Have pro-poor health policies improved the targeting of spending and the effective delivery of health care in South Africa?

RONELLE BURGER AND CHRISTELLE SWANEPOEL[1]

Stellenbosch Economic Working Papers: 12/06

KEYWORDS: FISCAL INCIDENCE, SOUTH AFRICA, HEALTH
JEL: H51, I18

RONELLE BURGER
DEPARTMENT OF ECONOMICS
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND, SOUTH AFRICA
E-MAIL: RBURGER@SUN.AC.ZA

CHRISTELLE SWANEPOEL
BUREAU FOR ECONOMIC RESEARCH
UNIVERSITY OF STELLENBOSCH
PRIVATE BAG X1, 7602
MATIELAND, SOUTH AFRICA
E-MAIL: SWAN@SUN.AC.ZA

UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

A WORKING PAPER OF THE DEPARTMENT OF ECONOMICS AND THE
BUREAU FOR ECONOMIC RESEARCH AT THE UNIVERSITY OF STELLENBOSCH

[1] The authors thank Mark Blecher and Servaas van der Berg for their comments on an earlier version of this paper. The authors however take responsibility for all remaining errors.

Have pro-poor health policies improved the targeting of spending and the effective delivery of health care in South Africa?

RONELLE BURGER AND CHRISTELLE SWANEPOEL[2]

ABSTRACT

Since 1994 there have been a number of radical changes in the public health care system in South Africa. Budgets have been reallocated, decision making was decentralised, the clinic network was expanded and user fees for primary health care were abolished. The paper examines how these recent changes have affected the incidence of spending and the accessibility and quality of health care.

The paper finds that between 1995 and 2003 there have been advances in the pro-poor spending incidence of both clinics and hospitals. The increased share of the health budget allocated to the more pro-poor clinic services has contributed further to the improvement in the targeting of overall health spending. Also, it appears that the elimination of user fees for clinics and the expansion of the clinic network have helped to make health services more affordable and geographically accessible to the poor and were associated with a notable rise in health service utilisation for individuals in the bottom two expenditure quintiles.

South Africa's spending on clinics and hospitals is well targeted and more progressive than other developing country public health systems. Unfortunately, it appears that to a considerable extent this result is driven by perceptions that services offered in public hospitals and clinics are of a low and variable quality. These perceptions seem to be encouraging most of those who can afford to pay more for health services to opt out of the public health system, thereby increasing the pro-poor incidence of public health spending. Complaints by users of public health facilities include long waiting times, staff rudeness and problems with drug availability. Dissatisfaction with health services is significantly higher in the public sector than in the private sector and the gap has expanded slightly over time. It is consequently not surprising that a substantial and increasing share of individuals – also including the very poorest – prefer to consult private providers.

Keywords: fiscal incidence, South Africa, health
JEL codes: H51, I18

[2] The authors thank Mark Blecher and Servaas van der Berg for their comments on an earlier version of this paper. The authors however take responsibility for all remaining errors.

Have pro-poor health policies improved the targeting of spending and the effective delivery of health care in South Africa?

1 Introduction

South Africa's apartheid health system was grossly ineffective. Private and public health spending combined was among the highest in the world at 8.4% of GDP, yet inequalities in provision, poor efficiency of spending and other factors impacting on health status meant that the country was not among the top 60 in terms of health status indicators (Goudge, 1999). Since the political transition in 1994, much effort has been invested into improving health outcomes of the poor. In an attempt to remove obstacles to access to health services, the government introduced free primary health care in 1996. Also, in terms of budget allocations there have been shifts to historically poorly endowed provinces and, within provinces, particularly to primary health care. Between 1995 and 2001 primary health care's share of public health spending has increased from 16 to 21%, enabling the construction of more than 700 clinics over this period.

The paper attempts to gauge the impact of these changes. The focus falls on changes in the incidence of South African public health spending. Have these budgetary shifts improved the pro-poor targeting of government health expenditure? Although the work is concerned primarily with inequities in health funding, it also tracks progress in the delivery of health services, investigating how the growing emphasis on primary health care has affected the poor. Have these changes succeeded in improving the quality and accessibility of health care for the poor?

To the knowledge of the authors, a comprehensive and detailed comparison of fiscal incidence trends has not been previously attempted for the South African public health system[3]. This lacuna is partly attributable to a lack of suitable data. The next section describes the limitations of the data sources available in detail and proposes an approach for using the available data sets to track trends in the incidence of the government's health spending.

2 Data Sources

2.1 Household surveys for estimating household utilisation

The empirical analysis of trends in the spending incidence of health services is constrained by the data sources available. For 1995, all the required information for calculating utilisation and user

[3] This research was part of a fiscal incidence study commissioned by the South African Treasury and is an extension of previous work on the topic with Servaas van der Berg.

spending is present in the 1995 Income and Expenditure survey merged with the October Household survey. It is however more difficult to generate a comparable fiscal incidence estimate for more recent years. None of the household surveys conducted post-1995 collected sufficient information on health utilisation, spending and household expenditure to allow the calculation of a comparable fiscal incidence estimate.

The 2000 Income and Expenditure Survey (IES) contains detailed information on household income and expenditure, but the complementary Labour Force Survey (LFS) provides no health service utilisation information. Information on health expenditure is inadequate because it does not track free service provision to the poor.[4] Unfortunately, the other surveys available for this period have their own limitations. The biannual Labour Force Surveys include no information on health utilisation. Some of the earlier October Household Surveys ask questions about the household's utlization of health services, but these surveys do not have sufficiently detailed information about household income and expenditure data to facilitate the construction of welfare quintiles. The same is true for the 1998 Demographic and Health Survey. The General Household Surveys (GHS) contain in-depth questions on health service utilisation, but income and expenditure variables are restricted to household salary income, which cannot be used to construct deciles, because 42% of the sample reported receiving no salary. The survey has a monthly expenditure variable, but it is captured as eight broad household expenditure categories. Also, the GHS provides no information that can be used to estimate average user fees for health visits.

