

Primary Health Care Financing and Need Across Health Districts in South Africa

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SECTION 1: INTRODUCTION

Background

Government health policy emphasises the importance of both decentralisation and equity in the public health sector (NDoH, 2002). The draft National Health Bill establishes a health system with decentralised management (p7) and, in particular, a district health system based on a PHC approach (p38). Concurrently, it states that provinces and municipalities must implement the system with regard to key principles, the foremost being equity (p38). However, it is unclear whether decentralisation and equity exist in harmony particularly in relation to the financing of PHC. This report explores this issue by evaluating the funding of non-hospital PHC services, within the decentralised South African system, against indicators of need.

A review of international experience illustrates the problem. Decentralisation, in its various guises, has proved to be a very popular reform in many developing countries (Brijlal *et al* 1998). Yet, it is often complex and characterised by political conflict between different spheres of government (Mills *et al* 1990; Collins 1996). Most importantly, one threat of decentralisation is to the equity of health care financing across geographical populations. As decentralisation progresses to lower levels of the system local financing sources become increasingly important. If there is no effective vehicle for cross subsidy between wealthier and poorer populations, then inequities are likely to increase (Collins *et al*, 1996). While, decentralisation may encourage additional resource generation at the local level (Collins *et al*, 1996), it may also result in fragmentation of funding with little overall coordination (Brijlal *et al* 1998, Mills *et al* 1990). All this points to the need for strong central oversight of financing to redress problems of inequity and manage, if not rationalise, fragmentation of funding. This report reviews this in relation to the financing of PHC across districts in South Africa.

The decentralisation process in the South African health sector has been far from straight forward. Problems encountered have related to the grossly inefficient and inequitable legacy of apartheid and the establishment and restructuring of other spheres of government (Hall, Haynes and McCoy, 2002). This has created many problems for health sector coordination including health financing. The first wave of decentralisation proceeded with the new constitution. This enshrined a process of fiscal federalism (Gilson *et al*, 1999). Effectively many of the decisions about the allocation of resources across and within sectors were removed from the national level and given to provinces (Thomas and Muirhead, 2000). The National Treasury allocates block grants to provinces, which then decide the sectoral split and the spending within each sector (Gilson *et al*, 1999). In effect provinces must translate national priorities into provincial resource allocation patterns. While the National Department of Health has responsibility for determining policy it is somewhat removed from decision-making around actual funding patterns, most notably in relation to PHC.

It is interesting to note that the National Department of Health does have some power over resource allocation through the conditional grants which address the funding of tertiary hospitals, human resource training and specific programmes, such as nutrition (Doherty *et al*, 2002). Interestingly, and prior to the formulation of the conditional grants, the Financial and Fiscal Commission proposed a ring-fencing of funds to support Primary Health Care and the District Health System, in terms of a "Minimum National Standards Grant" (FFC, 1996). Further, there was an attempt by the National Department of Health to obtain a conditional grant for PHC activities in 1997. Nevertheless, neither proposal succeeded. Instead, National Treasury

sanctioned the protection of higher levels of hospitals¹. Currently, then, there is no resource allocation mechanism that protects the funding of PHC despite its importance to national health policy. One aim of this research will be to document to what extent this has penalised the effective and equitable funding of non-hospital PHC across the country.

Questions about the extent of decentralisation in the health sector are only now being resolved. This is partly due to the fact that the final form of local government only came into being with the elections in December 2000 (Hall, Haynes and McCoy, 2002; NDoH, 2003). The current definition of municipal health services, and that contained in the draft National Health Bill, is related to environmental health services (NDoH, 2002). This “narrow” definition means that the responsibility for the funding of PHC, except for EHS, will lie with each province. This definition of Municipal Health Services has been chosen over those that either

- assign PHC funding to local government or
- segment local government structures and assign the metropolitan councils the full responsibility for PHC funding.

The implications of this policy for financing are reviewed later in the document. This is, of course, not to say that local government does not have an important role in PHC provision. Indeed, the National Department of Health has been initiating Service Level Agreements for the provision of PHC services (Makan *et al*, 2003). These are to be put into place first between provinces and local governments, by July 2003, and then subsequently between different levels of local governments.

Rationale and objectives

While much has been published on inter-provincial inequities (see Thomas *et al*, 2000; McIntyre *et al*, 1998; McIntyre *et al*, 1995), little is known about the equity of financing primary health care across health districts. Further given PHC is a key government policy it is vital for policy makers and planners to understand the current funding picture, its implications for equity and the changes which need to be made to move the health system closer to stated goals. Indeed, it is a goal of the National Department of Health to have every public PHC facility offer a comprehensive package of PHC services by 2004 (Makan *et al*, 2003). Consequently, the following objectives are set out for the study:

- To map the financing of non-hospital primary health care within local government areas across South Africa.
- To construct deprivation indices for the country as a whole and for each province to measure the need for health care services.
- To analyse the equity of financing health care in relation to need.
- To propose changes to improve the equitable allocation of resources.

The realisation of these objectives will provide an important baseline for subsequent evaluation of financing of health care services across health districts and assist with the planning of appropriate financing mechanisms for Primary Health Care.

¹ Personal communication with senior policy maker in the National Department of Health (15/05/2003)

Report Structure

Following this introduction, the next section outlines the methods used to collect, aggregate and analyse data which map financing and need across health districts in South Africa. Section 3 presents the main financing results, examining where funding is concentrated in terms of health districts and provinces. Section 4 discusses the deprivation scores of districts across the country and presents some analyses of relative deprivation within provinces. Section 5 draws together the financing and need results to explore the extent of inequity in the funding of non-hospital PHC. Section 6 discusses the way forward to improve the equity of financing of PHC and address the implications of current policy. Finally conclusions and recommendations are set out in Section 7.

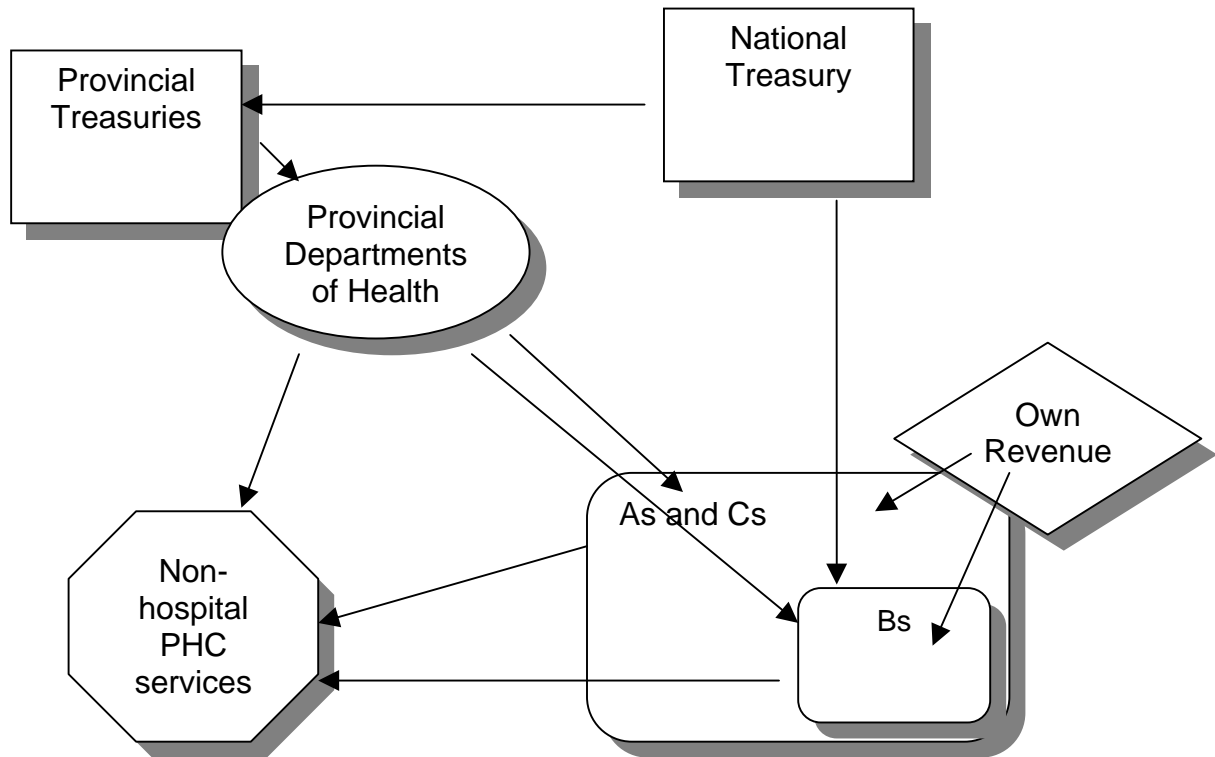
SECTION 2: METHODS

Outline of Funding Flows

The financing of non-hospital PHC services is currently quite fragmented. Indeed, the overall funding relationships in the public health sector are complex. To understand the methods used for data collection it is necessary to map out the funding flows. This is shown in Diagram 2.1. National Treasury allocates funds to provinces and local governments in the form of block grants (the equitable share) and conditional grants (for earmarked purposes) (National Treasury, 2002). Provincial Treasuries must allocate these funds across sectors, such as health, education and so on through their own budget process. Provincial Departments of Health then allocate the funds they receive from provincial Treasury to different activities, such as district hospitals, clinics and so on. As noted there is no formal mechanism to protect funding of PHC activities at any stage in this resource allocation process.

Provincial Departments of Health contribute to the funding of non-hospital PHC in two ways, through their direct expenditure on provincial health programmes and clinics and through transfers that they make to local government for such activities. These transfers can go to As (metropolitan councils), Bs (local municipalities) or Cs (district municipalities), though there are relatively few transfers to Cs at present. Transfers may take the form of contracts or subsidies (Mbatsha and McIntyre, 2002). The equitable share grant and conditionals grants to local government currently go to the B level (local municipalities). Historically, these funds were not mandated for health care services but for the core responsibilities of municipalities, including housing, water and sanitation. Nevertheless, there is some suggestion that some local governments may utilise these funds for health care. In addition local governments raise their own funds for health care through local rates and tariffs, and this has grown to be quite an important source of funding in some districts (Thomas *et al*, 2000). The substantial fragmentation of funding of non-hospital PHC makes coordination of equitable financing difficult.

