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Financing and benefit incidence in the South African health system: Preliminary results

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EXECUTIVE SUMMARY

This report presents the preliminary findings of an analysis of health care financing and benefit incidence in South Africa. A financing incidence analysis determines which socio-economic groups bear what burden of funding health services. A benefit incidence analysis determines what benefit (expressed in monetary terms) different socio-economic groups derive from utilising health services. These analyses enable one to assess how equitable a health system is; financing is regarded as equitable if contributions to funding health care are according to ability to pay, and health service use is regarded as equitable if benefits are distributed according to need for health care.

This study is the first *comprehensive* assessment of financing and benefit incidence in South Africa, i.e. it quantifies the incidence of all sources of health care finance and the benefit incidence of all public and private sector health services. The analysis was done in 2006 terms. It draws on data from Statistics South Africa's 2005/06 Income and Expenditure Survey and a nationally representative household survey specifically undertaken to obtain accurate health service utilisation data. In addition, supporting data were obtained from the District Health Information System, from National Treasury and from several medical scheme administrators.

The key findings in relation to health care financing incidence include:

- Although personal income tax is very progressive, excise taxes and the fuel levy are regressive and VAT is almost proportional. The progressivity of personal income tax is offset to a considerable extent by the regressivity of other taxes.
- Out-of-pocket payments are slightly regressive while medical scheme contributions are highly progressive.
- Overall financing of health care in South Africa is very progressive, but this is almost exclusively due to medical scheme contributions.

The key findings of the benefit incidence analysis include:

- Within the public sector, the poor benefit relatively more than the rich from outpatient services at district hospitals and at clinics and community health centres. The rich benefit considerably more than the poor from central hospital services (both in- and out-patient services) and also benefit more from public sector in- and out-patient services overall.
- The rich benefit far more from private sector services than the poor, with the exception of traditional health care provider services.
- Overall, benefit incidence of health care in South Africa is very 'pro-rich', with the richest 20% of the population receiving 36% of total benefits (despite having a 'health need share' of less

than 10%) while the poorest 20% receive only 12.5% of the benefits (despite having a 'health need share' of more than 25%).

The findings indicate that there is a lack of cross-subsidies in the overall health system in South Africa. Although health care financing is 'progressive', this is largely due to the richest groups bearing the burden of medical scheme funding; however, the richest groups are the exclusive beneficiaries of these funds. It is indisputable that benefit incidence in South Africa is inequitable; benefits from health care are not distributed according to the need for health care.

The only component of the current South African health system that could contribute to overall income and risk cross-subsidies is tax funding. However, the strongly progressive component of personal income tax is to some extent offset by the regressivity of excise taxes and fuel levies and the proportional impact of VAT. In addition, the benefits of tax funded health services are not equitably distributed in that the overall benefit incidence of public sector services is pro-rich.

In the context of the degree of income inequalities that exist in South Africa, the need to move to a health system where South Africans contribute according to ability-to-pay and benefit according to need for health care is long overdue.

1. INTRODUCTION

This report presents the preliminary findings of a component of a research project called SHIELD (Strategies for Health Insurance for Equity in Less Developed countries). SHIELD, funded by the European Union (2006-2009), is being undertaken in South Africa, Ghana and Tanzania ¹.

The starting point for SHIELD is the concern about the inequities that characterise many African health systems and the growing debate about how best to promote equity in these systems while ensuring affordability and sustainability. African health systems are commonly fragmented, consisting of a complex mix of formal and informal, public and private financing and provision, that frequently exacerbate socio-economic inequities. There is now international consensus that pre-payment health care financing mechanisms (including tax funding and various forms of health insurance) should form the core of health systems' funding. SHIELD explores the potential for health insurance mechanisms, particularly mandatory insurance (also known as social or national health insurance), to address inequities in pluralistic health systems in the three countries (Ghana, Tanzania and South Africa).

A major component of the SHIELD project is a financing and benefit incidence analysis of the *entire* health system in each country. A financing incidence analysis determines which socio-economic groups bear what burden of funding health services. A benefit incidence analysis determines what benefit (expressed in monetary terms) different socio-economic groups derive from using health services. It is only when the health service financing and benefit distribution patterns are documented and the factors driving these patterns are well understood that it will be feasible to adequately consider options for health system change to promote equity and efficiency. These analyses enable one to assess how equitable a health system is; financing is regarded as equitable if contributions to funding health care are according to ability to pay, and health service use is regarded as equitable if benefits are distributed according to need for health care. There is some debate about the precise meaning of funding care according to ability to pay; should the rich simply pay more in absolute terms than the poor or should they contribute a higher percentage of their income than the poor, i.e. should funding be progressive? In the context of the magnitude of income inequalities existing in South Africa, where the richest 10% of the population account for 51% of income and the poorest 10% of the population account for a mere 0.2% of income (Statistics South Africa, 2008), it is indisputable that the overall health care financing system should be progressive.

¹ SHIELD is a multi-country collaborative project involving: Health Economics Unit, University of Cape Town; Centre for Health Policy, University of the Witwatersrand; Ghana Health Research Unit; Ifakara Health Institute, Tanzania; London School of Hygiene and Tropical Medicine; Karolinska Institute, Sweden; and Royal Tropical Institute, Netherlands.

Health care financing in South Africa comprises allocations from general tax revenue (estimated to account for about 40% of total funding in 2005), medical scheme (i.e. private voluntary health insurance) contributions (45% of total funding) and out-of-pocket payments (estimated to account for about 14% of funding) (McIntyre et al., 2007). There have been a number of tax incidence studies undertaken in South Africa in the past (McGrath et al., n.d., Simkins et al., 2000), but the data in these studies are now out of date. In addition, the most recent tax incidence analysis did not include corporate tax incidence, which is problematic given that corporate income tax accounts for about a quarter of all tax revenue. However, no analysis of the incidence of other components of health care financing in South Africa, namely medical schemes and out-of-pocket payments, has been undertaken.

There have also been some benefit incidence analyses undertaken in South Africa (Castro-Leal, 1996, Van der Berg, 2000). However, both of these studies only focused on the benefits from publicly funded health services and did not quantify benefits from private sector health services. These studies also relied on data which have many deficiencies. In particular, the household surveys used in these studies do not allow for the calculation of *utilisation rates* and therefore under-report actual utilisation. Utilisation in these surveys is linked to questions on recent illness and service utilisation for that illness. This means that health service use for other reasons (e.g. for ante-natal care, other preventive services, deliveries, etc.) is not reported. Also, the surveys only ask about the use of one service while many people use more than one service during an illness episode. Finally, very crude unit cost data were used in both studies.

The SHIELD study is, thus, the first attempt to quantify financing and benefit incidence for the entire South African health system, and to do this as comprehensively and accurately as is possible. The SHIELD team will continue to refine these estimates if further data become available. Due to considerable policy demand for access to our preliminary findings, we have decided to publish them in the format of a 'Discussion Paper' to make them rapidly and widely available. We have undertaken extensive and rigorous analysis of the data and are confident that these results reflect an accurate picture of the financing and benefit incidence of health services within South Africa. Any later refinements will not change the basic patterns portrayed in this paper. Given the focus on making these results available to feed into policy processes, we have attempted to keep the methodological description brief and as 'non-technical' as possible, and to place the emphasis on presenting the key results. More extensive methodological details and further results (e.g. Kakwani Indices) will be provided in other publications.

