

**Regional Network for Equity
in Health in Southern Africa**

Equity in Health Care in Namibia Towards needs-based allocation formula

**Ministry of Health
and Social Services, Namibia
World Health Organisation**

With Regional Network for Equity
in Health in Southern Africa (EQUINET)

April 2005

This paper has been produced with the support of
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**DISCUSSION
Paper
NO. 26**

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**MINISTRY OF
HEALTH AND SOCIAL SERVICES**

**EQUITY IN HEALTH CARE
IN NAMIBIA
TOWARDS NEEDS-BASED
ALLOCATION FORMULA**

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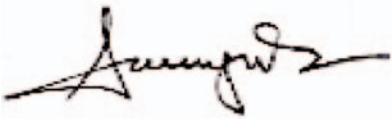
PREFACE

This report covers detailed results of the study in equity in health care in Namibia. The study was conducted with the aim of shedding some light on the mechanisms of health resources allocation in the public sector in Namibia, with the view to developing equitable funding system.

This study benefited from valuable comments provided by Equity Network in Health of Southern Africa (EQUINET) and the MoHSS officials. The technical advice of Prof Diane McIntyre, Health financing theme co-ordinator for EQUINET, Health Economics Unit, University of Cape Town is highly appreciated. The conduct of this study was made possible through technical support from World Health Organisation. Financial support was given by EQUINET.

I acknowledge the contributions of various parliamentarians and regional councilors who participated by responding to questionnaires. My sincere appreciation goes to the Equity study team: Dr E Zere (WHO – Namibia), Mr W Kapenambili and Mr T Mbeeli for conducting this study.

I trust that the results of this study will enable the MoHSS in formulating policies and plans for equity in resource allocation and financing in the health sector. The MoHSS is committed to implement the recommendations of this study in order to redress inequities in the health system.



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LIST OF ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
CBS	Central Bureau of Statistics
DHS	Demographic Health Survey
GDP	Gross Domestic P
GNP	Gross National Product
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
MDG	Millennium Development Goals
MoHSS	Ministry of Health and Social Services
NDHS	Namibian Demographic Health Survey
NHA	National Health Account
NPC	National Planning Commission
NPRAP	National Poverty Reduction Action Programme
PCA	Principal Component Analysis
PHC	Primary Health Care
PRS	Poverty Reduction Strategy
TT	Tetanus Toxoid
UNDP	United Nations Development Programme
US\$	United States Dollar
WHO	World Health Organisation

EXECUTIVE SUMMARY

The study was conducted with the aim of generating evidence needed to enhance the Ministry of Health and Social Services' (MoHSS) endeavours to redressing inequities in resource allocation in Namibia. It specifically purports to develop a needs-based allocation formula that will assist the MoHSS to shift its resource allocation mechanism away from the historical incrementalist type.

This paper was written using the following sources of information:

- data from the Namibia Demographic and Health Survey (DHS), which was used to generate asset indices to be used as proxy indicators of need for health care, using the technique of principal component analysis (PCA);
- various asset-based and health-related variables, which were used to develop the indices; and
- a questionnaire, which gathered the views of parliamentarians, councillors and health policy makers on the goals of the health system and the weights that they are likely to attach to different attributes of the population for the purpose of resource allocation.

The focus of the study is on the inter-regional allocation of resources, as the available data does not allow an analysis to be made at a smaller, district level. Analysis at regional level has its drawbacks in that the population is very unlikely to be homogeneous. Thus pockets of poor areas with relatively greater need for health care may not be picked in relatively well-off regions.

The results of the PCA are in line with those of the Namibia human development indices – measures of material and social welfare. This suggests that the variables used in computing the asset indices are effective in classifying the regions according to their welfare. Caprivi, Ohangwena and Omusati were identified as having the lowest asset indices, while Hardap, Erongo and Karas regions had the highest.

There are inequities in the distribution of resources between regions. Needs for health care are inversely related to resources allocated. The regions with relatively greater need for health care (Caprivi, Ohangwena and Omusati) get a lower share, while those with relatively less need (Hardap, Erongo and Karas) are allocated a greater share of resources.

Given the backlog of inequities inherited from the past, allocation according to need requires that historically under-resourced regions get

more resources. Thus, the principle of vertical equity has to guide the ministry's equity initiatives.

In Namibia the current allocation of public sector health resources that is based on historical incrementalist budgeting is not even in line with equal expenditure per capita. Therefore, in moving towards needs-based allocation, it may be advisable in the short run to aim at equalising expenditure per capita. A gradual move towards bridging inequities helps to buffer any possible negative effects on the performance of the health system (such as lowered efficiency) caused by a rapid reduction or increase in resources.

Namibia is a sparsely populated country with a very low population density in some regions. This may inflate the costs of service provision. Consequently it is essential to adjust the needs-based allocation formula for the costs of service provision resulting from geographical factors.

The majority of respondents view equity as 'equal access for equal need' and agree that communities with greater need have to get a greater share of the available resources. Furthermore, for the purpose of resource allocation decisions, they feel that more weight should be accorded to children, women, rural populations, the unemployed, the disabled, the poor and those who are HIV-positive. In the current study, however, weighting the population by those attributes does not make significant differences, as the population attributes seem to be distributed uniformly across the regions. It is therefore important to identify other attributes that vary significantly among the different regions.

In conclusion, the study provides insight into the state of equity in resource allocation in the public health sector and those mechanisms that have been implemented to redress the existing inequities by shifting the current resource allocation method away from historical incrementalism. It also demonstrates how the available DHS data can be used to construct asset indices to classify regions according to their need for health care. It further illustrates the usefulness of communitarian views in allocating public resources.

EQUITY IN HEALTH CARE IN NAMIBIA TOWARDS NEEDS-BASED ALLOCATION FORMULA

1. INTRODUCTION

Namibia is one of the countries in the world with high levels of income inequality as measured by the Gini index. This is mainly attributed to the legacy of the exclusionary policies of the apartheid regime. However, inequalities are not only limited to income distribution. There is a pervasive inequality in access to resources and outcomes, for example, in health and education.

A cursory glance at the Human Development Index (HDI) of the various language groups in the country attests to this inequality. The European language groups have an HDI exceeding 0.800, a figure that is above the cut-off point for high human development (UNDP Namibia, 2002). In contrast, the HDI for the San people is not more than 0.300 (ibid) – a figure that is far below the average for sub-Saharan Africa (HDI = 0.464) and cut-off point for low human development (HDI = 0.500). Inequalities also have a regional dimension. The under-five mortality rate for Kavango region is the highest at 113/1000, while that of the two most affluent regions – Erongo and Khomas – stands at 51/1000.