To make optimal use of the available data sources, the authors construct a model to replicate the IES/LFS expenditure deciles in the GHS using the variables common to both surveys. Many previous studies have followed a similar route.[5] This process is often refered to as "out-of-sample imputation" (Alderman *et al*, 2003: 173). The main requirement is a sufficiently large set of corresponding variables that can be used in the modeling process. Also, it is most credible if surveys are of the same year. If the surveys are from different years one must be willing to make the additional assumption that parameter values for these explanatory variables in the model are constant over time. Finally, if the imputed variable is used to calculate some indicator of poverty or inequality etc. then the imprecision of the indicator must be acknowledged by also computing

[4] Furthermore, the reliability of the 2000 IES/LFS has been questioned by the research community. There are various reasons for concern, but most perturbing is perhaps the 38% gap between the income captured by national accounts and the household surveys. The deficiencies of the IES 2000 have been well documented and include both sampling and data coding problems See Simkins (2003), Poswell (2003) and Van der Berg (2005) for more details. Although there are several concerns about the reliability of the IES/LFS 2000, it has been shown that aggregated analysis of the data set yields robust and plausible results (Burger et al., 2003). Simkins (2004) outlines the process that was followed to clean and reweight the version of the Income and Expenditure survey that was used for this analysis.

[5] See Elbers *et al* (2000: 2-3) for a short literature review.

standard errors (Alderman *et al*, 2003; Elbers *et al*, 2003 and Demombynes *et al*, 2002: 2-3).

For this study household expenditure is imputed in order to calculate per capita expenditure and hence expenditure deciles in the 2003 GHS using the 2000 IES/LFS. These surveys share enough variables to facilitate the modeling. However, since the survey years do not correspond, we have to assume constant parameters over time.[6] Finally, since the imputed values are only employed to construct expenditure deciles in the GHS, the simulation of standard errors does not apply to our modeling. Only variables that were generated through identical questions[7] and response categories in the two sets of surveys were included in the list of possible explanatory variables for this model.[8] The main criterion used for choosing between these different modelling approaches[9] is the proportion of households correctly predicted per decile. For our purposes it is also vital that misallocated observations should be located as near as possible to the correct decile, preferably in neighbouring deciles. In earlier elimination rounds, models are ranked using the adjusted R-squared values.

Based on these criteria, a series of expenditure models – matching each of the expenditure categories in GHS 2003 – is selected as the best model. Although prediction is the ultimate aim for these models, it is encouraging to note that the coefficient signs do not contradict economic intuition. The overall correlation between the estimated and actual per capita household expenditure is 0.66.[10] Table 1 in the Appendix below shows the overlap between the predicted and actual decile allocation. The clean diagonal trend for the deciles is attributed partly to a procedure that assigned the maximum (minimum) category value to predicted values that were above (below) the boundaries of each of the eight expenditure categories.

The explanatory power is low for some of the household expenditure models and this causes

[6] Thus household expenditure was estimated in GHS 2003 with coefficients as modeled in IES/LFS 2000. The required adjustments were made for inflation between 2000 and 2003.

[7] Variables were eliminated when the phrasing of questions or answer categories were not comparable.

[8] The set of variables available for model estimation falls into six categories. The first relates to income sources and includes estimated salary income, whether individuals in the household receive any government grants, and information about any other form of financial support. The second captures the structure of the household, e.g. household size, dependents etc. The third contains geographical variables, such as rural and provincial dummies. The fourth describes the characteristics of the household head (e.g. age, literacy, educational attainment, race and gender). The fifth and sixth categories are private assets and community resources. For each of these last two categories the variables were combined to calculate an asset index using principal component analysis. The calculated asset indices were added to the list of variables available along with the individual variables from the categories.

[9] In the model selection process both income and expenditure models were considered. The options available to us included models for non-salary household or individual income; total household or individual income or total household or individual expenditure. Another option was to use the eight household expenditure categories available in the GHS 2003 to its full advantage by devising a separate model for each of these expenditure categories.

[10] Note that the model predicts household expenditure. The per capita conversion occurs after the model has generated the predicted values.

clustering among predictions, especially at the bottom of the distribution. This is viewed as the main shortcoming of this approach. Despite this, estimates appear to be reasonably robust[11] and the construction of the expenditure quintiles enables more sophisticated analysis of the rich selection of service delivery variables in the GHS 2003.

The analysis does not review fiscal incidence prior to 1995. The Project for Statistics on Living Standards and Development survey (PSLSD) for 1993 has previously been used for such work. However, the survey is not considered to be well-suited for fiscal incidence analysis as it does not specify whether the individual consulted a public or private provider. The structural changes that occurred in South Africa in 1994 with the first democratic elections and the subsequent change of government and post-1994 with the reorganisation of the public health system would encumber attempts to use post-1994 surveys to construct a model of individual behaviour pre-1994. Where survey questions are deemed sufficiently comparable, the PSLSD data was included in cross-tabulations examining trends in the accessibility of health services.

