themes: financial results and capacity. Chapter 1 contains an introduction, background motivation and objectives of the study. Chapter 2 explains the literature review. The methodology applied in this study is discussed in chapter 3 while Chapters 4, 5 and 6 respectively outline provincial health sector resources available alongside the distribution of facilities and personnel, the flow and sources of funds and its uses. In Chapter 7 capacity issues in the Northern Cape with regard to Provincial Health Accounts and possibility to institutionalisation are discussed. Finally conclusions and recommendations based on the findings are given in Chapter 8.

Chapter: 2

Literature Review

2. Introduction

This chapter provides a literature review of National Health Accounts in developed and developing countries. It identifies current gaps and compares country experiences.

By doing the literature review I will attempt to achieve the following:

1. I will look at different models that have been used by various countries when doing NHA
2. Review the country experiences and look at methods used, the range of results and policy issues that were addressed.
3. Finally I will review in detail the application and use of NHA in the range of countries using a common framework to find out what is relevant for the Northern Cape.

2.1 Literature Review

The use of National Health Accounts (NHA) to provide a picture of health related resource flows is an initiative undertaken by many countries throughout the world. In order to make the results of these investigations comparable across nations a standardised format for the presentation of financial data from the health sector has been developed. One of the first initiatives was by the Organisation for Economic Co-operation and Development (OECD,1987) which conducted a comparison of member countries' health expenditure. OECD countries now submit health accounts in a relatively simple and standardised format on a regular basis to the OECD. (Berman, 1996)

It has been proposed that improved estimates of national health expenditures in developing countries should be seen as an essential prerequisite for systematic national efforts to reform the health sector. Because of their pluralistic health care systems, developing countries should adopt the "Harvard" model in developing these estimates. It is argued, based on several recent experiences, that this is both feasible and extremely useful. (Berman, 1996).

The Harvard School of Public Health, amongst others, has suggested that, due to the more pluralistic nature of health systems in a developing country setting, an expansion of the OECD categories of sources of finance as well as financing intermediaries may be necessary to appropriately provide some standardisation of the framework of accounts to suit a number of developing nations and allow cross national comparison (Berman, 1997 and Berman & Thompson, 1999).

This they have termed National Health Accounts (NHA) and they suggest that the main benefits of this approach over the previously proposed OECD approach is the presentation of the flow of funds from sources through financing intermediaries to users in a matrix format so that flows can be tracked through the health system. By their admission, however, the generalizability of such categorisation must be tested through the completion and comparison of a number of National Health Account development exercises and the adjustment of a framework to suit local needs is also necessary (Berman, 1997).

2.2 A regional initiative

The potential benefits of national accounts for developing countries are great given the economic constraints faced by many of these countries. Nevertheless, national health accounting is less advanced in developing countries, and few have compiled any accounts. Obstacles include poorly developed conceptual frameworks and methodological tools relevant to situations in developing countries (Berman, 1996)

Regional initiatives are now taking place both in Asia (Tangcharoensathien et al, 1999) and sub Saharan Africa. South Africa is one of a number of countries now in the process of development and refinement of a set of National Health Accounts. Egypt produced one of the first set of NHAs from the Africa continent in 1995 representing its expenditure data in terms of the original sources of funds, financing agents and health care providers (Berman 1997).

At present there are ten African countries involved in the Eastern and Southern Africa (ESA) NHA network namely Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. Most Sub-Saharan countries are implementing a number of health sector reforms that target improvement in efficiency and management of health services (Gilson and Mills, 1995), which can be informed by NHA data and analyses.

2.3 Results from a comparative analysis of Eastern and Southern Africa Countries (ESAC)

Regional results show that the contribution of finances from public sources is mainly from general tax revenues and the amounts raised depend on a nation's tax base and the ability of the government to collect taxes.

Low tax ratios in most of the low-income countries have often translated into limited capacity and insufficient public finances for health care.

Households are the largest purchasers of health services in the region. As evidenced especially by the findings of the NHA conducted in Ethiopia and Kenya, which showed high proportions of out-of-pocket payments. Yet the majority of the population in these countries are poor with poor health status. Evidence from some countries shows that high out-of-pocket payments dissuade the poor from utilising health care services. (Wagstaff and van Doorslaer,1993). It is therefore less likely that their health status will improve should reliance on this form of financing health care continue. The challenge to policymakers therefore is how to improve the health status of the majority of the population given that the principal financing option for health care is direct out-of-pocket.

The general perception internationally was that hospital expenditure was too high in relation to primary health care in developing countries, but the evidence from the NHA studies conducted in the ESA region does not support this. Apart from South Africa, Malawi and Ethiopia spend more on primary care than hospital level in their countries with Tanzania spending slightly less as a proportion of its public expenditure than on hospitals. Conversely South Africa has public expenditure greatly skewed toward the hospital sector. (Nabyonga and Munguti, 2001)

2.3.1 Policy Application of the ESA NHA study.

NHA comparative analysis of the ESA countries highlighted that, there is need for Governments to explore alternative financing mechanisms as households are already overburdened. Options for consideration may include exploring the possibilities of introducing social health insurance schemes and changes in government budget priorities to increase health care allocation.

Northern Cape health sector is mainly financed by general taxes which depend on the economic activity of the country. This dependency needs to be reviewed later.

2.4 Country experience comparisons

From the broader literature I am looking at the following four issues:

- What motivated other countries to do NHA?
- Which model was used and why it was used by each of the countries? Can it be applied in PHA?
- What results were shown and how they were used, to help inform how to do PHA?
- Finally, what policy issues were addressed and how they can be useful in the Northern Cape Health Department?

Table 3: Country experience comparisons in doing NHA

Country	Rationale	Methods	Key Results	Policy Relevance
Egypt (Rannan-Eliya and Nada et.al 1995)	To describe in a comprehensive manner the flow of all health expenditure within health care system including both public and private funding	The Harvard method was used because of pluralistic nature of public financing system	1. NHA created ability to monitor and evaluate the impact of any future reforms. 2. NHA established that Egypt is a low health care spender, that households bear a considerably higher than average share of the financing burden, and that government financing is too little and too divided to have substantial effectiveness.	1. There has been no major policy change as a result of the NHA though it has helped policy makers understand the relative contributions of the different institutional sectors in providing and financing health care. 2.Yet the results from the NHA study did lead to formulating a health sector reform agenda that is focused on restructuring the provision of primary care services. 3. Further the Ministry of Health used NHA data to develop policies integrating private sector funds into the health care system and formulate private sector regulatory legislation.

Country	Rationale	Methods	Key Results	Policy Relevance
Ethiopia and Kenya (Partnerships for Health Reform:Middle East and North Africa Regional National Health Accounts Initiative. 1999)	1. NHA is seen as a tool for gathering national health financing and expenditure data from both the public and private health sub-sectors including consumers. 2. NHA is seen as a tool to track all expenditure flows across a health system, and links the sources of funds to service providers and to ultimate uses of the funds.	The NHA approach is based on methodologies developed by the OECD and Harvard method	NHA showed health financing reliance on out-of-pocket payments	1. The results provided by NHA allowed policy development and monitoring for more efficient allocation of health care resources aimed at achieving a country's reform goals such as, more equitable access to priority health services. 2. The challenge to policy-makers is how to improve the health status of the majority of the population given that the principal financing option for health care is direct out-of-pocket.
South Africa (Thomas and Muirhead 2000)	To examine the overall funding and use of resources in the South African health sector such that the policy makers and manager could have information that will help them to lay a foundation for improved policy formulation and resource allocation in the future and allow more monitoring and evaluation of past reforms.	South Africa has taken a similar approach like other developing countries. A mix of OECD and Harvard models was used.	1. The current public health sector resource allocation across provinces is increasingly inequitable.	1.The 1997/98 allocations were broadly based on Financial and Fiscal Commission proposed formula while 1998/99 allocations were allocated using the Department of Finance formula. Both formulae have been subject to some criticism particularly in relation to the individual formula components and

				weighting mechanisms, but the objective of both, namely the equitable allocation of government resources is widely supported.
			2. Public health care financing is too heavily dependent on general taxation.	2. Alternative financing sources, user fees and social health insurance (SHI) have received the most attention in recent years. In particular the potential importance of increasing revenue through charging insured patients higher fees for services received at public sector hospitals has been highlighted.
			3. Salaries absorbed a large and increasing proportion of expenditure in the public health sector.	3. Further investigation is needed of the cause into the continued growth in salary costs, however, recently inflation and exchange rate fluctuations have had direct impact on general cost increases including salaries. Government plans to right-size the bureaucracy may further reduce the personnel share.

Zambia (Mbanefoh, 1996)	NHA study was primarily motivated by the need to enhance the role of private and non-governmental providers in the provision and financing of health services in Zambia, in the face of considerable fiscal strain on the part of the government. The enhancement of the role of the private providers is what they are doing, whom they serve, their distribution across the country, and their potential.	The Harvard approach was used, which was called the "Berman study"	1.There is no very active private sector in Zambia with very few pharmacists in the country. 2. Cost recovery was found to be at an experimental stage	1.Based on the study result there was a detailed study of health financing. 2. With total commitment to health care reform, there was local involvement and enthusiasm on health expenditure studies on the part of Zambian key health officials.
China (Ming Xin Ming and Yu De Zhi 1996)	To review and assess accuracy of National Health Expenditures 2. To assess the potential utility of adopting the fairly complex OECD template for national health	The OECD approach is used in this study	China Health Accounts focussed on the distribution of total expenditure across the sectors of government, labour insurance, individual and rural collective insurance 2. Individual out-of-pocket expenditures account for the largest share and enterprise	National health expenditure information provided baseline and trend data for monitoring changes in resource allocation. 2.Trend analysis could be used to evaluate the effects of policy initiatives in the financing of health care.

	accounts data to the specific data availability and planning needs of the Chinese Government.		account for almost as large a share of health expenditure as individuals.	
U.S.A (Rannan-Eliya, Berman and Somanathan 1997)	1.National Health Accounts was developed from efforts to develop internationally comparable estimates of national health expenditure. 2. The need in the U.S to manage the introduction of large public financing programme such as Medicare and Medicaid led to the NHA study	1.The U.S (Harvard) method was used to estimate a detailed matrix of the sources and uses of health expenditures, with extensive breakdowns of both public and private sources of spending.	1.The data sources including both public and private are often developed for reasons unrelated to health accounts, as such methods must be developed to modify data to match concepts useful for analyzing the health care system. Because the health care system changes over time, NHA must be periodically re-examined to determine the extent or scope of health care, and to insure that the best concepts, data sources, and methods are being captured.	1.NHA provided understanding of the structure and trends in health expenditure and such information plays a pivotal role in national health care policy. 2. It also serves as a base from which sub-accounts of expenditures useful to decision-makers can be crafted.

2.5 Discussion on country experience comparisons

(i) Rationale in doing NHA

Most countries showed that NHA could be used as a tool in tracking the flow of funds by providing answers to these questions: 1. Where do the funds come from? 2. Who receives the funds? 3. What is done with the funds?

(ii) Methods

There are currently two approaches that are used to do NHA. Each country can either choose the combination of models or one of the two models to use depending on the complexity or simplicity of the financial system of that particular country. The two models are "Harvard" and OECD as they are defined later in the text on 2.6 Egypt in doing NHA used "Harvard" method because of the pluralistic nature of public financial system and detailed matrix of the sources and uses of the expenditure that the model provides. Most developing countries including South Africa chose a combination of the two models.

(iii) Results

Each country processed and analysed NHA data that it had and different results came up. These results formed a basis on which conclusions and recommendations were made as stated in Table 3.

(vi) Policy relevance

The results provided by NHA led most of the countries to develop policies that could address financing issues and the possibility of engaging in health sector reform.

By doing the literature review I found that there is gap in terms of doing the NHA at provincial level.

None of the countries mentioned anything about the Provincial Health Accounts and I think it is a wonderful tool that can be used when a country engages in decentralisation of health services because it allows managers to be empowered at lower levels.