The principle of equity is one of the pillars of the primary health care approach. The reduction of inequities in health and health care remains a challenge for health policies in all countries, whether developed or developing. Equity is in fact one of the major objectives and priorities of health policy for economic, social and moral reasons (Dahlgren and Whitehead, 1992).

As part of its PHC strategy, the Ministry of Health and Social Services (MoHSS) considers equity as one of its guiding principles for the allocation of resources to maximise the health outcomes of the poor and disadvantaged. In its policy framework, the equity principle is stated as follows: 'All Namibians shall have equal access to basic health care and social services provided by the Ministry. Particular emphasis shall be paid to resource distribution patterns in Namibia to identify and accelerate the correction of disparities' (MoHSS, 1998: 6).

Furthermore, the government's Poverty Reduction Strategy (PRS) of 2002 commits the government to achieve a reduction in inter-regional disparities in resource allocation through an appropriate resource allocation formula (NPC, 2002a).

Since 1992, there has not been significant shift of resources towards poorer regions. This is partly explained by the fact that the ministry allocates its budget on a historically incrementalist basis. The historically disadvantaged regions, which have the highest levels of morbidity and mortality, still receive the smallest share of the health budget. The PRS aims for a reduction in this inter-regional disparity in health expenditure per capita, i.e. the equalisation of expenditure per capita. In the longer term it is expected that regions with the worst health status indicators will get a greater proportion of the ministry's budget.

The allocation of health expenditure by region indicates wide disparities. In the 1998/9 and 2000/1 financial years, regions such as Karas, Hardap and Erongo received financial resources more than proportionate to their population; in contrast, Oshana and Ohangwena received less.

In countries such as Namibia that are emerging from an apartheid history, the existence of glaring socio-economic inequalities in health and access to health care services is not unexpected. However, policy decisions that are based on intuition may not be well focused and targeted. Monitoring the impact of policies that are aimed at improving the status of the disadvantaged and gauging achievements entails identifying the poor and vulnerable and developing criteria to allocate resources. Well-targeted scarce health resources can contribute to the improvement of the health status of the population and result in the attainment of the Millennium Development Goals (MDG) and Vision 2030.

As a result of high levels of inequality of outcomes and access to resources in Namibia, there is a need to move away from incremental budgeting towards allocation based on agreed criteria. It is therefore important to generate relevant evidence to inform policy debates on resource allocation. This study aims to bridge the existing information gap.

1.1 Aim and objectives

Aim

The aim of this study is to shed light on the mechanism of health resource allocation in the public health sector in Namibia, with a view to developing an equitable funding system.

Objectives

The specific objectives of this study are to:

- elicit community preferences on the allocation of health resources;
- develop asset indices using data from the Demographic and Health Survey (DHS) 2000; and
- propose regional weightings for the development of needs-based resource allocation formulae.

1.2 Significance of the study

The research exercise is significant and relevant for Namibia because it is in line with government policies aimed at reducing inequalities in health and health care. The evidence generated by the study will contribute to policy changes that will assist the process of bridging the present inequities in the allocation of health resources in Namibia.

1.3 Organisation of the report

The report is organised as follows:

- Section 2 presents background information on the Namibian health sector
- Section 3 is a literature review with conceptual framework
- Section 4 describes the study methodology
- Section 5 gives the results of the study
- Section 6 discusses the results, with a conclusion and recommendations.

2. NAMIBIAN CONTEXT

2.1 Geography

Namibia is located in the southwestern part of the African continent. It has a surface area of 824 116 km², which makes it the fifth-largest country on the continent. The country is divided into 13 administrative regions and 33 health districts.

2.2 Demography

The 2001 Population and Housing Census estimates the population of Namibia at 1 830 330 with a growth rate of 2.6% per annum (NPC, 2003b). Between 1991 and 2001, the Namibian population grew by about 30%. At the current growth rate, the population will double in about 27 years. The country is sparsely populated with a low population density of 2.1 persons per km².

In 2000, infant and under-five mortality rates were 38 and 62 per 1000 respectively. The total fertility rate was 4.2 during the same period (MoHSS, 2003a). These figures are favourable when compared to those of many countries in sub-Saharan Africa.

In 2001, life expectancy at birth was estimated at 50 years and 48 years for females and males respectively. This has declined from 1991 estimates, which were 63 and 59 years (NPC, 2003). This decline may be attributed to the HIV/AIDS epidemic. There is wide differential in life expectancy between the various regions, as well as between rural and urban areas. The difference between the region with the most favourable life expectancy (Karas and Otjozondjupa, with 61 years for males) and the least favourable (Kavango, with 42 years for males) is about 20 years.

2.3 Socio-economic features

On the basis of its GNP per capita of US\$ 1 980, Namibia is classified as a lower middle-income country¹. However, this does not reflect the reality, as there is a high level of income inequality. In 1993 the share of consumption of the poorest 10% of the population was 0.5%. In contrast the share of the richest 10% was about 64.5%: about 129 times greater than that of the poorest income/consumption decile (UNDP, 2004). Furthermore, about 35% of Namibia's population lives off less than \$1 a day, indicating high levels of poverty (UNDP, 2004). Since 1994 GDP per capita at constant prices registered an average growth rate of 1.1% (NPC, 2003c).

1. The World Bank classifies countries into three income groups according to 1990 GNP per capita: low income (US\$ 755 or less); lower middle-income (US\$ 756 – 2,995); upper middle-income (US\$ 2,996 – 9,265), and high income (US\$ 9,266 or more).

On the basis of the Human Development Index (HDI)², Namibia is classified with the *medium human development countries* (UNDP 2003). The difference between the country's GDP per capita rank and rank in HDI is -48, implying inefficiency in the country's performance in translating resources into welfare. The HDI has declined from 0.667 in 1995 to 0.607 in 2002.

To address the major challenges of the economy, namely poverty and inequality, the government has put in place various policies, plans and strategies such as the PRS, the National Poverty Reduction Action Programme (NPRAP) 2001–2005, National Development Plans and Vision 2030.

2.4 Disease burden

Communicable diseases account for the greatest proportion of the disease burden. Diseases such as HIV/AIDS, tuberculosis and malaria have a relatively high incidence. The prevalence of HIV in the 15–49 age group in 2003 was estimated at about 21.3% (UNDP, 2004). Likewise, tuberculosis is on the increase, due partly to its association with HIV/AIDS. In 2002, tuberculosis notification rate was estimated at 700 per 100 000 population. Malaria is also a major problem. The disease is endemic in the northern parts of the country. In the 2002/03 financial year, there were about 419 223 reported cases of malaria giving a case rate of 229 per 1000 population.

According to reports of the Health Information System (HIS), the leading causes of death for people of all ages in government and mission health facilities in 2002 were HIV/AIDS, diarrhoea, pulmonary tuberculosis, pneumonia and malaria. In *infants* the leading causes of death for the same period were pneumonia, gastroenteritis, HIV/AIDS, premature births and slow foetal growth.