2. METHODOLOGY

2.1 Overview of data sources

The analysis uses two main data sources. For the financing incidence analysis, the Income and Expenditure survey, 2005/2006 (Statistics South Africa, 2008) data was used to estimate the share of household expenditure paid in taxes and other forms of health care financing. The benefit incidence analysis uses data obtained from a nationally representative household survey undertaken specifically to obtain accurate data on health service utilisation (called the SACBIA survey)². Data collection for the SACBIA survey began in April in some provinces and ended in July 2008. The sampling involved two stages. The first stage selected Enumerator Areas (EAs)³. EAs were stratified by province, type of settlement (farm, informal settlement, tribal settlement, small holding, and urban settlement), and population group (Black African, Coloured, Indian, and White). In total, 960 EAs were selected across the nine provinces. In the second stage, five households were interviewed within each EA such that the total sample size was 4,800 households. Due to variations in the population sizes across provinces and population groupings, the EAs were not selected equally across the strata. This is to ensure adequate representation of provinces and population groups that are small relative to others. The EAs within each stratum were selected with a probability proportional to the size of the EA, defined as the number of households within it.

2.2 Measuring socio-economic status

Living standards or the socio-economic status of households are generally measured using reported income, consumption expenditure or a composite index of socio-economic status (O'Donnell et al., 2008). While reported income may be seen as a good measure, it often suffers from under-reporting. The study therefore, categorised households into socio-economic groups using household per capita consumption expenditure. Although the use of composite indices of socio-economic status are increasingly being used in health sector analyses, it was essential to have a monetary measure in order to estimate the relative progressivity of alternative financing sources, i.e. to calculate health care financing contributions as a proportion of household financial resources. For ease of analysis, households were categorised into quintiles (i.e. dividing the sample into five equal parts of 20% each).

² The SACBIA (South African Consortium for Benefit Incidence Analysis) survey was a collaborative initiative by the Health Economics Unit, University of Cape Town; Centre for Health Policy, University of the Witwatersrand; the National Department of Health; and the London School of Hygiene and Tropical Medicine. SACBIA was funded by the European Union and data was collected by the Community Agency for Social Enquiry (CASE).

³ Enumerator Areas (EAs) are small area units with a population size of about 750 and between 150-200 households on average. EAs have important properties such as well defined boundaries that are represented by maps and relatively small sizes of clusters. The EAs constitute the primary sampling units (PSU), while households within EAs constitute secondary sampling units (SSU).

2.3 Financing incidence analysis

The analysis of tax incidence focussed on the major sources of general tax revenue, namely personal income tax (approximately 30% of total tax revenue), corporate income tax (about 25%), VAT (27%), fuel levies (5%) and excise duties (almost 4%).

The contribution of individual households to various taxes was estimated from the Income and Expenditure Survey (IES) data. Table 1 provides an overview of each type of tax, and the quantification technique. The personal income tax component was estimated based on reported income but the excise, fuel levy and *ad valorem* tax were estimated based on reported consumption expenditure on items that are taxable. It is widely acknowledged that the most difficult incidence analysis relates to corporate income tax. It is impossible to know with certainty whether the burden of this tax is borne by shareholders (which usually occurs in a highly competitive market) or if it is passed on to consumers (which usually occurs in situations of monopoly or oligopoly). A range of scenarios are considered, with the overall results using the 50% shareholder : 50% consumer burden distribution.

The weighted estimates of the total tax payments based on the IES are often below those reported by the national Treasury. For this reason, the study apportioned to households the difference between the estimated revenue and that reported by Treasury, based on their proportional share of each initial tax estimated from the IES.

For the other components of the financing incidence analysis, out-of-pocket (OOP) payments and medical scheme contributions, the IES was also used. OOP payment was estimated based on reported expenditure on dental services, medicines, medical laboratories and x-rays, services on medical auxiliaries, consultations including traditional healers, and other payments to access health care (such as hospital service fees – beds, theatre, wards, etc.) but excluding transportation costs. Medical scheme contributions were estimated as the sum of the individual's reported contributions to the schemes as well as the employer's contributions. As the trend is for employers to use a 'total cost of employment'⁴ approach to employee remuneration, it was assumed that the incidence of medical scheme contributions on individual households should include both the employer and employee components.

⁴ The size of the total remuneration package is set. In some instances, the employee has the option of whether or not to opt for medical scheme cover. In addition, if medical scheme contributions increase, other components of the remuneration package decrease accordingly. For this reason, it is appropriate to assume that households ultimately bear the burden of total medical scheme contributions.

Table 1: Financing incidence analysis estimation techniques

Component	Share in Total Health care financing	Source of Data	Rates ^a	Computation Technique
Taxes	40%			
Personal Income Tax	12%	IES, 2005/2006	18-40% depending on income level plus flat rate contribution as a function of income. 0% tax for incomes below R35,000 for individuals below 65 years and R60,000 for individuals 65 years or older. A rebate of R6,300 and R4,500 for individuals below 65 years and 65 years or older respectively.	Apply the appropriate tax rate, rebates and tax thresholds on the gross <i>taxable</i> income (salaries and wages received, income from business or professional practice/activities, part of dividends and interest received and/or accrued on deposits) of individuals within each household within the taxable range
Corporate Income Tax	10%	IES, 2005/2006	29%	Apportioning the total corporate tax receipts based on Treasury data to households based on assumptions of tax shifting. Shifting assumptions include certain percentage borne by shareholders (the IES includes information on those who receive dividends) and the rest by households through consumption. The scenarios considered ranged from two extremes: that shareholders/capital owners bear the full burden of the tax, and that consumers bear the full burden, with variation within these ranges in ten percent increments: (100%; 0%), (90%, 10%), ..., (0%, 100%).
Value Added tax	10.8%	IES, 2005/2006	14% on standard rated goods and services	The VAT rate is applied to expenditure of goods and services that are standard rated excluding the zero-rated and exempted goods.
Fuel Levy	2%	IES, 2005/2006	R1.27/litre for petrol and R1.11/litre for diesel	Since fuel is consumed by households (personal or public transportation) as well as corporate users, estimation involved a

Excise Tax	1.5%	IES, 2005/2006	52% of retail price for cigarette R1.58/litre for beer R0.08/litre of traditional beer R1.71-R5.12/litre of wine R26.23/litre of spirit ^b	process of generating the component attributable to public transport users, users of private transport and those attributed to users in businesses. For cigarettes, apply the tax rate on the expenditure on cigarette products; for beer, wine and spirits, apply the rate per litre to the quantity of such products consumed by households (estimated through average retail prices). Other components of the excise taxes are environmental levy goods, mineral tax and ad valorem tax.
Others	4%	IES, 2005/2006	Includes taxes on property and unidentified levies, stamp duties and fines, air departure tax and skills development levy.	-
Insurance	45%			
Medical Schemes (Private)	45%	IES, 2005/2006		Household expenditure on medical schemes' premium as well as employers' contribution were summed together.
Out-of-pocket payment	14%			
OOP payments	14%	IES, 2005/2006		Household expenditure of medicines, consultations, treatments, and procedures excluding transportation were summed.

^a This applies to the taxes and are based on the 2005/2006 assessment year

^b assuming 43% alcohol per volume

Note: IES – Income and Expenditure Survey

2.4 Benefit incidence analysis⁵

Benefit incidence analysis (BIA) involves estimating the value, in monetary terms, of health care benefits that accrue to individuals in various socio-economic groups. The basic idea behind this is to assess the adequacy of targeting of government services as well as the equity implications of the utilisation of private health care services in South Africa. Historically, BIA studies have concentrated on assessing government subsidies and the extent to which these subsidies are targeted at the poor.

The methodology of BIA combines the cost (usually the average or unit cost) of providing various services with information on utilisation of each type of service by individuals in households. The basic steps used in quantifying the health service benefits accruing to individuals are:

Step 1: Estimate the distribution of utilisation of public and private health services in relation to a measure of living standards (in this case, we use per capita consumption expenditure to generate quintiles of households according to socio-economic status).

Step 2: Estimate the unit cost of each service and multiply the utilisation rate for each service by the service-specific unit cost to obtain the monetary benefit of each service.

Step 3: The distribution of health service benefits across socio-economic groups is assessed, and the distribution of health care monetary benefits for each service and for all services are compared with the distribution of need for health care.