2.2 Administrative data for estimating unit costs

Despite hospital use being considerably lower than that of clinics, expenditure on hospitals is a multiple of expenditure on clinics. Facility level administrative data from 2002/3 show that the expenditure on hospitals was six times higher than spending on clinics. Expenditure on hospitals and clinics represented 82% of the total health budget (Treasury, 2006). This justifies the focus on public spending on hospitals and clinics only.

The authors examine the data for evidence of an anti-poor bias in the unit costs of these services by examining administrative data. (Regrettably, the government only started to collect these data on a sufficiently disaggregated level in 2001, thus it was not possible to identify any changes in the anti-poor bias of unit costs over time.) Due to recent introduction of these additional reporting requirements, the Department of Health's facility-level expenditure data base contains a number of seeming discrepancies and irregularities. However, taken as a whole, the data appears reliable enough to provide reasonably credible estimates for the aggregated analysis envisaged.[12]

3 Methodology

An examination of fiscal incidence requires an estimation of the proportion of overall spending

[11] The user fee and utilisation estimates stay more or less then same when using alternative methods to estimate expenditure quintiles

[12] With a few exceptions, the Department has preferred to not amend or challenge the expenditure figures reported by the provinces.

that specific subsets of the population receive. Demery (2003) explains that the proportion of spending allocated to a specific subgroup can be calculated using the following formula:

$$x_j = \sum_{k=1}^{n} \sum_{i=1}^{2} \frac{H_{ijk}}{H_i} \left[\frac{S_{ik}}{S} \right]$$

where x_j is the share of total government spending that benefits group *j*, *S* refers to the government's health services subsidy and *H* represents the number of visits to public health facilities. The subscripts *i* and *k* denote the type of service (e.g. clinics or hospitals) and the region respectively. By introducing the *k* subscript, the unit cost of a service is allowed to vary by region.

As is evident from the formula, the incidence calculation for a specific health service is driven by two factors: utilisation share per region and per subgroup and the share of subsidy for the region. With household surveys it is usually relatively straightforward to calculate the share of utilisation. It is however not as easy to retrieve an estimate for the share of spending allocated to a region for a specific service and where individuals pay user fees, the computation becomes more involved. To calculate the government subsidy, revenue collected from user fees will need to be subtracted from government spending.

Demery (2003) notes that the share of spending received by a subgroup cannot be interpreted as indicative of the benefit beneficiaries in this group receive unless an additional assumption is made. It is required to assume that the cost of providing the service is indicative of the value that the beneficiaries obtain from the service. The justification for this assumption is that the cost of the service represents the amount by which household income would have to increase if the household wanted to pay for this service. However, there is an implicit supposition in this statement that does not seem realistic. If given additional funds (sufficient to cover the cost of this service), it is not clear that the household would have wanted to spend the money in this way. Firstly, due to the inefficiencies of the public sector, the cost of service provision may often far exceed the market value of such a service. It appears naïve to believe that there is a satisfactory matching of demand and supply in the absence of any market mechanism – even if only on an average level. In the last section of this paper, this hypothesis will be examined critically by investigating the satisfaction of users, the quality of public service provision and the preferences individuals reveal through their choices between public and private providers.

4 How equitable is spending on public hospitals and clinics?

4.1 The distribution of unit costs

To assess the incidence of health spending, it is necessary to examine how the average cost of providing hospital services and clinic services differs by region. The authors opt against using provincial level estimates of expenditure on clinics and hospitals, because these totals include items that can distort the unit cost calculations, such as once-off projects requiring large capital expenditure or expenditure on specialised hospitals that are also used by other regions. Instead, regional average costs were calculated by matching facility-level data on recurrent expenditure for 2002/3 with utilisation statistics for the same year.

For hospital services, the facility's recurrent hospital expenditure[13] reported by the provinces was matched to the National Hospital data base's inpatient day numbers for the facility (for the same year) to compute a unit cost for each hospital.[14] Outpatient days were not included in the calculation because there were too many missing values for this variable. An average unit cost is calculated for each province, using the total number of inpatients visiting each facility as a weighting factor. Specialised hospitals were excluded from the sample for the calculation of the average.

When the provincial average cost estimates are used to compute an average cost per quintile, there is some indication that the average cost of hospital services is lower for the poorer quintiles. The difference is, however, not large. When these regional cost averages are applied to the 2003 GHS, the average unit cost estimates for the top quintile is 11.03% higher than that for the lowest per capita household expenditure quintile and not statistically significant. There are concerns regarding the reliability of these estimates due to the small cell sizes of the proportions used for these calculations[15] and the large standard deviations of the regional cost means. Given the relatively low observed variation in the average unit cost across quintiles when taking regional difference into account, there is no evidence to warrant assuming anything other than equal unit cost across regions for public hospitals.

In the case of clinics, the expenditure data base is more incomplete, allowing successful facility-level matching for only four of the nine provinces. Among these four provinces there is little

[13] Here actual recurrent expenditure was estimated by excluding any expenditure identified as capital expenditure or expenditure on land and buildings from the total. 'Actual' is used here to distinguish what was spent by the institution from budgeted expenditure.

[14] The matching was manual as the databases were not designed for this purpose. Although there were 51 cases where utilisation information could not be located for hospitals with expenditure information, these items represent only 5% of total hospital expenditure.