Non-communicable diseases are also on the increase, along with communicable diseases. Hospital statistics indicate that conditions such as cancer and cardiovascular problems are among the top causes of death. This creates an additional burden to the country's health system, which is already overstretched by emerging and re-emerging communicable diseases.

Under-five child malnutrition is also one of the major health problems needing attention. The prevalence of stunting (a low height-for-age ratio) is estimated at about 24% (MoHSS 2000). A breakdown of the average prevalence of stunting according to different variables, such as

2. The Human Development Index (HDI) is a composite measure composed of the GNP per capita, longevity, level of literacy and school enrolment. It measures average achievements in basic human development. It ranges from zero to one.

geographical location and mother's level of education, shows striking differences. Khomas (32.3%) and Kavango (30.7%) regions have the highest proportion of children with stunted growth, while Erongo (8.7%) has the lowest in the country. Furthermore, the rate of stunting in children whose mothers have no education (29.4%) is more than twice that of children whose mothers have completed their secondary schooling and beyond. This highlights the prevalence of significant inequities in health.

2.5 Organisation of services

The MoHSS has adopted the decentralisation policy to improve service provision and management by devolving authority to 13 MoHSS regional directorates. At the national level re-organisation has been undertaken to enable the national level to support service provision and management development for the whole health sector. The 13 regional directorates oversee service delivery in a total of 34 health districts.

There are 30 public district hospitals, providing institutional medical and nursing care, including preventive, promotive, primary and secondary curative health care. They also provide technical and referral support to 37 health centres and 259 clinics. The number of facilities mentioned above is inclusive of mission facilities that receive 100% government subsidy.

With a population density of about 2 persons per km², diseconomies of scale and size are likely to be widespread, thus inflating the costs of running a health facility. In turn, this scale inefficiency is likely to constrain the amount of resources available for getting the facilities close to the people who use them. This problem has necessitated the establishment of outreach services/mobile clinics. There are about 1 150 outreach points serving communities lacking access to fixed health facilities. Outreach services are provided by district hospitals and health centres.

In order to support the districts, three intermediate hospitals have been designated in Oshakati, Rundu and Katutura, while the Windhoek Central Hospital performs the role of overall national referral hospital.

In addition to the public sector health facilities, there are private for-profit hospitals and clinics that mainly cater for the urban population. There are about nine private hospitals with a bed complement of 473, comprising about 7% of the total of hospital beds in the country.

2.6 Utilisation of and access to services

It is estimated that about 80% of the population lives within 10 km of public health facilities (El Obeid et al, 2001). In contrast, the findings of the NDHS 2000 indicate that about 70% of households live within 20 km

of a government health facility. This implies that about 1.2 million (67%) of Namibian people live within 20 km of a public health facility. The two different figures on population coverage (indicators of physical access) from the two different sources seem to be conflicting. Hence, there is a need for further studies to generate more credible information.

According to the standards of sub-Saharan Africa, Namibia's input-to-population ratios are good. These are shown in *Table 1*.

Table 1: Input-to-population ratios 2000/2001

Input category	Number	Population per input category
Doctors	278	6 571
Pharmacists	30	89 817
Dentists	19	112 000
Registered nurses	966	1 638
Social workers	82	34 216
Health inspectors	34	63 306
Hospital beds	6 742	379

Source: Essential Indicators Report 2000/01 (MoHSS) and for public sector only

However, the average ratios described in Table 1 do not reveal the reality of the situation. There is a wide inter-regional variation that typifies the duality of Namibian society. Reference to two regions of the country clearly illustrates this fact: in Khomas (a region where the capital city is located), a doctor serves about 2 000 people, whereas there are more than 16 000 people per doctor in the Ohangwena and Omaheke regions. The same trend holds true for the other health resources such as nurses and health facility beds.

An average per capita visit to a health facility of 1.7 is registered for the period 2002/03 financial year (MoHSS, 2003). Although this might look favourable when compared to those of most African countries, it falls short of the ideal 2.5 visits per capita that is often recommended for developing countries. It also should be noted that these average figures conceal a lot of useful information that is needed to evaluate existing health policies and plans in terms of their equity implications. Disaggregating by measures of socio-economic status (e.g. income quintile, education and area of residence) may give a better and more informative picture. Utilisation of selected preventive services is given in *Table 2*.

Table 2: Utilisation of selected preventive services and their trends

Service	Value (%)	
	1992	2000
Immunisation coverage, children 12–23 months	58	65
Contraceptive prevalence	23.3	37.8
Antenatal care, provided by doctor/nurse	87	91
Assistance at delivery, by doctor/nurse	68	78
Women who received at least one dose of tetanus toxoid (TT)	61	85
Men who used a condom during last act of sexual intercourse	-	45
Under-five children sleeping under bed net	-	6.7

Source: DHS, MoHSS 2000

Table 2 shows that there was a significant increase in the utilisation of preventive services over the period noted. However, a breakdown of the data by various attributes of the population exhibits some striking differences in utilisation. For example, if we look at TT, the rate for those women who have completed education of secondary school and above is 99%, whereas the figure for those with no education is only 60%. Similarly, by area of residence, whereas the figure for TT coverage is about 97% for urban areas, it is only 78% for rural women. Similar trends are seen in the other measures presented in the above table, albeit to differing magnitudes.

3. LITERATURE REVIEW

3.1 Equity in health care: Concept and definitions

In developing countries, specifically in sub-Saharan Africa, health sector reforms have been underway since the 1980s as part of broader macro-economic adjustment programmes. One of the major parameters used to measure the performance of the sectoral reform initiatives is equity.

The health policies of most countries have explicit, albeit vague, statements on equity. The Universal Declaration of Human Rights states the following in relation to equity in health and access to health care:

We all have the right to a standard of living adequate for the health and well-being of ourselves and our families, including food, clothing, housing and medical care and necessary social services, as well as the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond our control.

Equity is also enshrined in the World Health Organisation's (WHO) Alma Ata declaration as one of the pillars of the Primary Health Care (PHC) strategy (WHO 1978).

Equity is a system of justice based on conscience and fairness. It is a criterion that determines whether or not the system can produce an allocation that meets society's requirement for justice. It is a normative issue, so the decision that is made depends upon people's values. Equity is an important consideration for many people with regard to the allocation of health care resources.

The concept of equity in health (healthcare) has been widely debated over the years. Definitions of equity abound. Although equity may be defined in many ways, all of its definitions revolve around a common point: the fair distribution of something (such as health services) among different individuals and groups in society (Mooney 1983). In line with this, Wagstaff et al (1989) found that policy-makers and researchers in Europe and North America generally agreed that health care should be distributed according to need and financed according to the ability to pay.