2.4.1 Estimating utilisation rates

A very disaggregated classification of health services was adopted in the SACBIA survey in order to estimate benefit incidence accurately. Health services considered include: public hospitals (district, regional/provincial tertiary, national central, and specialised hospitals⁶); public clinics and community health centres; private hospitals; private general practitioners; private specialists; private dentists; private retail pharmacies; traditional birth attendants; and traditional healers. Utilisation was separately recorded for outpatient visits and hospital admissions.

⁵ It should be noted that the SACBIA survey was conducted during the first part of 2008. In order to ensure comparability with the FIA results (which are in 2006 terms), an assumption was made that utilisation patterns had not changed much between 2006 and 2008, and 2006 unit costs were used.

⁶ In order to disaggregate visits and admissions to public hospitals by level of care, respondents were asked to provide the name of the hospital which had been visited or to which a household member had been admitted. This information was then individually coded using a list of all district, regional, provincial tertiary, central and specialised – e.g. TB or psychiatric – hospitals within the public sector.

Utilisation of outpatient visits used a recall period of one month, while the inpatient care recall period was one year. These recall periods are in line with international best practice. Importantly, respondents were asked to provide information on all services used during this recall period, and not simply service use linked to reported illness or only on one service use episode during the recall period. This enabled actual utilisation *rates* to be calculated.

As a one month recall period was used for outpatient services, these data had to be converted into annual utilisation rates. Researchers often multiply the total visits in the past one month (or four weeks) by a fixed number of 12 (or 13) to annualise the total visits reported in a 'representative' sample of the population through a household survey (O'Donnell et al., 2008). While this is the default approach in the absence of a reliable national database on utilisation of various health services, it is likely to under-report (over-state) the actual total annual visits calculated based on the household survey when the month of reporting is less (more) prone to specific diseases or health conditions. Variations occur in the health seeking patterns of households across various months of the year and seasons in different countries (Sauerborn et al., 1996, Briet, 2002). In some cases, *perceptions* of illness even vary across seasons (Sauerborn et al., 1996).

The seasonal adjustment of visits is performed by taking into account the month in which the survey was conducted in each province. For visits to public facilities, the seasonal index was generated from the District Health Information System (DHIS) which documents total visits to individual public sector facilities in each month, while for most private services, the index was generated from data on utilisation patterns in each month provided by the largest medical scheme administrators⁷. The index essentially compares utilisation of each type of service in the month(s) in which household survey data were collected, with the average monthly utilisation over a full year. We apply the seasonal index to the utilisation data from the household survey to obtain seasonally adjusted annual visits to the specified health facility or service.

2.4.2 Estimating unit costs

Generically, unit costs (i.e. cost per outpatient visit or cost per inpatient day) are calculated as the total recurrent expenditure in a facility divided by the weighted total number of users (inpatients and outpatients). This is straightforward in the case of facilities or services that only include outpatient care (i.e. is simply expenditure divided by number of outpatient visits). In the case of hospitals, expenditure must be allocated across outpatient and inpatient services. A frequently used assumption is that the resources used per outpatient visit are equivalent to a third of the resources used per inpatient day. However, this assumption is not based on a solid

⁷ This is because individuals who enroll on medical insurance in South Africa use mainly private health facilities. Data were obtained from administrators accounting for about half of medical scheme members.

empirical basis and previous research has shown that the ratio of expenditure per inpatient day to expenditure per outpatient visit varies considerably across hospitals at different levels of care (Lombard et al., 1991).

For this reason, we calculated the ratio of the unit costs for inpatient care and outpatient visits for different categories of public sector hospitals using statistical methods. Data on the total outpatient and inpatient utilisation by type of hospital and by province was extracted from the District Health Information System (DHIS), as well as the total number of nurses and medical doctors – as a proxy for the relative size of the facility. This data was combined with data on recurrent expenditure at each public sector hospital in South Africa, provided by the national Treasury, to estimate the unit cost per inpatient day and per outpatient visit. A simple linear regression was fitted to generate the ratio of variation between an outpatient visit and an inpatient day across various public facilities. This ratio is then used to estimate the unit costs for inpatient and outpatient services for each level of care.

As the utilisation data for inpatient care collected in the SACBIA survey is in the form of admissions rather than inpatient days, the unit cost per inpatient day was converted into the unit cost per admission by estimating the average number of patient days per admission for each category of hospital.

For most private sector services, unit cost estimates were based on data provided by the largest medical scheme administrators. The total value of claims (as opposed to amount paid by scheme) was divided by the total number of visits or hospital admissions for each type of service (e.g. visit to a private dentist, GP or specialist). In the case of services provided by traditional healers and traditional birth attendants, the average out-of-pocket expenditure per visit to these service providers by households derived from the SACBIA household survey was used as the unit cost.

2.4.3 Estimating need for health care

It is difficult to accurately measure the distribution of the need for care across socio-economic groups. Mortality statistics rarely have socio-economic information associated with them. Morbidity data is usually collated from health facilities and thus, is more representative of service utilisation than of need for health care. For this reason, the distribution of health need across socio-economic groups is usually estimated by including questions on health status or illness in household surveys.

Household surveys undertaken in low- and middle-income countries (such as the Living Standards Measurement Surveys) most frequently only include questions on self-reported illness

(e.g. have you been ill or injured in the past month). Numerous studies have indicated that self-reported illness is a poor measure of health need (Makinen et al., 2000, McIntyre and Gilson, 2000, McIntyre et al., 1998, Sauerborn et al., 1996). There tends to be lower 'recognition' of illness by low-income groups than higher income groups. This could be partially explained by the fact that the poor cannot 'afford' to be ill (either in terms of the opportunity cost of lost work time or due to poor health service access), while high income groups are likely to have relatively good access to health services as well as sick leave benefits in their formal sector jobs (McIntyre et al., 1998). Sauerborn and others reached a similar conclusion, noting that one of the key ways in which the economic costs of illness can be avoided by poorer households is "by modifying illness perception (the phenomenon of ignoring disease)" (Sauerborn et al., 1996).

Household surveys in high-income countries which aim to measure health need rely on self-assessed health (SAH) status. This can take the form of a 'crude' measure of health need (e.g. how would you describe your current health status, with a number of options ranging from excellent to very poor) (van Doorslaer and Gerdtham, 2003). Another method is to measure a number of aspects of health status (e.g. mobility, ability to care for oneself, and to undertake usual activities, pain and anxiety) and use mathematical algorithms to construct scales which translate these multi-attribute or multi-dimensional measures into a single index. These include the index of independence in activities of daily living (ADL), the health utility index (HUI), the EQ5D and the SF-36.

The SACBIA survey collected self-assessed health status data, through a simple rating question. Even though the categories in this measure (e.g. excellent, good, fair, poor, very poor) do not tell us that there is equidistance between categories (O'Donnell et al., 2008), the SAH measure is still useful in understanding the disparities that exist between individuals' health status. In the inequality literature, several methods are used to scale the SAH status. The most frequently used procedure is to recode the responses as a dichotomous variable. This is the approach adopted in this study; individuals were re-coded as having good health if they reported health status above 'fair' and as bad health if they reported health status of 'fair' or below. This procedure was adopted because of its simplicity and also because studies that have standardised the measure of need often come up with very similar results (see O'Donnell et al., 2008).

3. RESULTS

The analyses presented in this report are expressed in 2006 terms. The results of the financing incidence are presented by comparing each quintile's share of payments to consumption expenditure. This is presented for each of the financing mechanisms highlighted earlier (taxes, insurance and out-of-pocket payments). When the poorer quintiles' health care contributions as a proportion of total household expenditure are high relative to the richer quintiles' proportion, we may conclude that the financing mechanism is not in favour of the poor or in technical terms, it is regressive. However, when the richer quintiles pay a greater proportion of their total consumption expenditure towards health care funding compared to the poorer quintiles, we may conclude that the financing mechanism is in favour of the poor, or it is progressive.