In the White Paper on transformation of the health system the South African government emphasised primary health care . PHA will assist the decision-maker at provincial level in formulating policies that will be more appropriate for PHC. Also in the literature there has been no mention of capacity issues that were deterring or facilitating the undertaking of NHA.
In doing the PHA, I will use the same methods that were used by most of the developing countries namely the combination of the Harvard and OECD.

2.6 Comments on methods

The NHA methodology was based on systematic compilation of "sources and uses matrices". The Organisation for Economic Co-operation and Development (OECD) provided most successful effort in developing standardized estimates. The "Harvard" methods meet the OECD standards but also go beyond them to estimate a detailed matrix of the "sources and uses" of health expenditures, with more extensive breakdowns of both public and private sources of spending. The OECD method only allocates sources of spending to "public" and "private". The U.S. approach is particularly useful in pluralistic health care systems, where finance comes from multiple sources and where providers may receive payment from more than one source. It is less useful where a single source of health spending is dominant nationally as in most OECD member states. (Berman, 1996)

Egypt, Mexico and Colombia have used the US approach in formulating NHA and Egypt in particular because of the pluralistic nature of the health care system the approach was ideal.

It formulated the flow of funds in terms of three major levels: the original sources of funds, the financing agents, and the health care providers or other categories of uses of funds.

South Africa like many other developing countries used the OECD and the Harvard approach in formulating NHA.

2.6.1 Comments on uses of the NHA

Countries may learn when doing NHA that the data sources, including both public and private are often developed for reasons unrelated to health accounts. As such, methods must be developed to modify data to match concepts useful for analyzing the health care system. Because the health care system changes over time, NHA must be periodically re-examined to determine the extent or scope of health care, and to ensure that the best concepts, data sources, and methods are being captured.

According to Berman (1996) there are three major steps needed to further develop the NHA tool in Developing Countries: a clear conceptual framework for developing the NHA matrices; consistent definitions of sources and uses which can be applied in many countries; and improvement in methods for estimating NHA components for which data are generally poor or lacking.

National Health Accounts documents total health care financing and expenditure within a particular country for a given year. Because NHAs are compiled on a routine basis they are particularly useful for monitoring changes in health care financing and expenditure that have occurred over time within a given country.

The level of detail in NHAs enables the undertaking of crucial analyses of which findings can be used by researchers and policy makers to aid decision-making in the health sector. Such analyses include the evaluation of :

- The size of the health sector relative to other sectors in the economy;
- The overall pattern of flow of funds within the health sector;
- The distribution of health care financing between different sources;
- The distribution of health care financing between the different financing intermediaries.

2.6.2 Conclusion on uses of NHA

- NHA can be used in formulating policy relating to health care financing i.e. User fees, Social Health Insurance
- To stipulate the role of Public Sector in health with respect to financing and service provision.
- Interaction between the Public and Private sector in health related matters

2.7 Capacity Issues

NHA in many developing countries is still at an early stage as this is a new concept. There are therefore teething problems in some of the countries in terms of getting the appropriate data and trained personnel to collect and analyse the information.

NHA will be more useful if countries are able to collaborate to develop standard definitions and estimation methods. It can be done first at a regional or sub-regional level, where countries share common languages and institutional structures.

Through such collaborative efforts, national teams can gain experience, adapt successful practices to local conditions, and learn from the efforts of others as well as themselves. (Berman, 1996)

2.8 Conclusion

National Health Accounts is an accepted method for estimating the total financial expenditure on health care in a country over a defined period of time. NHA is based on a feasible and useful definition of the boundaries of the health care sector. Health expenditures are analysed based on a flow of funds framework and presented in the form of matrices linking sources of expenditure, financing intermediaries or agents, and a variety of breakdowns of the uses of expenditure.

National authorities in many countries have fostered the development of national health accounts as a basic tool and information source on health care financing in their countries. National Health Accounts is rapidly becoming an essential tool for health care system analysis and also in helping policy makers reach important decisions.

2.9 Summary

It can be inferred from the literature review that NHA is still in its developing stages especially in developing countries. Although Egypt and South Africa have already produced comprehensive NHA reports there is still more to be done to refine it. There is still a gap in terms of what is happening in the local government sector. Most countries use the same methodology that meets the OECD standards and go further to use a detailed matrix of the sources and uses of health expenditure and more extensive breakdowns of public sources of spending.

The gap that has been identified in the literature review is that there has been no country that has explicitly done provincial health accounts. Nevertheless, the key principles are the same.

This study uses the NHA methods to help compile PHA to be used to assist health sector resource allocation on an ongoing basis.

Chapter: 3

Methodology

3. Introduction

This chapter outlines the approach adapted, gives classifications and definitions as well as explain the methodologies used in collecting the data. It also briefly touches on the linkage between the comprehensive NHA and this study. The approach used in this study is to combine the "Harvard" and OECD approaches, as noted.

3.1 Methods

The Provincial Health Accounts data were broadly classified into two categories, 'financial' and 'non-financial' data. The financial data comprises both health financing and expenditure data. The non-financial data comprises other health sector resources (e.g. number of facilities, personnel, number of beds, etc), as well as the activities of the health sector (e.g. number of patients seen at the different facilities, and other health outcomes). The classifications and definitions of each of these categories of data are briefly described in sections 3.2 and 3.3 below.

3.2 Financial Quantitative Data

Classification and Definitions

In broad terms, collection and analysis of financial data aims to document:

- Where money for the public health sector comes from (Sources);
- The channels of these funds (Financial Agents/Intermediaries), and
- What this money is spent on (Uses).

'Sources' refer to the major sources of funding for health care expenditure. Within the overall framework of 'sources of funding' for the entire (public and private) health sector, sources of funding for the provincial (public sector) level are classified under three major categories, namely: (a) revenue from national government, (b) revenue from provincial government and (c) local authority revenue. Also there are user fees. Although they are not regarded as a source of revenue there is potential of cost recovery at tertiary and secondary level of care.

'Financial intermediaries' refer to the organisations or groups who receive funds from sources and pay for or purchase health care with those funds. A review of financial agents/ intermediaries is critical because they make the link between 'sources' and 'uses' and as such are key actors in the flow of funds within the health sector. In view of this, financing intermediaries are influential in the final distribution of resources in the health sector. At the provincial level, and within the public sector, there are two major financing intermediaries namely: (a) the Provincial Department of Health and (b) Local Authorities.

'Uses' refers to the activities that health care funds are actually spent on.

In terms of uses of finances available to the health (public) sector, expenditure is potentially presented in four broad ways namely:

- by providers which refers to the explicit categories of organisations or individual practitioners who provide health services;
- by line items which refer to the type of inputs to health services (personnel, drugs etc.)
- by functions which refer to the type of health service provided (curative, preventive etc.)
- by geographic areas which could include area classifications such as health regions, health districts, rural and urban areas.

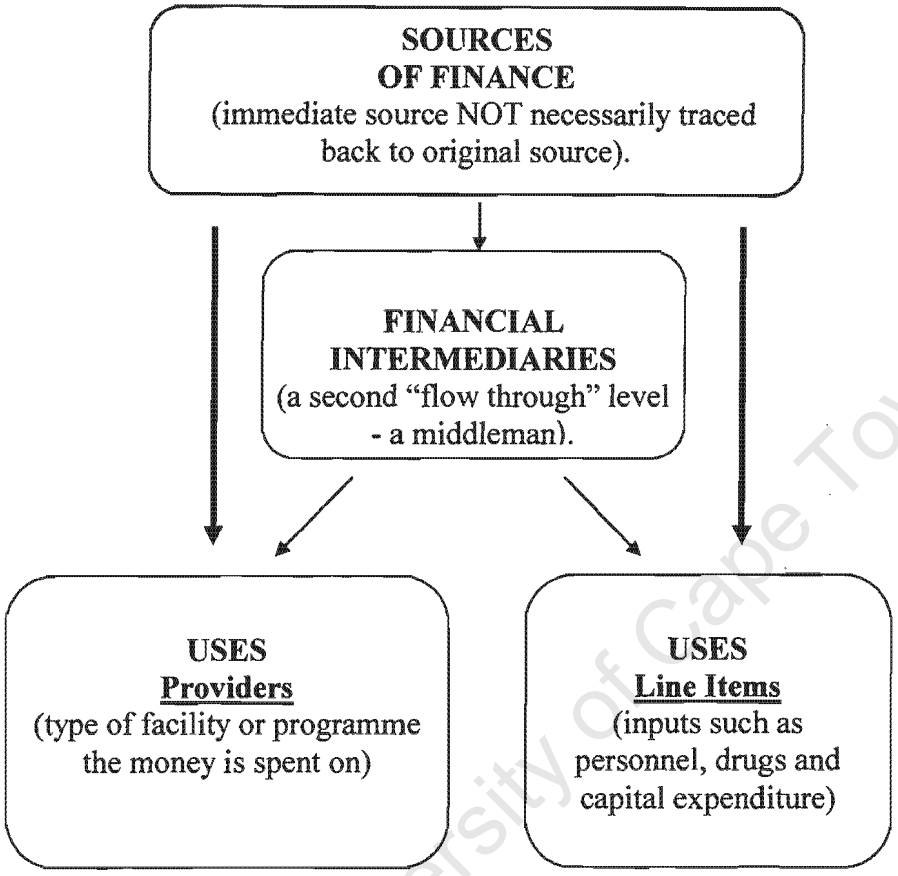
In this PHA because of data shortages the expenditure is presented by the first two ways namely by providers and by line items.

Within the 'providers' category, expenditure is classified according to the different levels of care (e.g. different hospital categories, primary health care facilities, training and research institutions, etc). Within the line item category, expenditure is split between input categories such as personnel, medicines and vaccines, medical consumables, equipment, transport, etc.
In the line item analysis categorisation between recurrent and capital expenditure is undertaken. Capital expenditure has items with life longer than a year. These items mainly comprise of buildings, vehicles and major equipment. Recurrent costs are costs for those resources that are expected to be consumed (or replaced) within one year.

Provincial Departments of Health deal with capital expenditure in differing ways.
For instance Northern Cape Province does not pass their capital budget to the Provincial Department of Works (PDoW) but have all expenditure passing through the Provincial Department of Health (PDoH) accounts. The Department of Works is contracted by them to carry out the work. (Thomas and Muirhead, 2000). In the Northern Cape not all the Department of Works expenditure was collected due to difficulty in finding the appropriate data from the department. This may underestimate capital expenditure.

3.3 Structure representing the flow of funds

Figure 2: Structure given to represent funding flows in the National Health Accounts System.



Source: Thomas and Muirhead 2000

The above financing flows are then represented in a matrix format as below so that the source (or intermediary) can be identified together with the use.

3.3.1 The Flow of Funds Matrix

Matrix: 1 Sources of Funds to Financial Intermediaries 1998/99

Financial Intermediaries	National Revenue Fund via Prov Treasury	Conditional Grant from NDoH	Provincial Own Revenue	Local Gov Own Revenue	Total
PDoH		xxxxxx	xxxxxx		xxxxxxxx
PDoW	xxxxxx		xxxxxx		xxxxxxxx
LAs	xxxxxx			xxxxxx	xxxxxxxx
Med Schemes	xxxxxx		xxxxxx		xxxxxxxx
Total	xxxxxxxx		xxxxxxxx	xxxxxxxx	xxxxxxxx

Note: There are funds that go to Medical Schemes for government employees, however, I will not analyse them here.

Matrix: 1A Financial Intermediaries to Providers 1998/99

Financing Agents or Financial Intermediaries Providers	PDOH	PDOW	Local Authorities	Medical Schemes	Total
Regional Hospitals	xxxxxx				xxxxxxxx
Health centres & Clinics	xxxxxx	xxxxxx	xxxxxx		xxxxxxxx
Health Administration	xxxxxx				xxxxxxxx
Education & Training Institutes	xxxxxx				xxxxxxxx
Laboratories	xxxxxx		xxxxxx		xxxxxxxx
Other	xxxxxx			xxxxxx	
Total	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx

Matrix 1 and 1A are an outline of the NHA matrices showing major funding flows.