At a time of tight constraints on public spending, it is important to scrutinise the objectives and impacts of this spending. Specifically, we should examine social spending to determine if it is producing visible successes in bridging inequality in its various aspects among the different groupings in society.

Mooney (1986) proposes the following seven definitions of equity:

- equality of expenditure per capita;
- equality of inputs per capita;
- equality of inputs for equal need;
- equality of access for equal need;
- equality of utilisation for equal need;
- equality of marginally met need; or
- equality of health.

How useful are these definitions? Let's look at four of them:

- *Equality of expenditure per capita* signifies an equal division of the budget among the different health zones (geographical areas) on the basis of their population size. This definition does not make allowance for differences in need.
- *Equality of inputs per capita* implies that physical resources are divided equally among the different health zones, based on the population size. This may, for example, be reflected in ratios such as number of physicians per population and number of beds per population. Although it is an improvement over the previous definition in the sense that it takes into account price differentials, it suffers from the same serious shortcoming because it does not accommodate differences in need.
- *Equality of access for equal need* implies a fair geographic distribution of resources based on health care needs and ease of access. Equal access is mostly understood to mean the absence of constraints on access, such as financial or geographical barriers. Unequal access results if people are denied health care because of their socio-economic status, or other factors unrelated to the need for care. If people have the same information, tastes and preferences for health care, equality of access for equal need becomes identical to equal utilisation for equal need.
- *Equality of marginally met need* assumes that regions rank needs in order of priority to be met in identical manner (Mooney 1986). Under this definition, equity will be achieved when each region with its available resources is only just able to meet the same last need (ibid). Culyer and Wagstaff (1993), however, argue that this is better viewed as an efficiency principle with the objective of maximising health rather than an equity principle.
- *Equity defined as equality of health* does not imply that people will live the same number of years or enjoy the same state of health. A strict equality of health is difficult to achieve, as there are certain health conditions that are inevitable and unavoidable.

This may, for example, include, health conditions resulting from biological and genetic variations. Inequity in health exists only if the health differences are unnecessary, avoidable and unjust (Whitehead 1992).

For the purpose of this study it is useful to take the definition of equity as highlighted in the MoHSS Policy Framework and the PRS. As stated earlier, the MoHSS equity principle defines equity as equal access to basic health care services and correction of disparities in resource allocation. Similarly, the government's PRS focuses on achieving equal health expenditure per capita. However, these definitions of equity do not take into account the differential health needs. Furthermore, the definition of access and the content of basic health care and social services are not clearly stated. It therefore becomes difficult to have a clear working definition of equity. To rectify this shortcoming the following definition of equity in healthcare is applied in this study:

Equity in healthcare implies equal access to a basic package of services for equal need, where access and need are defined as follows:

- *need* refers to both the 'capacity to benefit' and the 'severity of illness'; and
- *access* refers to the absence of barriers, namely *financial* and *geographical* barriers.

The focus of the above definition is on horizontal equity: equal treatment for equal need. This implies the health care system must treat two individuals with the same complaint in an identical way. Given the historical imbalances in Namibia, resources are currently concentrated in the regions with relatively less need. Therefore, an equitable allocation entails the distribution of more resources to the regions that were historically disadvantaged. Hence this incorporates the principle of vertical equity, i.e. unequal treatment for unequal need.

Equity in access to health care requires the appropriate allocation of scarce health resources, taking into account the need for health care. The following discussion presents the various allocation mechanisms that are commonly used by developing countries and the steps that may be taken to develop a needs-based formula.

3.2 Approaches to resource allocation

Resource allocation refers to the process by which available resources are distributed between competing priorities. It is a means of achieving the ministry's goal of improving access to basic health services for all and ultimately improving health status. Some of the approaches used in resource allocation include the following:

- *Political negotiation:* Resources are allocated on the basis of political and other vested interests. It is likely that resource may not take into account the need criteria. Resources may be channelled to address the health care needs of the elite group at the expense of the poor and disadvantaged.
- *Incremental budgeting:* Resources are distributed according to historical allocation patterns. This type of resource allocation in most instances does not uphold the principles of equity because it does not accommodate the need for health care. The allocation mechanism in Namibia is in conformity with this type of resource allocation. This is deemed as inequitable because, for historical reasons, resources were concentrated in a few areas that were relatively advantaged.
- *Allocation according to health care needs:* Government's health objectives are underlined by the stated PHC agenda. Therefore, countries have begun allocating resources on the basis of perceived health needs. The allocation of resources according to health needs uses a normative and/or statistical approach. The normative approach is concerned with stakeholders' views of perceived priority health needs whereas the latter is based on the use of objective data.

3.3 Major components of a needs-based formula

Developing an operational definition of equity

The first important step is to have a clear, workable definition of equity. Central to the definition of 'equity' is the notion of fairness or justice; however, countries may define equity in different ways. The operational definition of equity influences the steps taken towards the equitable allocation of resources (see the operational definition of equity in Section 3.1.)

Developing a needs-based formula

In the statistical approach to resource allocation, the size of the population in geographic area is the primary indicator of need for health services. Population size can then be weighted by a range of other indicators of relative need for health care such as:

- the demographic composition of the population;
- mortality levels; and
- the level of deprivation, as it influences the level of ill health in an area, the communities' ability to pay for health care costs and their level of dependence on public sector health services (EQUINET 2003).

Differing costs of service provision

There may be a wide variation in the cost of delivering similar services in different geographic areas of a country. This may be related to input prices (e.g. labour costs) and rough terrain/remoteness, which may inflate transportation costs and increase staff remuneration (relief/hardship allowance). Furthermore, this may also reduce input productivity and consequently increase costs. Therefore, it is important to accommodate cost differentials in allocating resources.

Other funding sources

The attainment of equal access to basic health services entails taking into account other funding sources such as payments from private households, including insurance and development partners. For example, in South Africa members of medical aid schemes are excluded from the base population used for resource allocation purposes (Pearson 2002). However, this requires accurate expenditure data, which countries are currently trying to address through the National Health Accounts (NHA).

However, in developing countries there are some problems experienced in the development of a needs-based resource allocation, such as:

- There is a lack of reliable and timely data.
- There is a tendency to create perverse incentives, e.g. there may be incentives to exaggerate population or other factors that make up any allocation formula.
- The exclusion of certain services from the formula becomes problematic. Some essential services may be considered national services, whereas others are considered regional or district services. Resources for national services need to be taken from the overall budget before allocation of the balance to lower levels and should not be included in any allocation formula. This can be done by, for example, adjusting for cross-boundary flows using estimated percentage use by resident population and percentage national use.
- Defining the basic package of services may be difficult. Sometimes the package may not address the needs of the poor – contrary to the principle of equitable resource allocation.