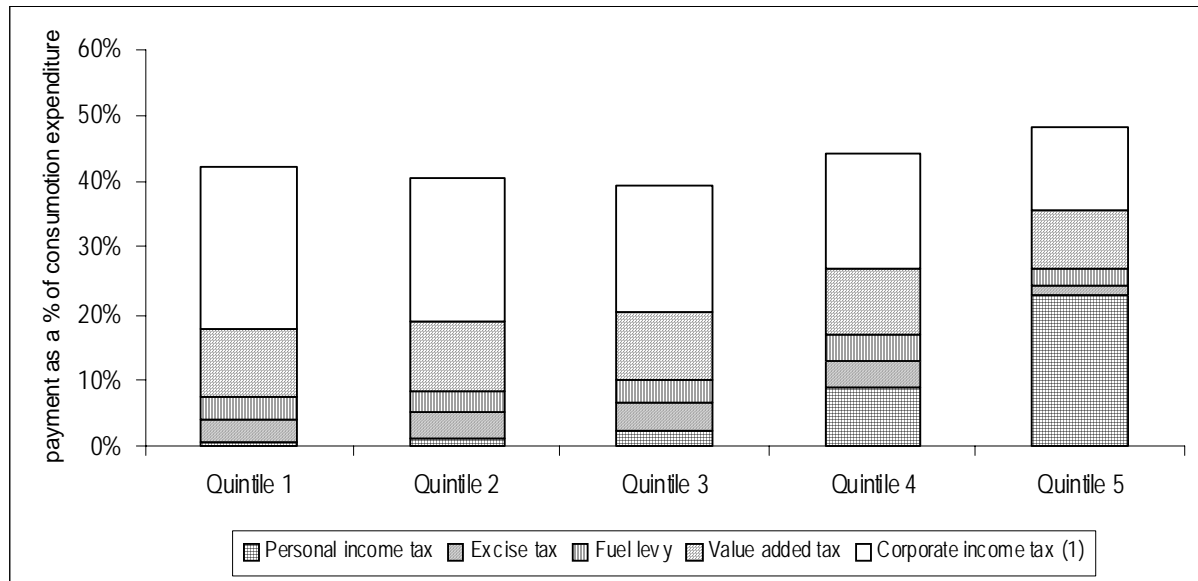
For the benefit incidence analysis, the results are presented across all of the different types of services for both public and private facilities. This shows each quintile's share of benefits received from each health service. When the share of total benefits received by the poorer quintiles is greater than the total share of benefits received by the richer quintiles, we may conclude that the benefits are distributed in favour of the poor (technically, the benefits are pro-poor.) If on the other hand, the distribution of the benefits is such that the shares received by the richer quintiles are greater than those received by the poorer quintiles, we may conclude that the distribution of health care benefits is not in favour of the poor (i.e. it is pro-rich.) More importantly, the distribution of health care benefits across quintiles is compared to the relative need of each quintile for health care to assess whether benefits are equitably distributed (i.e. that people benefit according to need).

3.1 Results of the financing incidence analysis

Figures 1 to 3 present the tax incidence findings. As indicated earlier, it is not possible to determine with complete accuracy the distribution of corporate tax across socio-economic groups. Figure 1 assumes that all corporate tax is shifted onto consumers, while Figure 3 assumes that shareholders bear the full burden of corporate tax. Figure 2 presents a scenario where the burden of corporate tax is equally shared by shareholders and consumers.

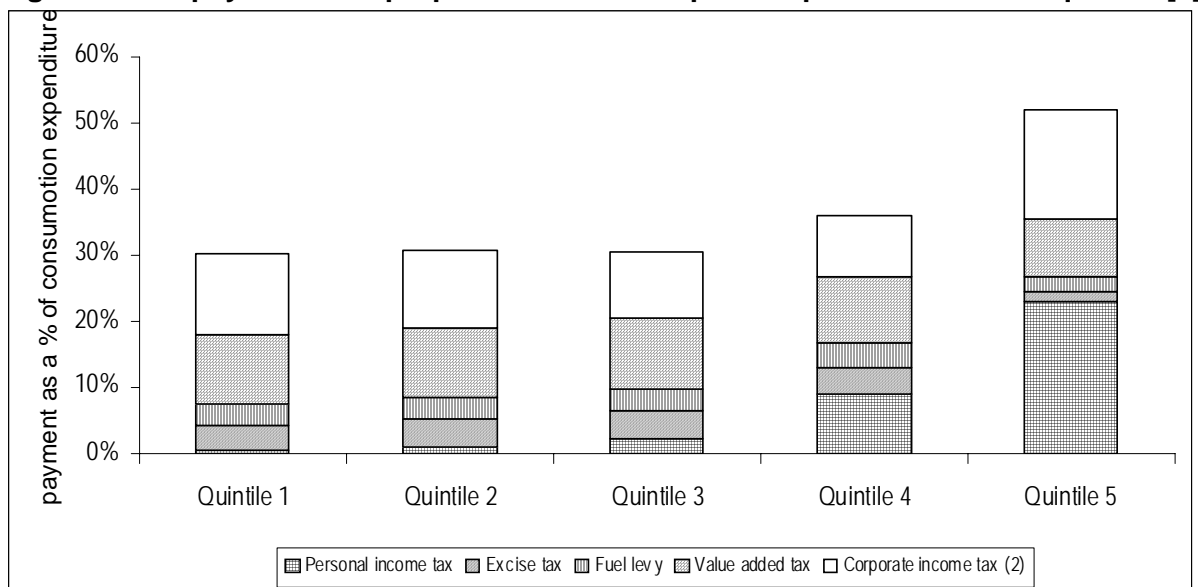
These figures clearly indicate that personal income tax in South Africa is very progressive, whereas excise taxes and the fuel levy are regressive. VAT was found to be almost proportional, i.e. the burden is equally shared across socio-economic groups. The progressivity of personal income tax is offset to a considerable extent by the regressivity of other taxes.

Figure 1: Tax payment as a proportion of consumption expenditure in each quintile [1]



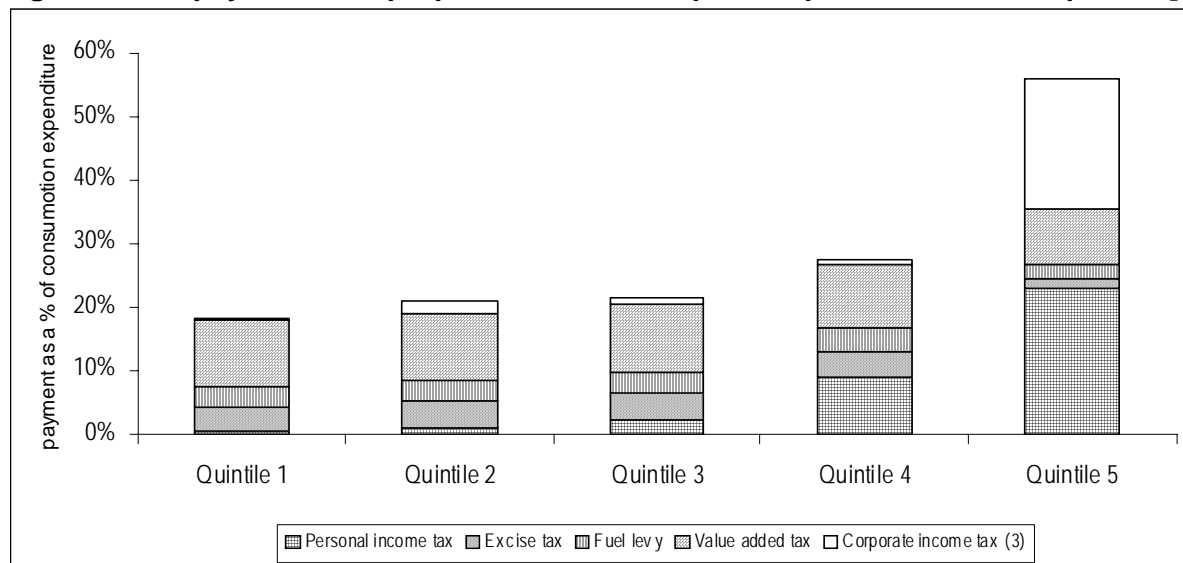
Note: here we assume that corporate income tax is distributed across households based on reported consumption expenditure on manufactured goods.