Matrix 1 shows sources to financial intermediaries and Matrix 1A shows how funds received by the financing intermediaries get distributed to the providers. The major flow of funds to the Provincial Department of Health comes from the National Treasury via Provincial Treasuries, that is the non-conditional grant. The horizontal division of provincial allocation between provinces is based on population-based estimates of need, plus costs of maintaining existing provincial infrastructure. (Gilson et.al, 1999) The conditional grants come directly from the NDoH to the PDoH and are administered by the NDoH.

3.4 Non-Financial Quantitative Data

Classifications and Definitions

Non-financial data are collected to assess the relative performance of health sector activities and in particular issues relating to efficiency and equity. Non-financial data are classified into two broad categories namely, resources (which include personnel, number of facilities, number of beds, etc) and activities data (which include number of outpatient visits (head counts), number of inpatient admissions, inpatient days, deaths, etc). The 'personnel' sub category comprises numbers of different nurse categories, specialists, physicians, administration staff, etc. Data on personnel were collected as full-time equivalents.

3.4.1 Collection & Entry Methods and Sources of Data

Financial Quantitative Data

A standard workbook was designed for purposes of uniformity in data entry for the province.
(In Appendix 1 and 2 attached are some of the completed matrices for data entry or workbooks that were used for data collection).

In the Northern Cape, the process of collecting data involved meetings, interviews and telephonic discussions with several key informants from the PDoH. The process started off with getting permission to collect the data and introducing the objectives of the project. At the first meeting with these key informants, the data collection guide was reviewed, to ensure that the different types of data that were being requested were understood and obtainable.

The different sections of the data collection guide were assigned to the relevant key informants from PDoH, who were asked to compile the requested data for the team. Data were made available in a fairly easy and rapid way in electronic format but mainly in hard copies of FMS print-outs which made the process of data entry and cleaning manageable but lengthy.

For financial data, the major source of the data was the Financial Management System.
Extra data on 'sources' and 'financing intermediaries' was provided through a data collection guide that was filled in by a key informant from PDoH.

For other 'providers' (e.g. nursing colleges, CHCs and clinics, etc) FMS reports were provided. Expenditure data for each individual facility was entered onto Excel spreadsheets and thoroughly checked by me (author) and another researcher for double-counting and other human errors (data capturing errors) and then aggregated into the different provider categories.

Attempts were made to collect data directly from the local authorities. Due to the fact that some of the data were not available, however, extrapolation and estimation of certain expenditure items were done based on the proportionate line items and provider expenditure given by authorities that provided returns. Local authorities data should therefore be interpreted with caution. (Thomas and Muirhead, 2000). Due to unavailability of certain data the local authority expenditure could be understated.

3.5 Non Financial Quantitative Data

Collection Methods and Sources

The process for collecting non-financial data was similar to that of collecting financial data. The relevant key informant from PDoH provided all non-financial data, in FMS and PERSAL hard copy, for each facility. These data were then aggregated into the same provider categories as those used when compiling financial data.

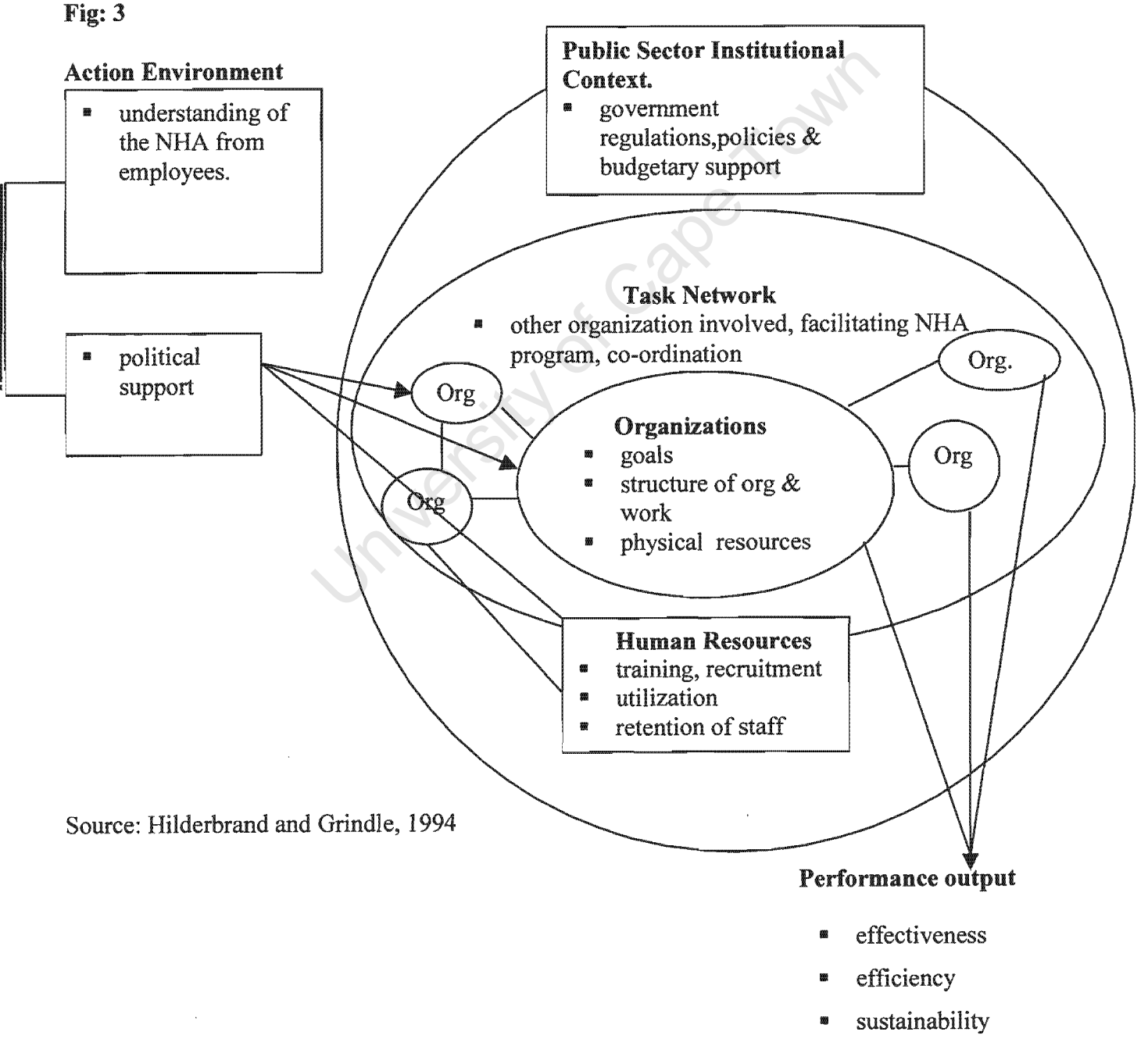
Personnel data was collected from two sources, PDoH and PERSAL system (the national system for recording information on personnel) which was made available through the new Vulindlela software.

3.6 Capacity assessment methodology using qualitative analysis

The literature review has shown that no capacity assessment has been done in NHA. Consequently, I am using a general conceptual framework for public sector capacity and applying it to NHA. This framework is derived from Hilderbrand and Grindle, 1994. They used a broad definition of capacity as "The ability to perform appropriate tasks (in this case NHA) effectively, efficiently and sustainably"

3.6.1 Conceptual Framework

Fig: 3



Source: Hilderbrand and Grindle, 1994

Fig 3 shows a conceptual framework for analysis. There are five dimensions and correspondingly, five levels of analysis that affect capacity and capacity building interventions. These dimensions incorporate a number of factors that influence the ability of a specific organization to achieve specific goals, they are as follows:

3.6.2 Action Environment

Within this dimension, a broad set of factors are considered in terms of their impact on the ability to carry out the PHA; factors ranging from the economic condition of the country, political influence and social factors such as the overall level of human resource development.

Specific concerns relate to:

- Understanding of the NHA from employees of the PDoH
- Whether there is political support, i.e. does the provincial government support NHA

3.6.3 Institutional Context

This dimension of capacity includes the laws and regulations affecting the civil service and the operation of government, such as employment bills and workers remuneration.

Key questions are:

- What are the government regulations and policies in effect that constrain the achievement of the NHA, the financial and budgetary support?
- What appropriate action and resource are needed to achieve the NHA tasks?

3.6.4 Task network

This concept deals with the interrelationships between organisations co-operating to achieve a common task and how they affect the performance of NHA.

Key questions are:

- What organizations besides PDoH are involved in facilitating the NHA and what role are they playing?
- Is there good co-ordination and communication between the organizations?

3.6.5 Organizations

Organizations provide the physical resources and conditions that enable or deter people from carrying out their assigned duties. They encompass both formal and informal forms of communications and behaviour that facilitate or obstruct effective action by individuals and entire organizations.

Key question relate to:

- The structure of the organization, departmental processes, resources, and management that affect how individual talents and skills are used to accomplish the tasks.

3.6.6 Human Resources

This dimension of capacity directs attention to how people are educated and attracted to public sector careers and the skills that enable them to carry out technical, professional, and managerial roles effectively. Also it focuses attention on how talents are used within organizations.

Key issues are:

- The training, recruitment, utilization and retention of staff and technical talent that contribute to task performance.
- How well positions and responsibilities are matched with skills.

3.7 Capacity assessment key factors for PHA

The capacity for the PHA will be assessed and translated in NHA context as previously discussed. When assessing capacity the key lines of inquiry were identified:

1) Appropriate task networks / communication

- Is there routine networking within the specific departments with regard the NHA, across geographical boundaries within the one sector and across levels of the health system, across sectors?
- To what degree do the existing routine task networks reflect those required for an NHA task network?

2) Existence of appropriate lines of authority and responsibility

- What reporting structures and accountability are there, particularly across differing stakeholders?
- How are tasks carried out at present?

3) Relevant skills

- Which people will be involved in doing the NHA? What are their skills, training and length of experience?
- What is the effective division of labour?

4) Adequate information systems

- How readily is information available from different systems?

5) A facilitating context

- Does the political and economic environment help perform NHA?

When conducting the interviews with the relevant officials in assessing capacity the above key determining factors were taken into consideration. Further the NHA component tasks were defined into three sub-component tasks that measures the strength or the capability of the Northern Cape provincial department of health to carry out the provincial health accounts and institutionalise it.

- Understanding concepts around NHA
- Collection of necessary data
- Analysing and using the data

3.8 Approach on qualitative data collection

Semi-structured interviews were used to gather the capacity information to assess the feasibility of institutionalizing the Provincial Health Accounts. Formal arrangements were made with the top officials of the departments.

These officials were selected based on the position they hold in the department in order to get first hand information ensuring that the data are reliable.

Background information about the study was provided together with questionnaire and letters that stated intention to conduct interviews and what the information is going to be used for.

All interviews were recorded. At the start of the interview I went through the objectives of the project and how the information would help the managers and the policymaker in making decisions. Anonymity was guaranteed for ethical reasons.

The recorded interviews were transcribed into a written document by a third party and thoroughly checked by me (the author). Furthermore, notes were taken during the interviews as backup information.

3.9 Limitation and biases

Although key capacity data from the interviewees were recorded I could not manage to document all in detail. The nature of interviews and qualitative data are that they soon fade without adequate documentation/transcription. A fuller picture may have emerged with complete documentation.

In this study there is selection bias in that only the top officials were selected for interviews as well as information bias because not every question could be answered adequately due to a lack of information.

Chapter: 4

Provincial Sector Resources

4. Introduction

This chapter outlines Provincial Health Sector resources available alongside the distribution of facilities and personnel.

4.1 Provincial Health Sector Resources

Table: 4 Resources allocated to the Provincial Department of Health in Northern Cape

Indicators	1996/97	1997/98	1998/99	% change 96/97-97/98	% change 97/98-98/99
Real Expenditure (R)*	385,413,682	415,926,635	408,146,440	7.92	-1.87
Total number of Personnel (health sector)	3,008	3,211	3,980	6.75	23.95
Total number of actual beds	1,965	1,965	1,965	0	0
Total number of health facilities	127	127	127	0	0
No of Hospitals	21	21	21	0	0
No of facilities)	83	83	83	0	0
Population	843,376	855,638	868,079	1.45	1.45
Population less medical scheme members	666,267	675,954	685,783	1.45	1.45
Real per capita Expenditure	457	486	470	6.35	3.29
Real per capita Expenditure excluding medical scheme population.	578	615	595	6.40	3.25

Source:PDoH data

Note*: All financing and expenditure data are represented in real terms that are in 1999/00 prices. To reach this, inflation figures were taken from the Statistics South Africa for the relevant years using the average change from April to March to match the financial years used. This resulted in a multiplication factor of 1.1662 for 1996/97, 1.1062 for 1997/98 and 1.0628 for 1998/99.