[15] The cell sizes of the proportions are small because illness is a relatively rare occurrence. The observations are then further reduced because only a fraction of those who are ill opt for public health facilities. This already small sample is then divided into 45 smaller cells when calculating the proportion of users per province for each expenditure quintile.

evidence of a systematic regional bias in the average unit cost. To assess whether the regional variations in unit costs result in an anti-poor bias in unit costs, the authors use the estimates generated for the four provinces and allocate the weighted average to the remaining five provinces. These estimates reveal little evidence of an anti-poor bias in unit costs. There is a mere 2.29% difference (not statistically significant) between the estimated average cost per visit for the lowest and the highest per capita household expenditure quintile. Motivated by these findings, the authors opt to work with equal regional unit cost for public clinics.[16]

4.2 Utilisation of Public Health services

Before reporting the observed trends, it is important to note that the available household surveys have limitations. They cannot provide a comprehensive and unbiased account of hospital and clinic utilisation due to at least two shortcomings. Firstly, hospitals are excluded from their sampling and thus their surveys are likely to systematically underrepresent hospital utilisation. Secondly, the surveys only enquire about health consultations resulting from illness and hence overlook preventative care as well as health visits by pregnant mothers. It is not clear whether the underestimation of utilisation resulting from these omissions, will be unbiased with respect to expenditure quintiles.

Table 1 depicts changes in the five per capita household expenditure quintiles' share of utilisation of public clinics and hospitals between 1995 and 2003. In both periods hospital utilisation is notably lower in the bottom expenditure quintile. It is also clear that the top household per capita expenditure quintile's utilisation of public hospital and clinics is considerably smaller than the shares of the rest of the household expenditure quintiles. Significantly, it appears that there has been a decline in the top household expenditure quintile's share of utilisation of both public clinics and hospitals between 1993 and 2003. As expected, individuals in the top expenditure quintile are more likely to use public hospitals than clinics.

TABLE 1: Utilisation share of public clinics and hospital by per capita household expenditure quintile, 1995 – 2003

Per capita household expenditure quintiles	Hospitals		Clinics	
	1995	**2003**	**1995**	**2003**
1	16.1	16.3	19.9	20.3
2	20.1	17.8	23.3	22.1
3	21.5	22.6	22.7	25.8
4	25.7	28.3	22.3	23.6
5	16.6	15.1	11.8	8.2

[16] Due to the association between low spending and low utilisation rates underspending in poor provinces may not show up in the unit cost averages. In areas with lower government spending the quality of the service can be inferior and travelling time to public health facilities may be longer, which is expected to discourage use.

Table 2 shows clinic utilisation as a proportion of the utilisation of all public health facilities for the five per capita household expenditure quintiles in 1995 and 2003. There has been a steep rise in clinic visits, following the introduction of free primary health care and the expansion of clinics during this period. Although the district health system is possibly still not functioning as well as it could, it appears that some progress has been made in using primary health care services to lighten the burden of hospitals.

TABLE 2: Clinic utilisation as percentage of public health utilisation by per capita household expenditure quintile, 1995 – 2003		
Per capita household expenditure quintiles	**1995**	**2003**
1	40.6	70.6
2	39.5	71.1
3	36.8	69.1
4	32.0	61.9
5	25.0	50.4

Table 3 displays the proportion of health care utilisation captured by private providers in 1995 and 2003 across per capita household expenditure quintiles. The period 1995 to 2003 saw a notable increase in private health care providers' share of utilisation in each per capita expenditure quintile. Table 3 shows that the utilisation of public health care services varies according to the income level of the individual with most of the poorer families opting for public providers, while the more affluent tend to prefer private health services. The observed increase in private consultations as share of health visits among the poorer households is unexpected.

TABLE 3: Percentage of health care utilisation provided by private suppliers by per capita household expenditure quintile, 1995 - 2003		
Per capita household expenditure quintiles	**1995**	**2003**
1	20.9	24.5
2	22.6	28.2
3	28.5	28.1
4	36.6	39.6
5	65.1	75.6

Table 4 shows that reported illness has been reasonably stable over the period. Reported illness and injury are markedly higher for the top per capita expenditure quintiles. This pattern could reflect the significance of individual perception in answering such a question. Demery (2003) and Lindelow (2005) also find higher reported illness among the richer groups in their research on health services in Ghana and Mozambique respectively. Demery (2003) refers to this as "perception bias". It is likely that the higher incidence of reported illness and injury among richer individuals can be attributed to a different perception of the severity of discomfort and ill-health that an individual has to endure to be called ill or injured. In support of such an interpretation, we find that a much higher proportion of the upper expenditure quintiles do not consult doctors because they did not think that their illness or injury was serious enough to require a health

consultation. If these all cases where respondents did not consult a health worker because they did not deem it necessary, are omitted from the cross-tabulation below, the incidence of reported illness is somewhat more even for the five expenditure groups. Given the possibly strong role of perception in determining the answer to this question, it may be imprudent to attach too much weight to these patterns.

As expected, more affluent individuals are more likely to consult a health worker when they are ill or injured. These income associated patterns become considerably starker when individuals who claim to be ill or injured, but report that their illness or injury is not serious enough to warrant consulting a health worker, are excluded from the sample. Between 1995 and 2003 there is a rise in the proportion of the bottom two expenditure quintiles that seek care when ill or injured.