Figure 2: Tax payment as a proportion of consumption expenditure in each quintile [2]



Note: here we assume that corporate income tax is distributed equally across households (based on reported consumption expenditure on manufactured goods) and shareholders (based on receipt of dividends).

Figure 3: Tax payment as a proportion of consumption expenditure in each quintile [3]



Note: here we assume that corporate income tax is distributed across shareholders based on reported receipt of dividends.

The alternative assumptions about the distribution of the burden of corporate income tax between shareholders and consumers lead to vastly different overall financing incidence patterns. The assumption of all corporate tax being shifted onto consumers leads to the progressivity of personal income tax being almost completely neutralised so that the overall tax burden approaches being proportional (Figure 1). If shareholders bore the full burden of corporate taxes, the overall tax structure in South Africa would be very progressive (Figure 3). The corporate structure in South Africa certainly lends itself to opportunities to shift corporate taxes onto consumers, but the exact extent cannot be determined. For this reason, we have assumed the 50% : 50% share of corporate tax burden between consumers and shareholders (as reflected in Figure 2) to reflect overall tax incidence in the rest of the report.

Figure 4 provides an overview of the financing incidence of out-of-pocket payments and medical scheme contributions. While out-of-pocket payments are slightly regressive, medical scheme contributions are highly progressive, as would be expected given that it is largely the richest quintiles that are members of these schemes.

Figure 4: Out-of-pocket and medical scheme contributions as a proportion of consumption expenditure in each quintile

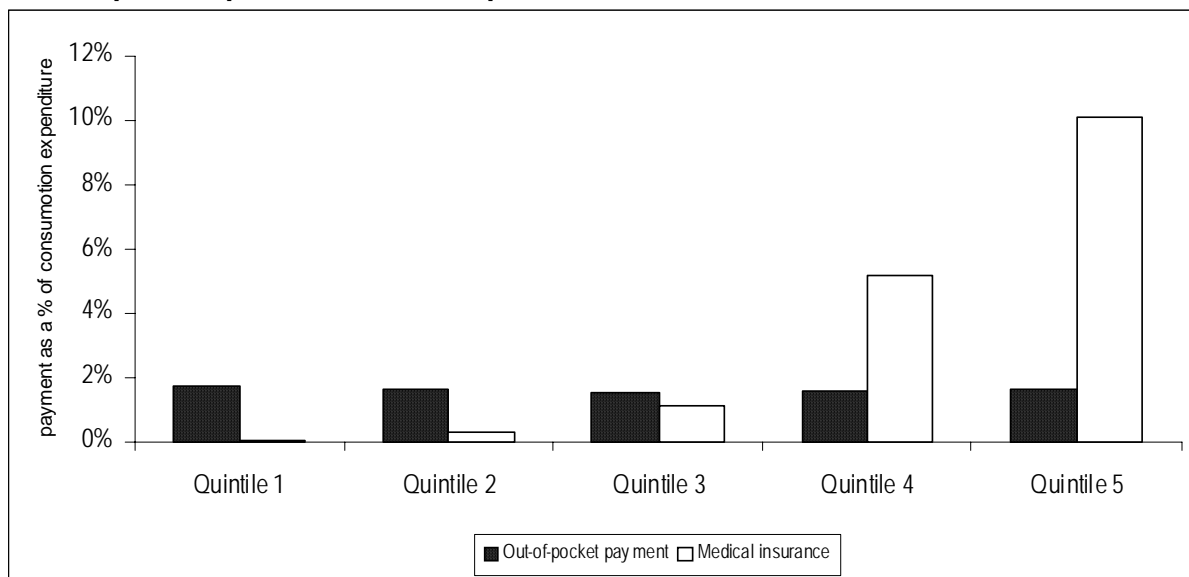


Figure 5 shows the overall average of contributions to health care funding as a percentage of household consumption expenditure. The fact that only a portion of total government tax resources is allocated to the health sector (11.55% in 2006) is taken into account in the representation of health tax funding in this figure. It clearly reflects that medical scheme contributions represent the greatest burden to households in relation to health care financing at present.

Figure 5: Overall average of health care payments as percentage of household consumption expenditure

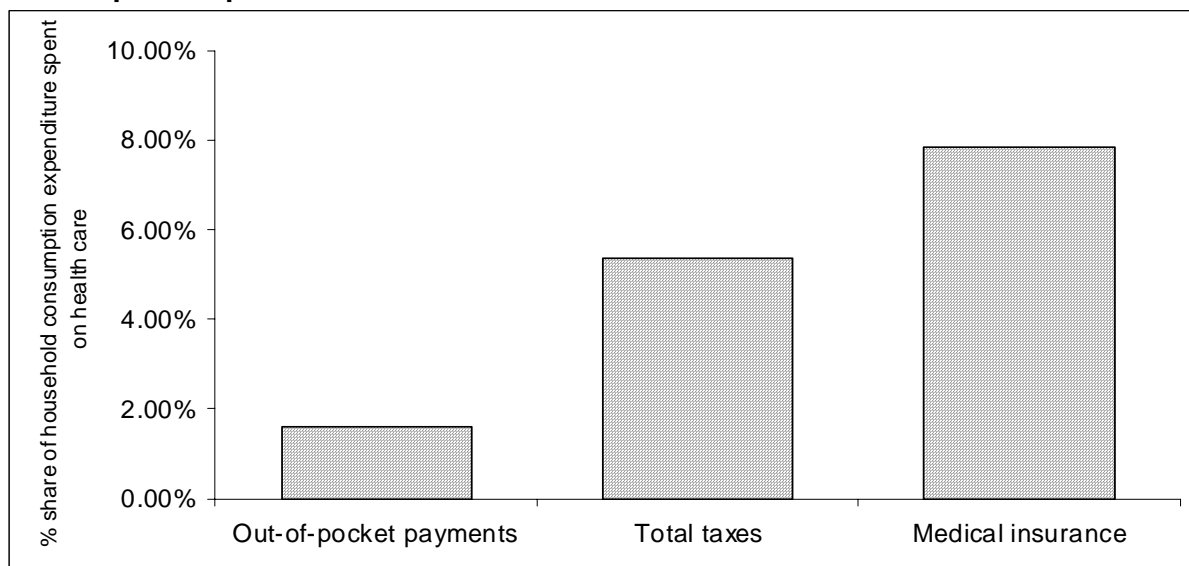
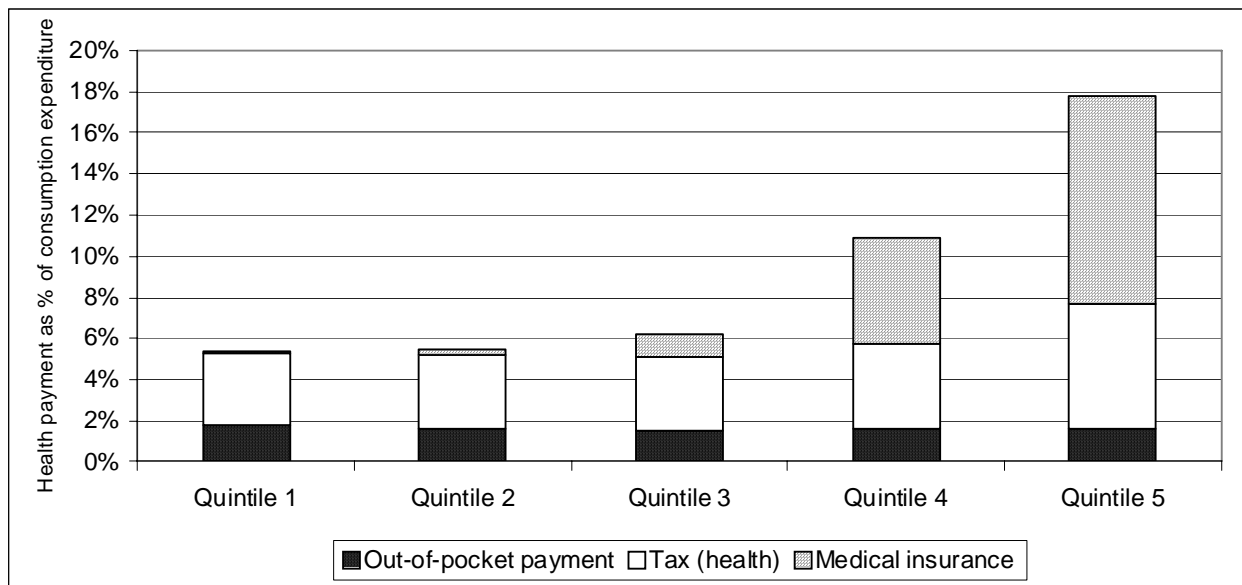