Table 4 shows the resources allocated by the Provincial Treasury to the Provincial Department of Health in the Northern Cape. During the financial year 1997/98 there was a substantial increase of 7.92% in total expenditure of which a huge portion was allocated as transfer payments to Provincial Aided Hospitals. Recent South African health reforms propose incorporation of the non-public sector in the health system in a manner that optimises use of all health care resources to ensure equity. In terms of these reforms, short and long term plans for restructuring the health system have been developed, but are concerned mainly with the public and private for-profit health sector, and non-governmental organisations (NGOs). Explicit mention is seldom made of provincial aided health facilities, which are private not-for-profit providers that receive funding from provincial health departments to subsidise their annual expenditures. (Kawanga and Knight, 1999). Nevertheless, for the Northern Cape such facilities are important.

Notwithstanding, funding levels dropped back in 1998/99. With a real per capita health expenditure of R 470, and national average of R 509 per capita in 1998/99. This decline in expenditure is largely attributable to an overall drop in provincial budgets as a consequence of the general reduction in government consumption expenditure as well as the introduction of fiscal federalism which meant that each province has the ultimate authority to determine its own health budget. The Northern Cape province is considered one of the less-resourced provinces in South Africa. Nevertheless, real health expenditure per capita for the Northern Cape is reasonably near the equity target allocation of the national average. (Mc Intyre, et.al, 1998).

Despite the decrease in real expenditure, the total number of personnel increase by 24% between 1997/98 and 1998/99 financial years. Northern Cape province during this period had a number of clinics built and Kimberly Hospital and Colesberg hospitals were upgraded.

New programmes like HIV\AIDS, Mother and Child Health were developed to step up the services and quality of care. Administration staff, cleaners, a number of nurses, pharmacists and doctors were then appointed to fill in the posts that were vacant.

Table: 5 Comparison of trends in real per capita health expenditure for selected Provinces.

	1996/97	1997/98	1998/99	% change 96/97 – 97/98	% change 97/98 – 98/99
Northern Cape	618.63	662.81	640.46	7	-3
Gauteng	978.82	994.30	973.21	2	-2
Western Cape	773.31	757.05	744.80	-2	-2
North West	541.16	626.26	689.42	16	10
Mpumalanga	330.03	379.69	302.31	15	-20
National Average	643.14	668.91	633.68	4	-5

Source: Adapted from NHA Public Sector Report, May 2000
Note: The real per capita on health expenditure includes funding from the Provincial Dept of Works and others but excludes local authority hence it is different from the real per capita expenditure shown in Table 4.

Table 5 illustrates the trend in real per capita provincial expenditure on health, excluding local authority expenditure but including funding from PDoW and other local departments, over the 1996/97 to 1998/99 period. The results show that health per capita expenditure is reasonably close to equity unlike Mpumalanga province, which is far below the national average. Nevertheless, the 3% decline between 1997/98 and 1998/99 is of concern in absolute terms. This may need urgent attention if the quality of health care is to be improved.

However, it is interesting to see that in 1998/99 Northern Cape real per capita expenditure was above the national average when extra funding from other sources was included as stated on the note below the Table 5.

Table: 6 Comparison of distribution of facilities and health personnel (1998/99)

Province	Northern Cape	National Average	Mpumalanga
Hospital beds per 1,000 population	2.26	N/A	N/A
Doctors per 100,000 population	12.69	21.95	11.03
Nurses per 100,000 population	227.92	294.38	206.88
Pharmacists per 100,000 population	2.48	3.41	2.51
Hospital beds per 1,000 Population (excl. Med Scheme population)	2.87	N/A	N/A
Doctors per 100,000 population (excl Med Scheme popn)	12.77	22.46	11.36
Nurses per 100,000 population (excl Med Scheme popn)	229.36	301.20	213.22
Pharmacists per 100,000 population (excl Med Scheme popn)	2.49	3.49	2.59

Source: PHA data

Table: 6 shows that the distribution of health personnel and facilities in the Northern Cape relative to Mpumalanga is better especially in terms of doctors and nurses per population but it is well below the national average. Possible reasons are that the province is not able to attract more doctors due to the fact that inter-alia there are no incentives for them to work there. The majority of people are urban based in the Northern Cape as compared to Mpumalanga which has the majority in the rural areas so the inadequacy of doctors is not the reluctance of the doctors to work in rural areas as it is the case in some of the provinces especially those that were called TBVC states prior 1990. This issue needs further investigation.

Also the sparse availability of pharmacists needs to be looked at in order to ensure efficient distribution of drugs and medicines within the facilities.

Summary

- The Northern Cape is relatively less resourced as of 98/99 in terms of human resource. But real health expenditure per capita is reasonably near equity allocation of the national average.
- The introduction of fiscal federalism[1] and the overall reduction in government consumption expenditure has resulted in reduction in overall provincial per capita budget in health spending per capita between 1997/98 and 1998/99.
- The availability of doctors, nurses and particularly pharmacists in the province is a matter of concern that needs to be looked at in order to ensure effective health care and efficient distribution of drugs and medicines within the facilities.

Chapter: 5

The Flow and Sources of Funds

5. Introduction

This chapter examines the sources of funds, their flow to intermediaries and extensively discusses user fees as an important alternative financing source.

5.1 Sources and Channels of funding

The Flow of Funds Matrix

Table: 7 Sources of Funds to Financial Intermediaries 1998/99

Financial Intermediaries	National Revenue Fund	Conditional Grant	Provincial Own Revenue	Local Gov Own Revenue	Total
PDoH	361,430,093	35,626,359	11,089,988	-	408,146,440
PDoW*	4,804,642	-	98,054	-	4,902,696
LAs	19,660,840	-	401,229	47,564,624	67,626,693
Med Schemes	35,943,362	-	733,538	-	36,676,900
Total	**421,838,937**	**35,626,359**	**12,322,809**	**47,564,624**	**517,352,729**

Source:PDoH Data
*Note: All activities done by the PDoW on behalf of PDoH are funded through the budget allocation of the PDoH.

Table 7 illustrates the flow of funds from the source to the financial intermediaries in 1998/99. The largest funding flows are the unconditional grants from the National to Provincial Treasuries which were then allocated to Provincial Department of Health, (R 361million). Other large flows are conditional grants[2] from NDOH to Provincial Treasuries then to the PDoH (R 35 million). Local Authorities generates a sizeable amount of funds, some of it is used for funding public health programmes in the primary health care centres.

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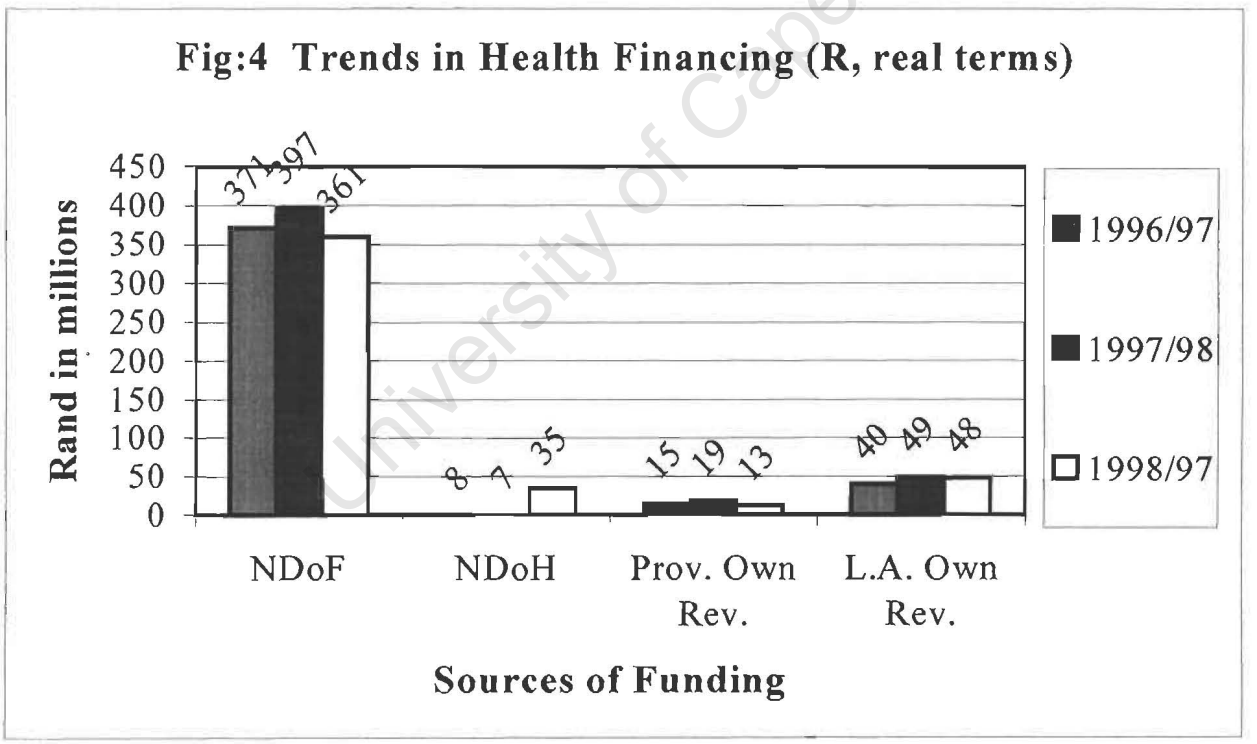
[1] Following the introduction of the new constitution, a system of fiscal federalism was effectively adopted, where significant budgetary authority over sectoral allocations was decentralized to provinces.
[2] Conditional grants are essentially a mechanism of 'protecting' or 'ring-fencing' funding for specific activities that are regarded as priorities, i.e. the funds can only be used for the purpose specified in the conditions attached to the grant.

There is incomplete information on LA expenditure by providers and extrapolations have been made based on the expenditure data provided.

Strictly speaking medical schemes are in the private sector, the public sector is both a source and financial intermediary for such funds.(Thomas and Muirhead, 2000). Funding flows to medical schemes are contributions made from public sector sources for civil servants. Given that civil servants' medical aid absorbs a sizeable proportion of funds, (R 36 million) in 1998/99, it is useful to note this flow.

5.2 Sources of Finance



Source: PDoH Data / Records

Figure 4 shows that the major source is general taxation funding from national government. Northern Cape is the province with the smallest population, even though it contains the largest proportion of land.

The national government when allocating resources takes into account amongst other things, the population size of the province. Northern Cape Provincial Health Department is allocated approximately 2% of the national budget for health. The formula underlying the horizontal division more closely reflects the earlier health sector formula as it includes population-based and other weighting factors that are intended to allow for differential needs between provinces.(Gilson, et.al, 1999). Nevertheless, the population-based formula for allocation of resource was seen as problematic in that population groups of different socio-economic status have different levels of health needs.

The way in which the health components of the formula was calculated was changed. Previously, the health component was based on the proportion of the population without private health insurance and weighted in favour of women, children and the elderly. The new formula does not remove those with private health insurance from the base population, it merely gives them a lower weighting. In addition, the weighting for women, children and the elderly has been removed, although a crude weighting process was applied that still fell short of financial equity.

Over the past few years a number of formulas have been recommended for deciding how to allocate funds to provinces. At present the Department of Finance uses a formula that takes inter-alia the following factors into account:

Education

the average size of the school-age population and the number of learners enrolled in public, ordinary schools.

Health

The size of the population that does not have private health insurance, with a small allowance for those with private insurance who may use some public sector services.

Social Welfare

The estimated number of people entitled to security grants. This is targeted at the elderly, the disabled and children.

Basic component

Each province's share of the total population of the country.