Diagram 2.1: Representation of Funding Flows relating to PHC



Financing Data

Sources

Mindful of the complexity of funding of non-hospital PHC services, a picture of financing has been built up from several sources, as discussed. First, data on provincial direct funding of PHC and provincial transfers to local government earmarked for PHC have been collected from Provincial Departments of Health and Provincial Treasuries. These data were also checked against information made available by National Treasury on transfers to local municipalities. Local government own funding of health care services has been derived from a database made available by the National Department of Provincial and Local Government. This was also checked against data from National Treasury which indicated own revenue contributions to health in the metropolitan councils and selected local municipalities. The own revenue data was also checked for consistency against the NHA database (Thomas and Muirhead, 2000). While there were some discrepancies, the overall size of the funding indicated was in line with previous research.

Further Annex 1 outlines a comparison of the data included in this report and the Intergovernmental Fiscal Review (IGFR, 2003) on provincial funding of non-hospital PHC services. The totals show an extremely close tally, within 1.5%. Nevertheless, there are some difference for specific provinces, most notably Limpopo and the North West province. If the IGFR data are correct then this report may have overestimated the amount of funds going to non-hospital PHC services in Limpopo and the North West. Further research is required to clarify this. Indeed, more precise figures may only become available with a consolidation of data from Service Level Agreements and/or the full roll out of District Health Expenditure Reviews. While some caution

may be warranted when considering the results of Limpopo and the North West, the overall results and conclusions of this report remain valid.

Level of Analysis

Financial data have been aggregated to the level of As and Cs, metropolitan districts and district municipalities, to allow for ease of comparison. Where transfers are made to the B level, the data have been aggregated up to the appropriate C within which the Bs reside. Data relate to the 2001/02 budget year and are revised budget estimates. A picture of PHC financing across the whole of South Africa is thus presented (Section 3).

Per capita

The population data used in this chapter relate to the total population in each district and/or province unless otherwise stated and are derived from the 1996 Census with projections. Currently, there are no reliable data on private sector dependency at a district or provincial level, even using proxies such as medical scheme membership. Consequently, it is difficult to calculate what proportion of different populations is dependent on the public sector. Estimates at the provincial level are derived from the consolidated NHA report (Doherty *et al*, 2002) and using more up to date information from the Medical Schemes Council. Estimates at the district level are avoided because of their likely unreliability. The effect of this may be to underreport the existing inequities in health financing, though the report's general conclusions and strategies for system development are unlikely to be affected.

Need and Deprivation Indices

Many previous studies on health financing in South Africa have relied on equal funding per capita as a basis of measuring equity (see for example McIntyre, Baba and Makan, 1998). While this is one approach it may not go far enough. Instead, equitable funding may require a bias toward those in greatest need or the endorsement of the notion of vertical equity, "unequal treatment of unequals" (Mooney, 1996; McIntyre, 1997). Therefore, to assist with measuring equity, composite indices of deprivation for district municipalities were constructed from 1996 census data. In this report both funding per capita and funding according to deprivation are explored as measures of equity.²

Deprivation indices are useful because there is a strong correlation between deprivation and ill health (McIntyre *et al*, 2000). Thus deprivation indices allow a detailed map of need in the specific provinces.³ Those who are more deprived are more dependent on publicly funded health services and so have a greater need for these services than those who have access to private care.

Census data for 1996 were utilised to build up a picture of need for health care services in each district. Data from the ward level were used in relation to variables that appeared relevant to socio-economic status. These are shown in Box 1. The values of such indicators were weighted according to the respective population within each ward. A deprivation index score was then calculated using principal component

² It may be argued that sectors, other than health, also contribute to health status and the need for health care. While the authors accept this point an analysis of broader social sector spending goes beyond the scope of this research project. It is, nevertheless, an important area for future research.

³ Similar work has been done previously by both McIntyre and Muirhead and Statistics South Africa by magisterial district, however to our knowledge this is the first time this analysis has been performed by the newly demarcated council boundaries.

analysis. This involves the generation of an index from the underlying relationship that exists between a given set of variables. Before applying the PCA method, it is required that the variables to be used must correlate with each other. In this case, variables that reflect deprivation are used to generate an index of deprivation – deprivation being the underlying relationship between the variables.

As previously mentioned, a different PCA was run for each province and for the country as a whole. The reason for conducting separate PCAs for each province is that many resource allocation decisions are taken at the provincial level. The index of deprivation was generated by ward. The index for each ward was weighted by the proportion of the population of the district in the ward. (In any district the weights for wards add up to one). The value of the index for all wards in a district is added up to give a single value for each health district.

The score indicates a measure of the relative socio-economic deprivation in a district in relation to other districts in the province. Positive scores indicate that a district is relatively deprived. The results are shown in Section 4.

Box 2.1: Key Socio-Economic Variables

- Proportion of black individuals in the population
- Proportion of children in the population
- Proportion of the population which are illiterate
- Proportion of the population which are unemployed
- Proportion of the population living in informal dwellings
- Proportion of the population with no access to telephones
- Proportion of the population with no electricity
- Proportion of the population with no sanitation
- Proportion of the population with no direct access to water

SECTION 3: FINANCING

Overall Financing

Almost R 5.8 billion was spent on non-hospital PHC in 2001/02 (see Diagram 3.1 and Table 3.1). This is approximately 19% of the public sector health budget. To compare these estimates of PHC expenditure with earlier years, NHA data (Thomas and Muirhead, 2000) are analysed for 1996/97-1998/99. Transforming all data into 2001/02 prices gives us Diagram 3.1, which shows that real expenditure peaked in 1997/98, just under R6.0 billion or R176 per capita. Since then spending on PHC has dropped both in real and per capita terms. Nevertheless, there has been a recovery since 1998/99. However, real per capita expenditure on non-hospital PHC in 2001/02 was still lower than in 1996/97.

Diagram 3.1: Total and per capita funding of non-hospital PHC in the public sector, 1996/97-2001/02 (2001/02 prices)

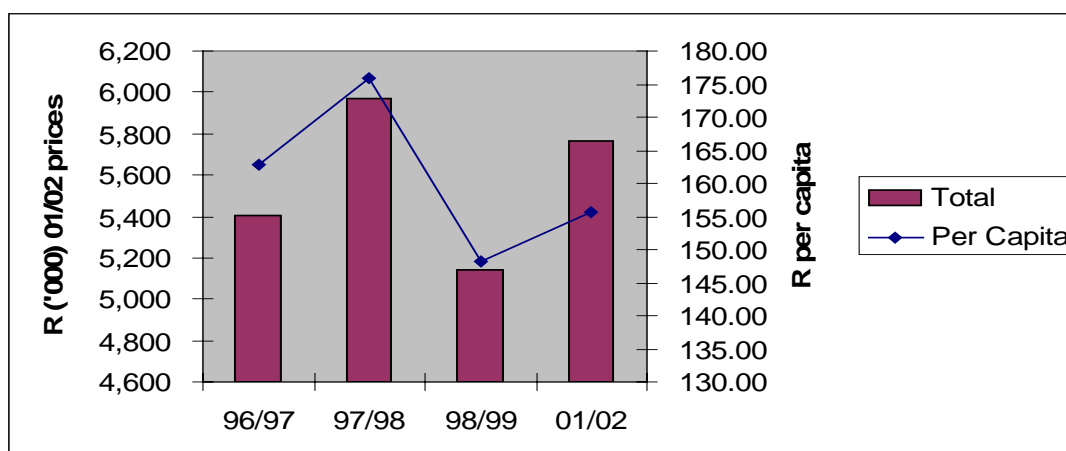


Table 3.1 Overall Financing of non-hospital Primary Health Care Services across the provinces

(R '000, 2001/02 prices)

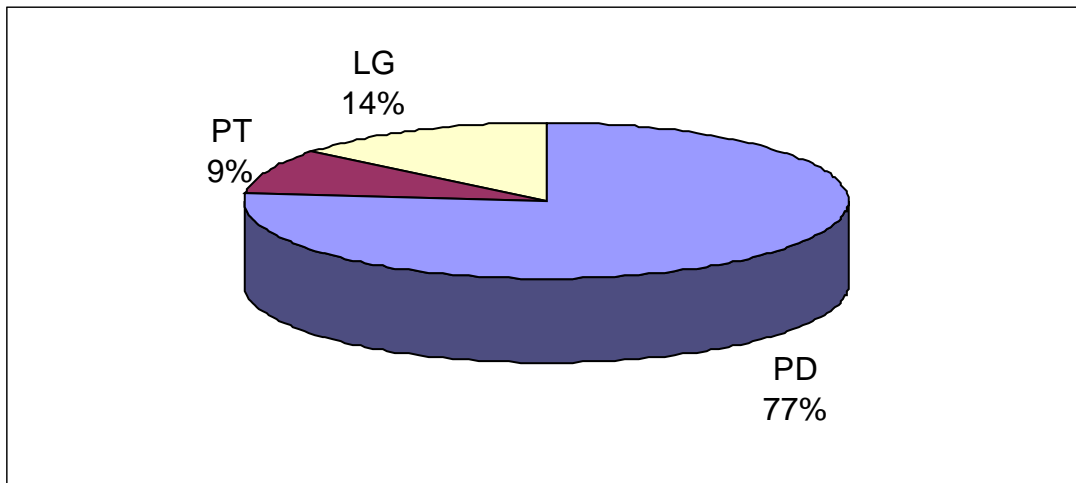
Provinces	Provincial Direct Funding	Provincial Transfers	Local Government Own Revenue	Total
EC	502,603	72,201	54,997	629,801
FS	133,227	56,361	24,414	214,002
GT	839,516	212,258	420,253	1,472,026
KZN	952,611	73,084	218,531	1,244,225
L	464,825	2,125	14,088	481,038
MP	117,555	13,579	28,184	159,319
NC	88,004	5,023	7,209	100,235
NW	445,047	29,667	23,862	498,576
WC	540,460	187,646	234,167	962,273
Total	4,083,848	651,944	1,025,704	5,761,496