Figure 6 combines all three sources of finance for health care in South Africa. It indicates that the major factor contributing to the progressivity of health care financing in South Africa is that of medical scheme contributions.

Figure 6: Distribution of total health financing incidence in South Africa

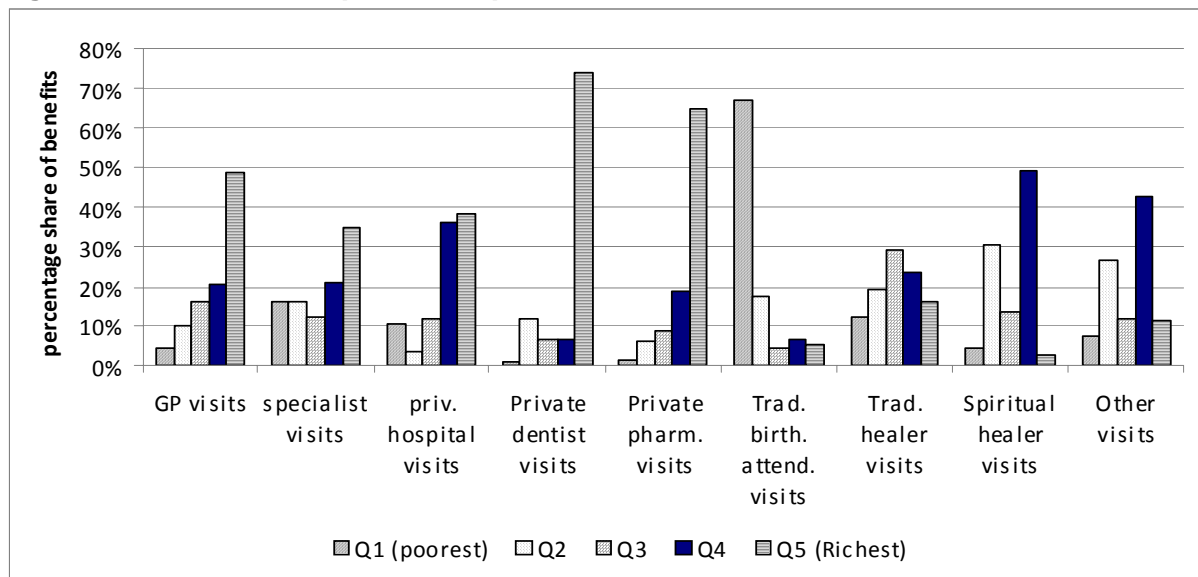


Note: 11.55% of total tax funds are allocated to health (National Treasury, 2007), as the basis for the health tax incidence

3.2 Results of benefit incidence analysis

Figures 7-9 provide a disaggregated overview of the benefit incidence of a range of different health services. Figure 7 shows that in relation to private sector outpatient health care services, the benefits accrue primarily to the highest income quintiles, with the exception of traditional health care providers.

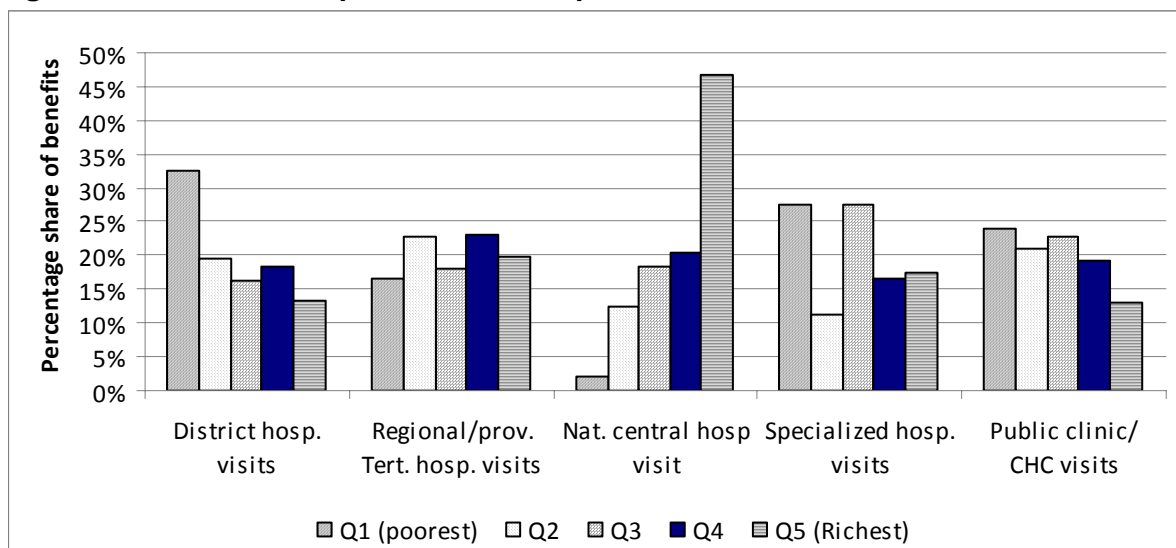
Figure 7: Distribution of private outpatient health care benefits in South Africa



A different pattern emerges in relation to the benefits of public sector outpatient services (see Figure 8). While services provided in public clinics and district hospital outpatient facilities are

pro-poor, the richest quintiles gain the greatest benefits from national central hospital (and to some extent regional/provincial tertiary hospital) outpatient facilities.

Figure 8: Distribution of public sector outpatient health care benefits in South Africa



In relation to inpatient care (see Figure 9), private hospital inpatient care benefits accrue almost exclusively to the richest 20% of the population. Over 70% of the benefits of inpatient care in public sector central hospitals accrue to the richest 40% of the population. Inpatient care benefits from other public sector hospitals are more evenly spread across socio-economic groups.