Backlogs

This tries to compensate for backlogs in health and education infrastructure in the provinces, with extra weight given to provinces with a large rural population.

(Mc Intyre, D and Nicholson, J 1999)

While conditional grants provided through the NDoH were introduced in 1998/99, they are not the only tied funding mechanisms that have been used to determine provincial expenditure. Before fiscal federalism the national level determined a top-slice of funding to protect similar activities (e.g. supra-regional services, research and training and so on). Furthermore, throughout the period there were central allocations to provinces to support RDP priorities such as clinics building and upgrading. (Thomas and Muirhead, 2000)

The NDoH's conditional grant determines resource allocation with respect to certain activities including:

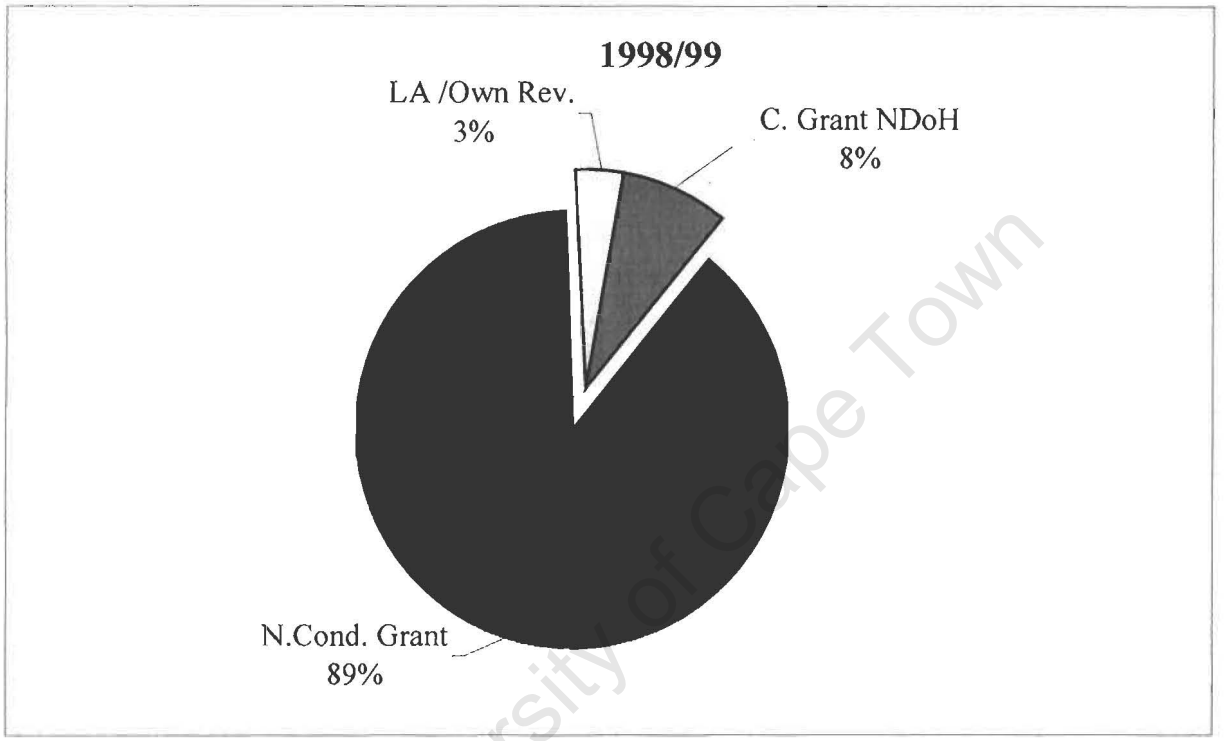
- Hospital Rehabilitation
- Central Hospital Services
- Training and Research
- Nutrition Programme

Northern Cape during periods under review (1996/1997 to 1998/1999) did receive these conditional amounts. The increase in 1998/99 is an attempt to try and correct past inequities.

Fig. 5 below shows that during 1998/99 financial year conditional grants from the NDoH constituted 8% and non-conditional 89% of the real total expenditure.

Public Funding

Fig 5: Proportion of Health Care by Source



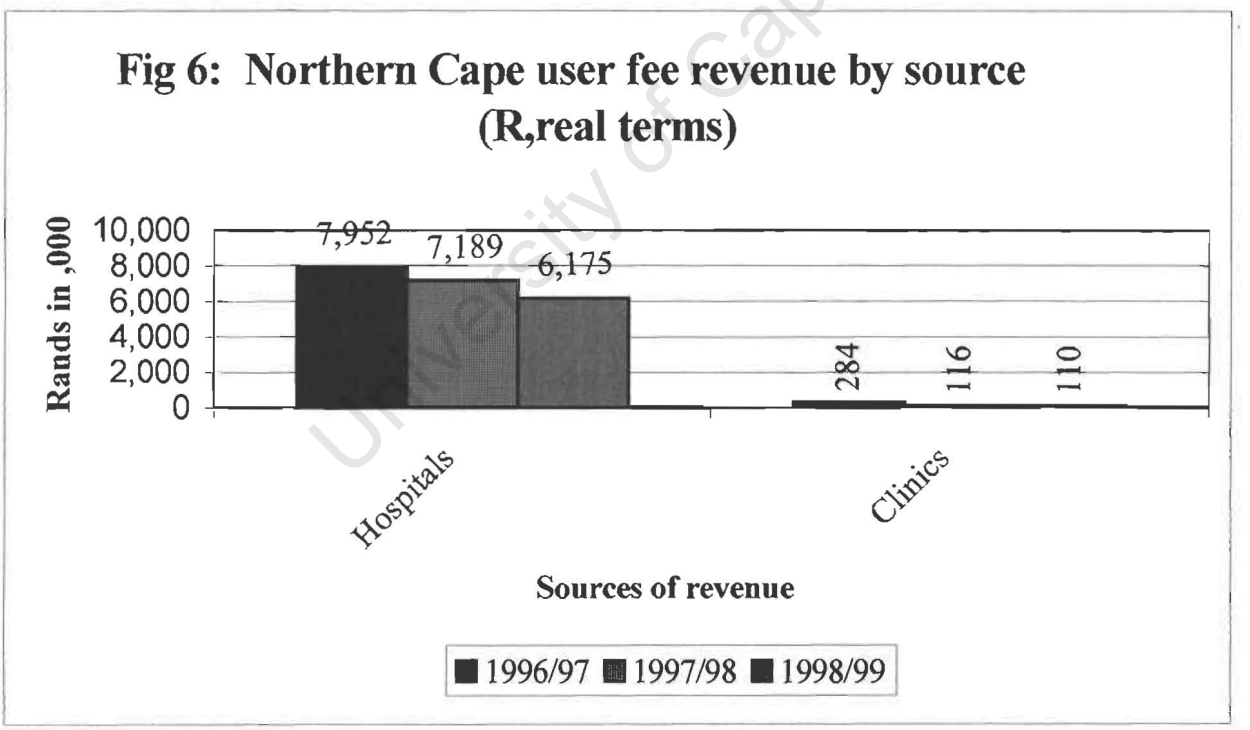
Source: PDoH Data / Records

A potential source of funding for the health sector is user fee revenue. In most provinces in South Africa, user fees/charges are collected from patients, but the health departments do not retain the revenue. Hence user fee revenue has been excluded as source of funding for the health sector (in this exercise), especially for the years under review.

Despite this, it is important to review how much is currently being collected from user fees and how much each source is contributing.

This information is useful in informing planners and administrators in the PDoH about the potential amount of funding for the health sector, especially at a time when some provinces are starting to allow health to retain a part of user fees. Revenue from user fees is the only current alternative to taxation based funding for provincial governments.

Figure 6 shows that most of the user fees come from hospitals with little from the local authority clinics/health centers. Although there is supposed to be free primary health care (according to the Government Policy) some PHC facilities still charge a fee for service. This issue needs further investigation, as it is contrary to existing policy.



Source: Data from PDoH

Table 8 shows user fee collections expressed as percentage of total expenditure.

(i.e. revenue collected from each source is expressed as a percentage of expenditure by that category of provider). The decline in fees is noted in Table 8, in regional hospitals. A standard measure of financial sustainability is the proportion of costs recovered by user fees (McPake and Kutzin, 1997). The last column in Table 8 presents average revenue collection expressed as a percentage of total health expenditure.

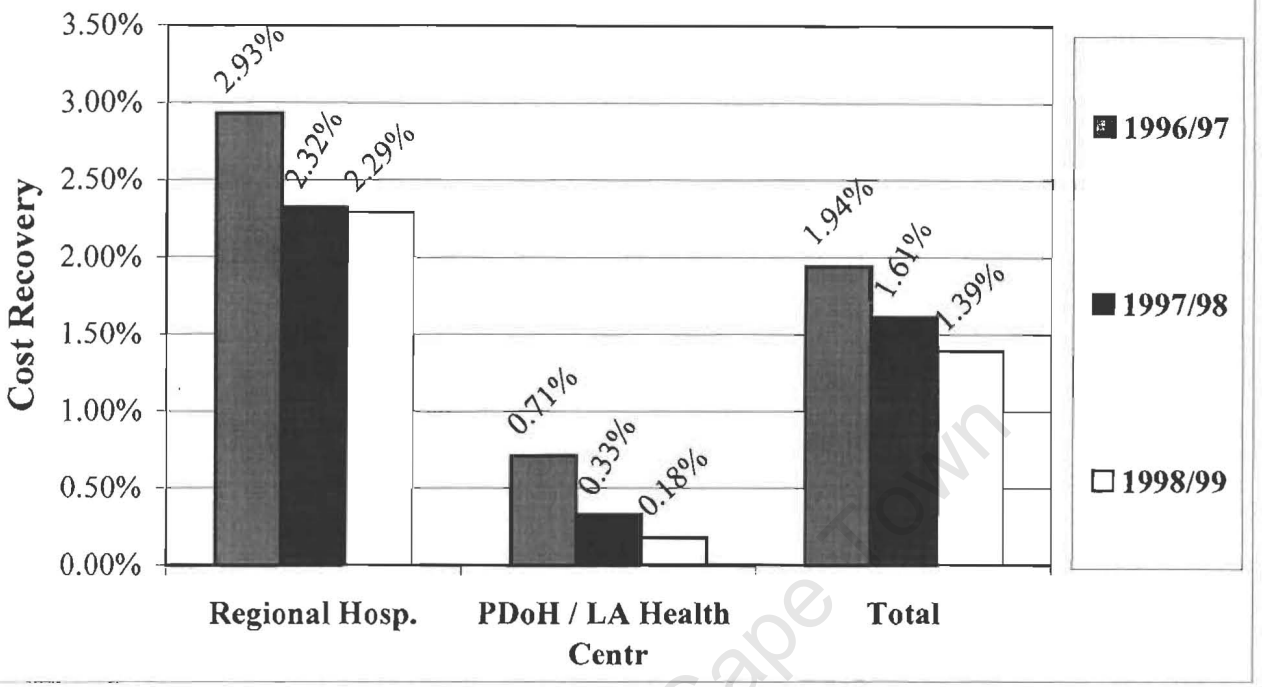
Despite the small amounts the Regional Hospitals have the potential of contributing to health revenue. The retention of all or a part of the revenue collected could result in substantial gains in terms of funding, for instance in buying medicines and improving quality of care.

Table: 8 User fee collection expressed as a percentage of total expenditure by category of provider.

	Total Expenditure of Regional Hospitals	Total Expenditure at PDoH Health Centres and LA Clinics	Average Total
1996 / 97	2.93%	0.71%	1.94 %
1997 / 98	2.32%	0.33%	1.61%
1998 / 99	2.29%	0.18%	1.39%

Source: Data from PDoH

Fig 7: Cost recovery level in public sector facilities (1996/97-1998/99)



Source: Data from PDoH

Figure 7 shows a relative decline in cost recovery in the regional hospitals . The declining trend in public sector user fees is a matter of concern to those who see this source as a critical complement to general taxation (Thomas and Muirhead 2000) Overall the cost recovery rates have been declining from 1.94% in 1996/97 to 1.39% in 1998/99. User fees that are charged in the facility augment the limited resources that are available in the public sector. Even Mc Pake and Kutzin (1997) stated that a standard measure of financial sustainability is the proportion of costs recovered by user fees.