Note: Provincial Direct Funding refers to allocations from the respective Provincial Department of Health to PHC clinics or activities

According to the data in Table 3.1, the financial resources for non-hospital PHC were concentrated in Gauteng, KwaZulu Natal and the Western Cape, which together accounted for over 60% of the funds (though just under 50% of the overall population

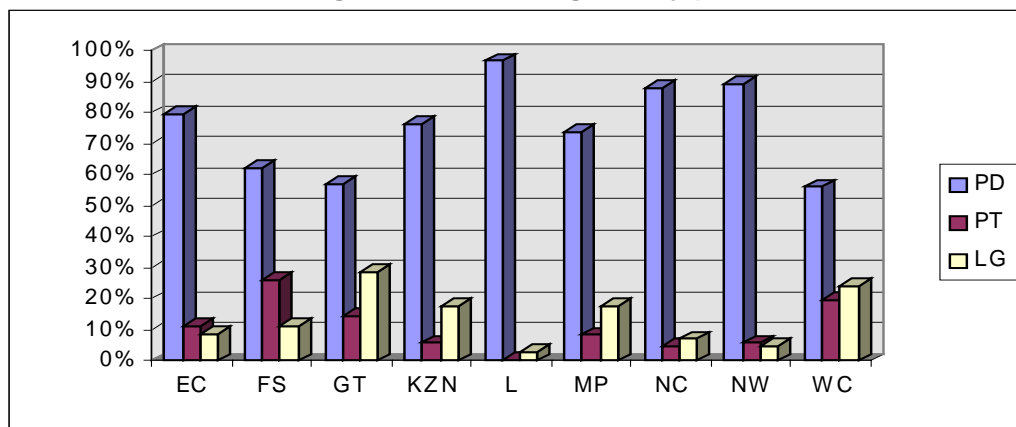
and 44% of those without medical scheme membership). Of this, the main source of financing came from Provincial Departments of Health, which accounted for over 75% of funds on average over the country (see Diagram 3.2). This source of funding was particularly important in Limpopo, North West and Northern Cape where it accounted for 97%, 89% and 88% respectively (see Diagram 3.3).

Diagram 3.2: Average contribution of different sources of funding for non-hospital PHC, 2001/02



Key: PD is funding of non-hospital PHC direct from Provincial Departments of Health; PT is provincial transfers from Provincial Departments of Health to Local Governments for health care activities; LG is funds allocated by local government to health care through their own budgets.

Diagram 3.3: Funding mix by province

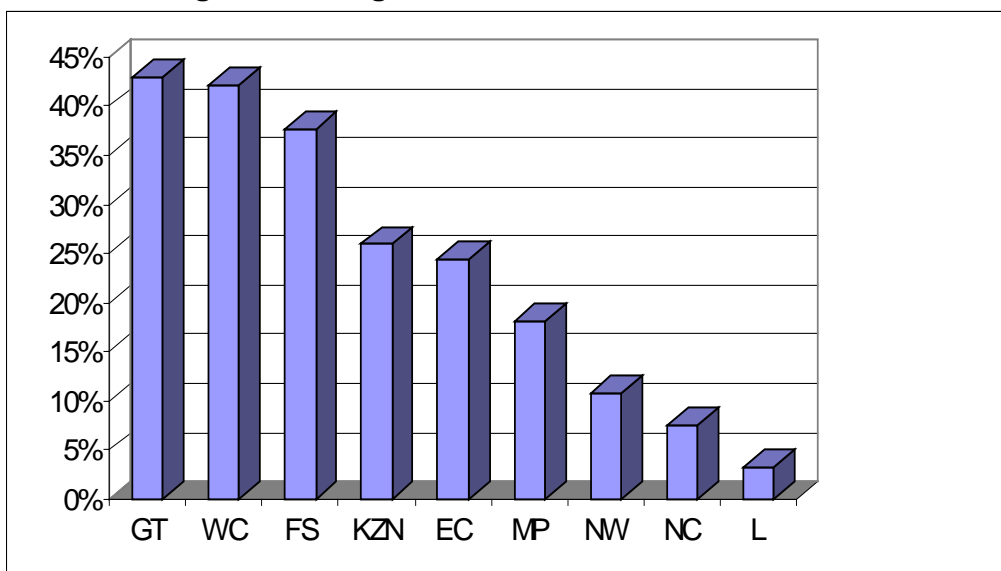


Own revenue from local government made up around 14% of the pie, at just over R 1billion. Again Gauteng, KwaZulu Natal and the Western Cape were the major contributors, with over R870 million from local governments to non-hospital PHC (see Table 3.1). Transfers from Provincial Departments of Health to local government were the least important source of financing, averaging only around 9% of overall funds. Nevertheless, transfers were a more important funding source for Gauteng and the Western Cape, at 26% and 20% respectively.

Combining these data together it is interesting to note in which provinces there has been more financial decentralisation. This is calculated by noting what proportion of funds flow through local governments (rather than being allocated directly from

province to facility or programme). This includes both money from local government budgets and funds transferred from provinces for health care activities. The results are shown in Diagram 3.4. Gauteng, Free State and Western Cape all have more than 35% of their non-hospital PHC funding flowing through local governments. In contrast, Northern Cape and Limpopo channel less than 10% of their funding of PHC through this sphere of government.

Diagram 3.4: Degree of Decentralisation across Provinces



Funding by District

It is important to get behind the provincial totals and averages to understand the financing of individual health districts (both As and Cs). The funding of non-hospital PHC is highly concentrated in a few health districts, as shown in Table 3.2 and Diagram 3.5.

Table 3.2: Concentration of Funding for non-hospital PHC in health districts

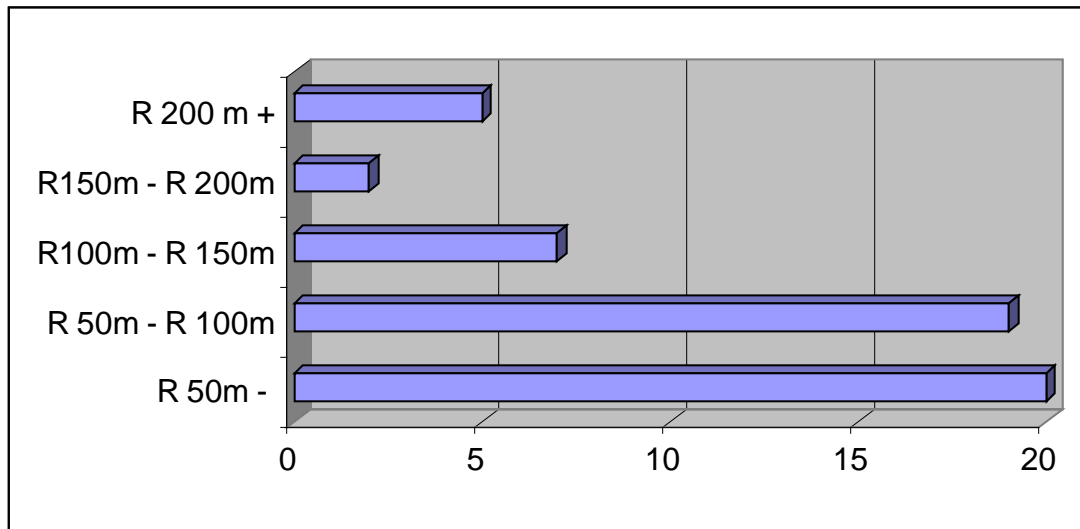
	R ('000)	Proportion of total Funding	Proportion of the total Population
Top 5 best-funded	2,503	43%	28%
Top 10 best-funded	3,259	57%	42%
Top 20 best funded	4,294	75%	62%

The top five best funded health districts (Cape Town, Egoli/Johannesburg, Ekurhuleni/East Rand, Durban and DC 12) accounted for 43% of total funds, but only 28% of total population. Indeed, three quarters of all non-hospital PHC funding was concentrated in 20 health districts with 60% of the population. Seven districts received more than R 150 million, while 39 were allocated less than R 100 million for health care services⁴, showing the wide variety of health districts across the country.

⁴ Interestingly, the average value of funding of health districts, R108 million, is somewhat misleading as an indicator of representative funding levels. Instead, the median may be a better guide, where there is such a skewed distribution, and this stands at R72 million.

Indeed, the best-funded health district (Cape Town) received 63 times more funds than the worst, while only have 22 times more inhabitants. A complete ranking of health districts by funding level is attached in Annex 2.