TABLE 4: Prevalence of reported illness and injury over the last month by per capita household expenditure quintile, 1995 – 2003

Per capita household expenditure quintiles	1995	2003
1	7.2	8.1
2	8.5	9.1
3	9.3	11.5
4	11.4	13.5
5	12.1	13.7

TABLE 5: Proportion of the ill that reported consulting a health worker over the last month by per capita household expenditure quintile, 1995 – 2003		
Per capita household expenditure quintiles	**1995**	**2003**
1	78.3	83.5
2	80.4	83.4
3	82.1	82.0
4	86.5	83.0
5	87.9	86.5

The progressive fee structure of public health services is evident from Table 6: a markedly smaller proportion of poor individuals report paying for their consultation with a health worker. Payment has declined sharply between 1995 and 2003. As expected, the trend is most noticeable for clinics, where user fees were eliminated in 1996. Due to apparent inconsistencies in the way that medical aid members interpreted this question,[17] it is necessary to assume that all medical aid members paid for their health visits. For the same reason medical aid members are excluded in the estimation of average costs.[18] (The approach used for deriving average user fee estimates is

[17] In 2003 most medical aid members reported that they paid for their health care visit, while very few medical aid members indicated that they paid for their visits in 1995. Due to private suppliers' frustrations with late or no payment by medical aid schemes, they started to demand that their clients pay them directly and then claim the expenses back from their medical aid company. This change may have affected the way medical aid members answer this question.

[18] The estimates for user fees for public hospitals and clinics in 1995 and 2003 were largely based on the detailed household spending data in the IES 1995 and 2000. All prices reported here were converted to 2000 prices by adjusting for inflation. Estimates for user fees in 2003 were based on 2000 data by assuming that user fees were constant between 2000 and 2003 – apart for inflation. The Income and Expenditure survey in 1995 and 2000 asked respondents to estimate their household's annual expenditure on a number of items, namely "Flat rate in respect of services and medicine obtained at hospital/clinic", "Doctors, dentists, psychiatrists, specialists, opticians, nurses, homeopaths, paediatricians, etc." and "Hospitals, nursing-homes, clinics, etc. including ambulance services". In 1995 expenditure on public hospitals was identified by linking the IES to the OHS (the surveys were designed for this) and using reported payment for the use of a public hospital as a filter. For each per capita expenditure quintile, the annual facility-relevant spending on these three items for all those who reported using the facility and paying for services received in a public hospital in the past month (excluding medical aid households as mentioned previously), were added. In cases where a household utilised more than one health service in the past month (2.15% of cases), only half of the expenditure was allocated to the total. For each quintile, the total health expenditure for all non-medical aid households for which at least one of its members reported a paid-for visit to a public hospital is then divided by the estimated total paid hospital visits for non-medical households for the year. This derived cost figure may overrepresent the actual average cost because the expenditure total for the household may also include expenditure on visits to other health facilities during the year (especially for clinics where payments are expected to be smaller). To compute the average user fee for the quintile, the derived average payment for those who reported paying is multiplied by the proportion of the quintile's public hospitals visitors who reported paying for their visit (assuming that all medical aid members paid). It is clear that this method is not ideal, but it is likely to provide some indication of changes in user fees over time. It is important to note that user fees have an almost negligible influence on the fiscal incidence calculation. The calculation for the 2000 IES/LFS was more involved. The 2000 IES/LFS contained no information on health service utilisation, so it was assumed that in terms of spending, the ratio of expenditure on public hospitals to expenditure on all health services remained the same in each of these categories. Again, given that the user fees have such a small influence on the overall calculation, these assumptions are of less concern than they would have been otherwise. The same strategy was applied to

not discussed in the main text of the paper because it has a negligible influence on the incidence estimates.) The small increase in the average payment for hospital use is due to a modest rise in the mean expenditure of those who reported paying for public hospital visits. The average payment associated with a visit to a public clinic has stayed level due to an increase in the estimated average payment by those who report paying for their visits to public clinics. It is likely that this trend may be an artefact of the approach used to estimate the user fees.

TABLE 6: Percentage of users that paid for their visit to public clinics and hospitals by per capita household expenditure quintile, 1995 - 2003

Per capita household expenditure quintiles	Hospitals		Clinics	
	1995	2003	1995	2003
1	85.7	61.3	60.7	8.1
2	84.3	55.6	63.0	6.6
3	84.5	60.6	68.7	10.2
4	85.6	61.1	76.3	12.1
5	92.5	69.3	86.9	23.2

TABLE 7: Average payment in South African Rand (2000 prices) for visit to public clinics and hospitals by per capita household expenditure quintile, 1995 – 2003,

Per capita household expenditure quintiles	Hospitals		Clinics	
	1995	2003	1995	2003
1	1.75	3.92	1.01	1.00
2	2.10	6.75	1.49	1.64
3	3.77	9.23	2.31	2.10
4	5.18	8.56	2.21	1.45
5	22.80	26.06	15.86	6.12

4.3 Distribution of health services subsidies

As mentioned above, user fees are often trivially small compared to the costs associated with delivering health services and consequently – as can be seen from Tables 8 to 11[19] – it has little substantial impact on the incidence of health spending. In fact, in all cases the share of the subsidy is virtually identical to the utilisation share. Subsidy allocation for clinics favours the poor. The top expenditure quintile receives a considerably smaller share of government spending on health services due to their lower utilisation of these services. Although the shares of subsidy and utilisation are somewhat lower for the per capita household expenditure quintiles at the bottom, the variation of the shares of subsidy and utilisation for the bottom four expenditure groups (thus excluding the top expenditure quintile) is within a reasonably narrow band.

---

generate user fee estimates for public clinics.

[19] It is encouraging that reasonably similar patterns are obtained when using alternative welfare indicators to examine spending incidence in 2003. The results are not an artefact of the modelling process used.