Monitor Company et al (1996) and Gilson et al (1999) have suggested the causes of the decline for the public sector:

- a lack of incentive for collection – without revenue retention at the facility level health, care providers as in many other countries have little motivation to enforce fee collection (Gilson, 1997).
- poor structure of pricing – private patients do not pay the full costs associated with their treatment. This means that private patients are being subsidised by the public sector. Further, fees are rarely fully adjusted for inflation.
- inadequate collection systems – many facilities have allowed large debts to build up from patients, which have had to be written off.
- patient dissatisfaction with the quality of public sector hospitals – the growth of the private hospital sector has drained a large number of skilled staff from the public sector. This in turn, has exacerbated problems within the public sector and led to patients moving to the private sector.

Some provinces have taken initiatives to improve cost-recovery in public sector facilities. Such initiatives include improving collection systems, retention of fee revenue and revised pricing schedules. However, such initiatives address only part of the problem. (Thomas and Muirhead, 2000). Any additional user fee revenue must be channelled into quality improvements if patient dissatisfaction with the public sector is to change (Creese,1991). Perceptions of quality, as well as pricing, are key determinants in people's choice of health care provider (Mwabu et al, 1996). Where the public sector is not seen to provide quality services those with means to pay may move to the private sector.

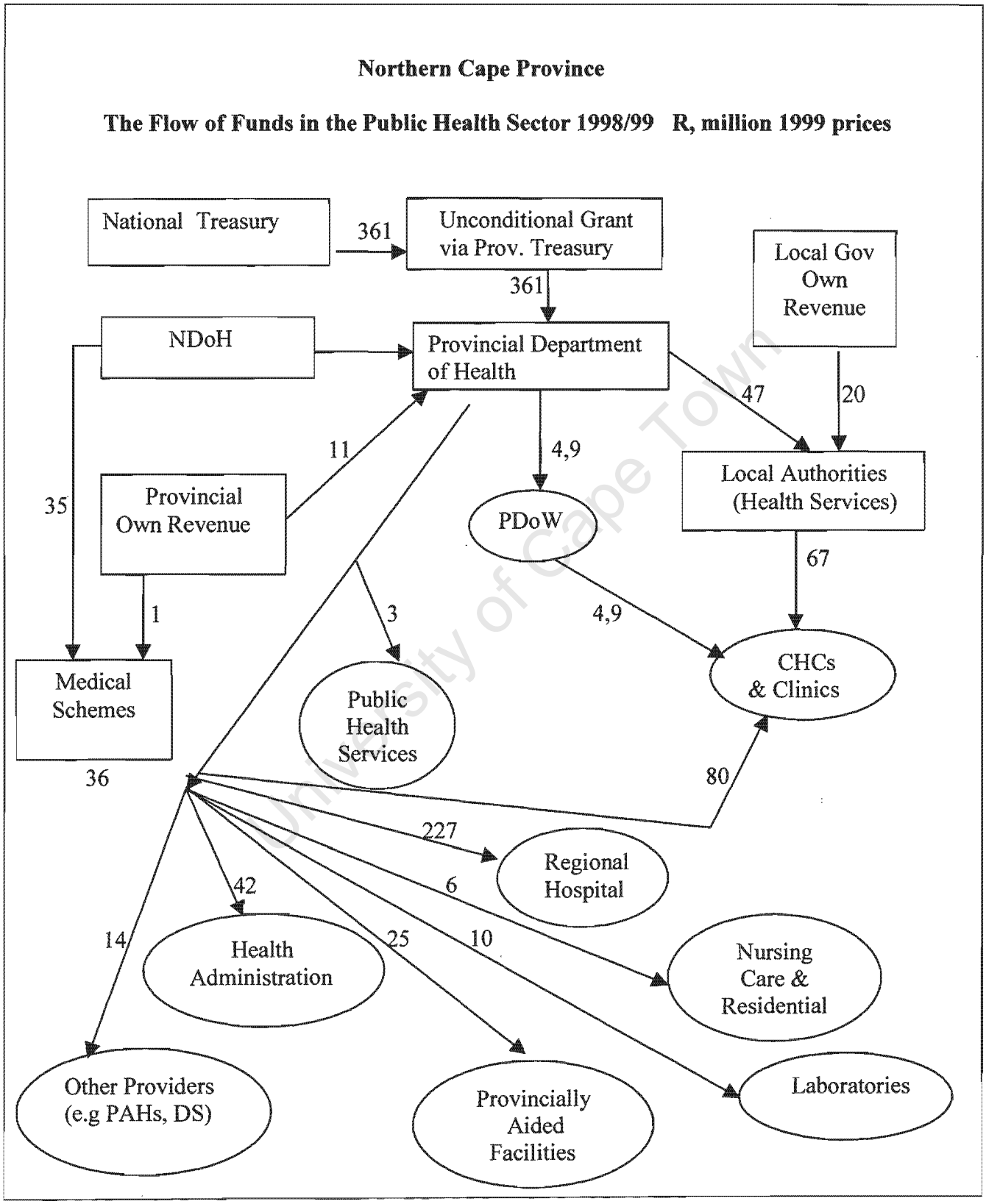
5.3 Flows of fund to financing intermediaries

There are several financing intermediaries at provincial level. Two major intermediaries are identified for the public health sector, namely Provincial Department of Health and Local authorities.

As shown in Figure 8 ('flow of funds' diagram), the PDoH is the biggest financing intermediary. PDoH (see Annex 3) also acts as a financing intermediary in the case of capital expenditure (i.e. building and upgrading of facilities, vehicles and major equipment). As in other provinces, the Provincial Department of Works (PDoW) is responsible for building, upgrading and maintenance of facilities.

In the Northern Cape, the PDoH identifies and verifies the need for building, upgrading and maintenance, and submits it to PDoW. PDoW estimates costs involved, awards tenders and supervises construction. PDoH does the final payment for these services.

Figure: 8



Summary:

- Northern Cape public health services have four sources of funding, provincial allocation from the NDoF via the provincial treasuries where the bulk of funding is coming from, NDoH allocates conditional grants for specific activities, the province and local authorities generates its own revenue.
- A potential additional source of funding for the health sector is user fee revenue collected from patients at tertiary and secondary levels. However, the user fees at these levels of care are declining and that raises some concern for sustainable financing of these institutions. At primary level there are indications that small amount of fees are collected, this must not be allowed to continue because that could be a violation of the government is free primary health care policy.

Chapter: 6

The Uses of Funds

6. Introduction

The chapter discusses how the funds that the province received were used and on what these were spent.

6.1 Uses of Funds

Expenditure data are presented in two ways.

- Line/Standard items (including capital vs. recurrent)
- Levels of care and types of provider

6.2 Distribution between line items / input categories

Table 9 below indicates major capital outlay and real recurrent expenditure during the three financial years under review. The major capital projects (i.e. building of clinics, upgrading, hospital renovations, etc) for the Provincial Department of Health is done through Provincial Department of Works as noted previously.

Table 9 illustrates that capital expenditure during 1996/97 amounted to 0.3 % of the total real expenditure; this was a very small expenditure for a province which has a huge backlog in infrastructure.

There were various reasons for the slow development of the capital projects, like the highly centralised administrative system by the National Department of Health, delays with the tender processes and submission of claims on allocations. However, during 1997/98 and 1998/99 the situation improved and more projects were undertaken.

Table: 9 PDoH Recurrent vs. Capital (real) Health Expenditure

	Real Recurrent Expenditure	% of Total	Capital Expenditure PDoW	% of Total	Total
1996/97	384,245,150	99.70	1,168,532	0.30	385,413,682
1997/98	410,746,300	98.75	5,180,335	1.25	415,926,635
1998/99	403,243,744	98.80	4,902,696	1.20	408,146,440

Source: PDoH Data

6.3 Provincial Department of Health Expenditure by Line Items

In Table 10 &10(a) personnel expenditure shows an increasing trend for the three years in observation. In 1998/99 it absorbed 60.2% or R 237 million of real recurrent expenditure, followed by medicines and vaccines (6,8%), or R27 million, and other stores and livestock (4.2 %) or R 16 million. It is clear that growth in personnel costs is crowding out expenditure on other items, such as maintenance, medicines and vaccines.

Nationally over 70% of recurrent costs were personnel related in 1998/99 (Thomas and Muirhead, 2000). If Government was properly committed to PHC approach it would seriously have to consider allocative efficiency by reducing the expenditure on personnel in hospitals and increasing medicines and vaccines in PHC facilities.

Although the Northern Cape province has serious shortages of skilled personnel like pharmacists and doctors, the cut would have to come from the unskilled workers and this would initially have to be negotiated with the labour unions. Alternatively, the human resource at tertiary and secondary levels of care could be reallocated to primary level of care.

Table: 10 Trends in PDoH real recurrent expenditure by line Item

LINE ITEMS	1996/97	1997/98	1998/99
Personnel expenditure	215,695,211	221,529,568	237,546,195
Medicines and vaccines	25,743,116	27,014,808	26,851,763
Other medical consumables	13,493,297	14,366,443	13,464,990
Other stores and livestock	16,644,121	17,474,586	16,428,616
Laboratory services	9,412,939	8,887,795	10,070,040
Minor equipment	709,700	1,032,404	789,024
Transport	4,833,947	5,147,628	8,361,833
Other recurrent costs	15,708,071	28,029,344	13,678,216
Transfers	74,620,954	86,361,507	67,419,319
TOTAL	**376,861,356**	**409,844,083**	**394,609,996**

Note: (The figures exclude the Funds from Provincial Own Revenue)
Source: PDoH Data / Records

Table 10(a) Proportions in PDoH real recurrent expenditure by line Items

LINE ITEMS	1996/97	1997/98	1998/99
Personnel expenditure	57.2%	54.1%	60.2%
Medicines and vaccines	6.8%	6.6%	6.8%
Other medical consumables	3.6%	3.5%	3.4%
Other stores and livestock	4.4%	4.3%	4.2%
Laboratory services	2.5%	2.2%	2.6%
Minor equipment	0.2%	0.3%	0.2%
Transport	1.3%	1.3%	2.1%
Other recurrent costs	4.2%	6.8%	3.5%
Transfers	19.8%	21.1%	17.1%
TOTAL	**100.0%**	**100.0%**	**100.0%**

Source: PDoH data

6.4 Level of Care Analysis

Tables (11, 11(a)) and Figure 9 below illustrate that in 1998/99 hospitals absorbed a large share, more than half of the real total expenditure, that is 56% or R227 million. This is a result inter-alia, of upgrading and staffing as discussed earlier in 4.1, then followed by the outpatient care centres (i.e. community health centres and clinics) with 15% or R59.6 million. In 1998/99 although we observed a decline in hospital expenditure and an increase in expenditure in outpatient care centres that was a positive move toward promoting PHC. Further the expenditure on public health programmes rose sharply between 1996/97 and 1998/99 and this will do much to boost PHC activities.