Diagram 3.5: Number of health districts within funding bands for non-hospital PHC



Funding per person across provinces

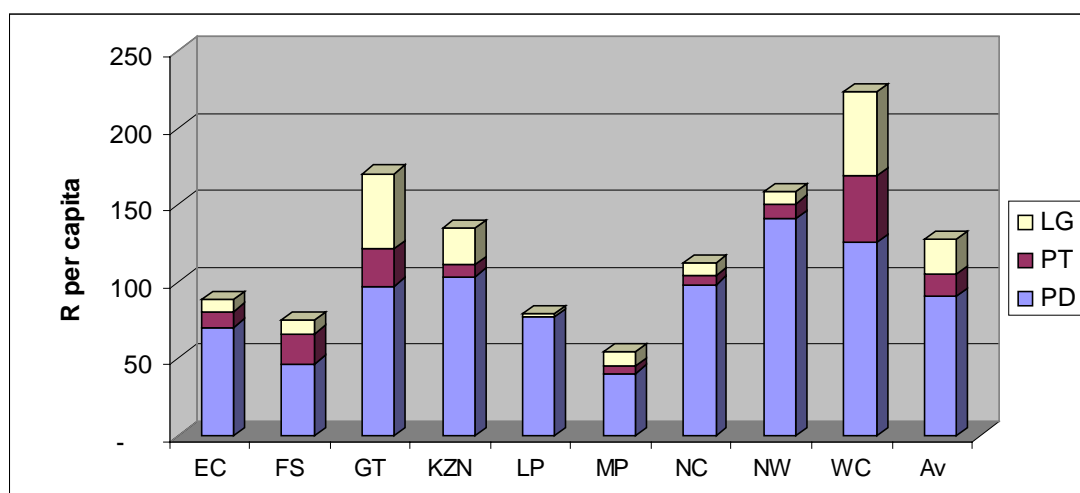
To examine the extent to which the imbalances highlighted thus far are justified it is necessary to begin exploring measures of equity. An initial step is to examine funding per capita. While this measure may not go far enough, in terms of being an indication of need, as discussed in Section 2, it does start to highlight where there are inequities in the system. Table 3.3 and Diagram 3.6 indicate the average financing per capita across provinces for non-hospital PHC services. Given the importance of PHC delivery to the key policy objectives of the South African government it is perhaps alarming that the imbalances in funding across the country are so large. Over R220 is allocated on average to each person in the Western Cape for non-hospital PHC services; this is 75% higher than the national average (R 128 per capita) and four times higher than in Mpumalanga (R55 per capita only).

As noted earlier, the key driver of funding levels is allocations from the Provincial Departments of Health. In this regard, North West has surprisingly high allocations of funds from provinces direct to non-hospital PHC activities, R141 per capita. In contrast funding from the Mpumalanga Provincial Department of Health is extremely low, only R40 per person. Local government own revenue is an important source of funds in the Western Cape, Gauteng and, to a lesser extent KwaZulu Natal (R54, R49, R24 per capita respectively). Such contributions dwarf those in many other provinces. At the other extreme local governments in Limpopo only contribute R2 per capita to non-hospital PHC.

Table 3.3: Per capita financing of non-hospital PHC across provinces
(R per capita, 2001/02 prices)

Provinces	Provincial Direct Funding	Provincial Transfers	Local Government Own Revenue	Total
EC	70	10	8	88
FS	47	20	9	75
GT	97	25	49	170
KZN	103	8	24	135
MP	40	5	10	55
NC	98	6	8	112
L	77	0	2	79
NW	141	9	8	158
WC	125	43	54	223
<i>Average</i>	<i>90</i>	<i>14</i>	<i>23</i>	<i>128</i>

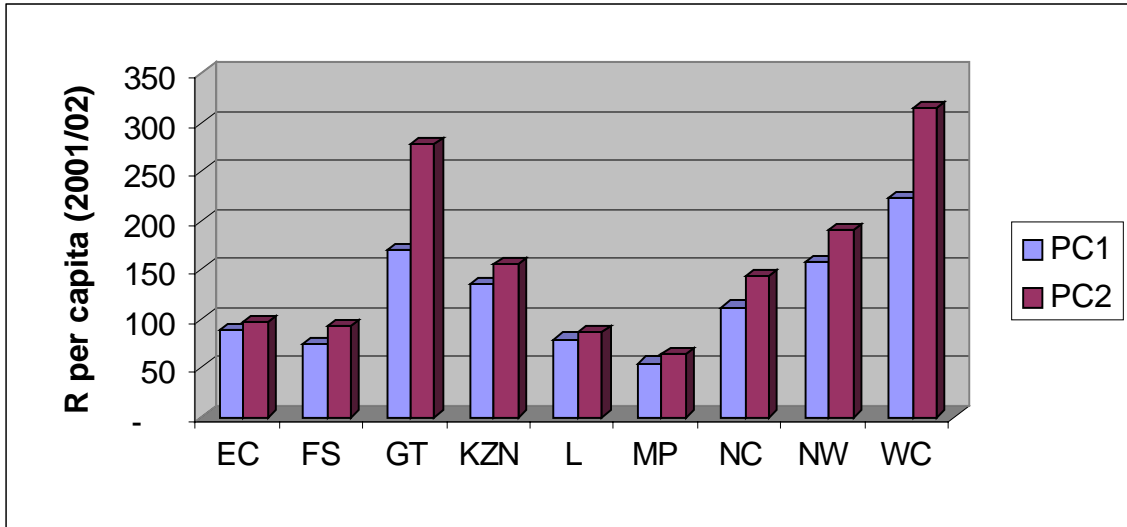
Diagram 3.6: Per capita financing of non-hospital PHC in provinces, by source of funds



Note: 'Av' refers to the average per capita funding of non-hospital PHC across the provinces

Ideally, the population figures to be used in this calculation would reflect those who use and are dependent on the public sector and not the entire population. One way round this has typically been to subtract medical scheme members from the overall population when estimating per capita financing. Nevertheless, the availability and quality of such data are problematic even at the provincial level, let alone disaggregated by district. Still, Diagram 3.7 highlights the effect on funding per capita if medical scheme members are excluded. As can be seen this move actually increases the funding imbalances between provinces, with the funding per capita shooting up for Gauteng, by 63% to R277, and for the Western Cape, by 41% to almost R314. Using these figures Western Cape per capita funding is almost five times higher than in Mpumalanga. Thus the funding picture shown in Table 3.2 is an underestimate of the degree of inequity across the provinces.

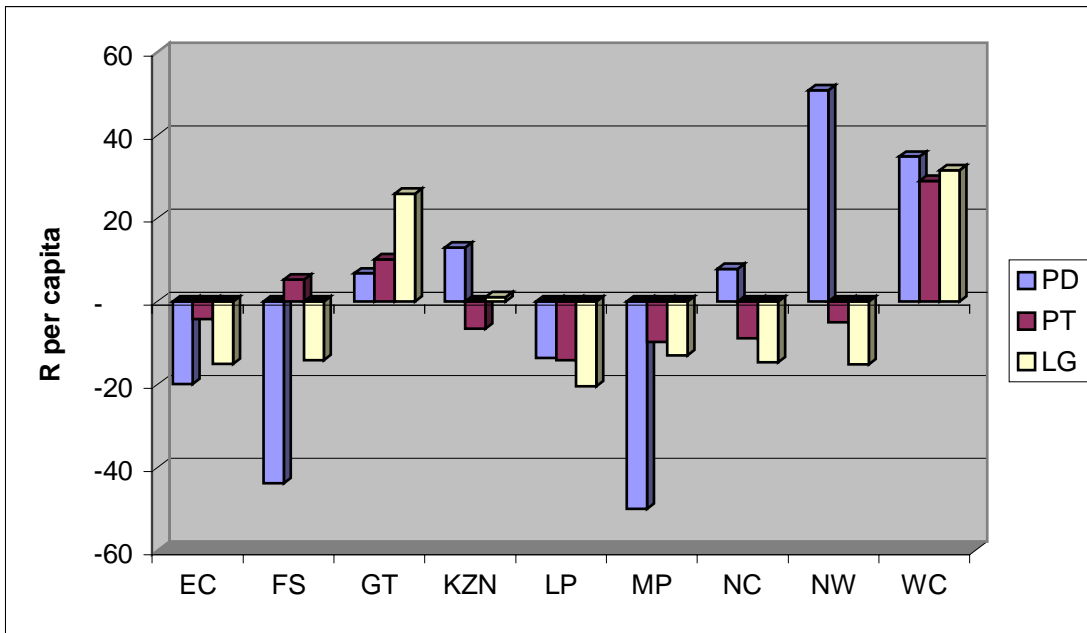
Diagram 3.7: Funding per capita with, and without, medical scheme membership



Key: PC1 refers to the funding per capita across the whole population in each province, while PC2 relates to funding per capita for those not on medical schemes

Diagram 3.8 presents the data in a slightly different format. It compares the levels of funding from different sources of non-hospital PHC in each province with the national average. Hence it shows how relatively well, or badly, non-hospital PHC is funded from the three sources: provincial direct, provincial transfers and local government own revenue. The Western Cape and Gauteng have more than average funding for each source, while Eastern Cape, Limpopo and Mpumalanga get less than average per capita allocations from each source. One key issue in decentralising finances is whether the increased mobilisation of resources at lower levels will actually increase inequity. This requires higher levels of government to compensate for lower level imbalances. Is there any evidence for this? Of the six provinces with worse than average mobilisation of local government funds, only two (North West province and Northern Cape) are compensated with higher than average allocations from the Provincial Departments of Health. On the basis of these data, inequities in financing are large and higher levels of government are doing little to compensate for the imbalances of funding mobilisation at lower levels.

Diagram 3.8: Difference from average for each source across the provinces

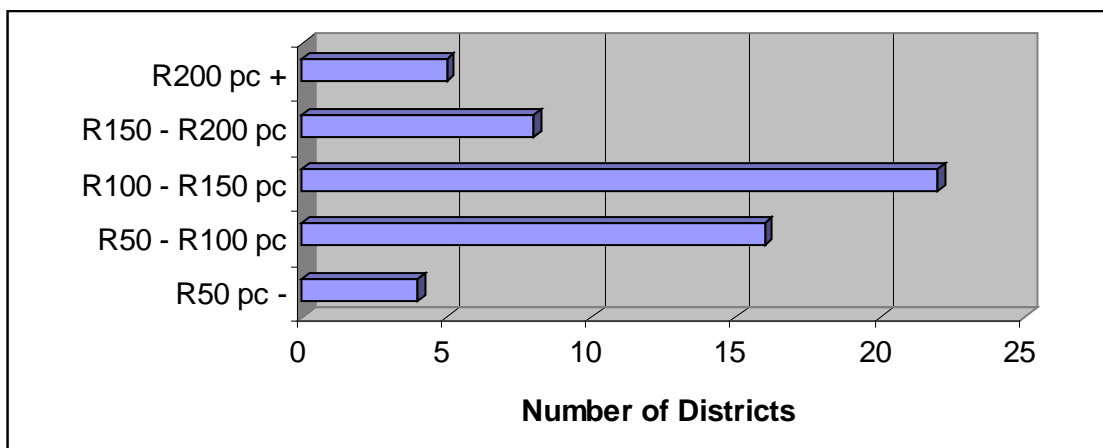


Funding per person across health districts

Averaging funding data across *provinces* may also hide the degree of inequity in the financing of PHC across *districts*. To paint a more precise picture of inequity it is important to examine inter-district funding imbalances. The data in Diagram 3.9 show that in 2001/02 the five best-funded districts, in per capita terms, allocated more than R200 per capita to non-hospital PHC while the three worst funded districts allocated less than R40 per capita. This five-fold imbalance demonstrates that the population of districts does not play any meaningful role in the allocation of PHC funds across the country. Yet population is often used as a key indicator of need in resource allocation formulae (see earlier discussion in Section 2).