4. METHODOLOGY

4.1 Data sources

Data used for the study was obtained from the Namibia Demographic and Health Survey (NDHS, 2000). Also, a questionnaire (attached as Appendix 1) was used to gather the views of a convenience (non-random) sample of stakeholders, including health professionals, health policymakers and community representatives (parliamentarians, regional and municipal councillors). The total number of respondents was 60 ($n = 60$). The DHS data was used to classify households according to asset indices. The questionnaire focused on weights that the stakeholders attach to various community and individual characteristics that are seen as proxy indicators of the need for health care.

The two data sets (DHS and stakeholders' views) address the two approaches of establishing needs based allocation formula, i.e. the objective (statistical) and subjective (community views) methods.

4.2 Data analysis

The indicator of need was based on the computation of asset indices that take into account a set of asset-based and health-related variables for each household:

- whether the household has electricity, radio, a television, a refrigerator, any bicycles, any motorcycles, a car or a telephone (each coded as 1 = Yes, 0 = No);
- the main household source of drinking water (seven categories);
- the main type of toilet facility used by the household (six categories); and
- the main type of flooring material in the household (five categories).

Even though the most accurate poverty and asset indices can be calculated from household consumption data, the absence of such information in the available data sets, such as the DHS, precludes its use. Therefore, there is the need to rely on variables such as those mentioned above to develop asset indices. Studies have shown the close relationship between asset indices and consumption expenditure. Filmer and Pritchett (1998), in their study on the education sector in India, have shown that asset indices provide a close correspondence with state domestic product (SDP) and poverty rates data. Hence, in the absence of reliable household income and expenditure data, the use of asset indices based on the above variables becomes important.

The method of principal component analysis (PCA) was used to determine the weights of asset indices based on the above variables. PCA is helpful when we have obtained data on many variables and wish to develop a smaller number of artificial variables (principal component) that will explain most of the variance in the observed variables. In PCA we assume that there is some redundancy in the variables that we have collected, implying that some of the variables correlated with one another and are possibly measuring the same thing. The first principal component is the linear combination of variables with the largest amount of information common to all of the variables. The result obtained from the first principal component is usually used to develop the asset index based on the following formula:

$$A_j = f_1 \times \left(\frac{a_{j1} - a_1}{S_1} \right) + \dots + f_n \times \left(\frac{a_{jn} - a_n}{S_n} \right)$$

In the above formula:

- f_1 is the 'scoring factor' for the first asset as determined by the procedure;
- a_{j1} is the j the household's value for the first asset; and
- a_1 and S_1 are the mean and standard deviation of the first asset variable over all households.

Data on stakeholders' views were analysed using descriptive statistics such as measures of central tendency and dispersion and graphs. The weights attached to the various individual and household/community characteristics complemented the findings from the PCA.

Data was analysed using Stata statistical software, Stata/SE 8.2 (StataCorp 2003) and Microsoft Excel.

5. RESULTS

This section presents the findings of the study in two parts:

- an analysis of the DHS data using PCA; and
- an analysis of the questionnaire-based data.

5.1 PCA Results

The PCA model resulted in the scoring coefficients depicted in *Table 3*.

Table 3: Scoring coefficients

Variable	Score
Electricity	0.33396
Radio	0.13322
Fridge	0.32739
Television	0.31159
Bicycle	0.04541
Motorbike	0.05885
Car	0.16271
Telephone	0.26037
Piped water	0.00000
Open well	-0.39040
Surface water	-0.28558
Borehole	-0.26370
Rain water	-0.34551
Tanker	-0.03142
Other water	-0.14986
Flush toilet	0.00000
Pit latrine	-0.18018
VIP latrine	-0.12059
Bucket latrine	-0.06260
No toilet	-0.65752
Other toilet	-0.03083
Natural floor	0.00000
Wood floor	0.06691
Ceramic	0.43763
Cement	0.43763
Carpet	0.34206

Table 3 shows a consistent pattern in the asset and health-related variables used in the model. The assets that are likely to be owned by the better-off households have a positive value, which increases the household's asset index. In contrast, those that characterise poor households (e.g. a pit latrine and an open well) have the expected negative value, which results in a decreased asset index.

The scoring coefficients from the PCA model were fed into the formula provided in Section 4.2 above in order to derive the asset indices. In other words, the product of the scoring coefficients and the standardised values of the asset and health-related variables give the indices. Following this procedure, the indices for the 13 regions were computed – as depicted in Table 4. It should be noted that it was not possible to compute indices for the 34 health districts, as the data does not allow this.

Table 4: Asset indices by region

Region	Index
Caprivi	0.13278372
Erongo	0.0137936
Hardap	-0.04166997
Karas	-0.00925807
Khomas	0.10838237
Kunene	-0.00320042
Ohangwena	0.24805635
Kavango	0.0465321
Omaheke	0.00385575
Omusati	0.17299321
Oshana	0.06093324
Oshikoto	0.05835945
Otjozondjupa	-0.02251395

The index values listed in Table 4 have negative values for regions that are relatively less deprived and positive for those that are relatively more deprived. It can be seen that regions such as Ohangwena, Omusati and Caprivi have the highest positive values indicating the presence of relatively higher levels of deprivation. This supports the common belief that these regions are poor. As indicated in Namibia Human Development Report 2000/2001 (UNDP, 2000), the per capita incomes of the three regions that were less than half the national mean per capita income were the lowest of all. Furthermore, the HDI³ of the three regions are also below the national level of 0.648.

3. The Human Development Index (HDI) is a composite measure composed of the GNP per capita, longevity, level of literacy and school enrolment. It measures average achievements in basic human development. It ranges from zero to one.

In calculating resource allocation formula that includes asset indices, there is a need to normalise the indices in Table 4. This means giving the least deprived region a value of 1 and expressing all other regions in relation to this region's value. To this end, we added 1.04199274 to all the asset indices of the regions – a figure makes the value of the least deprived region (Hardap) equal to 1. The resultant values were used as weights to adjust the population of each region for resource allocation purposes. These values are presented in Table 5.