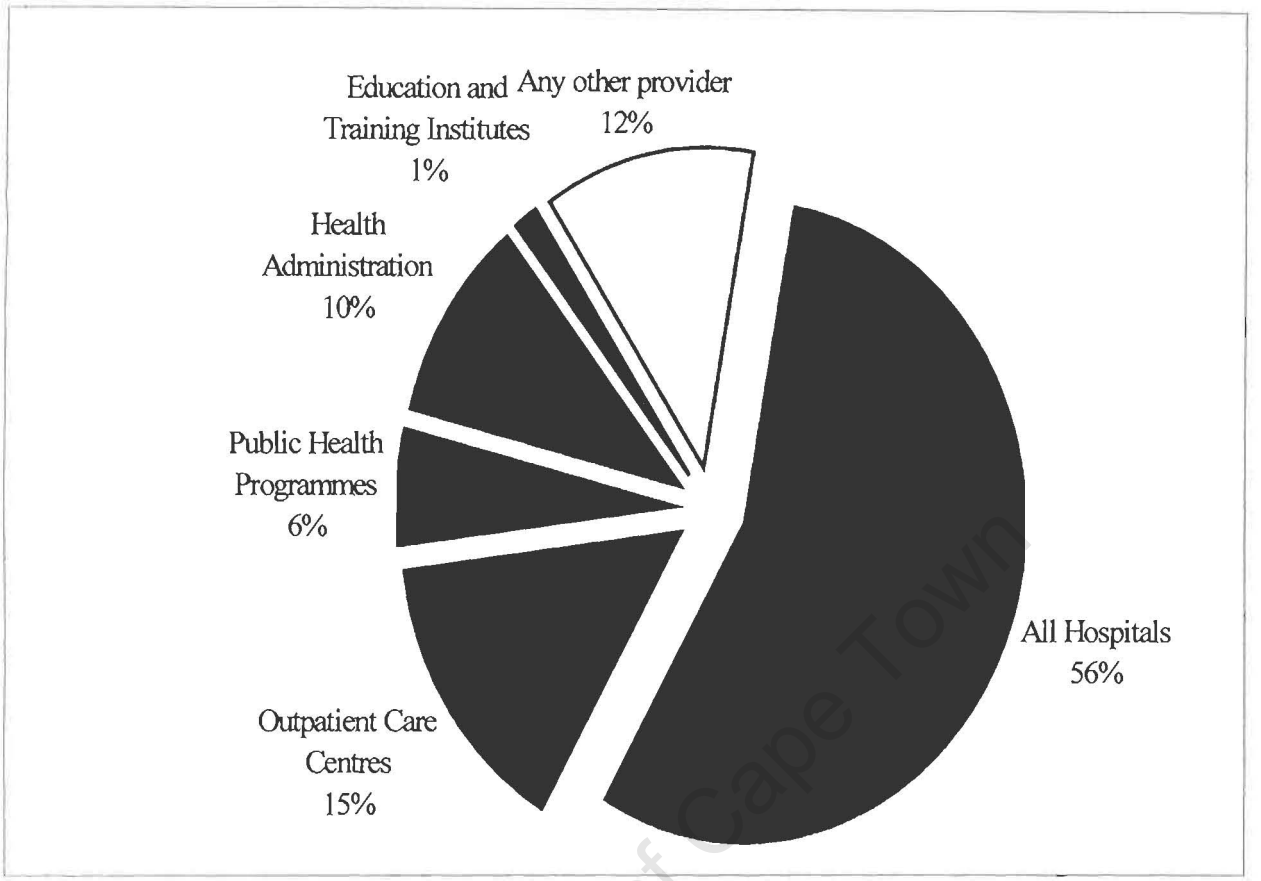
6.4.1 Level of care distribution analysis

Table 11: Trends in Health Expenditure by providers

PROVIDER	1996/97	1997/98	1998/99
All Hospitals	232,840,686	271,181,306	227,003,346
Outpatient Care Centres	39,757,590	35,166,532	59,698,738
Public Health Programmes	12,245,155	25,996,491	23,474,693
Health Administration	59,826,110	46,010,906	42,414,664
Education and Training Institutes	6,677,500	6,482,408	6,117,160
Any other provider	34,066,641	31,088,992	49,437,839
TOTAL	**385,413,682**	**415,926,635**	**408,146,440**

Source: PDoH Data / Records

Figure 9: Share of health expenditure by provider-1998/99



Source: PDoH Data / Records

Table 11(a): Proportions in Health Expenditure by providers

PROVIDERS	1996/97	1997/98	1998/99
All Hospitals	60.4%	65.2%	55.6%
Outpatient Care Centres	10.3%	8.5%	14.6%
Public Health Programmes	3.2%	6.3%	5.8%
Health Administration	15.5%	11.1%	10.4%
Education and Training Institutes	1.7%	1.6%	1.5%
Any other provider	8.8%	7.5%	12.1%

Source:PDoH data

Table: 12 Facilities at different levels of care and total number of beds, 1998/99

Level of care	Number of facilities	Number of Beds	Percentage of total acute public sector hospital beds (%)
Regional Hospitals	27	1437	77
Mental Hospitals	1	107	6
Other specialist hospitals	2	216	12
PDoH clinics / health centres	108	84	5
LG clinics / health centres	101	0	0
Total	**239**	**1844**	**100**

Source: PDoH Data / Records

Table: 12 shows the level of care facilities and total number of beds in the facilities. Regional Hospitals, as classified in this province, consist of 26 District Hospitals and 1 Central Hospital with 1 437 total number of beds. About 77 percent of total acute public sector beds are in regional hospitals.

The Pabon Lasso model combines hospital efficiency indicators (i.e bed turnover, number of admissions and average length of stay) for meaningful comment on the efficiency with which hospitals are operating. Recent studies suggest sizeable technical inefficiencies in hospital service provision in South Africa (Zere et al, 2001)

The Pabon Lasso model of regional hospitals in Thomas and Muirhead, (2000) shows Northern Cape as operating efficiently on average, with bed turnover and occupancy and relatively low average length of stay. However, Thomas and Muirhead (2000) warn that this should be interpreted with caution because of the classification of all hospitals in the province as regional.

Chapter: 7

Capacity Assessment and Institutionalisation

7. Introduction

This chapter discusses the capacity issues in the Northern Cape province with regard to PHA and the possibility to institutionalise it. Key results are displayed according to the components of capacity outlined in the methodology chapter.

7.1 Factors that can facilitate and constrain the development of NHA in the province.

Understanding of NHA.

Generally, none of the interviewees knew the concept of National Health Account. However, it was seen as a useful analytical tool according to one top official. When asked if he supports NHA, he answered, "*Yes, I do, because I've just mentioned the fact that I see it as an extension of our attempt to analyse our information and data in such a way that we can make better decisions as it pertains to efficiency, aligning our expenditure with policy etc……*" (Interview data)

The same official said that, "*The Provincial Health Account (PHA) could be used to monitor and co-ordinate the functioning of the provincial treasury, together with the line departments. The Finance Department within the Health Department and the provincial treasury should co-ordinate the process.*" (Interview data)

Another official said that, "*The information could be used by the provider of the funds namely national government, donors and other stakeholders, in order to determine whether the funds have been used for the purpose for which were given. As the funds provided to the Province come from public coffers every interested party should have access to the NHA or PHA information.*" (Interview data)

Human Resources for NHA.

Generally it was noted that the major constraint was the lack of skilled people that could be trained to do the NHA although there are a few people with good computer knowledge in the department of health.

Networking for NHA.

When negotiating budgets with the Treasury, basically incremental budgeting is used. A few years ago the Treasury introduced the concept of zero-based budgeting, which did not get off the ground, because everybody wanted twice as much money as the country could afford.

The provincial treasury together with other line managers could do the NHA analysis during the budget process to assess whether the objectives set have been achieved and the financial information ends up in the Budget Council, which comprises that of the cabinet and treasury.

Data for NHA.

Presently the financial information comes from the FMS (Financial Management System), which is an excellent administrative system according to one top official.

A senior financial manager said, "*It depends on the financial system used, the accounting structure we need to use should provide the objectives of the project, so that we can see how we allocated funds for the entire project. We would also look at the line items to trace the actual expenditure, and how that expenditure is incurred.*" (Interview data)

The national treasury decides on the format of the financial information and the provincial treasury adapts that broad framework to suit the province. The national, provincial treasuries, line managers, the provider of funds and other stakeholders would use the information.

The information comes almost exclusively from the Financial Management System. But because of the different sources of funding, donor funding for example is not adequately covered through the FMS system. The financial administration section and the financial management section are mainly responsible for collection and putting together of the financial information.

The financial information is collected, submitted to the treasury and other departments on a monthly, quarterly, or half yearly basis, depending on the period that is needed for specific information. The information is not "user friendly", this is what a senior official had to say "*The problem is that you don't get it out of the system in a way that you can easily make decisions.*

Very often when I get figures from the FMS, for example, I need to sit with a calculator and do certain things, which I think I shouldn't be doing". (Interview data)

Another senior manager said, "*The information system that is being used doesn't really provide some of the information that one would need to monitor effectively*". (Interview data)

Backdated information for three years can be downloaded and accessed, however beyond three years the information is accessible via Vulindlela or from preserved hard copies. The financial administration generates the data and is responsible for ensuring that the quality is correct. The head of the financial administration, his deputy-clerks and admin officers are involved in data collection. The top officials in the department express a need for training of the staff in order to do the provincial health accounts.

The PERSAL, which is the personnel information system, is used to capture data and store it. Vulindlela is being designed so that certain information of personnel can be obtained.
The senior manager uses the Vulindlela information when filling certain posts. For instance, he said, "*If I want to know the composition of the department in terms of race,gender,etc. It's easier to get it from Vulindlela than from Persal. The line departments are responsible for collecting the data and consolidated the information.*" (Interview data).

7.2 Institutionalisation

When assessing whether to institutionalise the PHA using the sub-component tasks as listed in 3.7 as a criteria to determine the capability of the Northern Cape to conduct its own PHA, various issues came to the fore during the interviews. The critical one was the difficulty in obtaining access to data from official sources.

Further, there was general reluctance from most government officials to share data even with others within the same ministry and many problems in the quality of officially compiled data.
The technical assistance needed to do PHA is enormous, especially in the Provinces where even the top officials do not know the concept of NHA or PHA.

As highlighted when assessing capacity there is a need in the province to improve the interaction between the organisations and the information system that provides the data so that the data are compatible with the data that are needed. The training of personnel to do PHA is another major obstacle in the province. Based on these findings the Northern Cape province is still far from being able to independently construct PHA.

However, continued interest on the part of senior provincial Department of Health decision-makers will permit the gradual strengthening of NHA capabilities in the province of the Northern Cape.

Chapter: 8

Conclusions and Recommendations

8. Introduction

This chapter draws conclusions and make recommendations based on the findings of the study.

8.1 Conclusions and Recommendations

This Provincial Health Accounts (PHA) has revealed some issues amongst others that need attention in order for the health care services in the Northern Cape to be provided efficiently and equitably and the requirements for future PHA to be conducted.

1) Equity

The Northern Cape is near the national average per capita real expenditure. However, in terms of staffing is below from the national average.

2) Financing

The health sector in South Africa is mainly financed through general taxes. In the 1998/99 financial year the unconditional grant from taxes accounted for 89% of the allocation to the health sector.

This leaves health sector funding entirely dependent on economic conditions prevailing at the time of the budget allocations, hence it is important that other possible financing mechanisms be explored.

User fees as a potential source of revenue can be used at tertiary and secondary level of care but not at primary level as that would defeat the objectives of primary health care and violate the government policy of free health care.

3) Health Expenditure by Line Items

Personnel expenditure is far higher than any other item and on the increase and considering technical efficiency, as highlighted in Table 5 page 42 the Northern Cape is still under-resourced in terms of specialised personnel like doctors and pharmacists. The alternative solution would be the re-allocation of semi-skilled and unskilled personnel from the tertiary and secondary levels of care (i.e Regional Hospitals) to primary health care (Community Health Centres).

Where there is allocative efficiency that channels the funds to activities that will produce greatest gains, those available funds could be allocated to buying drugs and medicines and ensuring that equity in PHC is enhanced. Overall the PHC approach in 1998/99 began to take off seriously as shown by the increase in real expenditure in Outpatient Health Care centres than in Regional/District Hospitals.

Capacity

Based on the findings from this study it would be difficult for the province to conduct its own PHA and even to institutionalise it, the reasons being:

1) The NHA concept is new and little is known about how to do it at provincial level as well as at the regional level.
2) The data or information needed to do the PHA is not systematically organised to facilitate obtaining it as easily and efficiently as possible.
3) There is not enough staff trained to do the PHA.

The Northern Cape Department of Health management would have to put NHA into their programme in order to be able to institutionalise it. The following could then be done:

- Invite NHA experts in the country to conduct workshops and train personnel to be involved in the PHA.
- Improve the way the organisations interact around budget information.
- Improve the financial system of reporting, in terms of accessibility of information.

References

Berman, P. (1996). National Health Accounts in developing countries: Appropriate methods and recent applications. Boston: Data for Decision-Making, Harvard School of Public Health.