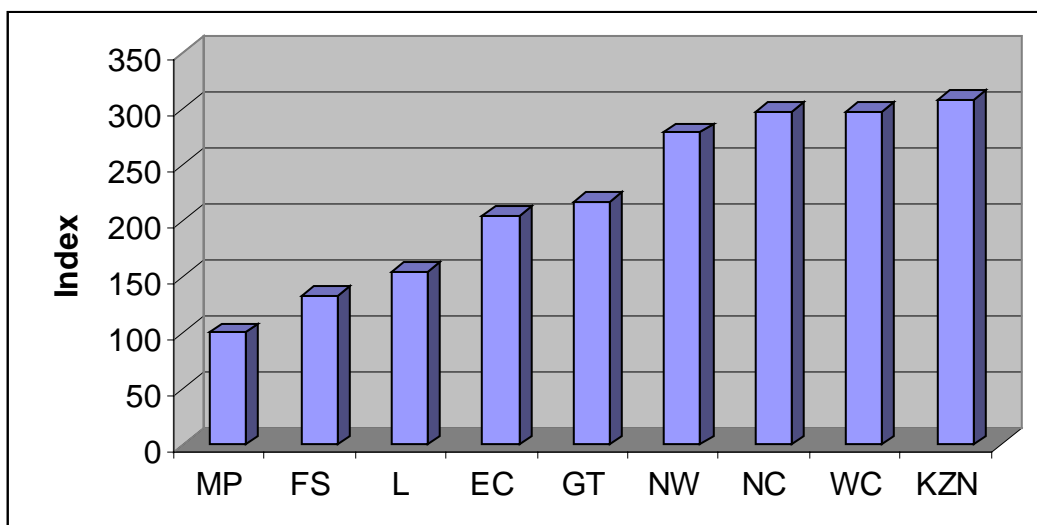
Further, the Western Cape has five out of the top ten best-funded districts, whereas Eastern Cape, Limpopo and Mpumalanga have those districts with the least funding per capita. (Annex 3 contains a complete ranking of districts by funding per capita.)

Diagram 3.9: Range of funding of non-hospital PHC per capita across districts



Can such discrepancies in the funding of non-hospital PHC be justified? The sheer scale of the imbalances would seem to indicate that financing of non-hospital PHC is currently done without any reference to the principles of equity. Still, it may be possible to argue that more funds are needed in more urban provinces or districts because of higher costs. More plausibly, it should be noted that in some provinces, such as the Eastern Cape and KwaZulu Natal hospitals are an important alternative mode of delivery of PHC services. Indeed, hospital activities, and therefore funding, related to PHC has not been highlighted thus far in this report. To help assess this last concern it may be important to factor in some proportion of district hospital spending, to take account of hospital-based PHC, to see whether this does indeed improve the equity of financing across provinces. This proportion must alter across provinces, as different provinces have different modes of delivery. Based on historical expenditure data between 1996/97-1998/99 estimates of district hospital spending are added in to the non-hospital PHC spending to see whether inequities are reduced. Diagram 3.10 presents the results in index form, where the province with the least funding has a score of 100 (in this case Mpumalanga).

Diagram 3.10: Estimated index of total PHC funding across provinces



The results certainly suggest a narrowing of differential between the best and worst funded provinces (when compared with Diagram 3.5). Further it is interesting to see that KwaZulu Natal, Western Cape, Northern Cape and North West provinces have very similar funding levels. Nevertheless, there are still substantial inequities in terms of overall funding of PHC between provinces, with PHC funding in Mpumalanga, Limpopo and the Free State appearing very low. Indeed, it is questionable whether some of these provinces would be able to afford the PHC package advocated by the National Department of Health (Brijlal and Hensher, 2000) and costed at approximately R200 pc in 2001/02 prices.

There are also problems with adding in hospital PHC estimates. It is unclear that a channelling of PHC resources through hospitals is allocatively efficient given that the biggest potential gains in health status may be achievable in rural, underserved areas. Further, while hospitals may be an important mode of delivery of PHC in some provinces they are less likely to be equitable in reaching those in rural and remote areas. Such a mode of provision is also less likely to be technically efficient, given the higher costs that are typically incurred at the hospital level. While hospital funding of PHC may boost the apparent PHC expenditure figures in some provinces this may be deceptive as hospital delivery of PHC services may be both inequitable and inefficient.

SECTION 4: DEPRIVATION

Two sets of analysis were conducted in relation to the geographical identification of need. First a ranking of all South African health districts was calculated according to deprivation score. This analysis highlighted the best and worst off areas in the country and acts as an important guide to where funds should be targeted to improve the health care of the most deprived. Second, provincial deprivation indices were also derived. These show within each province the relative deprivation of each district. Ideally, they would inform provincial level decisions over resource allocation.

Overall Ranking of Health Districts

Table 4.1: Deprivation scores across districts and provinces

Provinces	Deprived ←			Undeprived →		
	More than 4	Between 2 and 4	Between 0 and 2	Between 0 and -2	Between -2 and -4	Less than -4
EC	15,44	14,13,12		10		NM
FS			19	18,20,16,17		
GT				92	42,98	Ek,Ts,Eg
L		93,34,94,33,35	36			
KZN	27,24,26,43	28,29,21,23		22,25	D	
MP			32,30	31		
NC				7	9,8	6,91
NW		91,39	38,37	40		
WC						5,4,3,2,1,CT

Key:

Numbers refer to District Councils/Health Districts

Letters refer to Metropolitan Councils

Numbers in 90s refer to CBDCs. Thus 91 is CBDC1.

High positive scores indicate high levels of deprivation, while high negative scores indicate districts that are well resourced.

Table 4.1 requires some commentary. The columns highlight ranges of deprivation score; the higher the score the more deprived is a health district. Hence those districts in the far right column have the lowest deprivation scores in the country and are therefore the least deprived. Not surprisingly this includes most of the Metropolitan Councils. Any health district with a score higher than 0 can be thought of as relatively deprived. Reading down each column shows the health districts in a deprivation band. Reading across each row gives an idea of the deprivation scores for health districts within a specific province. The complete listing of deprivation scores across the country is attached in Annex 4.

Table 4.1 and Annex 4 show that the most deprived districts are concentrated in three provinces, KwaZulu Natal, the Eastern Cape and, to a certain extent, Limpopo. Indeed, KwaZulu Natal has five of the top ten most deprived districts in South Africa. It is little surprise that the least deprived health districts are concentrated in the Western Cape and Gauteng. What is perhaps less obvious is that all six of the Western Cape health districts are the least deprived in the country (with Jo'burg Metro and Tshwane Metro being 7th and 9th respectively). In such a context resource allocation policy must take account of the radically different needs for health care in different parts of the country, and this is explored in Section 5.

Deprivation within provinces

The other interesting analysis highlighted by Table 4.1 is the spread of deprivation within some provinces. It is clear that there are wide discrepancies in living standards in the Eastern Cape and KwaZulu Natal where some health districts are very deprived and others very well resourced. Issues of redistribution must, therefore, not only focus on inter-provincial allocations but also each province's own budgeting and resource allocation processes to districts. In other provinces this is less of an issue as deprivation scores tend to be more similar, such as in the Western Cape, Free State and Mpumalanga. Relative deprivation scores for each province are displayed in Annex 5. The relative deprivation scores for KwaZulu Natal and Eastern Cape are highlighted below to demonstrate the wide variety of needs in these provinces (Diagrams 4.1 and 4.2). It may be that these provinces might need special attention when considering equitable allocation of resources to meet the needs of specific districts.