Table 5: Normalised asset indices and weighted population

Region	Normalised asset index	Population 2001	Population weighted by asset index	Share of un-weighted pop (%)	Share of weighted pop (%)
Caprivi	1.17469007	79 826	93 771	4.4	4.5
Erongo	1.04885567	107 663	112 923	5.9	5.5
Hardap	1	68 249	68 249	3.7	3.3
Karas	1.03445087	69 329	71 717	3.8	3.5
Khomas	1.13871766	250 262	284 978	13.7	13.8
Kunene	1.03775449	68 735	71 330	3.8	3.5
Ohangwena	1.28893985	228 384	294 373	12.5	14.3
Kavango	1.09015733	202 694	220 968	11.1	10.7
Omaheke	1.05304261	68 039	71 648	3.7	3.5
Omusati	1.21622685	228 842	278 324	12.5	13.5
Oshana	1.10867799	161 916	179 513	8.8	8.7
Oshikoto	1.09964885	161 007	177 051	8.8	8.6
Otjozondjupa	1.01986192	135 384	138 073	7.4	6.7

As can be seen from Table 5, the regional share of weighted population increases for those regions that are relatively more deprived. For example, the unweighted share of population for Ohangwena is 12.5%. However, after weighting with the normalised asset index, the share increased to 14.3%. In other words, if we allocate resources on the basis of weighted population, the allocation share of Ohangwena region will increase by about 2%. This is an adjustment to the region's increased needs as indicated by the asset indices.

Thus, in allocating resources based on the asset index, it is important that we focus on weighted population in order to take account of the differential needs for health care. To illustrate this, Table 6 presents the actual allocations of the 2000/1 financial year's budget of the MoHSS and contrasts them with the equity target share of the budget.

Table 6: Equity share vs actual budget for 2000/2001

Region	Share of weighted population (%)	Equity target share of budget (N\$)	Actual budget (N\$)
Caprivi	4.5	42 387 357	25 973 102
Erongo	5.5	51 044 726	72 051 219
Hardap	3.3	30 850 696	53 543 907
Karas	3.5	32 418 542	58 805 909
Khomas*	13.8	128 818 914	114 422 762
Kunene	3.5	32 243 429	43 252 613
Ohangwena	14.3	133 065 967	70 377 103
Kavango*	10.7	99 884 647	109 267 758
Omaheke	3.5	32 387 135	31 740 464
Omusati	13.5	125 811 108	99 153 133
Oshana*	8.7	81 145 39 1	64 438 661
Oshikoto	8.6	80 032 697	113 079 203
Otjozondjupa	6.7	62 413 334	76 398 014

**According to personal communication from hospital management, the following assumptions on population from the immediate catchment area were used in allocating the budget for referral hospitals in these regions: Khomas (Windhoek Central = 15%, Katutura = 50%), Kavango (Rundu = 80%) and Oshana (Oshakati = 50%).*

As can be seen from Table 6, there are inequities in the distribution of public sector health care resources between regions. For example, Ohangwena, which is relatively the most deprived region, receives a budget that is about 89% less than its equity share. On the other hand, Hardap, which is relatively the least deprived region, receives a budget which is about 73% *more* than its equity share.

It is very important that needs-based allocation formula that are derived through statistical techniques (an objective approach) need to be complemented with the views and preferences of the general public, including policy makers (a subjective approach). Section 5.2 presents the findings of a survey of parliamentarians, councillors (regional and municipal) and health policy makers.

5.2 Communitarian views

Background characteristics of respondents

The respondents included members of parliament, health policy makers and health professionals. *Table 7* presents the demographic characteristics of the respondents.

Table 7: Background characteristics of respondents

	Characteristic	Numbers	Percentage (%)
Gender	Male	42	63.6
	Female	24	36.4
Age in years	20 – 39	6	9.1
	40 – 49	33	50.0
	50 – 59	22	33.3
	60+	5	7.6
Occupation	National Assembly	16	24.2
	National Council	1	1.5
	Regional Council	25	37.9
	Municipal Council	3	4.6
	Health professional	16	24.2
	Other	5	7.6

As can be seen from *Table 7*, about two-thirds of the respondents were elected representatives of the people at different levels. Therefore, it can be assumed that there is fair representation of community views. Besides, the other major stakeholders in the health policy-making process – health professionals - make up a quarter of the respondents.

Respondents' views on equity

With respect to the question as to what the goal of the Namibian system should be, nearly half of the respondents believed that the goal should be to provide all people with equal access to health services if they have the same health needs. The views of the representatives of the people and the health professionals were the same (presented in *Table 8* below).

Table 8: Views on equity

Goal of health system	Number of respondents	Percentage (%)
To try to ensure that everyone has the same (equal) health status	23	22.5
To try to ensure that everyone has equal access to health services if they have the same health needs	48	47.1
To try to ensure that everyone has equal use of health services if they have the same health needs	26	25.5
Other	5	4.9
Total	102*	100

**Total exceeds the number of respondents due to multiple responses*

About a quarter of the respondents' views on the goal of the health system are in line with a definition of equity as 'equal utilisation for equal need'. The other issue raised was whether or not special effort should be made to ensure that those with the greatest health needs benefit most from health services. This is a concern about vertical equity, i.e. whether there should be unequal treatment for unequal need. About 89% responded in the affirmative, which implies a positive attitude towards vertical equity.

In the context of equity in health service delivery, the respondents mentioned children, orphans, the disabled and the elderly to be the most disadvantaged groups. With respect to whose views should be considered when deciding on the goals of the country's health system, the respondents ranked views in order of importance, as follows (from most important to least important):

- citizens' views
- patients' views
- healthcare professionals' views
- politicians' views.

Views on resource allocation

The following hypothetical question on resource allocation was asked to the respondents to solicit their views on weights to be attached to different groups of the population:

Assume that an additional N\$ 100 million has been allocated for the public sector health services in Namibia. These services

will result in exactly the same improvement in health status in the population. Assume that you are in charge of allocating these new resources across a number of health services. Please decide how to allocate the N\$ 100 million across the different groups listed in each question below, remembering that the total impact on health will be the same, only the distribution will differ. In each question, the amounts you write down must add up to N\$ 100 million; e.g. you may decide to allocate N\$ 10 million to Program A; N\$ 90 million to Program B; and nothing to Program C.

Table 9 shows the weights that the respondents attached to the different population groups.

Table 9: Weights attached to different population groups

Allocation variable		Weight attached (%)
Age	Children	45
	Working-age adults	24
	Elderly	31
Gender	Male	41
	Female	59
Residence	Rural	46
	Peri-urban/informal	31
	Urban-formal	23
Income	Average annual income = N\$ 1,500	67
	Average annual income more than N\$ 29,500	33
HIV Status	HIV+	64
	HIV-	36
Employment status	Unemployed	69
	Employed	31
Disability status	Disabled	67
	No disability	33

As seen in the section on the PCA-generated weights, the weights in Table 9 (which have been obtained from the views of the different groups in society) can also be used as weighting factors, assuming that the sample of respondents is representative of the population. Since most of the respondents are members of parliament and councillors, we may regard the above weights as the views of the community.