Berman, P. (1997) National Health Accounts in Developing Countries: Appropriate Methods and Recent Applications. Health Economics 6 p11-30.

Berman, P, Thompson A (1999). Developing NHA in Lower Income Countries: Preliminary revised guidelines for boundaries, and classifications to improve compatibility with emerging international standards. Washington D.C.: Partnerships for Health Reform (PHR) Abt Associates.

Creese, A. (1991). User charges for health care: A review of recent experience. Health Policy and Planning. 6: 309-319.

Department of Health (1999), Review of health conditional grants for 2001/02 and beyond: discussion of key issues and proposed work plan. Health Financing and Economics. National Department of Health. Pretoria.

Development Bank of Southern Africa (1998). Northern Cape: Development Profile, Development Paper 131. Development Information Business Unit.

Gilbert L, Selikow. T and Walker L. (1998). Society, Health and Disease: An Introduction Reader for Health Professionals: Ravan Press, Randburg.

Gilson L. and Mills M. (1995) Health sector reforms in sub-Saharan Africa: Lessons of the last 10 years. In Berman P. ed Health Sector Reform in Developing Countries: Making Health Sustainable. Boston: Harvard University Press.

Gilson, L. (1997) "The lesson of user fees experience in Africa." Health Policy and Planning 12(4):273-285.

Gilson L, Doherty J, McIntyre D, Thomas S, Brijlal V, Bowa C, Mbatsha S (1999), "The dynamics of policy change: Health care financing in South Africa, 1994-1999." Johannesburg: Centre for Health Policy and Health Economics Unit.

Griffiths, A. and Mills, M. (1983b). Health sector financing and expenditure surveys. In: Lee K, Mills A (eds.) (1983). The economics of health in developing countries. Oxford: Oxford University Press.

Hilderbrand M.E, and Grindle M. (1994) Building Sustainable Capacity Challenges for the Public Sector, Harvard University

Kawanga, M. and Knight, S. (1999) in State-aided Hospital in Ntuli, A. (Ed) South African Health Review 1999 Durban: Health System Trust, 1999.

Mbanefoh, G.F (1996) Assessment of the current state of, and prospects for, National Health Accounts estimation and Health Expenditure in Africa. Paper presented at the International Workshop on National Health Accounts, organized by University of the Philippines School of Economics and Mexican Health Foundation, Mexico City, Mexico.

McIntyre, D. Baba, L. and Makan, B. (1998), Equity in public sector health care financing and expenditure in South Africa: An analysis of trends between 1995/96 to 2000/01. In Ntuli A (Ed) (1998). South African Health Review 1998. Durban: Health Systems Trust.

McIntyre,D. and Nicholson, J. (1999), The Budget Process: A Guide for South African Legislators. Henry J. Kaiser Family Foundation (USA) and the Rockefeller Foundation. Health Systems Trust.

McIntyre, D. Thomas, S. Mbatsha, S. and Baba, L. (1999). Equity in public sector health care financing and expenditure in South African Health Review, 1999. Submission for 1999 Health Systems Trust Annual Health Review, Cape Town: Health Economics Unit.

Mc Pake, B. and Kutzin, J. (1997) Methods for Evaluating Health System: Performance and the Effects of Reforms.Draft. Health Economics and Financing Programme, Health Policy Unit, London School of Hygiene and Tropical Medicine and Health Systems Development Programme, World Health Organisation.

Ming Xhi Lui and Yu De Zhi (1996) National Health Accounts in Developing Countries: China National Health Accounts. Paper presented in iHEA, Inaugural Conference Vancouver BC Canada.

Monitor Company, Health Partners International, Centre for Health Policy, National Labour and Economic Development Institute (1996). Achieving equity, efficiency and accountability: A vision and strategy for South Africa's public hospitals. Final report of the Hospital Strategy Project. Monitor Company. Johannesburg.

Mwabu G, Ainsworth M, Nyamete A (1996), "The effect of price, service quality and availability on the demand for medical care: Insights from Kenya." In Shaw P and Ainsworth M (1996) eds. Financing Health Services through User Fees and Insurance: Country case Studies from sub-Saharan Africa. The World Bank. Washington D.C.

Nabyonga, J. and Munguti, N. (2001) Draft Report on NHA in Eastern and Southern Africa: Comparative Analysis. ESA countries. Regional Health Economics and Policy Network.Regional meeting organised by Health Economics Unit, University of Cape Town.

Partnership for Health Reform: Middle East and North Africa Regional, National Health Accounts initiative (1999): In brief, funded by the US Agency for International Development and Abt Associates, Bethesda, Maryland. USA.

OECD (1987) Financing and Delivering Health Care: A Comparative Analysis of OECD countries. OECD. Paris.

Racelis, R. and Herrin, A. (1994) National Health Accounts of the Philippines: Partial Estimates as of November 1994. Paper prepared for the conference: Pesos for Health Part Two: Emerging Results of Current Research on Health Care Reform. Quezon City.`

Rannan-Eliya, R. Nada, L and Berman, P (1995) National Health Accounts of Egypt: Data for Decision Making. A resource for managing health reform. Harvard University, Boston.

Rannan-Eliya, R. Berman, P. and Somanathan, A. (1997) Health Accounting: A comparison of the System of National Accounts and National Health Accounts Approaches. Special Initiative

Reconstruction and Development Programme (1995) Key indicators of poverty in South Africa. RDP. Pretoria.

Report No. 4. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc.

Republic of South Africa. (1997). White Paper for the Transformation of the Health System in South Africa. (Towards a National Health System.) Government Gazette 382(17910):Notice 667.

Rice, D., Cooper, B., and Gibson, R. (1982) U.S. National Health Accounts: Historical perspectives,current issues, and future projections. In Levy, E.,ed La Sante Fait Ses Comptes (Accounting for Health). Paris. Economica.

Statistics South Africa (1998). The people of South Africa, Population census 1996: Census in brief. Statistics South Africa. Pretoria.

Tangcharoensathien, V. Laixuthai, A. Vasavit, J. Tantigate, N.A. Prajuabmoh-Ruffolo, W. Vimolkit, D. & Lertiendumrong, J. (1999) National Health Accounts development: lessons from Thailand. Health Policy and Planning. 14 (4) pp 342-353.

Thomas, S. Muirhead, D. (2000) National Health Accounts: Public Sector Report. Pretoria: Department of Health.

Wagstaff, A and van Doorslaer, E (1993) Equity in the delivery of health care: Methods and findings. In: van Doorslaer E, Wagstaff A, Rutten F. Equity in the Finance and Delivery of Health Care:An International Perspective. Oxford: Oxford University Press.

World Bank (1999), World Bank Development Report, 1999. World Bank. Washington.

Zere, E. McIntyre, D. & Addison, T. (2001) Technical efficiency and productivity of public sector hospitals in three South African Provinces. The South African Journal of Economics, Quarterly Journal Vol. 69(2) June 2001.

Annex: 1

The following tables show the detailed line item expenditure data for Northern Cape Province Department of Health. The transfers to Local Authorities are estimated and extrapolations have been made on the data provided.

Expenditure by Line Item (PDOH and Local Authorities)						
PDOH						
	1996/97		**1997/98**		**1998/99**	
LINE ITEMS	**Recurrent**	**Cap**	**Recurrent**	**Capital**	**Recurrent**	**Cap**
Personnel expenditure	215,695,211		221,529,568		237,546,195	
Direct personnel costs (i.e. PDoH employees)	190,514,071		216,692,150		233,091,687	
Other personnel costs (e.g. professional fees paid to district surgeons etc.)	25,181,141		4,837,418		4,454,508	
Stores and livestock	55,880,534		58,855,837		56,745,369	
Medicines and vaccines*	25,743,116		27,014,808		26,851,763	
Other medical consumables	13,493,297		14,366,443		13,464,990	
Other stores and livestock	16,644,121		17,474,586		16,428,616	
Laboratory services	9,412,939		8,887,795		10,070,040	
Minor equipment	709,700		1,032,404		789,024	
Transport	4,833,947		5,147,628		8,361,833	
Other recurrent costs	15,708,071		28,029,344		13,678,216	
Transfers (unallocable)*	74,620,954		86,361,507		67,419,319	
TOTAL	**376,861,357**		**409,844,082**		**394,609,996**	
	1996/97		**1997/98**		**1998/99**	
LINE ITEMS	**Recurrent**	**Cap**	**Recurrent**	**Capital**	**Recurrent**	**Cap**
Personnel expenditure	57%		54%		60%	
Direct personnel costs (i.e. PDoH employees)	50%		53%		59%	
Other personnel costs (e.g. professional fees paid to district surgeons etc.)	7%		1%		1%	
Stores and livestock	15%		14%		14%	
Medicines and vaccines	7%		7%		7%	
Other medical consumables	4%		4%		3%	
Other stores and livestock	4%		4%		4%	
Laboratory services	2%		2%		3%	
Transport	1%		1%		2%	
Other recurrent costs	4%		7%		3%	
Transfers (unallocable)*	20%		21%		17%	
TOTAL	**100%**		**100%**		**100%**	

Annex: 2

The following tables show the detailed line item expenditure data for Northern Cape Province Department of Health including capital expenditure.

	1996/97	,000	1997/98	,000	1998/99	,000
LINE ITEMS	**Recurrent**	**Cap**	**Recurrent**	**Capital**	**Recurrent**	**Cap**
Personnel expenditure	215,695,211		221,529,568		237,546,195	
Direct personnel costs (i.e. PDoH employees)	190,514,071		210,311,974		233,091,687	
Other personnel costs (e.g. professional fees paid to district surgeons etc.)	25,181,141		11,217,594		4,454,508	
Medicines and vaccines	25,743,116		27,014,808		26,851,763	
Other medical consumables	13,493,297		14,366,443		13,464,990	
Other stores and livestock	16,644,121		17,474,586		16,428,616	
Laboratory services	9,412,939		8,887,795		10,070,040	
Minor equipment	709,700		1,032,404		789,024	
Transport	4,833,947		5,147,628		8,361,833	
Other recurrent costs	15,708,071		28,029,344		13,678,216	
Transfers (unallocable)*	74,620,954		86,361,507		67,419,319	
Buildings		-2,000		2,000		0
Vehicles		0		0		2,000
Major equipment		7,000		2,000		7,000
TOTAL	**376,861,358**	**5,000**	**409,844,083**	**4,000**	**394,609,996**	**9,000**
Overall Proportions						
	1996/97		**1997/98**		**1998/99**	
LINE ITEMS	**Recurrent**	**Cap**	**Recurrent**	**Capital**	**Recurrent**	**Cap**
Total Personnel expenditure	57%		55%		60%	
Direct personnel costs (i.e. PDoH employees)	50%		53%		59%	
Other personnel costs (e.g. professional fees paid to district surgeons etc.)	7%		2%		1%	
Medicines and vaccines	7%		6%		7%	
Other medical consumables	4%		3%		3%	
Other stores and livestock	4%		4%		4%	
Laboratory services	2%		2%		3%	
Transport	1%		1%		2%	
Other recurrent costs	4%		7%		3%	
Transfers (unallocable)*	20%		20%		17%	
TOTAL	**100%**		**100%**		**100%**	

Annex: 3

This matrix shows the flow of funds from the Financial Intermediaries to Providers. The largest flow comes form the Provincial Department of Health about 79% of the total funding.

Matrix: 1A **Financial Intermediaries to Providers 1998/99**

Financing Agents or Financial Intermediaries to Providers	**PDoH**	**PDoW**	**Local Authorities**	**Med Schemes**	**Total**
Regional Hospitals	227,003,346				227,003,346
Health centres & Clinics*	83,173,431	4,902,696	67,626,693		155,702,220
Health Administration	42,414,664				42,414,664
Education & Training Institutes	6,117,160				6,117,160
Laboratories	10,000,000				10,000,000
Other Providers & Prov. Aided Hospitals	39,437,839			36,676,900	76,114,739
TOTAL	**408,146,440**	**4,902,696**	**67,626,693**	**36,676,900**	**517,352,729**

*Note: Includes Public Health Programmes