Diagram 4.1: KZN Deprivation Scores across health districts

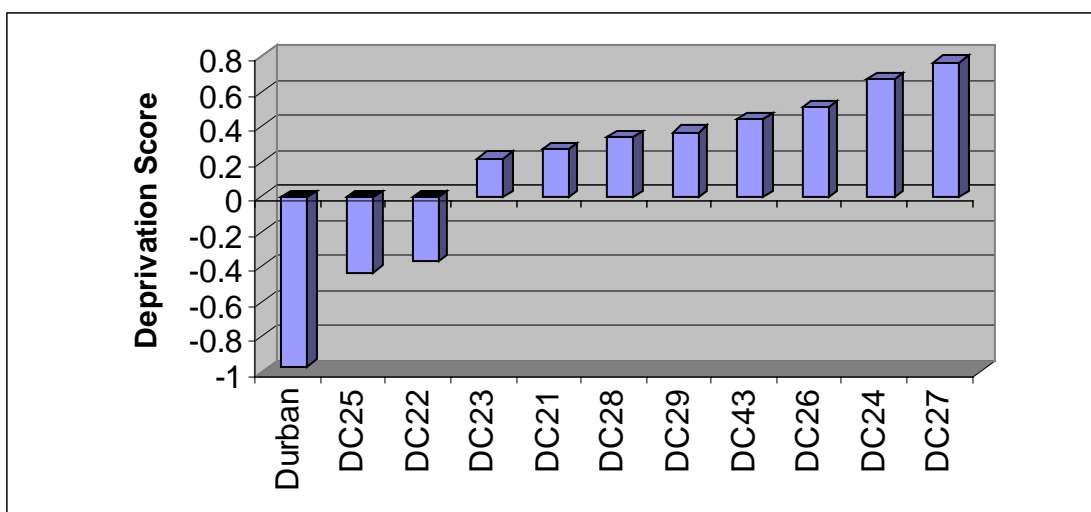
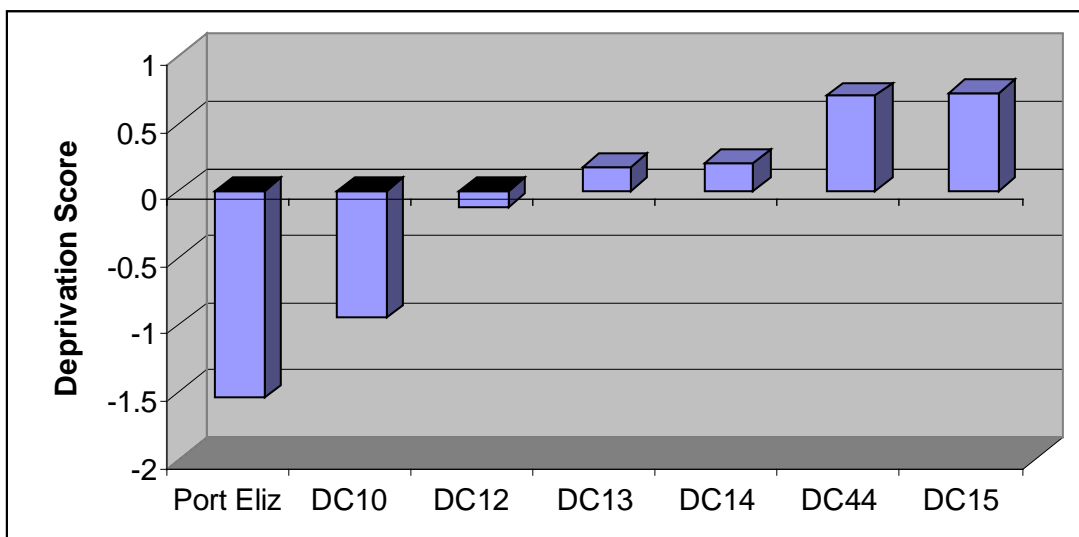


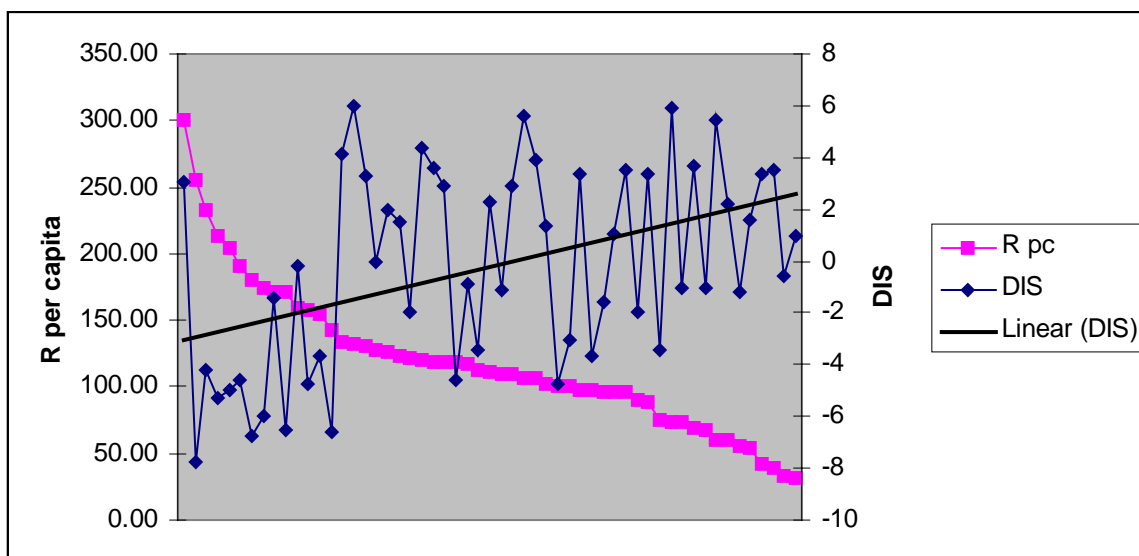
Diagram 4.2: EC Deprivation Scores across health districts



SECTION 5: FINANCING VS. DEPRIVATION

In this section we pull together the financing and deprivation data from previous sections to evaluate the equity of financing within the current decentralised system. In so doing we are exploring whether decentralisation has resulted in an equitable financing of PHC.

Diagram 5.1: Financing per capita vs. Deprivation across health districts in South Africa



Key: DIS is deprivation index score and Linear (DIS) is a linear trend line for the DIS.

Summary results are highlighted in Diagram 5.1. Here the financing per capita of non-hospital PHC services in each health district is compared with the need in each district, calculated using deprivation indices. Financing per capita ranges from a high of R300 to well under R50, and is shown by the curve from top left to bottom right. For each district, the deprivation score is also shown, ranging from +6 to almost -8. A trend line has been added to the deprivation scores to make the relationship clearer between financing and need. As can be seen, as financing per capita decreases there is an overall trend for the district to have a higher deprivation score. In other words, in general, the most needy districts get the least funding and vice versa.

This general picture of an inverse relationship between need and financing is also highlighted in Table 5.1. However, this time the data refer to relative deprivation within each *province*. As can be seen it is generally the case that the best funded districts, in per capita terms, are not those which are deprived. Conversely those districts that receive the least funding per capita tend to be those with high deprivation scores. There are some exceptions to the general rule; Mpumalanga is the most obvious case where financing and need appear to be better matched. However, as was noted earlier funding of non-hospital PHC is at such a low level in Mpumalanga that this type of relative analysis may be misleading.

Table 5.1: Best and Worst funded District Municipalities, in per capita terms, with their deprivation scores

Best-Funded Districts	Deprivation Index Score	Worst-Funded Districts	Deprivation Index Score
Eastern Cape			
Nelson Mandela (PE)	-1.54	DC 14	0.21
DC 12	-0.12	DC 10	-0.95
Free State			
DC 16	-0.15	DC 19	0.51
DC 17	-0.31	DC 20	-0.18
Gauteng			
Ekurhuleni (ER)	-0.13	CBDC2	0.73
Egoli (Jbg)	-0.28	CBDC8	0.26
Limpopo			
DC 33	-0.47	DC 35	0.28
DC 36	-0.44	CBDC4	0.25
KZN			
Durban Metro	-0.97	DC24	0.67
DC 22	-0.37	DC 29	0.37
Mpumalanga			
DC 32	0.26	DC 30	-0.21
Northern Cape			
CBDC1	-0.42	DC 8	0.1
North West			
DC 39	0.49	CBDC1	0.72
DC 40	-0.96	DC37	-0.13
Western Cape			
Cape Town	-0.61	DC2	0.09
DC5	0.35	DC3	0.45

Note: Higher positive values indicate increased deprivation.

Finally, financing and need data for two provinces, Limpopo and Gauteng, serve to confirm the inequities at a provincial level. Again there is a general inverse relationship between the need for health care and the financing per person in a particular district. These examples are by no means exceptional and this trend can be seen across almost all provinces.

Diagram 5.2: Financing per capita vs. Deprivation across health districts in Limpopo

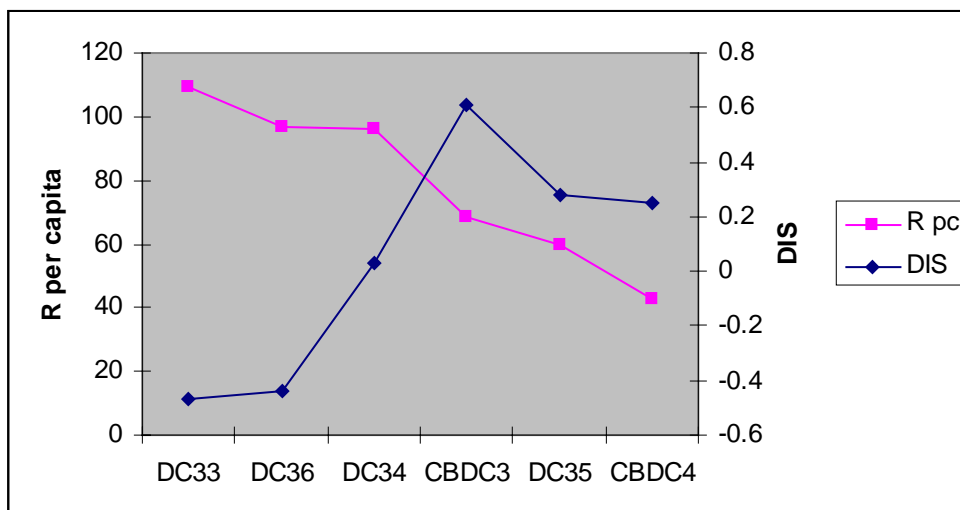
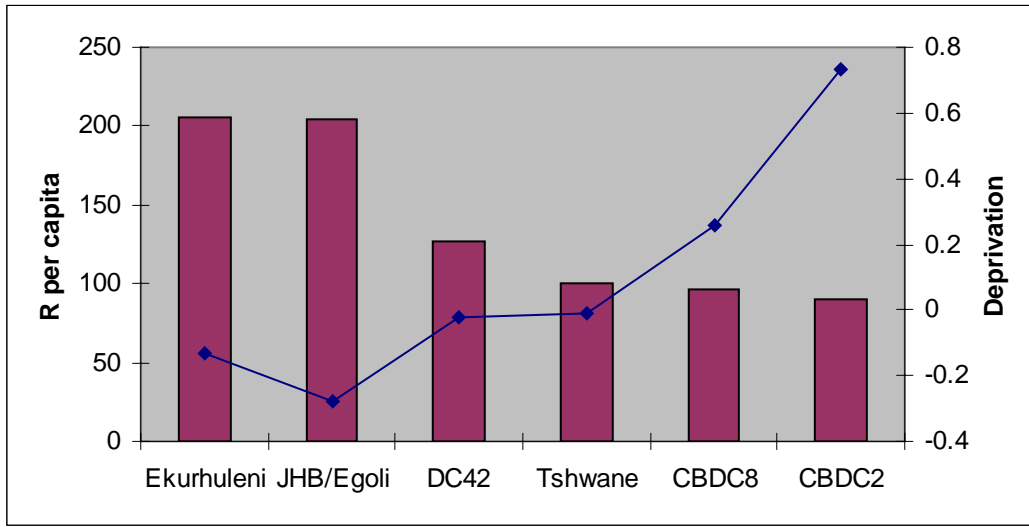


Diagram 5.3: Financing per capita vs. Deprivation across health districts in Gauteng



SECTION 6: DISCUSSION OF THE WAY FORWARD

Unlocking inequities and the role of Deprivation Based Budgeting

Turning the analysis round, what sort of resource allocation process would be needed to make budgets reflect relative deprivation? McIntyre and Muirhead (2002) suggest using a resource allocation formula based on the population of each district, *weighted for deprivation*. This draws together the concepts of funding per capita and relative deprivation score to arrive at an appropriate indicator of need for determining budgets.