TABLE 8: Share of subsidy, share of utilisation and the average subsidy per clinic visit by per capita household expenditure quintile in 1995			
Per capita household expenditure quintiles	**Share of utilisation**	**Proportion of subsidy**	**Average subsidy per capita (in South Africa Rand, 2000 prices)**
1	19.9	20.0	10.02
2	23.3	23.4	11.75
3	22.7	22.8	11.44
4	22.3	22.3	11.20
5	11.8	11.5	5.76

TABLE 9: Share of subsidy, share of utilisation and the average subsidy per clinic visit by per capita household expenditure quintile in 2003			
Per capita household expenditure quintiles	**Share of utilisation**	**Proportion of subsidy**	**Average subsidy per capita (in South Africa Rand, 2000 prices)**
1	20.3	20.3	18.06
2	22.1	22.2	19.69
3	25.8	25.8	22.89
4	23.6	23.6	21.01
5	8.2	8.1	7.21

TABLE 10: Share of subsidy, share of utilisation and the average subsidy per hospital visit by per capita household expenditure quintile in 1995			
Per capita household expenditure quintiles	**Share of utilisation**	**Proportion of subsidy**	**Average subsidy per capita (in South Africa Rand, 2000 prices)**
1	16.1	16.1	36.30
2	20.1	20.1	45.31
3	21.5	21.6	48.52
4	25.7	25.8	57.99
5	16.6	16.4	36.97

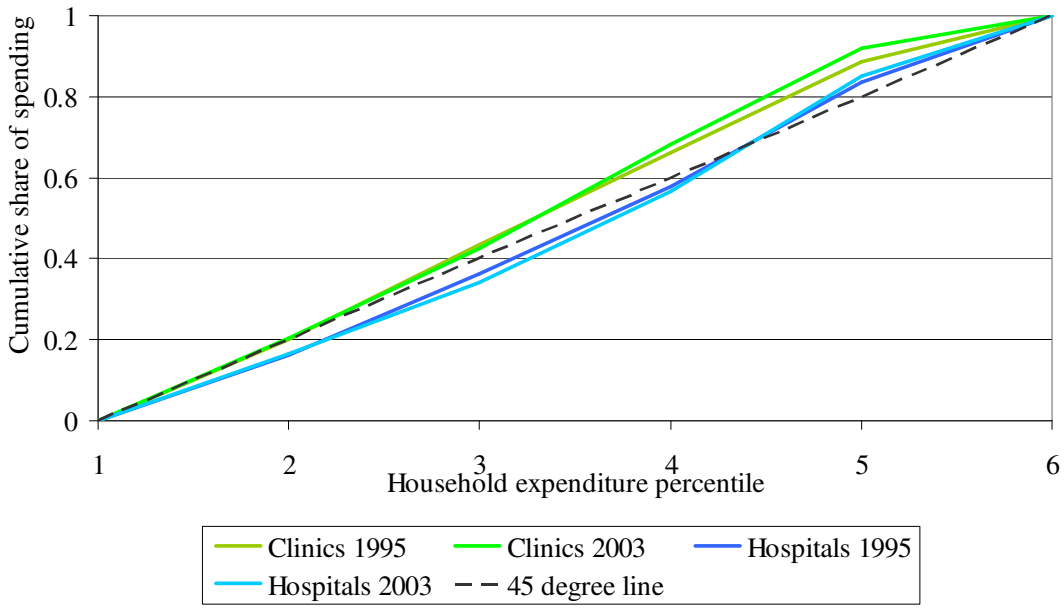
TABLE 11: Share of subsidy, share of utilisation and the average subsidy per hospital visit by per capita household expenditure quintile in 2003			
Per capita household expenditure quintiles	**Share of utilisation**	**Proportion of subsidy**	**Average subsidy per capita (in South Africa Rand, 2000 prices)**
1	16.3	16.3	51.05
2	17.8	17.8	55.65
3	22.6	22.6	70.51
4	28.3	28.3	88.43
5	15.1	15.0	46.80

The concentration curves below suggest that the government's expenditure on clinics have become more pro-poor between 1995 and 2003 while the incidence of hospitals stayed more or less the same. Unsurprisingly, expenditure on clinics is shown to be more pro-poor than spending on hospitals. South Africa's public health system appears to perform well compared to other developing countries – based on the concentration coefficients and the share of subsidy received by the lowest quintile cited in Yaqub (1999), the South African public health system is more pro-poor than any of the developing countries for which Yaqub (1999) had data.

Although the band of variation for the share of subsidy of the bottom four per capita expenditure quintiles is remarkably low, there is little evidence of effective targeting in this section of the distribution. By and large the pro-poor incidence of spending is driven by the substantially smaller share of subsidy received by the most affluent quintile due to their lower utilisation of public clinics and hospitals. Much of the observed pro-poor incidence is hence achieved not by well-targeted government spending, but by the perceived low quality of health care driving away many of those who can afford to use private providers.[20] The reasonably high (and increasing) levels of private provider utilisation among the poorest may be a symptom of the same problem.

[20] Havemann and Van der Berg (2003) make similar observations regarding the government's health srvices in their work on the demand for health.

FIGURE 1: Incidence of government spending on hospitals and clinics, 1995 to 2003



The next section investigates where efforts to improve access to health care for the poor has made a difference. Clearly, pro-poor spending means very little if the expenditure channelled to lower income groups is not translated into outputs and outcomes that can benefit the poor.

5 Access and quality of health services

The analysis of changes in service delivery outputs and outcomes is constrained by the data sources available. Only the 1993 PSLSD, the 1995 OHS/IES and the 2000 LFS/IES have welfare indicators that facilitate the construction of welfare quintiles. Using a model generated in the 2000 LFS/IES to allocate households to expenditure quintiles, the detailed service delivery output and outcomes data in the GHS can also be used for these comparisons.