Figure 9: Distribution of inpatient health care benefits in South Africa

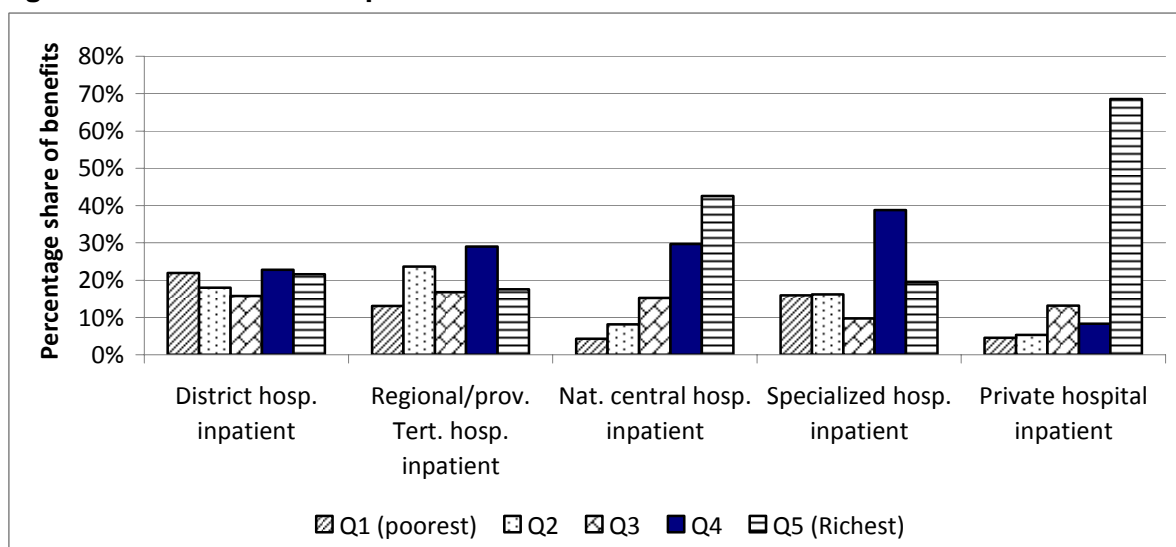


Figure 10 provides an overview of the distribution of benefits from outpatient and inpatient care in the public and private sectors. The benefits of public sector outpatient services are relatively evenly distributed, while relatively more of the benefits of public sector inpatient care accrue to

the richest households. This is largely due to the fact that the higher income groups have a particularly large share of the benefits from central hospitals. Benefits from the private sector, particularly in terms of inpatient care, accrue largely to the richest households.

Figure 10: Distribution of total public and private inpatient and outpatient health care benefits in South Africa

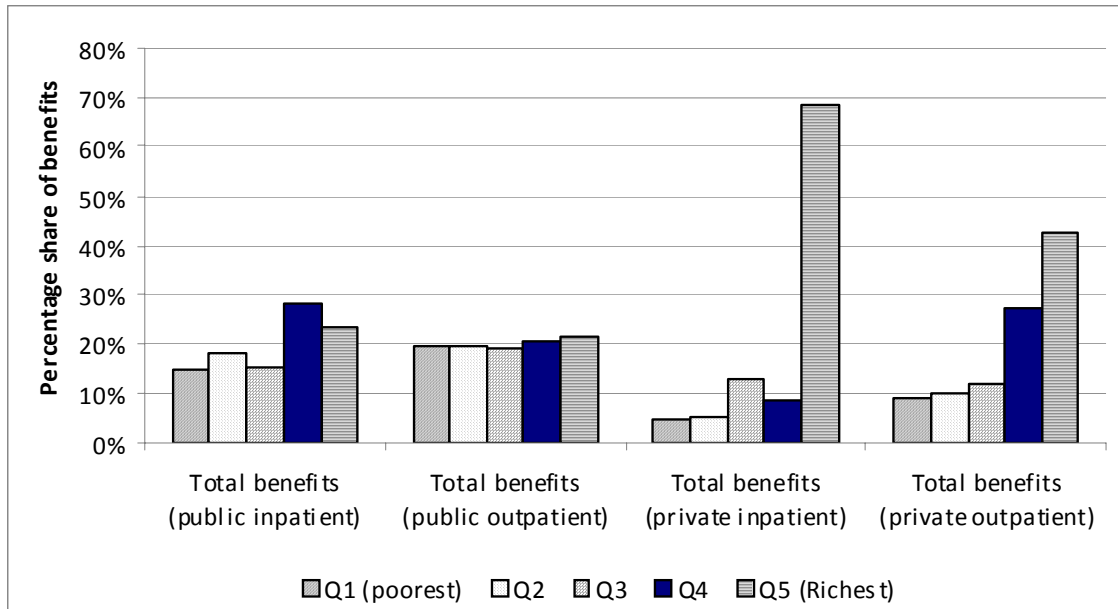
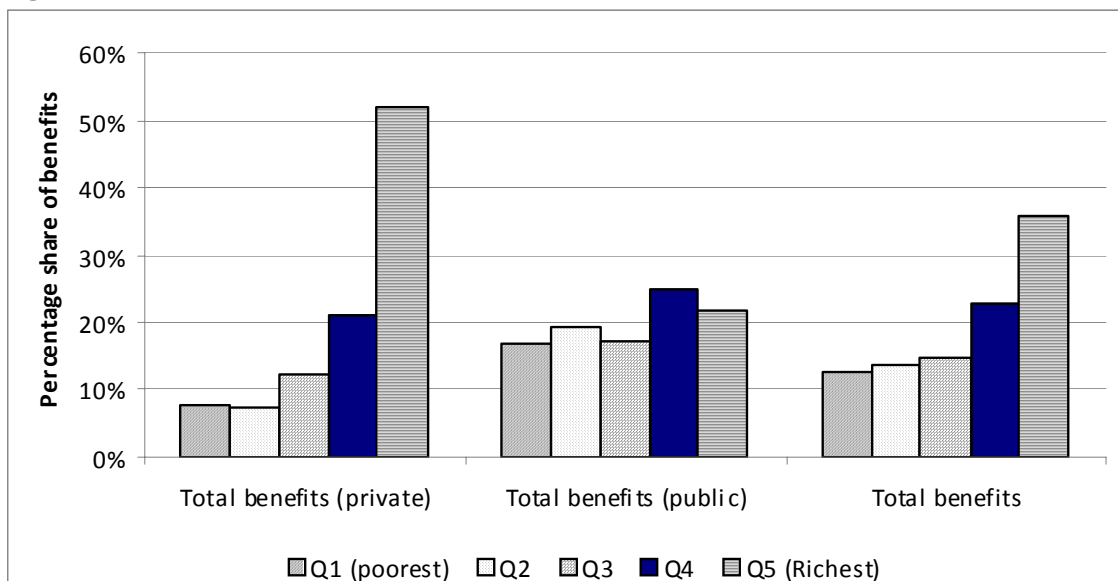


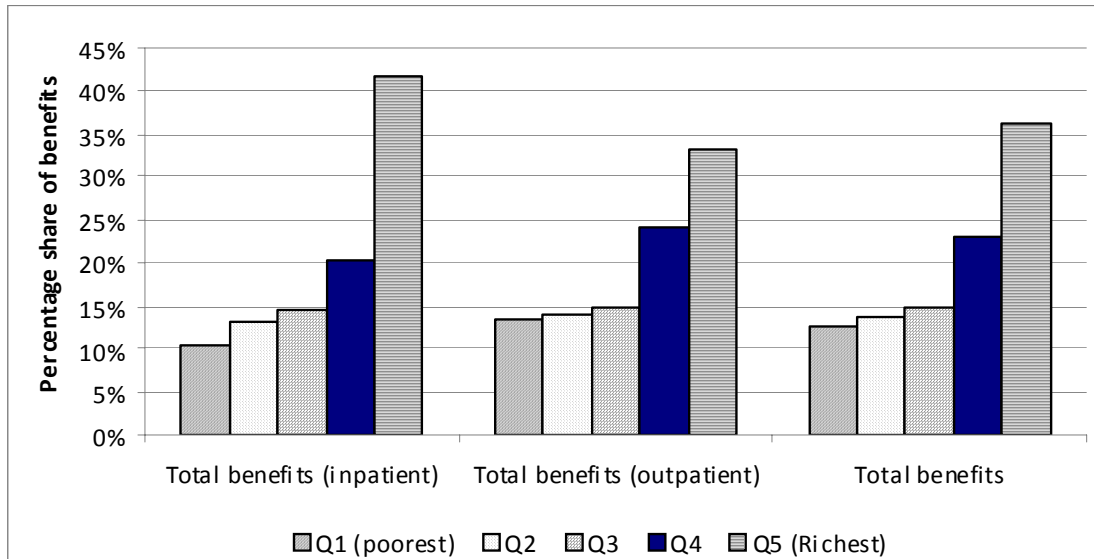
Figure 11 shows that the richest quintile benefits more from private sector services. Although benefits from public sector services are more evenly distributed across quintiles, they still favour the richer quintiles.