Table 6.2 demonstrates this method with one set of results from Limpopo. The final column indicates the difference between the equity target share and the actual total current budget. Aggregating these differences, estimates the overall magnitude of divergence from the target budget. The size of this divergence can then be related back to the overall size of the budget to calculate what proportion of the budget can be said to have been related to deprivation. This gives us a deprivation-based budgeting score (DBBS). Table 6.1 indicates the DBBSs for each province using current funding patterns.

Table 6.1: Deprivation based budgeting scores for financing of PHC across provinces, 2001/02

	Deprivation Based Budgeting Scores
Western Cape	51.9%
Mpumalanga	53.2%
KwaZulu Natal	54.4%
Eastern Cape	56.1%
Gauteng	56.1%
North Western	59.7%
Free State	62.5%
Northern Cape	67.0%
Limpopo	76.5%

The DBBSs indicate that, for instance, in Mpumalanga 53% of the combined current budget for non-hospital PHC can be justified according to need. A score of 100% would indicate that the budget was allocated completely according to need and, therefore, on an equitable basis. While this may be too much to expect, any movement to a higher score would be positive from an equity perspective.

The potential use of such indicators is as a base for setting targets for improved equity in each province. Clearly a move to deprivation based budgeting in one year is not feasible. Shifting money, and more importantly human resources and services, can only be done in a phased approach. Indeed, there has been insufficient attention paid in current research in South Africa to explore the interventions needed to actually produce effective redistribution. The problem is multidimensional and while an analysis of budget processes is part of the answer, human resource stickiness and absorptive capacity at lower levels of the system are also significant bottlenecks to redistribution. Such issues are taken up in the final section of this report.

Table 6.2: Budgeting According to Need - An Illustrative Example for Limpopo

	Deprivation Index value	Normalised DIV	Population	Population Weighted by Deprivation	% share of weighted popn	Equity Target Share	Actual Budget	Difference between Target and Actual	Magnitude of Divergence
DC33	-0.47	1	1 065 240	1 065 240	12%	55838	64 730	-8 841	8 841
DC36	-0.44	1.03	752 922	775 510	8%	40 651	111 944	-71 256	71 256
DC34	0.03	1.5	1 033 660	1 550 490	17%	81 274	74 670	6 678	6 678
CBDC4	0.25	1.72	1 300 553	2 236 951	24%	117 257	92 326	25 039	25 039
DC35	0.28	1.75	1 263 106	2 210 436	24%	115 867	78 831	37 142	37 142
CBDC3	0.61	2.08	639 383	1 329 917	15%	69 712	58 538	11 238	11 238
Total			6,054,864	9 168 543	100%	480 598	481 038		160 194

Calculation of DBBS:

Deprivation Based Budgeting Score = $1 - \text{Magnitude of Divergence} / \text{Actual Budget} = 1 - 160\,194 / 481\,038 = 67\%$

Nevertheless, the use of DBBS may be useful as part of a systematic strategy to reduce inequities and provide necessary funds to implement a PHC package in all health districts in South Africa. While current inequities cannot be bridged easily, a central financing body could coordinate the move toward better scores for each province and set targets for achievement within a five-year period. This would allow for a gradual but sustained tackling of the problem of inequitable financing under decentralisation.

Implications of the narrow definition of Municipal Health Services

The issue of how to finance PHC is particularly pertinent given the minimalist definition of Municipal Health Services contained in the National Health Bill. This basically gives district municipalities the responsibility for financing and providing Environmental Health Services only. The remainder of PHC services must be funded from Provincial Departments of Health. The implications of this definition are unclear at present. The worst case scenario from a sustainability perspective is that there will be a loss of funding for PHC of about R 1.0 billion, minus the costs of provision of Environmental Health Services: at maximum an 18% reduction in total public sector PHC financing. Key concerns relate to the responsibility for funding this potential short-fall. Nevertheless, others argue that the loss of funding may not be of too much concern. From an equity perspective they claim that the biggest loss of funding will actually occur in those districts where local government own revenue is high. It may be argued that such districts are those that are well off anyway and currently “overfunded”. Taking this one step further, those who support a more equitable allocation of resources might argue that the removal of local government PHC funding might actually level the playing field between districts and reduce inequities.

To explore such issues it is worth re-examining the data to see whether such assertions have any validity. In particular it is useful to examine those health districts where:

- own revenue is a high share of total PHC expenditure
- funding appears to be far below that required to deliver a PHC package.

In essence this analysis examines issues around both sustainability and equity. It concentrates on the districts that appear underfunded yet also rely on own revenue funding. More precisely, our analysis explores those health districts where overall funding per capita of PHC is less than R100 per capita and between R100 and R120 per capita and where own revenue funding is important for PHC funding.

Several points arise from the analysis. First, there are a number of health districts where PHC is currently extremely underfunded in per capita terms where local government own financing is important. Hence, it is not just the well-funded health districts that will be hit by this redefinition. DC30 and DC31 in Mpumalanga appear extremely vulnerable to loss of own revenue, with already low PHC funding per capita. In such cases, the amounts lost may not be large in Rand terms but the impact could be huge in terms of service delivery. Interestingly, to fill the potential gap lost by the twelve health districts with less than R100 pc of PHC funding, which would be most affected by the definition, less than R100 million would be needed. For the fourteen health districts where PHC per capita funding is between R100 and R120 the table shows that an extra R175 million would need to be raised to bridge the gap. In this latter grouping are the two metropolitan councils which appear most vulnerable to loss of own revenue funding, Tshwane and Nelson Mandela (Port

Elizabeth). Consequently, the data imply that at least R275 million should be targeted to these 26 health districts to avoid serious impacts on health care service delivery in already under-funded contexts. Still such a strategy should be seen as merely disaster avoidance. The pervasive inequities in the system highlighted earlier in the chapter and the need to deliver a full PHC package in all health districts require further and more comprehensive action.

Table 5.4: Potential Loss of funding, for “Vulnerable” Health Districts, through the narrow definition of Municipal Health Services.

Province	Health District	Overall PHC Per Capita (R)	Potential Loss as % of total PHC funds	For HDs with <R100 pc, Potential Loss Amount (R)	For HDs between R100 and R120pc, Potential Loss Amount (R)
MP	DC30	31.66	49%	13,965	
GT	Tshwane	100.79	42%		77,941
MP	DC31	33.78	36%	13,331	
KZN	DC29	97.97	26%	14,762	
EC	Port Eliz	118.15	25%		32,922
FS	DC17	96.81	21%	14,880	
NC	DC9	100.70	20%		7,093
FS	DC19	53.59	19%	7,575	
GT	DC42	113.36	19%		16,705
KZN	DC24	106.44	16%		7,825
GT	CBDC8	97.27	12%	8,700	
L	DC36	96.77	10%	5,983	
FS	DC16	109.82	7%		1,061
KZN	DC25	116.96	7%		3,615
KZN	DC23	118.66	6%		4,236
FS	DC18	72.89	6%	3,173	
KZN	DC26	120.00	5%		5,034
EC	DC14	39.28	5%	780	
EC	DC15	73.87	5%	6,979	
NW	CBDC1	106.42	5%		816
EC	DC12	110.87	4%		9,112
L	DC33	109.12	4%		4,799
KZN	DC28	118.73	4%		3,740
L	DC34	96.30	3%	3,638	
EC	DC13	88.62	2%	2,053	
MP	DC32	102.16	1%		888
Totals				95,819	175,787

SECTION 7: CONCLUSIONS AND RECOMMENDATIONS

The results produced by this research project highlight the extent of inequities in health financing of non-hospital PHC across South Africa. In many ways these results confirm the international picture that uncorrected decentralisation of health financing is no recipe for equity. Much effort is currently being devoted to managing the definition of municipal health services, and its implication for health financing and service delivery. Yet it is important not to lose perspective on the more fundamental issue, guaranteeing equitable financing to allow the population access to a basic package of health care services. This report hopes to contribute data, analyses and findings to this process. In this regard, the main conclusions and recommendations from the report are highlighted below.