Table 12 indicates that there has been progress in making health services more affordable for the poor. The affordability ratio expresses the cost associated with a visit to a health facility (including user fees and medicine) as a share of the household's annual per capita non-food expenditure.[21] According to Demery (2003) any proportion exceeding 5% is regarded as too

[21] The table reports the average affordability ratios for each quintile. The affordability ratios were computed by dividing the average cost per visit by the household's annual per capita non-food expenditure. An average cost per health facility visit was estimated for each quintile based on the payments reported by individuals who visited a health worker and did not belong to a medical aid scheme.

high.[22] The average ratios for the bottom two expenditure quintiles are both above this benchmark in 1993. By 1995 the situation had improved considerably for the poor so that all expenditure quintiles were now well below the 5% benchmark. Despite these signs of progress, affordability remains a concern for many poor households. It is the most frequently cited reason for not consulting a health worker among the bottom expenditure quintile.[23] The continued concerns regarding costs after the introduction of free primary health care could be attributable to the limited geographical coverage of clinics or alternatively, suggest that other costs associated with a visit to the health facility (e.g. travel costs or loss of income) are prohibitively expensive for some of the poorest households.

TABLE 12: Affordability ratios by per capita household expenditure quintile, 1993 - 2000

Per capita household expenditure quintiles	1993	1995	2000
1	9.9	1.5	2.1
2	6.1	0.9	1.7
3	2.9	0.7	1.3
4	2.2	0.5	0.9
5	2.5	0.9	1.0

[22] While there is general agreement on any ratio above 5 being too high, there is much controversy around what affordability ratio is deemed to be low enough, including suggestions that it may not be sensible to apply the same benchmark to all welfare quintiles.

[23] This is not shown in the table. The second most frequently cited reason for this group is that it was not required (33.4%).

TABLE 13: Percentage of those who did not seek health care when ill who cited expense as concern by per capita household expenditure quintile, 1993 - 2003		
Per capita household expenditure quintiles	**1993**	**2003**
1	52.3	42.2
2	43.4	43.5
3	41.1	39.0
4	32.9	31.0
5	14.7	18.5

According to Table 14, there has been a vast improvement in the poor's physical access to health facilities. The proportion of those in the bottom expenditure quintile that lived within 30 minutes of travel from the nearest clinic increased from 35% in 1993 to 62% in 2003. Significantly, the proportion of this group that lived more than an hour's travel time away from a clinic dropped from above 29% to 15% over the same time period. There has not been a dramatic change in the proportion of this bottom expenditure quintile that lives more than 30 minutes travel from a hospital, but there has been a sharp decline in the proportion of this impoverished group that had to travel more than an hour to the closest hospital.

TABLE 14: Percentage of each household expenditure per capita quintile with travel time to clinics and hospitals exceeding 30 minutes, 1993 - 2003								
Per capita household expenditure quintiles	**1993**				**2003**			
	Clinic		**Hospitals**		**Clinic**		**Hospitals**	
	30 - 59 min	**60 min or more**	**30 - 59 min**	**60 min or more**	**30 - 59 min**	**60 min or more**	**30 - 59 min**	**60 min or more**
1	36.1	28.7	25.2	50.5	22.5	15.2	50.0	20.0
2	35.2	22.2	27.2	51.9	28.7	7.3	40.4	23.9
3	31.6	18.2	33.7	36.0	29.9	9.5	43.5	16.2
4	24.2	13.9	36.2	25.4	21.1	6.2	39.6	12.6
5	27.3	13.9	33.8	14.5	14.4	5.0	20.8	3.6
Total	**31.2**	**19.6**	**31.6**	**36.7**	**24.2**	**8.7**	**37.3**	**13.9**

The household surveys show that users of public health facilities (15 years and older) generally have lower levels of satisfaction than users of private facilities. Users of public health facilities were significantly more likely to complain about long waiting times, unavailable drugs, incorrect diagnosis and rude staff[24], but users of private facilities were more likely to be dissatisfied with the price of the service. Although the levels of satisfaction are relatively high, it is concerning that

[24] Perceptions that public providers are more prone to incorrect diagnosis and ineffective treatments do not emerge as an important factor here, but previous studies have shown that access to doctors and the perceived higher quality of diagnosis that private clinics offer were important motivating factors for opting to pay R50 to R100 for a private clinic when public clinics were free (Palmer, 1999; Palmer et al., 2002; Schneider and Palmer, 2002).

the gap between public and private provider's levels of user satisfaction appears to have grown between 1998 and 2003.[25]

TABLE 15: Comparing the satisfaction of patients treated by public and private providers, 1998 - 2003		
	1998	**2003**
Public hospital or clinic	88.31	81.78
Private hospital or clinic	93.26	92.22

According to Table 16 the most common complaints of users of public health facilities were long waiting times, problems with the availability of drugs and rude staff. This may help to explain why (as Table 3 reported) a substantial and increasing share of the poorest households prefer to pay for private consultations despite having access to free consultations at public clinics.

TABLE 16: Complaints of users of public health facilities, 2003	
Long waiting times	37.61
Drugs not available	14.08
Rude staff or turned away	12.52
Opening times not convenient	7.69
Facilities not clean	6.64
Too expensive	3.14
Incorrect diagnosis	2.41

6 Conclusion

South Africa's public health spending has become more pro-poor between 1995 and 2003. Since the democratic transition, there have also been advances in the affordability of health services and poor households' geographical access to health services.