Figure 11: Distribution of total health care benefits in South Africa



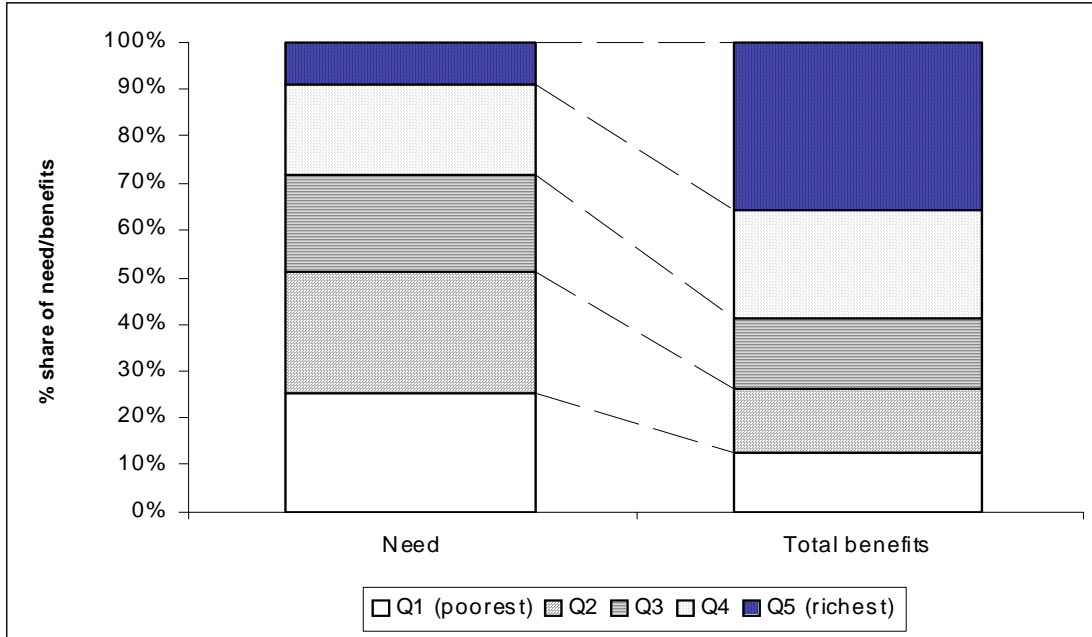
Similarly, Figure 12 shows that the greatest share of benefits from both inpatient and outpatient health services, for the public and private sectors combined, is firmly in favour of the richest households.

Figure 12: Distribution of total inpatient and outpatient health care benefits in South Africa



As indicated previously, the assessment of the equity of a particular benefit incidence pattern must be in relation to need for care. This means that the above reported pattern of the largest share of benefits accruing to the richest groups may in fact be equitable, if these groups bear a greater burden of ill-health or have a greater share of the need for care. Figure 13 shows that this is not the case; the share of benefits is not in line with the share of health need across socio-economic groups.

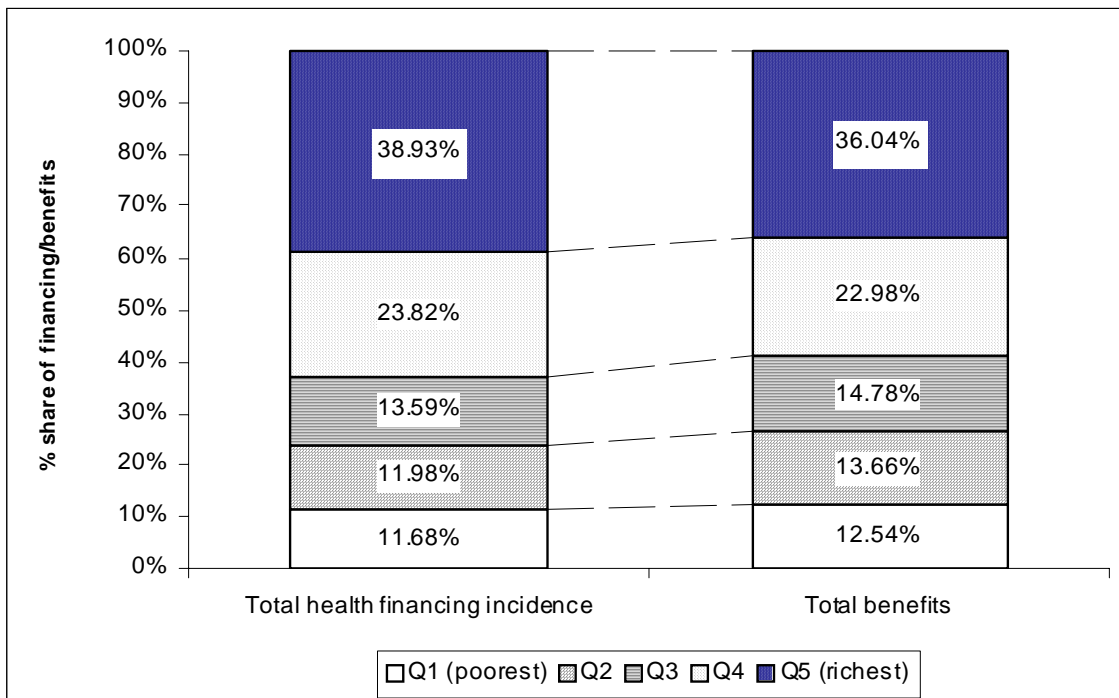
Figure 13: Comparing total benefit incidence with levels of health care need



3.3 Comparison of financing and benefit incidence analysis

It is also interesting to compare the percentage share of contributions to health care funding with the percentage share of health service benefits across socio-economic groups. Figure 14 shows that the distribution of funding contributions across socio-economic groups is very similar to the distribution of health care benefits; the poor receive slightly more benefit from health services than they contribute in funding

Figure 14: Comparison of total health care benefits and total health care financing incidence



4. DISCUSSION AND CONCLUSIONS

A very clear picture, of a lack of cross-subsidies in the overall health system, emerges from the results presented above. The financing incidence in South Africa is progressive, but the progressivity is largely due to the large share of financing attributable to medical scheme contributions, which are largely borne by the highest income groups. Indeed, the most 'progressive' component of health care financing in South Africa is that of private health insurance. However, as pointed out by researchers who produced similar findings in Asia (EQUITAP, 2005), the use of the term 'progressive' in this context can be misleading as although the richest bear a greater burden of financing, they are the only ones who benefit from private health insurance contributions.

This is clearly demonstrated in the benefit incidence results, where the share of health care benefits is heavily in favour of the richest groups. It is indisputable that benefit incidence in South Africa is inequitable; benefits from health care are not distributed according to the need for health care (see Figure 13). This suggests that the key source of inequity in the South African health system is the lack of adequate *risk* cross-subsidies. However, it could be argued that there is also a lack of income cross-subsidies, as the most 'progressive' and largest component of the health care financing system only benefits a small minority of the richest groups (i.e. the 14% of the population who are members of medical scheme members).

The only component of the current South African health system that could contribute to overall income and risk cross-subsidies is tax funding. However, the strongly progressive component of personal income tax is to some extent offset by the regressivity of excise taxes and fuel levies and the proportional impact of VAT. In addition, the benefits of tax funded health services are not equitably distributed in that the overall benefit incidence of public sector services is pro-rich, despite the fact that richer groups have a relatively small share of the need for health care. The only services that are pro-poor are public sector clinics and district hospital outpatient services. This reflects a similar pattern to many other low- and middle-income countries.

South Africa has a situation where 'you get what you pay for'. This confirms that both income and risk cross-subsidies, in the *overall* health system, are lacking. Although the rich bear a greater share of the burden of funding health services, they are gaining a very similar share of health care benefits as they are contributing (see Figure 14). In the context of the degree of income inequalities that exist in South Africa, the need to move to a health system where South Africans contribute according to ability-to-pay and benefit according to need for health care is long overdue.

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