Conclusions

- The financing of PHC is fragmented and there is no evidence of its coordination within the decentralisation process. Currently, no single institution has the mandate or authority for this role. Further, there has been no explicit national policy for PHC financing. Consequently, resource allocation for non-hospital PHC has been done with virtually no regard for equity.
- Further, need for health care and financial resources for PHC are in general inversely related. The least deprived health districts tend to get the most funds per person. Such results hold not only across the country as a whole but within most provinces.
- There are wide discrepancies in per capita financing of non-hospital PHC across provinces and districts. Four times as much money per person is allocated for these activities in the Western Cape as in Mpumalanga. Funding to individual health districts ranges from R300 to under R40 per capita. Indeed, 19 district municipalities receive less than R100 per capita for financing non-hospital PHC activities. Such amounts are *far* below those needed to deliver a PHC package.
- Relatedly, financial resources are highly concentrated in certain provinces and health districts; 3 provinces account for 60% of resources (KwaZulu Natal, Gauteng and Western Cape), but only 43% of the population without medical scheme membership, and the five best-funded health districts claim 43% of all non-hospital PHC funding, with only 28% of the population.
- The degree of financial decentralisation to local government levels is in most provinces limited. Provincial Departments of Health are the main funders of non-hospital PHC, averaging 75% of all finances. In Limpopo and North West around 90% of funds come straight from Provincial Departments of Health.
- Provinces are in general doing little to address inequities in the financing of PHC across their health districts. They are not using measures of need to guide budgeting (such as population based resource allocation). In general, they do not compensate for the differential revenue raising capacity of different districts and in some cases they exacerbate inequities.

Recommendations

It is vital that the National Department of Health, in alliance with National Treasury and provinces, develop a PHC financing policy which guarantees equitable financing to support access to an agreed package of services. In this regard, research is needed to ascertain the actual costs of PHC service delivery in provinces, the quality and quantity of services provided and the additional financing requirements for delivery of a PHC package. Broad-based commitment to the provision of the PHC package is foundational for equitable financing of PHC.

While an appropriate understanding of the financial requirements for PHC delivery is important, other steps are also needed to ensure appropriate use of such funds, and these relate to:

- Improving absorptive capacity of local governments;
- Guaranteeing the efficient use of allocated resources;
- Ensuring effective deployment of human resources to provide PHC services;
- Bolstering PHC capital infrastructure to improve access.

What is clear from the above is that to make redistribution work, to fund PHC more effectively and meet the needs of the population, resources must be plugged into developing the decentralised health care system. A platform is needed for effective redistribution. Resources and strategies must be directed to this end to allow an equitable PHC system to emerge.

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Annex 1: Comparison of data with the IGFR (2003), 2001/02 prices

	LGH (2001/02)	IGFR (2001/02)
Eastern Cape	574,805	682,853
Free State	189,588	184,802
Gauteng	1,051,773	908,905
KwaZulu Natal	1,025,695	1,275,810
Limpopo	466,950	344,584
Mpumalanga	131,135	159,319
Northern Cape	93,026	113,258
North West	474,714	379,349
Western Cape	728,106	625,100
Total	4,735,792	4,673,980

Note: Data refer only to provincial spending on non-hospital PHC services. Thus contributions from local government are excluded to ensure comparability.

Annex 2: Financing Data by Health District, 2001/02

Rank	Health District	R ('000)	Province
1	Cape Town	713,355	WC
2	Egoli (Johannesburg)	594,438	GT
3	Ekurhuleni (East Rand)	519,044	GT
4	eThekweni (Durban)	467,869	KZN
5	DC12	207,950	EC
6	Tshwane (Pretoria)	187,029	GT
7	DC22	152,441	KZN
8	DC37	143,159	NW
9	DC39	139,215	NW
10	DC15	134,456	EC
11	Nelson Mandela (Port Elizabeth)	129,642	EC
12	DC34	125,241	L
13	DC33	112,796	L
14	DC40	103,399	NW
15	DC28	99,123	KZN
16	DC38	94,745	NW
17	DC32	94,150	MP
18	DC26	93,767	KZN
19	DC21	92,057	KZN
20	DC42	89,673	GT
21	DC2	88,043	WC
22	DC13	82,573	EC
23	DC35	75,881	L
24	CBDC3	73,096	L
25	DC27	72,637	KZN
26	DC23	72,230	KZN
27	DC4	72,122	WC
28	DC17	71,284	FS
29	CBDC8	70,647	GT
30	DC36	61,874	L
31	DC29	57,381	KZN
32	DC18	55,606	FS
33	DC25	52,603	KZN
34	DC24	49,745	KZN
35	DC1	46,068	WC
36	DC19	39,568	FS
37	DC44	37,270	EC
38	DC31	36,716	MP
39	DC9	34,838	NC
40	DC43	34,372	KZN
41	DC20	33,041	FS
42	CBDC4	32,151	L
43	DC3	29,655	WC
44	DC30	28,453	MP
45	DC10	23,330	EC
46	DC7	22,732	NC
47	DC6	22,024	NC
48	CBDC1	21,979	NW
49	DC8	16,720	NC

50	DC14	14,581	EC
51	DC16	14,504	FS
52	DC5	13,030	WC
53	CBDC2	11,196	GT
	TOTAL	5,761,496	TOTAL

Annex 3: Per Capita Financing by Health District (2001/02)

Rank	Health District	R pc	Province
1	DC39	300.03	NW
2	Cape Town	255.25	WC
3	Ekurhuleni (East Rand)	232.29	GT
4	DC5	212.98	WC
5	Egoli (Johannesburg)	204.27	GT
6	DC6	190.10	NC
7	DC1	180.13	WC
8	DC4	173.68	WC
9	DC40	171.64	NW
10	DC3	171.10	WC
11	DC22	158.73	KZN
12	eThekweni (Durban)	155.20	KZN
13	DC2	143.40	WC
14	DC43	133.90	KZN
15	DC27	131.70	KZN
16	DC21	130.74	KZN
17	DC38	125.71	NW
18	DC37	123.32	NW
19	DC7	121.97	NC
20	DC26	120.00	KZN
21	DC28	118.73	KZN
22	DC23	118.66	KZN
23	Nelson Mandela (Port Elizabeth)	118.15	EC
24	DC25	116.96	KZN
25	DC42	113.36	GT
26	CBDC1	113.01	NW
27	DC12	110.87	EC
28	DC16	109.82	FS
29	DC33	109.12	L
30	DC24	106.44	KZN
31	DC32	102.16	MP
32	Tshwane (Pretoria)	100.79	GT
33	DC9	100.70	NC
34	DC29	97.97	KZN
35	CBDC8	97.27	GT
36	DC17	96.81	FS
37	DC36	96.77	L
38	DC34	96.30	L
39	CBDC2	90.09	GT
40	DC13	88.62	EC
41	DC8	75.05	NC
42	DC15	73.87	EC
43	DC18	72.89	FS
44	CBDC3	68.62	L
45	DC20	67.71	FS
46	DC44	60.55	EC
47	DC35	60.08	L
48	DC10	55.69	EC

49	DC19	53.59	FS
50	CBDC4	42.70	L
51	DC14	39.28	EC
52	DC31	33.78	MP
53	DC30	31.66	MP
	Average	127.56	

Annex 4: Overall Deprivation ranking by Health District

Rank	Health District	Deprivation Score	Province
1	DC27	5.996703	KZN
2	DC15	5.930216	EC
3	DC24	5.577547	KZN
4	DC44	5.465763	EC
5	DC26	4.406415	KZN
6	DC43	4.127074	KZN
7	CBDC3	3.665408	L
8	DC28	3.597313	KZN
9	DC14	3.549379	EC
10	DC34	3.534416	L
11	CBDC4	3.381666	L
12	DC13	3.373782	EC
13	DC29	3.344729	KZN
14	DC21	3.280836	KZN
15	DC39	3.084459	NW
16	DC33	2.914416	L
17	DC23	2.872959	KZN
18	CBDC1	2.794895	NW
19	DC12	2.272455	EC
20	DC35	2.20218	L
21	DC38	1.973787	NW
22	DC19	1.603919	FS
23	DC37	1.494743	NW
24	DC32	1.363798	MP
25	DC36	1.035546	L
26	DC30	0.952883	MP
27	DC22	-0.19014	KZN
28	DC31	-0.576	MP
29	DC25	-0.91155	KZN
30	DC18	-1.01058	FS
31	DC20	-1.01735	FS
32	DC16	-1.1341	FS
33	DC10	-1.16294	EC
34	DC40	-1.42963	NW
35	DC17	-1.60221	FS
36	CBDC2	-1.98846	GT
37	DC7	-2.00017	NC
38	DC9	-3.06072	NC
39	DC42	-3.4026	GT
40	DC8	-3.47163	NC
41	Durban	-3.66496	KZN
42	CBDC8	-3.70008	GT
43	EK	-4.19401	GT
44	PE	-4.57698	EC
45	DC6	-4.59633	NC
46	TSH	-4.72197	GT
47	JBG	-4.94408	GT
48	DC5	-5.26643	WC

49	DC4	-5.98323	WC
50	DC3	-6.50938	WC
51	DC2	-6.59047	WC
52	DC1	-6.76355	WC
53	CT	-7.73094	WC

Annex 5: Relative Deprivation Scores for Districts within each Province

	DISTRICT	INDEX
Eastern Cape	DC10	-0.95
	DC12	-0.12
	DC13	0.18
	DC14	0.21
	DC15	0.73
	DC44	0.71
	PE	-1.54
Free State	DC16	-0.15
	DC17	-0.31
	DC18	-0.23
	DC19	0.51
	DC20	-0.18
Gauteng	DC42	-0.02
	JOBG	-0.28
	TSHW	-0.01
	EKUR	-0.13
	CBDC2	0.73
	CBDC8	0.26
KwaZulu_Natal	DURB	-0.97
	DC21	0.27
	DC22	-0.37
	DC23	0.22
	DC24	0.67
	DC25	-0.43
	DC26	0.51
	DC27	0.77
	DC28	0.34
	DC29	0.37
	DC43	0.44
Limpopo	DC33	-0.47
	DC34	0.03
	DC35	0.28
	DC36	-0.44
	CBDC3	0.61
	CBDC4	0.25
Mpumalanga	DC30	-0.21
	DC31	0.21
	DC32	0.26
North West	DC37	-0.13
	DC38	0.41
	DC39	0.49

	DC40	-0.96
	CBDC1	0.72
Northern Cape	DC06	0.07
	DC07	0.43
	DC08	0.1
	DC09	-0.44
	CBDC1	-0.42
Western Cape	DC01	0.37
	DC02	0.09
	DC03	0.45
	DC04	0.21
	DC05	0.35
	Cape City	-0.61