On the basis of the above weights, the following formula can be used to supplement the formula that was developed using PCA:

$$\begin{aligned} \text{Weighting for each region} = & (\text{children} < 16 * 0.45) + (16 - 60 \\ & \text{years age group} * 0.24) + (\text{elderly} > 60 * 0.31) + (\text{male} * 0.41) \\ & + (\text{female} * 0.59) + (\text{rural} * 0.46) + (\text{peri-urban} * 0.31) + \\ & (\text{urban formal} * 0.23) + (\text{income} < \text{N\$ } 1500 * 0.67) + (\text{income} \\ & > \text{N\$ } 29,500 * 0.33) + (\text{HIV+} * 0.64) + (\text{HIV-} * 0.36) + \\ & (\text{unemployed} * 0.69) + (\text{employed} * 0.31) + (\text{disabled} * 0.67) \\ & + (\text{no disability} * 0.33) \end{aligned}$$

Data for most of the variables in the above formula can be obtained from various government documents, such as the 2001 Census and the HIV Sentinel Survey. However, it is difficult to obtain income data, as the national household income and expenditure survey is not yet finalised. Given the close relationship between the ownership of assets and household consumption expenditure, income in the above formula may be proxied by the asset indices that were generated earlier.

The share of the weighted population (weighted by the variables in the above formula) of each region as a percentage of the weighted total population does not manifest significant differences from the un-weighted one. This is explained by the fact that the variables included in the formula are distributed more or less uniformly across regions. For example, the age composition indicates that, in most regions, the elderly constitute about 6%.

6. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This study has attempted to shed light on issues of health resource allocation in Namibia, with the aim of generating the evidence required to move away from historical incrementalism towards needs-based allocation.

Based on data from DHS 2000, PCA was used to develop asset indices as proxy to the regional population's need for health care. Furthermore, views of peoples' representatives (e.g. members of Parliament), health policy makers and other stakeholders were solicited to develop weights for various attributes of the population that can be used in resource allocation.

Indices are computed using asset-based and health-related variables. These largely reflect levels of material deprivation. However, given the well-established relationship between income poverty and indicators of health status, the asset indices may be considered as proxy for health care needs.

Due to lack of data on micro-geographic areas (e.g. health districts), the focus of the study is on developing criteria to allocate health resources among the 13 regions. The analysis at regional level has its limitations in that the population is very unlikely to be homogeneous, implying that there are going to be deprived areas within relatively well-off regions. Therefore, it is necessary to establish district-level databases to promote the equitable allocation of resources within regions.

The results of the PCA model have identified those regions that are regarded as relatively poor in line with the findings of other studies, such as the Namibia HDR, 2000/2001. The model identified Caprivi, Ohangwena and Omusati regions as the most deprived. In a similar vein, the same regions are identified as worse-off in terms of their human development indices (UNDP, 2000). Similarly, there is concurrence between the two in identifying the least-deprived regions.

The human development index captures material and social welfare, as it is composed of per capita income, education (literacy rate and school enrolment) and longevity. The fact that the PCA results agree with the HDIs adds to its credibility as a measure of not only material but also social deprivation.

The study reveals inequities in the distribution of health resources between regions. The regions with more need for health care get a lower share of the public sector resources, while those with relatively less need are

allocated a greater share of resources. This is in line with the inverse care law. Unless the current system of resource allocation (historical incrementalist allocation) is changed to take account of the differential needs, inequities that were inherited from the past will be perpetuated.

The respondents' views indicate that the goal of the Namibian health system should be in line with the definition of equity as 'equal access for equal need'. This view also incorporates the country's health policy framework, which defines equity as 'equal access to basic health and social services provided by the MoHSS'. Although this definition only upholds the principle of horizontal equity, an overwhelming majority have also supported the notion of vertical equity.

Vertical equity has a higher potential for redistributing resources, and it often faces more political resistance (Bambas & Casas, 2003). However, in the Namibian context, where historical inequities in resource allocation are of significant magnitude, it is important to see agreement among policy decision makers with regard to issues of vertical equity to ensure that those regions/communities with relatively greater need are allocated a greater amount of the available resources.

Respondents believe that, when allocating resources, more weight has to be given to children, women, rural dwellers, the income poor, the HIV positive, the unemployed and the disabled. However, use of the above variables in generating weights for resource allocation seems to be limited because:

- demographic variables are more or less uniformly distributed across regions, thus failing to identify the regions with more need; and
- credible data on some of the variables is not readily available.

In summary, the study indicates that, with the available DHS data and communitarian views, it is possible to reverse the current historical incrementalist method of resource allocation. It is observed that the regions with relatively more need are still getting a far smaller share of the resources than what they actually require if the need for health care is taken into account. The PCA model provides insights into issues of resource redistribution to redress the backlog of inequities that Namibia faces.

Based on the foregoing conclusion, the recommendations below were developed:

- Given the current backlog of inequities in the allocation of health resources in Namibia, it is necessary to promote the principle of vertical equity. In other words the regions with the relatively greater need have to be allocated more resources.

- To redress the existing inequities, the MoHSS must move away from incrementalist budgeting towards a mechanism that takes into account the differential health care needs of the different regions.
- The move towards needs-based allocation of resources has to be gradual. This is because, in the short run, most of the resources are fixed, and therefore, the rapid reduction of resources in some areas may adversely affect performance and even perpetuate inequities. Furthermore, gradual change helps to build the requisite capacity needed to absorb the injection of more resources.
- In Namibia the current allocation of resources falls short of equal expenditure per capita. Therefore, moving towards needs-based allocation will take a long time. In the interim, it is recommended that measures be taken towards equal expenditure/government allocation per capita. This should be done through a levelling-up approach, to avoid any negative consequences for the health system.
- The absence of data on micro-geographic areas limits the analysis to regions, thus disregarding the intra-regional variations in need. Relevant databases on small geographic areas (up to the level of a village) should be established if scarce health care resources are to be targeted effectively.
- The population density in some of the regions (e.g. Karas) is very low, which means that nearby health facilities may be forced to undertake frequent outreach services. Furthermore, the rough terrain in some of the regions (e.g. Kunene) may inflate transportation costs and staff remuneration. Hence, needs-based allocation has to be adjusted for differing costs of service provision.
- The population attributes used in the questionnaire to elicit weights for resource allocation seem to be distributed uniformly across the regions, thus failing to distinguish regions according to their needs for health care. It is therefore important to identify other attributes that vary significantly among the regions.

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APPENDIX 1

REPUBLIC OF NAMIBIA



MINISTRY OF HEALTH AND SOCIAL SERVICES

Questionnaire on equity

Name: _____

Equity which is commonly regarded as synonymous to social justice, is an issue of great concern to the Namibian health sector. This questionnaire serves to solicit inputs from all stakeholders with the ultimate objective of proposing relevant recommendations that will guide resource allocation decision in the public health sector.