Public health spending is progressive. Poorer individuals pay lower hospital and clinic fees and make more frequent use of public hospitals and clinics than those at the top of the expenditure scale, who often prefer to use private hospitals. Unfortunately, to a considerable extent this pro-poor tendency of spending appears to be at least partly attributable to the perceived poor quality of services offered in public hospitals and clinics, which has persuaded many of those who can afford to pay more for health services to opt out of the public health system. Complaints by users of public health facilities include long waiting times, staff rudeness and problems with drug availability. Dissatisfaction with health services is significantly higher in the public sector than in

[25] The only other survey that asked about satisfaction with health services was the DHS in 1998. Unfortunately there is no earlier survey available for comparison.

the private sector and the gap has expanded somewhat over time. Despite the higher cost associated with private health services, a considerable and growing portion of individuals – including also those from very poor households – is consulting private providers.

Appendix Table 1:

TABLE : Expenditure model predictive capacity											
Deciles of	Predicted expenditure per capita										
Expenditure per capita	1	2	3	4	5	6	7	8	9	10	Total
1	**85.9%**	**13.4%**	0.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
2	**13.9%**	**69.4%**	**16.0%**	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
3	0.1%	**17.1%**	**62.5%**	**19.3%**	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
4	0.0%	0.0%	**21.1%**	**59.0%**	**19.5%**	0.4%	0.0%	0.0%	0.0%	0.0%	100%
5	0.0%	0.0%	0.1%	**19.1%**	**62.4%**	**17.7%**	0.7%	0.0%	0.0%	0.0%	100%
6	0.0%	0.0%	0.0%	1.2%	**17.0%**	**61.2%**	**20.3%**	0.3%	0.0%	0.0%	100%
7	0.0%	0.0%	0.0%	0.0%	0.1%	**20.6%**	**62.0%**	**17.2%**	0.0%	0.0%	100%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**17.0%**	**72.7%**	**10.3%**	0.0%	100%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**10.2%**	**79.9%**	**9.9%**	100%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**9.5%**	**90.5%**	100%

References

Alderman, H., M. Babita, G. Demombynes, N. Makhatha & B. Özler. 2003. How Low Can You Go? Combining Census and Survey Data for Mapping Poverty in South Africa. *Journal of African Economies* 11(2), 169-200

Blecher, M. 2006. Calculations on functional expenditure for the health budget. Processed.

Burger, R, Burger, RP, Nieftagodien, S & Van der Berg, S. 2004. Consumption patterns of South Africa's rising black middle-class: Correcting for measurement errors. Paper delivered at the conference of the Centre for the Study of African Economies (CSAE) on *Poverty reduction, growth and human development in Africa*. Oxford, March 2004.

Castro-Leal, F. 1999. *The impact of public health spending on poverty and inequality in South Africa*. South Africa: Poverty and Inequality Informal Discussion Paper Series. Washington, D.C.: World Bank

Demery, L. 2003. Analyzing the Incidence of Public Spending. In Bourguignon, F. and L. Pereira da Silva (eds.) *The Impact of Economic Policies on Poverty and Income Distribution. Evaluation Techniques and Tools*. New York: Oxford University Press.

Demombynes, G., C. Elbers, J. Lanjouw, P. Lanjouw, J. Mistiaen & B. Özler. 2002. *Producing an Improved Geographic Profile of Poverty, Methodology and Evidence from Three Developing Countries*. UN-WIDER Discussion Paper No. 2002/39. Helsinki.

Elbers, C., J. O. Lanjouw & P. Lanjouw. 2000. *Welfare in Villages and Towns*. Tinbergen Institute Discussion Paper TI 2000-029/2. Amsterdam.

Elbers, C., J. O. Lanjouw & P. Lanjouw. 2003. Micro-Level Estimation of Poverty and Inequality. *Econometrica* 71(1), 355-364

Goudge, J. 1999. The Public-Private mix. In Health Systems Trust, *South African Health Review 1999*. Health Systems Trust: Durban.

Havemann, R & Van der Berg, S. 2003. The demand for health care in South Africa, *Journal for Studies in Economics & Econometrics*, 27(3): 1–27.

Lindelow, M. 2005. The Utilisation of Curative Healthcare in Mozambique: Does Income Matter? *Journal of African Economies*, 14(3): 435–482.

Palmer, N. 1999. Patient choice of primary health care provider. Chapter 8 in *South African Health Review 1999*. Durban: Health Systems Trust. Available online: http://www.hst.org.za/sahr. [Accessed: October 2002]

Palmer, N, Mills, A, Wadee, H, Gilson, L & Schneider, H. 2002. A new face for private providers in developing countries: What implications for public health? London School of Hygiene and Tropical Medicine, London.

Poswell, L. 2003. Comments on Income and Expenditure Survey 2000. Development Policy Research Unit, University of Cape Town.

Sahn D E, Younger S D. Expenditure Incidence in Africa: Microeconomic Evidence. Fiscal Studies 2000; 21(3): 329 – 347.

Scheider, H & Palmer, N. 2002. Getting to the truth? Researching user views on primary care. Health Policy and Planning 17(1): 32 – 41.

Simkins, C. 2003. A critical assessment of the 1995 and 2000 income and expenditure surveys as sources of information on income. Unpublished manuscript.

Simkins, C. 2004. What happened to the distribution of income in South Africa between 1995 and 2001? A report for the National Treasury**.**

South African National Treasury. 2004. Trends in intergovernmental finances: 2000/01-2006/07, National Treasury, Pretoria. August 2004. Available online : http://www.finance.gov.za [Accessed: September 2004]

Van der Berg, S. 2005. Fiscal expenditure incidence in South Africa, 1995 and 2000. A report for the National Treasury. Available online: http://www.treasury.gov.za [Accessed: March 2005]

Yaqub, S. 1999. How equitable is public spending on health and education? Available online: http://www.worldbank.org [Accessed: July 2004]