Please complete the following questionnaire and return it to the Ministry of Health and Social Services, Directorate: Policy, Planning and Human Resources Development. We would appreciate if the completed questionnaire could be sent on or before 30 September 2003. Your views on this critical issue are extremely valuable. Please answer the questions as fully as possible. The questionnaire will only take 10 – 15 minutes of your time to complete.

We would like to assure you that the results from the questionnaire will be presented in an aggregate form with no individual's response identifiable.

If you need more clarification on the questions, please forward your queries to:

Mr. W. Kapenambili, Tel. 061 2032535 or Mr. B. Tjivambi, Tel 2032537.

Thank You

Equity in Health
Care in Namibia
Towards needs-
based allocation
formula

1. Information about you

Please tick the relevant box

- 1.1 **Gender:** Male
Female

- 1.2 **Age:** 20-29
30-39
40-49
50-59
60+

1.3 **The region in which you live:**

- Caprivi
Erongo
Karas
Hardap
Omaheke
Kunene
Khomas
Oshikoto
Ohangwena
Omusati
Kavango
Otjozondjupa
Oshana

1.4 **Occupation/post:**

- Member of Parliament National Assembly
 National Council
Regional councillor
Municipal council
Health professionals
Others Specify _____

2. Your views on equity

- 2.1 There are various ways in which an equity goal for the health system can be expressed. Which of the following do you think should be the goal of the Namibian health system (*You may choose more than one response*)

- 2.1.1** To try to ensure that everyone has the same (equal) health status (This implies that there are no differences in health status that are related to a person's socio-economic position)
- 2.1.2** To try to ensure that everyone has equal access to health services if they have the same health needs (Access implies the absence of financial and/or distance barriers)
- 2.1.3** To try to ensure that everyone has equal use of health services if they have the same health needs (i.e. equal utilisation for equal need)
- 2.1.4** Other

Please describe: _____

In the context of equity in health services delivery, do you think that special efforts should be made to ensure that those with the greatest health needs benefit most from health services?

Yes

No

- 2.3** In the context of equity in health services delivery, which groups do you think should be regarded as being disadvantaged? We have listed some possible groups in alphabetical order below. Please could you:

- Read through the list below and add any other groups that you feel should be regarded as being disadvantaged.
- **Rank** the groups that you feel are disadvantaged, **by writing a number in the box next to each group you feel should be regarded as being the most disadvantaged.** For example, write number 1 in the box next to the group which in your view is the most disadvantaged, number 2 in the box next to the group which in your view is the second most disadvantaged, and so on.

- A. Children
- B. Elderly
- C. Disabled
- D. Orphans
- E. People with AIDS
- F. Poor
- G. Rural dwellers
- H. Women

- I. Unemployed
- J. Other Please specify: _____
- K. Other Please specify: _____
- L. Other Please specify: _____
- M. Other Please specify: _____

2.4 Which groups' views/preferences should be considered when deciding on the goals of the country's health system? We have listed some possible groups in alphabetical order below. Please could you:

- Read through the list below and add any other groups whose views you feel should be taken into account when deciding on the goals of the country's health system.
- **Rank** the groups **by writing a number in the box next to each group whose views you feel should be given the greatest weight.** For example, write *number 1* in the box next to the group whose views you think are *most important*, *number 2* in the box next to the group whose views you think are *the next most important*, and so on.

- A. Citizens
- B. Health care professionals
- C. Patients
- D. Politicians
- E. Public servants
- F. Other Please specify: _____
- G. Other Please specify: _____
- H. Other Please specify: _____
- I. Other Please specify: _____

3. Your views on resource allocation

Assume that an additional N\$100 million has been allocated for **public sector health services** in Namibia. These services will result in *exactly the same improvement in health status in the population*. Assume that you are in charge of allocating these new resources across a number of health services. Please decide how to allocate the N\$100 million across the different groups listed in each question below, remembering that the total impact on health will be the same, only the distribution will differ. In each question, the amounts you write down must add up to N\$100 million; e.g. you may decide to allocate N\$10 million to Program A; N\$90 million to program B; and nothing to program C.

3.1 How much money would you allocate to program A, B and C:

Program	Amount N\$
Program A aimed at 10,000 children	
Program B aimed at 10,000 working age adults	
Program C aimed at 10,000 elderly people	
TOTAL	N\$ 100 million

3.2 How much money would you allocate to program A and B:

Program	Amount N\$
Program A aimed at 10,000 men	
Program B aimed at 10,000 women	
TOTAL	N\$ 100 million

3.3 How much money would you allocate to program A, B and C:

Program	Amount N\$
Program A aimed at 10,000 people who live in a rural area	
Program B aimed at 10,000 people who live in a peri-urban/'informal' settlement urban area	
Program C aimed at 10,000 people who live in a 'formal' urban area	
TOTAL	N\$ 100 million

3.4 How much money would you allocate to program A and B:

Program	Amount N\$
Program A aimed at 10,000 people with an average household income of N\$ 1 500 per year	
Program B aimed at 10,000 people with an average household income of N\$ 29 500 per year	
TOTAL	N\$ 100 million

3.7 How much money would you allocate to program A and B:

Program	Amount N\$
Program A aimed at 10,000 people who are HIV positive	
Program B aimed at 10,000 people who are HIV negative	
TOTAL	N\$ 100 million


3.8 How much money would you allocate to program A and B:

Program	Amount N\$
Program A aimed at 10,000 people who are unemployed	
Program B aimed at 10,000 people who are employed	
TOTAL	N\$ 100 million

3.9 How much money would you allocate to program A and B:

Program	Amount N\$
Program A aimed at 10,000 people who are disabled	
Program B aimed at 10,000 people who are not disabled	
TOTAL	N\$ 100 million

THANK YOU FOR YOUR COOPERATION



Equity in health implies addressing differences in health status that are unnecessary, avoidable and unfair. In southern Africa, these typically relate to disparities across racial groups, rural/urban status, socio-economic status, gender, age and geographical region. EQUINET is primarily concerned with equity motivated interventions that seek to allocate resources preferentially to those with the worst health status (vertical equity). EQUINET seeks to understand and influence the redistribution of social and economic resources for equity oriented interventions, EQUINET also seeks to understand and inform the power and ability people (and social groups) have to make choices over health inputs and their capacity to use these choices towards health.

EQUINET implements work in a number of areas identified as central to health equity in the region:

- Public health impacts of macroeconomic and trade policies
- Poverty, deprivation and health equity and household resources for health
- Health rights as a driving force for health equity
- Health financing and integration of deprivation into health resource allocation
- Public-private mix and subsidies in health systems
- Distribution and migration of health personnel
- Equity oriented health systems responses to HIV/AIDS and treatment access
- Governance and participation in health systems
- Monitoring health equity and supporting evidence led policy

EQUINET is governed by a steering committee involving institutions and individuals co-ordinating theme, country or process work in EQUINET:

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